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** quality and resources (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 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, national and regional 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. **Likely evolution of the baseline** - 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;

Annex I SEA Directive Requirements	Sub section in the Topic chapter
c) The environmental characteristics of areas likely to be significantly affected	**Environmental characteristics of those areas most likely to be affected** – provides a summary of those key aspects of the region most likely to be affected by the plan.
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.	**Summary of existing problems relevant to revocation of the Regional Strategy** (such as those designated under the Wild Birds and Habitats Directives and further expanded upon in **Appendix G**). Given the focus on European designated conservation sites this sub-section only 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 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;	**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**:

[1] The convention uses this definition to describe 'biological diversity' commonly taken to mean the same as 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 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 (92/43/EC)*** and ***Birds Directive (79/409/EC)*** 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 (2006/454/EC)*** 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.

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

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:

- 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 2009*** 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

[3] The Convention on Biological Diversity (http://www.cbd.int/ecosystem/) defines the Ecosystem Approach as *'a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.'*

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;
- 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.

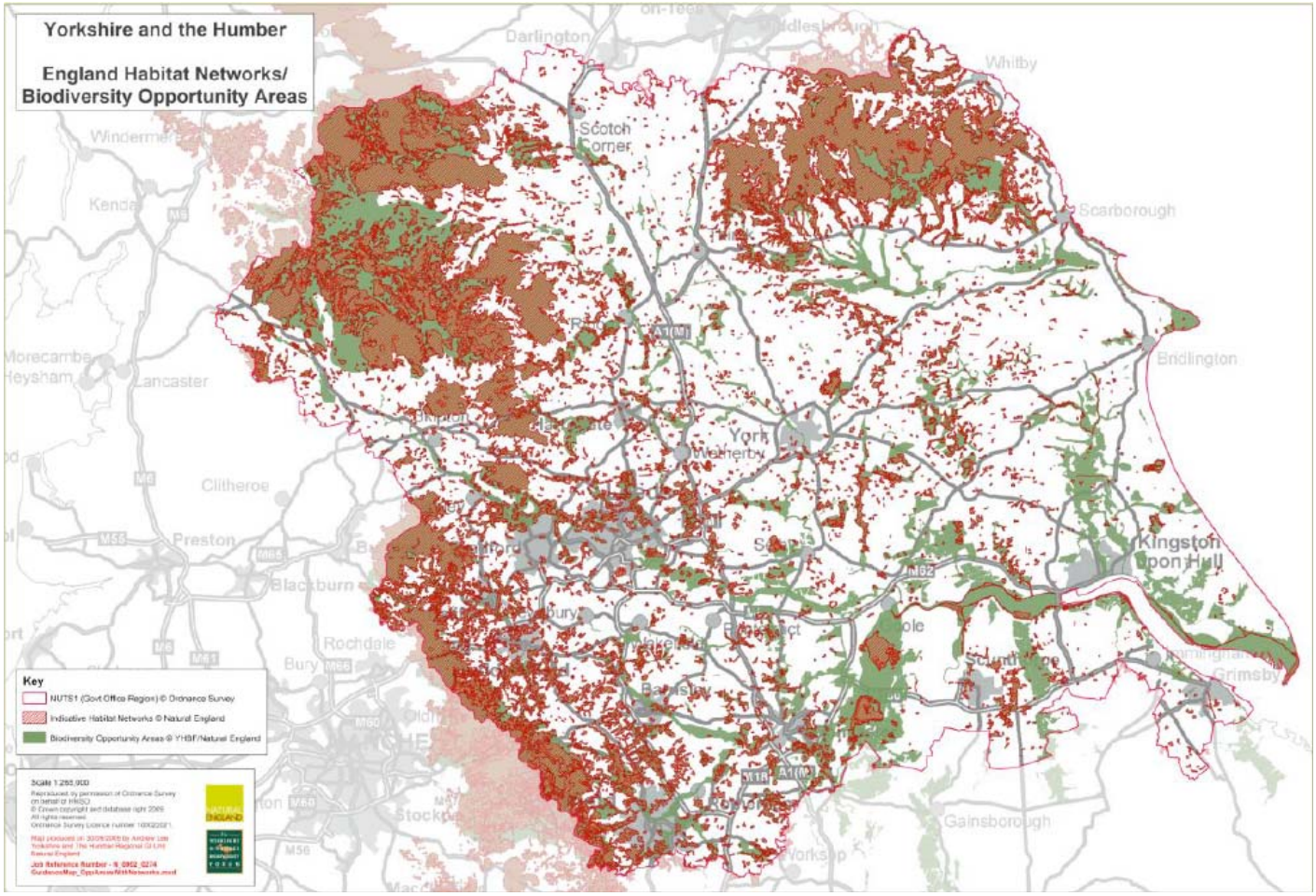
Yorkshire and Humber Regional Plans

The ***Regional Biodiversity Strategy (RBS)*** (2009) was produced to provide a strategic framework for the work undertaken by regional and local biodiversity partnerships in conserving biodiversity and the sustainable use of biological resources. It identifies the "improvement of functional habitat networks and the enhancement of the wider environment" as one of its six key themes and indicates that the traditional approach to protecting wildlife through a suite of protected sites is not sufficient to ensure that our biodiversity remains viable into the future. The RBS highlights that it is imperative to begin work at a landscape-scale maintaining and increasing habitat linkages across our landscapes and improving the quality of the wider farmed and urban landscapes beginning with actions to:

- Provide a regionally endorsed habitat network map
- Take a landscape-scale approach to the allocation of resources for habitat and species conservation
- Identify and incorporate habitat network approaches into all regional and local statutory plans

The RBS is supported by **Planning Guidance: Mapping for Biodiversity in Yorkshire and Humber** (2009) produced by the Yorkshire and Humber Biodiversity Forum. It identifies indicative ecological networks and maps biodiversity opportunity areas in the region (see Figure 1.1) to help target action towards achieving the region's contribution towards the UKBAP habitat targets.

Figure 1.1 Ecological Networks and Biodiversity Opportunity Areas



Source: Natural England

The ***Regional Forestry Strategy*** (2007) provides for a partnership approach to woodland management. It sets targets to deliver the woodland element of the England Biodiversity Strategy and prioritises other biodiversity objectives such as management of Ancient and designated woodlands, and the creation and protection of functional woodland networks.

There are also a series of thematic regional strategies including the ***Regional Environmental Enhancement Strategy***, the ***Regional Rural Framework***, the ***Regional Cultural Strategy*** and the ***Regional Heritage Strategy*** which seek to respond to specific aspects of the regional agenda and are relevant to biodiversity.

Shoreline Management Plans (SMPs) were introduced in 1994 by the Ministry for Agriculture, Fisheries and Food (MAFF) to provide a large-scale assessment of the potential risk of flooding and coastal erosion along the coast of England and Wales and present policies to guide future decision-making about coastal defence management. The ***River Tyne to Flamborough Head SMP 2*** covers the North Yorkshire coastline down to Flamborough Head. The dominant feature of the coastline is its superb coastal cliffs many of which are internationally designated, erosion and stability of both soft and hard cliffs is an issue common to much of the coast. The ***Flamborough Head to Gibraltar Point SMP*** covers the coastline from Flamborough Head in the East Riding of Yorkshire to Gibraltar Point in Lincolnshire, including the outer Humber Estuary. The coastline within the SMP area includes three distinct areas. The coastline in the north is typified by soft, eroding cliffs. The floodplain of the outer Humber Estuary includes some of the most productive agricultural land in the UK and major concentrations of industrial and commercial properties including important power stations. Over 400,000 people live or work in the floodplain area. The Lincolnshire coastline has coastal defences protecting extensive areas of low-lying land. There is some overlap between the areas covered by the SMP and the ***Humber Flood Risk Management Strategy*** which covers the coastline from just south of Easington to Saltfleet and extends into the Humber beyond the SMP area.

Catchment Abstraction Management Plans (CAMS) are prepared by the Environment Agency for the following catchments in the region and discussed further in the water section:

- Aire and Calder (2008)
- Yorkshire Derwent (2008)
- Don and Rother (2008)
- Hull and East Riding (2008)
- Swale, Ure, Nidd and Upper Ouse (2008)
- Wharfe and Lower Ouse (2008)
- Grimsby, Ancholme and Louth (2008)
- Esk and Coast (2008)
- Idle and Torne (2008)

These rivers are all within the Humber river basin district for which the Environment Agency has drafted the ***Humber River Basin Management Plan***. The improvements envisaged as a result of the actions planned include a strategic and planned approach to flood risk management and coastal erosion which incorporates opportunities for habitat creation, river enhancement and general ecological enhancement.

There are 157 Local Biodiversity Action Plans (LBAPs) in England, the following LBAPs have been developed within the region:

- Ancholme Internal Drainage Board (IDB) Biodiversity Action Plan (North Lincolnshire)
- Armthorpe Internal Drainage Board Biodiversity Action Plan (South Yorkshire)
- Ashfields and West Moor Internal Drainage Board (IDB) Biodiversity Action Plan (South Yorkshire)
- Barnsley Biodiversity Action Plan 2002 (Barnsley)
- Barnsley Biodiversity Action Plan 2008 (Barnsley)
- Bedale & Upper Swale Internal Drainage Board (IDB) Biodiversity Action Plan (North Yorkshire)
- Black Drain Drainage Board (DB) Biodiversity Action Plan (South Yorkshire)
- Bradford Biodiversity Action Plan (Bradford)
- Calderdale Biodiversity Action Plan (Calderdale)
- City of York LBAP (York)
- Craven Biodiversity Action Plan (Craven)
- Dearne and Dove Internal Drainage Board (IDB) Biodiversity Action Plan (South Yorkshire)
- Doncaster Biodiversity Action Partnership (Doncaster)
- Dun Drainage Commissioners Biodiversity Action Plan (South Yorkshire)
- East Riding of Yorkshire Biodiversity Action Plan (East Riding of Yorkshire)
- Garthorpe Drainage Board (DB) Biodiversity Action Plan (Yorkshire & The Humber)
- Goole Fields Internal Drainage Board (IDB) Biodiversity Action Plan (East Riding of Yorkshire)
- Hambleton BAP (Hambleton)
- Harrogate Biodiversity Action Plan (Harrogate)
- Hull Local Biodiversity Action Plan (Kingston upon Hull, City of)
- Isle of Axholme and North Nottinghamshire Water Level Management Board (North Lincolnshire)
- Kirklees Biodiversity Action Plan (Kirklees)
- Knottingley to Gowdall Internal Drainage Board (IDB) Biodiversity Action Plan (Yorkshire & The Humber)
- Leeds Biodiversity Action Plan (Leeds)
- Ouse and Humber Strategic Sub-catchment Area Biodiversity Action Plan (East Riding of Yorkshire)
- Potteric Carr Internal Drainage Board (IDB) Biodiversity Action Plan (South Yorkshire)
- Richmondshire Biodiversity Action Plan (Richmondshire)
- Rotherham Biodiversity Action Plan (Rotherham)

- Ryedale Biodiversity Action Plan (Ryedale)
- Scarborough Biodiversity Action Plan (Scarborough)
- Scunthorpe Internal Drainage Board (IDB) Biodiversity Action Plan (North Lincolnshire)
- Selby Area Internal Drainage Board (IDB) Biodiversity Action Plan (North Yorkshire)
- Selby Biodiversity Action Plan (Selby)
- Sheffield Biodiversity Action Plan 2002 (Sheffield)
- Sheffield Biodiversity Action Plan 2009-2018 (Sheffield)
- Tween Bridge Internal Drainage Board (IDB) Biodiversity Action Plan (South Yorkshire)
- Wakefield District Biodiversity Plan (Wakefield)
- Went Internal Drainage Board (IDB) Biodiversity Action Plan (Yorkshire & The Humber)

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 National

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 1.1**. 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.

Table 1.1 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%

[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

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
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 Yorkshire and Humber Region

Yorkshire and Humber is exceptionally rich in biodiversity and supports a wide range of species and habitats of international and national importance. This is reflected in the large number and types of sites that are designated for biodiversity (see Figure 2) and the fact the region supports more than 35 national priority habitats and 105 national priority species, in both designated and non-designated areas. Whilst the priority species and habitats are important, the majority of the region lies outside such sites. Although urban environmental and intensive agricultural landscapes support fewer species and habitats, the biodiversity associated with urban green spaces (private gardens, riverbanks, road verges, allotments and public parks) are important to the region. They represent the main contact with nature for the majority of people, but also provide valuable stepping stones for habitats and species as part of wider ecological networks.

Priority Habitats and Species

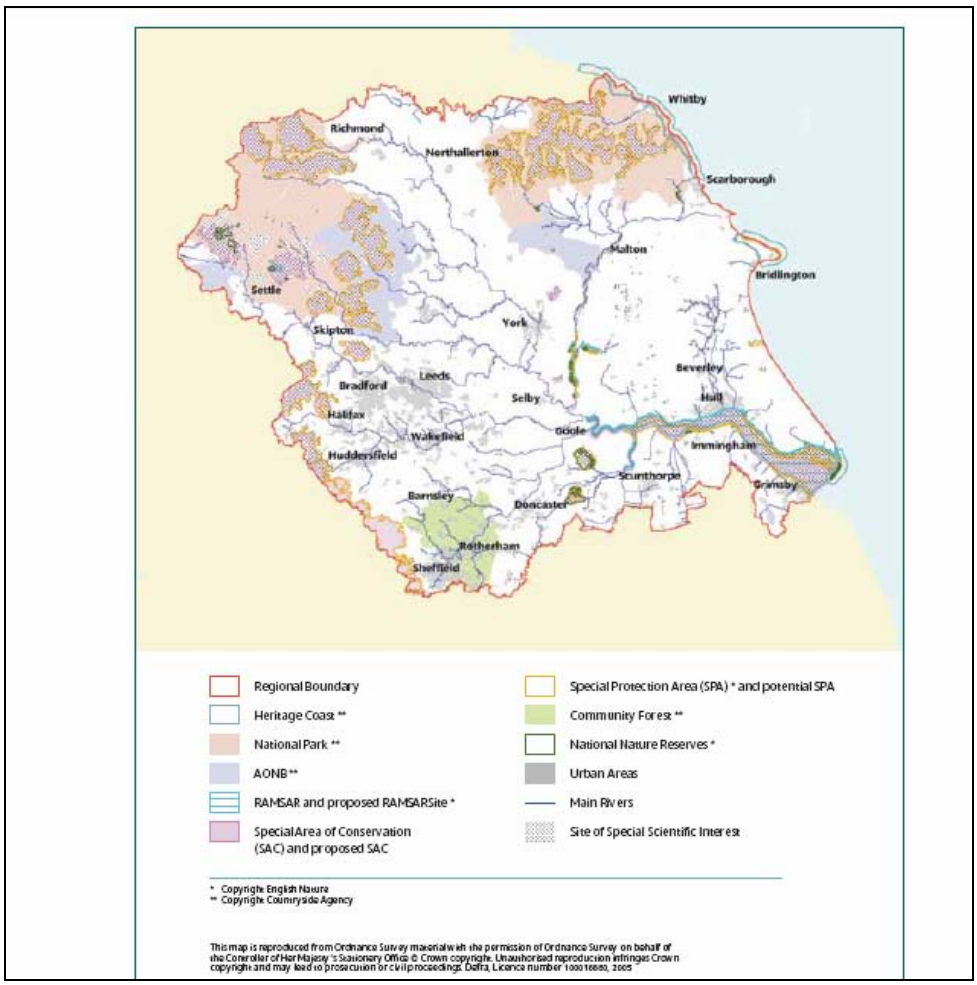
Some of Yorkshire and Humber's habitats are particularly important in an international and national context including:

- Upland moorland and heath: the North York Moors National Park contains the largest continuous tract of upland heather moorland in England, and along with the Pennine Moors the region holds 28% of upland heathland in England and extensive areas of blanket bog.
- Limestone habitats: the Yorkshire Dales contains the most extensive series of limestone pavements in the UK, and important areas of upload calcareous grassland. The region supports over 50% and 20% respectively of the area of these habitats in England
- Lowland hay meadows: the Lower Derwent Valley contains a greater area of high quality examples of this habitat than any other UK site.
- Lowland raised bog: Thorne and Hatfield Moors are England's largest area of raised bog and are home to eight Red Data Book (RDB) invertebrate species.
- Chalk grassland: the East Yorkshire Wolds hold the most northerly chalk grasslands and rivers in the UK.
- Over 23,600ha of Ancient Woodlands including some nationally significant concentrations that mean the Yorkshire and Humber region contains many of the largest connected woodland networks in England.

Along the coast, Flamborough Head is an east coast representative of hard chalk cliffs, which occur more frequently on the south coast of England. There are larger numbers and a wider range of cave habitats at Flamborough than at any other chalk site in Britain. These cliffs also support England's largest mainland seabird colony. The Humber is the second largest coastal plain estuary in the UK, and the largest coastal plain estuary on the East coast of Britain. It supports valuable saline lagoons home to highly specialised salt tolerant species, while internationally important numbers of wildfowl and waders are attracted to the mudflats of the estuary. During the breeding season it supports more than 10% of the UK's population of Bittern and in winter it regularly hosts more than 150,000 waterfowl.

In addition to the various important priority habitats, Yorkshire and Humber is important for a number of rare (e.g. UK BAP priority/Vascular Plant Red Lists) species including the Lady's Slipper Orchid now reduced to one 'natural' population in Yorkshire.

Figure 1.2 Environmental Designations



Source: Regional Strategy for Yorkshire and the Humber 2008

Internationally Designated Sites

The region has many internationally designated sites subject to the highest level of protection including:

- Woodlands, meadows and freshwaters ranging from Hornsea Mere SPA to the River Derwent SAC
- Coastal cliffs comprising Beast Cliff to Whitby SAC and Flamborough Head SAC and SPA
- Limestone areas including the Craven Limestone Complex and Ingleborough Complex SACs
- Sites designated for Great Crested Newts at Denby Grange Colliery Ponds SAC and Kirk Deighton SAC

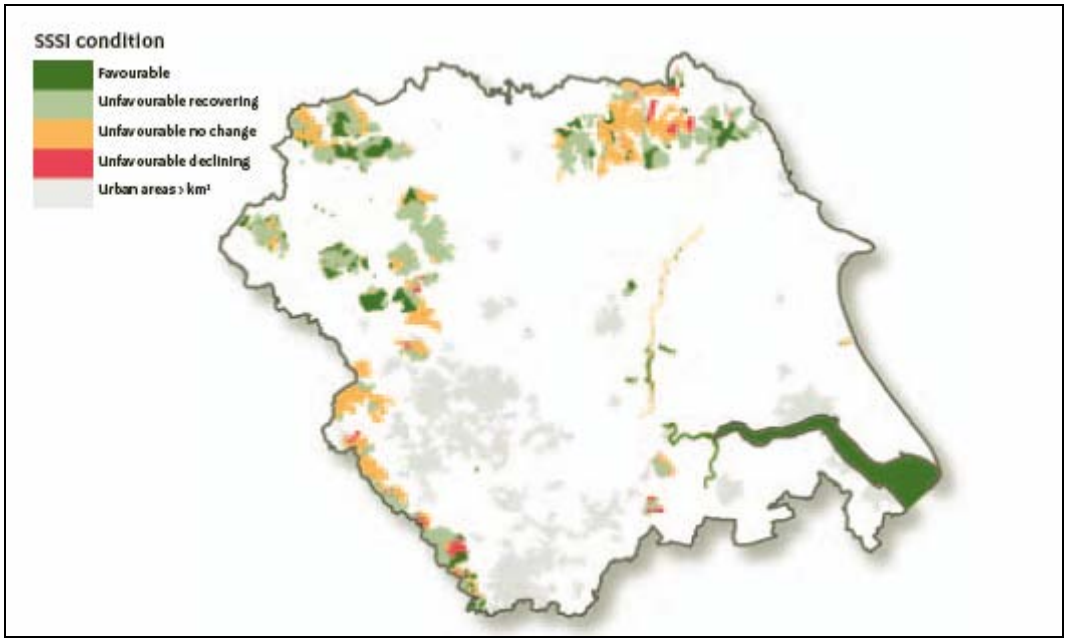
- Remnant lowland and extensive upland moors and bogs including the North Pennine Moors SAC and SPA , South
- Pennine Moors SAC and SPA, and Hatfield Moor SAC
- The Humber Estuary cSAC, SPA and Ramsar site

Nationally Designated Sites

There are 385 Sites of Special Scientific Interest which cover 11% of the region's land area. Eleven of these sites are also National Nature Reserves (NNR). The condition of SSSIs in the region (see Figure 1.3) has improved significantly over the last decade with 97.7% per cent being in favourable or unfavourable but recovering condition in 2012. However, 0.55% of SSSIs are still in unfavourable and declining condition with 0.01% destroyed.

There are 115 Local Nature Reserves of local importance for biodiversity.

Figure 1.3 Condition of SSSI



Source: Natural England

1.4 Environmental characteristics of those areas most likely to be affected

The decline of the region's biodiversity resource in the last four decades of the 20th century has been more severe than that experienced nationally, though there have been some limited signs of recovery recently e.g. improving river quality has led to increasing numbers of coarse fish in the Rivers Aire and Don and the return of Salmon to the Yorkshire Ouse. Climate change presents a further set of challenges, such as the need to address the loss of upland habitats, wetlands, isolated habitats and coastal habitats. This will necessitate the facilitation of alternative sites, especially for the migration of species.

Significant increased in housing provision is proposed most of which will be in West and South Yorkshire but with smaller increases in Scarborough, Selby, York, Hull, North East Lincolnshire and North Lincolnshire. New housing developments that are poorly sited can have negative impacts on biodiversity through direct damage or loss of habitats and species and secondary effects associated with infrastructure including road construction and the increased demand placed on local resources such as water. The allocation of areas for new housing needs to avoid direct impacts on areas of high biodiversity value or where land is of potential value for the creation/expansion of ecological networks. However, well sited and design housing can have positive benefits for biodiversity through the creation of new areas of biodiversity rich greenspace. Urban regeneration provides an opportunity to conserve, restore and create additional multi-functional habitat networks as part of its green infrastructure.

Tourism and recreation based diversification could also affect important biodiversity sites (especially internationally important biodiversity sites in the National Parks) as a consequence of increased pressure, disturbance and erosion.

Coastal and Marine Habitats

Much of the Yorkshire coast and Humber Estuary is internationally and nationally important for its biodiversity. North of Bridlington the coast is characterised by headlands, cliffs and bays while to the south, it is comprised of fast eroding, low clay cliffs and sand dunes down to Spurn Heard. The northern coast is important for its tourist appeal, biodiversity playing a key role in this e.g. seabird spectacles at Flamborough Head. The Humber Estuary supports sand dunes, grazing marsh, saltmarsh and mudflats. Over the centuries it has loss the vast majority of its estuarine habitat and the remaining areas are under pressure from development and sea level rise.

In addition to its status as an international biodiversity site the Humber Estuary is important for the economic prosperity of the region because of its major ports and transport links. Coastal habitats also provide a crucial role in flood defence which is currently challenged by climate change induced sea level rise resulting in increased coastal erosion. The land adjacent to the estuary is at high risk of flooding but also supports significant population centres. Delivery of economic aspirations and addressing the social

issues whilst protecting and enhancing the estuary's biodiversity is one of the key challenges for the sustainable development of the region.

There needs to be a strategic approach to coastal planning that facilitates sustainable economic development whilst enhancing biodiversity and provision for biodiversity is needed at an early stage in planning new development associated with coastal or estuarine environments to ensure the best location and type of development are achieved.

Rivers and Wetland Habitats

Rivers and wetlands are particularly important in Yorkshire and Humber from the upland peatlands, to the lowland river valleys and extensive coastal floodplain. Smaller features such as ponds, lakes and fens are also important for biodiversity and form part of a wider ecological network with other habitat types. A sixth of the region lies within flood risk areas including the floodplain of the Humber and much of this land includes major exiting and proposed development areas, significant industry, high grade agricultural land and transport infrastructure. An assessment of the Humber basin in the RBMP found that 90% of rivers, 82% of groundwater, and 99.6% of transitional waters were at risk of failing to reach good status due to diffuse pollution.

Healthy blanket bogs, rivers, wet woodland, floodplain meadows, fens and lakes are areas rich in biodiversity and also provide ecosystem services including storage of carbon to mitigate against climate change, moderation and storage of surface water runoff leading to reduction in flood peaks and natural filtration and treatment of pollutants. However, impacts on these habitats such as development of floodplain land, poor water management planning in new development, intensive agricultural land use, construction of flood barriers, drainage of upland areas, over abstraction of water resources and point and diffuse pollution has led to the loss, damage and fragmentation of wetland habitat.

Agricultural Habitats

Agriculture has long since been a dominant land use and over 70% of the region is in agricultural use with around 16,000 holdings which range from extensive sheep farming on the upland moorland to intensive arable production on the high-quality agricultural soils of the lowland flood and coastal plains. Its production of commodities, such as wheat, barley, potatoes, sugar beet, oilseed rape, peas and beans and grass, is greater than most other regions, and its livestock levels are high. A healthy and sustainably managed agricultural landscape can support biodiversity as well as providing a range of other ecosystem services including carbon storage to mitigate against climate change, moderation and storage of surface water runoff leading to reduction in flood peaks and natural filtration and treatment of pollutants.

The enhancement and promotion of the region's farmed landscape provides an opportunity for farm diversification which can boost rural communities, create jobs and open up the countryside to promote health and well-being. It is estimated that 35% of the main holdings in the region already have at least

one source of on-farm income in addition to primary agriculture. There are also other opportunities arising from the growing of other commodities such as energy crops that will also drive change.

Rural diversification is however a sensitive issue in upland areas and the more remote rural areas, where employment in agriculture is most important, although reduced agricultural production will have environmental benefits (e.g. reduced soil erosion, improved soil nutrient status) it may also lower the condition of wildlife habitats due to reduced grazing levels, especially in lowland areas.

Regional bird populations are considered a good indicator of the broad state of wildlife and the indicator for all native birds has improved from 1994 to 2008 by 22 per cent. Whilst, this is encouraging, farmland birds have declined very significantly over many decades as a result of more intensive farming.

Woodland Habitats

The Region once had extensive tree cover, but the development of industry and agriculture has reduced this considerably, especially in South and West Yorkshire, although patches of ancient woodland still exist both here and in North Yorkshire.

There are over 90,000 hectares of woodland in the region. Woodland covers approximately 5.8% of the region compared to 8.4% in England overall. This relatively low area of woodland together with, in some places, a history of inappropriate planting and neglect has led to declines in some of the region's distinctive woodland wildlife. The forestry resource varies considerably across the region. Woodland cover is extensive in North Yorkshire, where it comprises 13.6% of land area in Ryedale, but sparse elsewhere, especially in Hull and North East Lincolnshire, where it accounts for only 0.3% and 1.4% of land area. It also varies in terms of quality and public accessibility.

Over 26% of woodland is designated as ancient i.e. land that been continuously wooded since at least 1600 and is semi natural in character. It provides a refuge for woodland plants, fungi, invertebrates and other species that cannot adapt to different environmental conditions, and contains ancient unmodified soil profiles. The region contains two notable concentrations of ancient woodlands. One spans the boundary between the Howardian Hills Area of Outstanding Natural Beauty and the North York Moors National Park, with a second in South and West Yorkshire where over 50% of all woodlands in some metropolitan districts are classified as Ancient. The latter woodland is much more isolated and therefore more vulnerable to further fragmentation and decline.

There is a need to increase woodland cover in the region, within the context of wider landscape planning, to provide a more functional landscape and enhance the integrity of natural areas. In particular, there is a need for larger areas of better connected ancient woodland and for planting in urban areas to provide shade and other benefits, such as improved air quality.

1.5 Summary of existing problems relevant to revocation of the Regional Strategy

The HRA undertaken for the RSS in 2006 identified European and Ramsar sites within Yorkshire and Humber. The assessment of pressures on these sites is summarised in Appendix G. Key areas of concern are:

- development of freight and port facilities and increased waterborne transport on the Humber, potentially affecting the Humber Estuary SPA;
- Robin Hood Airport development, potentially affecting Hatfield Moor SAC and Thorne and Hatfield Moor SPA;
- effects of recreation, tourism and rural diversification policies on upland areas including the South Pennines Moors, North Pennine Moors, Ingleborough Complex, Craven Complex and North York Moors;
- effects of transport policies on the South Pennine Moors;
- water resource policies, potentially affecting a number of lowland, water sensitive Natura 2000 sites; and
- potential on and off site effects of renewable energy development.

1.6 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[8]. 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.[9]

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.[10]

Yorkshire and Humber Region

The SEA Directive requires a consideration of the evolution of the baseline without the proposed plan or programme being in place. Slightly confusingly in this assessment, this actually refers to the plan to revoke the regional strategy. So the evolution of the baseline without the plan will mean, in this instance, the evolution of the baseline with the regional strategy retained. Therefore, the assessment has used the findings of the 2008 Sustainability Appraisal of the Yorkshire and Humber plan to provide an informed understanding of likely future evolution of the biodiversity baseline. Any changes to the baseline that have occurred since 2008 have also been taken into account where information availability allowed.

Policy ENV8 identifies the need for local authorities to work with Natural England and Local Biodiversity Partnerships to “provide for habitat restoration/recreation” to ensure that the region’s ecology functions

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

as an integrated network of connected corridors and buffer zones. The focus on the restoration of networks of habitats was in response to the need to reverse the pattern of fragmentation, loss and decline of habitats and associated species. This policy was viewed in the Regional Biodiversity Strategy as the first step towards identifying core areas of biodiversity importance in the region although further development was required to ensure the delivery of robust and functional ecological networks that delivered clear benefits for biodiversity particularly in relation to adaptation to climate change in the long term.

Policy ENV6 sought to safeguard, manage and enhance the existing woodland resource in line with the Regional Forestry Strategy and to increase the woodland resource by approximately 500 ha per annum to 2021 as well as improving the woodland network, particularly in South and West Yorkshire so as to safeguard ancient woodlands. If implemented there would have been an increase in woodland area from 6% to 6.5% of total land area. It also sought to improve public accessibility to and within woodlands in or near towns or cities such that 70% of the population have one area of accessible woodland no less than 20 ha within 4km of their homes by 2021.

Policy E7 dealt with rural diversification and the reuse of farm buildings in light of changes to the Common Agricultural Policy and other changes happening in rural areas. The purpose of ENV7 was to protect higher quality agricultural land whilst encouraging land use changes that will help facilitate farm diversification in the light of structural changes that will occur to agriculture.

Long term this should have led to significant improvements in the functional ecological networks of the region's core biodiversity sites through a more integrated network of habitats.

1.7 Assessing significance

Table 1.2 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.

Table 1.2 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.

Effect	Description	Illustrative Guidance
+	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 major 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. Where a box is coloured but also contains a ? this indicates uncertainty over whether the effect could be a minor or significant effect although a professional judgement is expressed.

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

Table 1.3 summarises the significant effects identified in the detailed assessment of the Yorkshire and Humber Plan policies against the biodiversity topic.

Table 1.3 Significant Effects against the Biodiversity Topic

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
YH8 Green infrastructure	**Retention**	++	++	++	This policy states that areas and networks of green infrastructure will be identified, protected, created, extended, enhanced, managed, and maintained throughout the region to ensure that an improved, accessible and healthy environment is available whilst the integrity of internationally important biodiversity sites are protected. The policy states that local development frameworks should define a multiple hierarchy of green infrastructure, in terms of location, function, size and levels of use, based on analysis of natural, historic, cultural and landscape assets, and the identification of areas where additional green infrastructure is required. The policy defines assets of particular significance as national and inter-regional trails, floodplains, woodlands, biodiversity, heritage, and distinctive landscapes. The significant positive effects of the policy are short to long term. The NPPF includes a concise but strong policy that requires local authorities to plan positively for the creation, protection, enhancement and management of networks of green infrastructure. Non-statutory green-infrastructure strategies exist in the region and once established Local Nature Partnerships can be expected to play a key role in supporting their implementation. In the long term it is considered that the same significant positive effects will result. Leeds and South Yorkshire already have non-statutory green infrastructure strategies in place which were given weight in the development of core strategies due to the RSS policy. However, not all areas currently have such strategies in place and it would be up to Local Nature Partnerships to develop them. This may mean that in the short to medium term important green infrastructure could be lost to development, particularly given only 8 out of 23 local authorities have a core strategy in place and land allocations in older Local Plan policies may not have adequately considered the green infrastructure concept and just focussed on avoiding the development of designated sites.
	Revocation	-	?	++	
C1 Coastal sub area policy	**Retention**	++	++	++	This policy provides protection to the unique character, heritage and biodiversity of the undeveloped coast, in particular the natural beauty of the North York Moors National Park coast, the Flamborough Head coast, and Spurn Head. It seeks to protect the integrity of internationally important biodiversity sites, and improve marine water quality. The benefits of this policy will be seen in the short to the long term. This policy reflects national policy (e.g. the protection of heritage coasts) and legislation but the ultimate effects of revoking the policy will depend on local circumstances. Since the local plans for Scarborough and East Riding date from 1999 and 1996 they will not provide as strong a policy direction. It is also unclear whether existing and future land allocations will affect biodiversity assets. The effect of revoking this policy is therefore likely to be neutral in the short term and uncertain in the medium term depending on when new Local Plans are adopted. However, in the long term it is expected that local plans will conform to the
	Revocation	0	?	++	

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
					NPPF and significant positive effects will be seen.
RR1 Remoter Rural sub area policy	**Retention**	++	++	++	This policy states that plans, strategies, investment decisions and programmes should seek to ensure that the environmental quality of the region is protected. In particular, this policy identifies the region's upland natural environment including the Yorkshire Dales and North York Moors National Parks, the Howardian Hills, Nidderdale and Forest of Bowland AONBs and internationally important biodiversity sites for protection. It also seeks to safeguard the unique built environment. The significant policy effects of the policy are short to long term. This policy reflects national policy and legislation but the ultimate effects of revoking the policy will depend on local circumstances. Existing local plans may not provide as strong a policy direction. It is also unclear whether existing land allocations will affect biodiversity assets. The effect of revoking this policy is therefore likely to be neutral in the short term and uncertain in the medium term depending on when new Local Plans are adopted. However, it is expected that local plans will conform to the NPPF in the long term and significant positive benefits will be seen.
	Revocation	0	?	++	
ENV1 Development and flood risk	**Retention**	++	++	++	The purpose of this policy is to inform development on the basis of strategic flood risk assessments and ensure flood management reflects economic as well as environmental objectives, including the need to maintain the integrity of internationally important biodiversity sites on the Humber through managed realignment. It also requires positive land management for flood alleviation, particularly in the upland areas of the Yorkshire Dales, the North York Moors, the Howardian Hills and the Pennines. The effects will be short, medium and long term. Section 10 of the NPPF relates to fluvial and coastal flooding and requires local authorities to 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 NPPF includes a concise but strong policy that requires local authorities to plan positively for the creation, protection, enhancement and management of networks of green infrastructure; this should include land associated with flood alleviation. The River Basin Management Plan for the Humber also includes actions that cover the land management issues in this policy which would benefit the ecological network. In the long term it is considered that the same significant positive effects will result.
	Revocation	+	+	++	
ENV3 Water Quality	**Retention**	++	++	++	The purpose of this policy is to maintain high water quality standards by preventing polluting development and ensuring an adequate sewage and waste treatment system in line with the Water Framework Directive. It seeks to raise bathing and coastal water quality standards and protect and improve water quality at internationally important biodiversity sites at Denby Grange Colliery Ponds, Hornsea Mere, Kirk Deighton and the Humber Estuary. The effects will be short, medium and long term. The NPPF refers to existing statutory frameworks regulating water quality and provides for local authorities to minimise pollution from land uses accordingly. Local authorities should
	Revocation	+	+	++	

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
					work co-operatively with other authorities, the Environment Agency and water companies to ensure the spatial planning aspects of river basin management plans are applied, to contribute to the achievement of the required standards of water quality. In the long term it is considered that the same significant positive effects will result.
ENV6 Forestry, Trees and Woodland	**Retention**	++	++	++	Managing, safeguarding and enhancing by approximately 500 hectares per year the region's existing woodland resource, including ancient woodland, will have significant positive effects in terms of enhancing local biodiversity and landscape resources. The NPPF 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 as discussed in YH8. The loss of regional woodland creation target would result if the regional strategy is revoked so long term the same significant benefits may therefore not be seen.
	Revocation	+	+	+	
ENV8 Biodiversity	**Retention**	++	++	++	This policy provides specific protection for biodiversity sites. It seeks to ensure that biodiversity and geological heritage sites are protected including geological and geomorphologic features and processes, especially cave systems, karst landscapes and dinosaur remains on the East Coast. It also supports the protection and recovery of biodiversity in the floodplains, peat lands and saline lagoons of the Humber, grasslands, heaths and bogs, limestone pavements and meadows. This has a significant positive effect on the conservation of habitats in the region. The effects of this policy are short to long term. Paragraph 113 of the NPPF states: local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks. Therefore designated sites will remain protected. However, this policy also relates to protecting and enhancing undesignated biodiversity assets in the region. Paragraph 109 of the NPPF requires local authorities to minimise impacts on and provide net gains in biodiversity. The NPPF also includes a concise but strong policy that requires local authorities to plan positively for the creation, protection, enhancement and management of networks of green infrastructure. Non-statutory green-infrastructure strategies exist in the region and once established Local Nature Partnerships can be expected to play a key role in supporting their implementation. Therefore in the long term it is considered that the same significant positive effects will result.
	Revocation	+	+	++	

1.8.1 Effects of Retention

The effects of retention of the regional strategy have been assessed on the assumption that, in the absence of the legislation and regional architecture enabling updating of the regional strategy, although the general principles of development will remain some policies will become increasing outdated and in some cases in conflict with the national policies in the Framework. 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 protecting and enhancing biodiversity and geodiversity would lead to significant improvements in the functional ecological networks of the region's core biodiversity sites through a more integrated network of habitats.

1.8.2 Effects of Revocation

The Government's aim, as announced in the Natural Environment White Paper in June 2011, is that by 2020 biodiversity loss will have been halted and the country will support healthy well-functioning ecosystems in the form of coherent ecological networks, with more and better places for nature for the benefit of wildlife and people. In particular, the Natural Environment White Paper states that 90% of priority wildlife habitats should be in recovering or favourable condition. 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 will be in favourable condition, while maintaining at least 95% in favourable or recovering condition. According to the baseline figures, the 2020 target has already been achieved in the Yorkshire and Humber with 97.7% of SSSI in favourable or unfavourable but recovering condition.

Ecological legislation will help protect internationally and nationally designated sites from pressures associated with development. Furthermore paragraph 113 of the NPPF states: *local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks.* Therefore internationally to locally designated sites will remain protected following revocation. 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 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.

In respect of protecting and enhancing undesignated biodiversity and geodiversity assets in the region there are already many highly effective local partnerships with a focus on different aspects of the natural

environment. The Government is encouraging existing partnerships to join-up and integrate action to achieve multiple benefits – for example, on water and air quality, biodiversity, climate change adaptation and provision of green infrastructure. The White Paper sets out how the Government will help such groups to come together to become Local Nature Partnerships. Local Nature Partnerships will enable local authorities motivated by the "duty to cooperate" to work with a range of partners including land managers, businesses and conservation organisations to identify opportunities to protect and improving nature at local level. Local Nature Partnerships will link action to protect and improve the natural environment with wider national and local social and economic priorities. They are encouraged to make links with Local Enterprise Partnerships and Health and Wellbeing Boards and create new Nature Improvement Areas (e.g. Humberhead Levels) where there are significant opportunities to enhance and reconnect nature. It will also be necessary to achieve legally binding targets for air and water quality and these will remain significant contributory factors in improving the quality of areas important for wildlife. Therefore in the long term it is considered that the same significant positive effects in relation to the creation of functional ecological networks will result.

Despite these safeguards, it is far from certain that the overall effect of revocation on biodiversity would be in the short to medium term as local plans may not provide as strong a policy direction given that only 8 of 23 local authorities have adopted core strategies. It is also unclear whether existing and future land allocations will affect areas of biodiversity or geodiversity value particularly if increased housing delivery over and above the current allocation is required. Revocation could increase the number of additional homes delivered up to about 30,000 per annum to 2026 (see Population section) and thus the magnitude of the environmental impact. There is likely to remain a need for greenfield development particularly in relation to the West Yorkshire Green Belt, the amount of land required may increase to address local need. However, the application of the NPPF's presumption in favour of sustainable development will help avoid negative impacts where plans or policies are absent, silent or out of date.

The Yorkshire and Humber Plan gave strong protection to trees and woodland and in particular ancient woodland. However, the loss of regional woodland creation target of creating 500ha per annum would result if the regional strategy is revoked so long term the same significant benefits for woodland habitat may not be seen. Removal of this regional policy driver on woodland creation may lead to fewer local authorities adopting ambitious targets in this respect.

1.8.3 Effects of Partial-Revocation

The significant positive effects of partial-revocation on biodiversity are similar to retention/revocation.

1.8.4 Revoking all the Quantified and Spatially Specific Policies

Revocation of all the sub-area and quantified policies could increase the number of additional homes delivered up to about 30,000 per annum to 2026 (see Population section) and thus the magnitude of the environmental impact. There is likely to remain a need for greenfield development particularly in relation

to the West Yorkshire Green Belt, the amount of land required may increase to address local need. RSS policies along with statutory duties on environmental protection and policies in the NPPF should provide environmental protection in relation to development.

The Yorkshire and Humber Plan gave strong protection to trees and woodland and in particular ancient woodland. However, the loss of regional woodland creation target of creating 500ha per annum would result if the quantified policies are revoked so long term the same significant benefits for woodland habitat may not be seen. Removal of this regional policy driver on woodland creation may lead to fewer local authorities adopting ambitious targets in this respect.

1.8.5 Revoking all Non Quantitative and Spatially Specific Policies

Biodiversity will remain protected under national legislation and the NPPF if all the non- quantified and sub-area policies are revoked. However, as with revocation of the whole plan, in the short to medium term, local plans may not provide as strong a policy direction given that only 8 of 23 local authorities have adopted core strategies. Retaining Policy ENV6 and the regional woodland target will have a significant positive effect.

1.8.6 Retention of Policies, the Revocation of which may lead to likely Significant Negative Environmental Effects

There are no significant negative effects predicted in respect of this topic.

1.9 Mitigation Measures

Given that all likely significant effects identified would be positive no mitigation measures are proposed for this topic. However, it is recognised that local authorities will need to cooperate with their Local Nature Partnerships and neighbouring local authorities in line with the “duty of co-operate” to ensure benefits are delivered in the long term.

Policy E8 was supported by an opportunity map which directed delivery to key areas. Much of the biodiversity opportunity mapping within the Regional Strategy is still valid and local authorities will be able to continue to draw on available information, including data from partners, to address cross boundary issues, such as the provision of green infrastructure and wildlife corridors. Paragraph 218 of the NPPF advises that LPAs can continue to draw on evidence that informed the preparation of regional strategies to support Local Plan policies. The NPPF also provides guidance on how where appropriate local authorities can reflect in their Local Plans regional strategy policies.

1.10 Proposals for Monitoring

Negative and uncertain effects in respect of biodiversity relate to:

- SSSI favourable condition status (especially the Humber Estuary)
- Green infrastructure provision and accessibility

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 Yorkshire and Humber

The ***Regional Economic Strategy*** (RES) (2006-2015) is part of the regional strategy and provided a blue print to improve the economy of Yorkshire and Humber faster and better than its main competitors.

The skills and employment agenda ran right through the RES and it is further supported by more detailed plans. The following regional priorities were identified as a driver of sustainable economic growth:

a) The region will implement priority transport improvements that are vital to economic success. We will improve access to Hull and the Humber ports, airports and the Leeds and Sheffield city regions, and secure progress on long term transport priorities such as better rail links to London and Manchester by the North winning the case for higher levels of transport investment from Government;

b) The region will train people with the skills that businesses need, including rolling out Train to Gain across the region and reversing the "brain drain" of graduates – keeping more of the most mobile and skilled people in the region;

c) The region will deliver high quality physical development that supports urban and rural renaissance, helps our environmental goals, and builds on the distinctive assets of our cities and towns through attracting new private investment;

d) The region will raise attainment in our secondary schools and ensure that every school in Yorkshire and Humber has access to an education for enterprise programme, building on Enterprise Week activity. These activities will help to develop the qualities, attitudes and knowledge that will inspire our next generation of entrepreneurs. We will link this work to the successful London Olympic 2012 bid;

e) The region aspires to the goal of full employment. We will ensure that most people involved in major job losses quickly re-enter the labour market, help people get off incapacity benefit and into work, and address issues like health and diversity that affect employment;

f) The region will help businesses find new markets and innovate in new products and processes, encouraging more businesses to collaborate with our excellent universities and other higher education institutions to exploit the region's science and research base;

g) The region will put the customer at the heart of business support activity, including through Business Link and the wider business support network, by implementing the "Better Deal for Business" framework to help businesses raise productivity, cut costs, expand and train the right people. It will make the most of priority clusters such as advanced engineering and metals and digital industries and key sectors such as financial services and tourism;

h) The region will respond vigorously to climate change by integrating sustainable development into activity and mainstreaming practical projects. It will reduce polluting emissions, dependency on fossil fuels and create new business opportunities – for instance by reducing waste, promoting efficient and renewable energy, and managing flood risks; and

i) The region will promote diversity and renewal to fully utilise the talents of all people in all

communities to improve economic opportunities, particularly in disadvantaged areas.

The Northern Way sought to establish the North of England as an area of exceptional opportunity with a world class economy and a superb quality of life. It is focused on closing the £33 billion productivity gap between the North and better performing areas of the country. The Growth Strategy, published in 2004 and the Business Plan published in June 2005 was based on four key principles:

- to identify pan-northern investments which will add value;
- to build up the North's strengths;
- to complement the three Regional Economic Strategies; and
- to define actions at the most appropriate scale.

Local Enterprise Partnerships (LEP)

Out of the 39 agreed partnerships across England, four are in the Yorkshire and Humber Region, as follows:

Leeds City Region LEP

The Leeds City Region Partnership brings together the eleven local authorities of Barnsley, Bradford, Calderdale, Craven, Harrogate, Kirklees, Leeds, Selby, Wakefield and York and North Yorkshire County Council to ensure the city region economy continues to grow. The long-term ambition of the LEP is for a Leeds City Region that is '*A world-leading dynamic and sustainable low carbon economy that balances economic growth with a high quality of life for everyone.'*

The LEP will seek to achieve not only GVA growth, working to enhance market opportunities where the growth potential is greatest, but also an increase in overall employment, whilst working to facilitate a decrease in carbon emissions. For example, it will target:

- An absolute increase in GVA growth rate per annum, with the aim of achieving a minimum of 2.6% per year in the period up to 2030
- An absolute increase in employment rate in each area per annum, with the aim of returning to pre-recession employment rate for the city region by 2016, creating in the order of 60,000 jobs.
- A substantial and continued decrease in carbon emissions

Sheffield City Region LEP

The Sheffield City Region LEP is a collaboration between businesses and 8 local authorities (Barnsley, Bassetlaw, Bolsover, Chesterfield, Derbyshire Dales, Doncaster, North East Derbyshire, Rotherham and

Sheffield). The LEP has identified the sectors with the greatest potential to drive productivity in the City Region:

- Advanced manufacturing activities such as research and development, product design, bespoke manufacturing, and the provision of related services
- Low carbon industries (particularly the opportunities for our manufacturing sector)
- Creative and Digital
- Healthcare (including medical technologies)

In order to drive growth in the key sectors listed above, the LEP is focussing on six priority workstreams:

- Establishing a national growth hub for advanced manufacturing and materials.
- Delivering a new, employer-led approach to improving workforce skills.
- Improving support for strategically important companies and potential inward investors.
- Setting up a private sector-led business support service, focussing on improving innovation.
- Securing new forms of finance for businesses and infrastructure projects.
- Developing a Digital Hub to get the best out of existing assets

Humber LEP

The Humber LEP provides leadership to ensure the area capitalises on its biggest growth opportunity, renewable energy, whilst also targeting growth in the two other key areas of ports and logistics, and chemicals. It will prioritise its work to create growth and jobs in the renewable energy sector and the linked sectors of ports and logistics and chemicals, while also contributing to a wider private sector renaissance in the Humber. The LEP aims to:

- Co-ordinate public and private sector activity that is targeted at growing the three key growth sectors (renewable energy, ports and logistics, and chemicals), with the aim of developing an international-scale super cluster around the Humber.
- Lead on 16-19 and adult skills strategy, particularly in relation to the key sectors listed above, to ensure that as many of the jobs created as possible can go to local people, businesses can recruit the workforces they need to expand, the aspirations of young people are raised and graduate retention is improved.
- Take responsibility for the “Humber brand”, co-ordinating and promoting its offer for international trade and as a location for investment.
- Lead on international trade issues to help more companies export their goods and services.

- Lead on co-ordinating and identifying strategic transport and infrastructure priorities that will support economic growth.
- Co-ordinate activity that supports innovation and enterprise.
- Bring together partners where appropriate to bid for public and private sector contracts and funding.
- Submit a bid for an Enterprise Zone in the Humber and explore any other opportunities that arise from new Government policy.

York, North Yorkshire & East Riding LEP

The LEP covers the local authority areas of: Craven, East Riding of Yorkshire, Hambleton, Harrogate, Richmondshire, Ryedale, Scarborough, Selby and York. It aims to achieve positive outcomes that are relevant to the private sector, with priorities in:

- Agri-food
- Tourism
- High Speed Broadband
- Business Support
- Business Networks
- Coastal Regeneration, and
- Skills and Training.

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[11] 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: [12]

- 77.0% economically active;

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

- 70.5% in employment; and
- 8.2% unemployed.

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

- 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:[13]

	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

[13] 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 household crime	6,583	5,939	-10
Theft from the person	725	525	-28
Other theft of personal property	1,096	1,036	-5
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)[14] .

Total of 9,064,300 pupils at maintained schools and a further 589,800 at non-maintained schools)[14].

National Socio-Economic

In 2010 UK per capita Gross Value Added (GVA) was £20,476[15]. 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[16]. In the three months to July 2010 pay

[14] DCSF, Education and Training Statistics for the United Kingdom: 2011, http://www.education.gov.uk/rsgateway/DB/VOL/v001045/v02-2011c1v2.xls
[15] Regional, sub-regional and local gross value added 2010, http://www.statistics.gov.uk/pdfdir/gva1210.pdf
[16] NOMIS, Official Labour Market Statistics, Annual survey of hours and earnings - resident analysis

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 1.3% compared with 2.8% for the public sector[17].

In the period February - April 2012 the UK had a total of 29,280,000[18] 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%[19].

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%[20] .

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[21].

https://www.nomisweb.co.uk/output/dn87000/{AFB7B1A5-142C-4D4F-BDE2-467C1389CB90}/nomis_2009_08_20_160703.xls

[17] ONS Labour Market Statistics, June 2012, http://www.ons.gov.uk/ons/rel/lms/labour-market-statistics/june-2012/index.html

[18] ONS Labour Market Statistics, June 2012, http://www.ons.gov.uk/ons/rel/lms/labour-market-statistics/june-2012/index.html

[19] NOMIS, Official Labour Market Statistics, National Indicators, June-August 2009, https://www.nomisweb.co.uk/articles/news/files/LFS%20headline%20indicators.xls

[20] ONS, UK Snapshot, http://www.ons.gov.uk/ons/dcp171778_264972.pdf

[21] ONS Economic activity time series https://www.nomisweb.co.uk/reports/lmp/gor/2092957699/subreports/nrhi_time_series/report.aspx?

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

- 31.1% have NVQ4 and above;
- 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[22].

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)[23].

Socio-Economic

In 2010 England's per capita Gross Value Added (GVA) was 20,974.[24]

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[25].

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

[22] ONS https://www.nomisweb.co.uk/reports/lmp/gor/2092957699/report.aspx
[23] DCSF, Education and Training Statistics for the United Kingdom: 2009, http://www.dcsf.gov.uk/rsgateway/DB/VOL/v000891/Chapter1.xls
[24] 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
[25] ONS: Earning by workplace https://www.nomisweb.co.uk/reports/lmp/gor/2092957699/subreports/gor_ashew_time_series/report.aspx
[26] ONS https://www.nomisweb.co.uk/reports/lmp/gor/2013265930/report.aspx

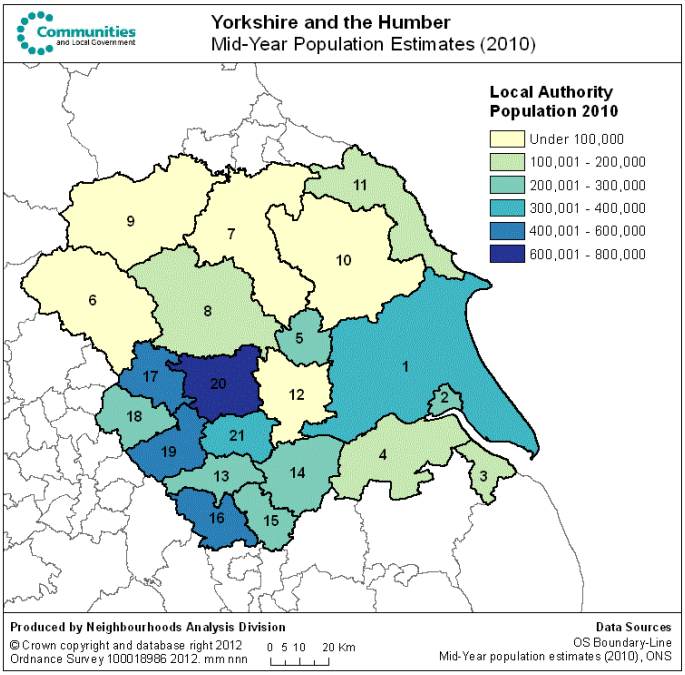
In Feb 2008 - Jan 2010, England had an unemployment rate of 7.8% (all people of working age). This compares to the previous year when it had an unemployment rate of 6%[27].

2.3.3 Yorkshire and Humber

Demographics

In 2010 the resident population of the Yorkshire and Humber region was 5,301,252 (49.3% male and 50.7% female) and 65.3% were of working age (66.4% of all males were of working age and 64.2% of all females were of working age). This represents 10% of the English total[28]. The most populous local authorities in the region were Leeds, Sheffield and Bradford. The local area with the smallest population in 2010 was Richmondshire, followed by Ryedale and Craven.

The map and table below illustrate how the population is distributed across local authority areas within the region.



Key for map:

[27] ONS https://www.nomisweb.co.uk/reports/lmp/gor/2092957699/subreports/nrhi_time_series/report.aspx

[28] Office for National Statistics, *Population estimates, mid 2010*, http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-231847

	Local authority	Population		Local authority	Population		Local authority	Population
1.	East Riding of Yorkshire	338,690	8.	Harrogate	158,686	15.	Rotherham	254,605
2.	City of Kingston upon Hull	263,890	9.	Richmondshire	52,957	16.	Sheffield	555,507
3.	North East Lincolnshire	157,314	10.	Ryedale	53,558	17.	Bradford	512,618
4.	North Lincolnshire	161,345	11.	Scarborough	108,590	18.	Calderdale	202,741
5.	York	202,447	12.	Selby	82,927	19.	Kirklees	409,842
6.	Craven	55,414	13.	Barnsley	227,610	20.	Leeds	798,769
7.	Hambleton	87,576	14.	Doncaster	290,593	21.	Wakefield	325,573

Between 2000 and 2010 the population of the Yorkshire and the Humber grew by 7%. This is greater than the overall growth rate in the English population (6%). The population increase was the result both of natural change and net inward migration.

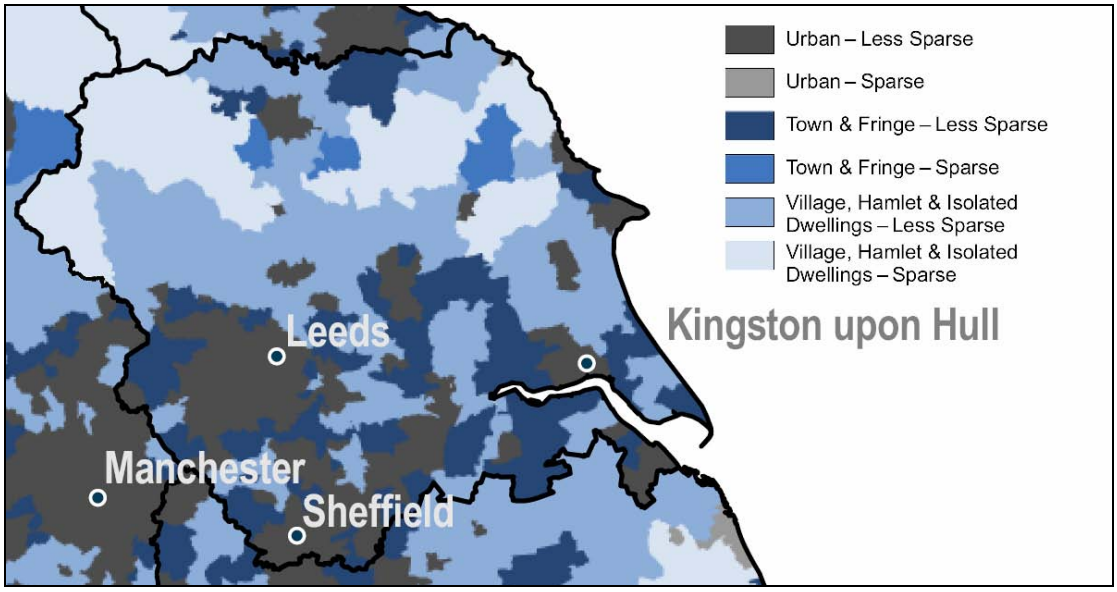
The share of the population of the Yorkshire and the Humber aged between 16 and 64 is greater than the England average: 65.3% of people fall into this category, compared to 64.8% across England as a whole. The proportion of the population aged 65 or over is similar to the national average (16.4% compared to 16.5%). There were proportionately fewer people of less than 16 years old living in the region (18.3% compared to 18.7%).

On the basis of rural-urban classifications developed by the Office for National Statistics, the Yorkshire and the Humber has 81% of its population living in urbanised areas[29]. The remaining 19% of the population lives in areas classified as rural. This is similar to England as a whole, where 19% of the population also live in rural areas. The map below shows a breakdown of middle super output[30] areas in

[29] 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

[30] Super Output Areas are a geography designed to improve the reporting of small area statistics and are based on the 2003 local authority boundaries used for 2001 Census outputs. Middle super output areas have a minimum population of 5,000 and a mean population of 7,200. There are 7,193 Middle super output areas in England and Wales.

the region.



Source: Office for National Statistics, Regional Trends 43

Over the 10 years to 2020 the Yorkshire and the Humber is projected to be one of the slowest growing regions in England. Over this period the population of the region is projected to grow by 6%, or 330,000 people, reaching a total of 5.6 million[31].

Population growth will be accompanied by changing age-structure of inhabitants. The age group expected to grow most in size is expected to be persons aged 65 or over. By 2020 it is projected this group will have grown by 21% compared to 1% growth in people aged between 16 and 65. Persons aged 65 and over are projected to comprise 19% of the population of the Yorkshire and the Humber in 2020. This has implications for people of working age with responsibility for caring for older relatives.

There will be significant local variation in the rate of population growth. The fastest growing local authorities between 2010 and 2020 are projected to be Selby, Bradford and Leeds. The population in these areas is expected to expand by between 12%, 9% and 9% respectively. On the other hand the population is projected to grow by only 1% over the next decade in Scarborough, North East Lincolnshire and Richmondshire. Uneven population growth is likely to mean that environmental pressures are felt differently across different parts of the region.

The share of the population of the Yorkshire and the Humber aged between 16 and 64 is greater than the England average: 65.3% of people fall into this category, compared to 64.8% across England as a

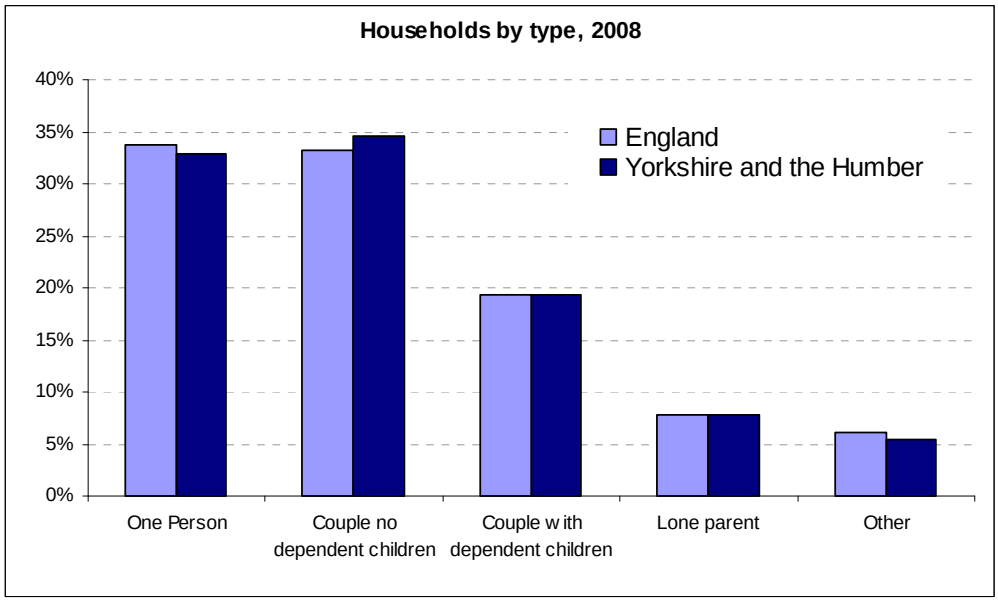
[31] Office for National Statistics, *2010 based sub-national population projections for England*, http://www.ons.gov.uk/ons/dcp171778_259219.pdf

whole. The proportion of the population aged 65 or over is similar to the national average (16.4% compared to 16.5%). There were proportionately fewer people of less than 16 years old living in the region (18.3% compared to 18.7%).

Housing

Demographic pressures will give rise to considerable need for additional housing. In 2008, there were 2.2 million households in the region[32]. Between 2008 and 2023 Yorkshire and the Humber is projected to experience the second highest rate of household growth of any English region (19%). It is estimated that by 2023, when the population will have reached 5.7 million, the number of households living in the region will be 2.6 million – an increase of 420,000.

The chart below shows the percentage of households of different types in Yorkshire and the Humber in 2008, compared to the England average. The region has a lower proportion of one-person households (33%) than the national average (34%). Couples without dependent children comprise a greater share of the household in Yorkshire and Humber than nationally (35% compared to 33%). The proportion of households made up by couples with dependent children and lone parent households, is the same as across England as a whole (19% and 8% respectively).



By 2023, one person households are projected to make up 37% of all households in Yorkshire and the Humber – an increase of 4 percentage points from 2008. The proportion of lone parent households is also expected to increase (to 9%). The share of households comprised of couples with and without

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

children is forecast to decline from 54% to 49%.

Housing delivery in Yorkshire and Humber decreased slightly from 10,800 to 10,200 between 2000-01 and 2001-02, after which it increased to 13,700 in 2003-04 before dropping again to 12,470 in 2004-05. Housing delivery in Yorkshire and the Humber increased considerably between 2004-05 and 2007-08. The number of net additional dwellings per annum rose from 12,470 to 20,270 during this period[33]. However as the economy entered recession in 2008, the annual number of net additions in the region fell from the 2007-8 level to 11,040 in 2010-11, with approximately 86% of these from private enterprise. Future housing supply is likely to continue to be dependent on wider economic conditions.

Housing associations and local authorities have played a significant role in housing supply in the region. In 2011-12 1,410 new dwellings were completed by these organisations. This amounts to 14% of the total number of housing completions in the region[34].

The average energy efficiency rating new homes in Yorkshire and the Humber has risen slightly over the last three years[35]. In the first quarter of 2012 new homes in the region had, on average, a SAP rating of 78.1. This compared to an England average of 79.4.

Home ownership is still the most common form of housing tenure in the region, although the percentage of owner occupied dwellings has fallen from 68% in 2005 to 64% in 2010, in line with broader national trends. The proportion of dwellings rented from a council or housing association decreased from 23% to 18% between 2000 and 2010. Over the same period the proportion of privately rented dwellings rose by 8 percentage points to 17%. The number of council houses in Yorkshire and the Humber that failed to meet the Decent Homes standard has fallen substantially in recent years – to 15,391 or 6% of the stock by March 2011[36].

House prices in the Yorkshire and the Humber were around 31% lower than the England average in 2011, at £146,163[37]. Prices in the region fell after the recent recession and remain 11% below the peak of £163,587 seen in 2007.

[33] Department for Communities and Local Government, *Table 118: Annual net additional dwellings*, http://www.communities.gov.uk/documents/housing/xls/118.xls

[34] In practice some new build dwellings built by housing associations are for market, not 'affordable', use. Department for Communities and Local Government, *Table 232: Housebuilding: permanent dwellings completed by tenure and region*, http://www.communities.gov.uk/documents/housing/xls/2145747.xls.

[35] Department for Communities and Local Government, *Code for sustainable homes and energy performance of buildings*, http://www.communities.gov.uk/publications/corporate/statistics/codesustainablesapq12012

[36] Department for Communities and Local Government, *2011 Business Plan Statistical Appendix*, http://www.communities.gov.uk/housing/housingresearch/housingstatistics/housingstatisticsby/localauthorityhousing/dataforms/hssabpsa1011/bpsadatareturns1011/

[37] Department for Communities and Local Government, *Table 507: Housing Market: mix adjusted house prices*, http://www.communities.gov.uk/documents/housing/xls/2105102.xls

Affordability pressures have eased somewhat as a result. The ratio of lower quartile house price to lower quartile earnings – a measure of peoples' ability to afford to buy a house – stood at 5.1 in 2011, down from 6.3 in 2007. This is less than the England average affordability ratio of 6.5[38].

Housing affordability varies significantly from place to place within the region. Consequently affordability pressures have eased slightly as a result of the recession. The ratio of lower quartile house price to lower quartile earnings – a standard measure of peoples' ability to afford to buy a house – stood at 5.12 in 2011, lower than the England average affordability ratio of 6.5[39]. This figure varies across the region with North Yorkshire (7.51) being less affordable than South Yorkshire (4.66) and West Yorkshire (5.03) and higher than the England average affordability of 6.5. Housing is least affordable in areas of North Yorkshire such as Harrogate, Ryedale and Richmondshire. The lower quartile affordability ratios in these areas are all greater than 8:1. In relative terms affordability pressures are less acute in Kingston Upon Hull, Barnsley and North East Lincolnshire. Affordability ratios in these places are 3.9, 4.1 and 4.2 respectively.

The number of households accepted as homeless by local authorities in the Yorkshire and the Humber was 4,770 in 2011. This is a 15% rise year-on-year, in line with an increase seen across England as a whole[40]. The rate of statutory homelessness per 1,000 households in the region (2.2.) is the same as the national rate and the number of statutory homeless households less than a third of the levels seen in the early 2000s. At the end of 2011 there were 900 households in temporary accommodation in the region, or 0.4 per 1,000 households[41]. This compares to the national rate of 2.3.

Gypsies and travellers

As at March 2008 there were 509 pitches on local authority/Registered Social Landlord sites and 302 pitches on private sites across Yorkshire and Humber.[42]

Socio-economics

The working age population had the following economic activity in April 2011 to March 2012:

[38] Department for Communities and Local Government, *Table 576: ratio of lower quartile house prices to lower quartile earnings*, http://www.communities.gov.uk/documents/housing/xls/152924.xls

[39] Department for Communities and Local Government, *Table 576: ratio of lower quartile house prices to lower quartile earnings*, http://www.communities.gov.uk/documents/housing/xls/152924.xls

[40] Department for Communities and Local Government, *Table 772: Statutory homelessness,* http://www.communities.gov.uk/documents/statistics/xls/2102069.xls

[41] Department for Communities and Local Government, *Table 776: Statutory homelessness: households in temporary accommodation*, http://www.communities.gov.uk/documents/statistics/xls/2102081.xls

[42] http://www.yhassembly.gov.uk/dnlds/Y&H%20RSS%20GypsyandTraveller%20FINAL%20REPORT%2031Mar09.pdf

- 76% were economically active;
- 69% were in employment;
- 9% were unemployed.

Of those of working age in Yorkshire and Humber region in 2011:

- 26.4% had NVQ4 and above;
- 47.4 % had NVQ3 and above;
- 64.2 % had NVQ2 and above;
- 79 % had NVQ1 and above;
- 8.2 % had other qualifications; and
- 12.8 % had no qualifications.

Yorkshire and Humber region has a total of 2,497,000 jobs with a job density of 0.72 (compared to 0.79 in Great Britain).

Economically, Yorkshire and Humber faces a number of challenges. The employment rate amongst people aged 16-64 in the region is 68.9%, compared to 70.5% across the UK[43]. A total of 52.3% of households in the region were working in 2011, down from 55.9% in 2008. By comparison, 55% of all English households were working in 2011[44].

In 2012 (January-March) the region had an average unemployment rate of 9% compared to a UK average of 8.2%. This compares to 2011 (January-March), when Yorkshire and Humber region had an average unemployment rate of 9.2% compared to a UK average of 7.7%.

In 2011, median gross weekly earnings for full-time employees in the region were £466. This compares to a UK average of £501 per week.

In the period April 2011 – April 2012, the average full-time gross hourly pay in Yorkshire and Humber region was £11.65 (compared to a national average of £12.71). This compares to £11.49 in 2010 for the region (and a national average of £12.57).

[43] Office for National Statistics, *Official Labour Market Statistics*, http://www.nomisweb.co.uk/

[44] Office for National Statistics (September 2011), *Working and workless households*, http://www.ons.gov.uk/ons/rel/lmac/working-and-workless-households/2011/index.html

Gross Value Added (GVA) per head in Yorkshire and the Humber in 2010 was the second lowest of any region in England: £16,900 compared to the England average of £21,000[45]. Total GVA in the region rose by 3.3% between 2009 and 2010 after falling by 2.2% the previous year. The per-head GVA index is 82.6, compared to the UK baseline of 100 and an index of 87.6 for the area in 2000.

In April-June 2011, the Yorkshire and the Humber proportion of workless households was the second highest of any English region. Almost 22% of households in the region were workless compared to an England average (of 19%[46]. A greater percentage of households had never worked in the region than nationally: 2.3% compared to an England average of 1.8%.

A slightly higher proportion of children in the Yorkshire and the Humber (17 per cent) lived in workless households in the second quarter of 2011 than the England average of 16 per cent. The proportion of the working age population in the Yorkshire and the Humber claiming a key social security benefit was 15.7% in November 2011 – a percentage point higher than the average across Great Britain (14.7 per cent)[47].

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.

[45] Office for National Statistics (December 2011), *Regional Gross Value Added (Income Approach)*, http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-250308

[46] Office for National Statistics (September 2011), *Working and workless households*, http://www.ons.gov.uk/ons/rel/lmac/working-and-workless-households/2011/index.html

[47] Nomis, *Official Labour Market Statistics*, https://www.nomisweb.co.uk/reports/lmp/gor/2013265926/report.aspx

2.4.2 Yorkshire and Humber

- Yorkshire and Humber is a varied region with a population mix that differs across its large geographic area. Each area has its own issues, opportunities and concentrations of people of different racial backgrounds. The overall population is around 5 million. Over two thirds of people live in West or South Yorkshire and many are concentrated in the cities of Leeds, Sheffield and Bradford.

- The region is experiencing an increase in households and pensioner numbers, in line with the national trend.

- Yorkshire and Humber's economy has undergone major restructuring and made great strides forward over the past two decades. Traditional industries such as coal, steel, textiles, fishing and agriculture have seen a decline in both the number of businesses and the level of employment. New areas of competitive advantage are emerging, including advanced manufacturing, low-carbon technologies and financial and business services. However, the economy is still based on a relatively high proportion of manufacturing. Manufacturing accounted for 15 per cent of Yorkshire and The Humber gross value added (GVA) in 2009, compared with only 10 per cent for the UK.

- The region's headline GVA was £89.7 billion in 2010. 2009 sub-regional data shows that nearly half (45 per cent) of the region's GVA was generated in West Yorkshire (£39.3 billion). Productivity, as measured by GVA per hour worked, was 89 per cent of the UK rate in 2010, one of the lowest of the English regions. Within the region productivity was lowest in North Yorkshire (83 per cent of the UK rate) and highest in Leeds (101 per cent of the UK rate) in 2009. The gaps in GVA per capita and productivity in manufacturing between Yorkshire & the Humber and the UK average have grown over the past two decades. This indicates that the region still needs to catch up in terms of higher value-added activities in manufacturing as well as in services.

- The region has an above-average proportion of residents (aged 16 to 64 and working) employed in routine occupations requiring a low level of skills or qualifications, 13 per cent in 2011 compared with 11 per cent in the UK. By contrast, occupations which require the highest qualifications are under-represented, at 38 per cent of all employed residents compared with 43 per cent in the UK. The region needs to improve the skills of the people already living here, and to attract and retain more skilled people to prevent market failure based on a 'low skills equilibrium' (a limited skills base deters employers needing highly skilled people from locating here which in turn provides little incentive for people to become better qualified because of too few appropriate jobs).

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 [48].

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[48].

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 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*".[49]

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.[50]

[48] 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
[49] Bank of England, Overview of the Inflation Report May 2012
http://www.bankofengland.co.uk/publications/Pages/inflationreport/infrep.aspx
[50] General Register Office for Scotland population projections,

Socio-Economic

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

2.5.3 Yorkshire and Humber

The SEA Directive requires a consideration of the evolution of the baseline without the proposed plan or programme being in place. Slightly confusingly in this assessment, this actually refers to the plan to revoke the regional strategy. So the evolution of the baseline without the plan will mean, in this instance, the evolution of the baseline with the regional strategy retained. Therefore, the assessment has used the findings of the 2008 Sustainability Appraisal of the Yorkshire and Humber Plan to provide an informed understanding of likely future evolution of the population baseline. Any changes to the baseline that have occurred since 2008 have also been taken into account where information availability allowed.

The Yorkshire and Humber Plan sought to deliver sustainable development by reversing the long-term trend of population and investment dispersal away from Regional and Sub-Regional Cities and Towns, using them as the focus of employment and housing, whilst creating more attractive living and working environments in urban areas. It sought to reduce inequalities and for currently excluded communities and for areas requiring regeneration to have benefited from development and investment. The policy's emphasis will help to provide employment opportunities for local people; economic diversification in the rural economy was particularly promoted with the aim of Principal Towns and Local Service Centres fulfilling their role as a focal point for rural and coastal communities. In terms of location the policy seeks to:

- Transform economic, environmental and social conditions in the older industrialised parts of South Yorkshire, West Yorkshire and the Humber
- Manage and spread the benefits of continued growth of the Leeds economy as a European centre of financial and business services
- Enhance the role of Sheffield as an important business location within its wider city region
- Optimise the opportunities provided by the Humber Ports as an international trade gateway for the region and the country

Demographics

Population in Yorkshire & the Humber is expected to increase in the long term. Between 2008 and 2033 the population of Yorkshire and Humber is expected to increase from 5,217,500 to 6,296,000.

The number of children under 16 is projected to increase from 970,700 in 2008 to 1,118,600 by 2033;

http://www.scotpho.org.uk/home/Populationdynamics/Population/DataPagesofPopulation/Population_scotprojections.asp

the number of people of working age is projected to increase from 3,250,000 in 2008 to 3,631,800 by 2033; the number of people of pensionable age is projected to rise by 65.2% from 996,800 in 2008 to 1,545,500 by 2033. Demographic pressures will give rise to considerable need for additional housing.

Socio-Economic

Yorkshire and the Humber is forecast to lag the national average in employment and GVA growth in the long term, mainly because of a weaker performance in services and manufacturing compared to the UK as a whole.

2.6 Assessing Significance

Table 2.2 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 2.2 Approach to Determining the Significance of Effects on Population

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.

Effect	Description	Illustrative Guidance
-	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. Where a box is coloured but also contains a ? this indicates uncertainty over whether the effect could be a minor or significant effect although a professional judgement is expressed.

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

Table 2.3 summarises the significant effects identified in the detailed assessment of the Yorkshire and Humber Plan policies against the population topic.

Table 2.3 Significant effects against the Population topic

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
YH1 Achieving Sustainable Development	Retention	++	++	++	This policy sets out the overarching framework for the RSS and provides the spatial basis for implementation of the RES which sets out a vision for Yorkshire and the Humber to "be a great place to live, work and do business that fully benefits from a prosperous and sustainable economy". It seeks to deliver sustainable development by reversing the long-term trend of population and investment dispersal away from Regional and Sub-Regional Cities and Towns, using them as the focus of employment and housing, whilst creating more attractive living and working environments in urban areas. It seeks to
	Revocation	+	+	++	

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
					reduce inequalities and for currently excluded communities and for areas requiring regeneration to have benefited from development and investment. The policy's emphasis will help to provide employment opportunities for local people; economic diversification in the rural economy is particularly promoted with the aim of Principal Towns and Local Service Centres fulfilling their role as a focal point for rural and coastal communities. In terms of location the policy seeks to: • Transform economic, environmental and social conditions in the older industrialised parts of South Yorkshire, West Yorkshire and the Humber • Manage and spread the benefits of continued growth of the Leeds economy as a European centre of financial and business services • Enhance the role of Sheffield as an important business location within its wider city region • Optimise the opportunities provided by the Humber Ports as an international trade gateway for the region and the country In the short-medium term following revocation there are likely to be some limitations on achieving the above objectives given the age of local plans in the region. In the long term impacts are slightly less certain as this will be dependent on the extent to which local authorities apply the requirements of the NPPF to their local context. However, given the need to have regard to the NPPF and the five 'guiding principles' of sustainable development it is considered that the same significant positive effects will result.
YH3 Working Together	Retention	++	++	++	This policy requires intra-regional co-operation between local authorities to deliver the appropriate housing needs of the region as a whole, realising the potential of key areas and ensuring the benefits are spread amongst them. It reflects Objective 5 of the RES to work together to achieve transport infrastructure and environmental enhancement measures. This focus on co-operation seeks to overcome the concept of core and peripheral areas, which is relevant to this region given the remoteness of many parts to larger centres and the pattern of city regions. It also encourages inter-region co-operation between local authority areas in the North East, North West and East Midlands. Paragraph 156 of the NPPF sets out strategic priorities that local authorities must consider when making local plans, whilst the Localism Act 2011 and paragraphs 178-181 of the Framework requires local authorities to work together, under the duty to co-operate, to ensure that strategic policies are properly co-ordinated and reflected within local plans. Therefore revocation does not remove the need for local authorities to co-operate in the preparation of their local plans, although it does give them the freedom to decide the most appropriate priorities for their local area. The concept of core and peripheral areas is particularly relevant
	Revocation	+	+	++	

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
					to this region given the remoteness of many parts to larger centres and the pattern of city regions, and the need for regeneration and renewal in South Yorkshire. In the short-medium term, given that only 8 out of 23 authorities in the region have adopted core strategies, there may be an impact on the need to overcome the concept of core and peripheral areas since older Local Plan policies may not reflect the need to sustainability transform socio-economic conditions in parts of the region. Hence there may be a delay in significant positive effects being realised. In the long term impacts are slightly less certain as this will be dependent on the extent to which local authorities apply the requirements of the NPPF to their local context, however it is considered that inter-regional cooperation will continue in respect to regeneration and renewal in the Tees Valley and South Yorkshire sub-area and that in the long-term the same significant positive effects will occur.
LCR1 Leeds City Region sub-area policy	Retention	++	++	++	This policy sets out the overarching direction for the Leeds City Region. It seeks to deliver sustainable development by focussing employment and housing on the regional cities of Leeds and Bradford. Growth in Leeds-Bradford is to be encouraged to the south of the city centres with an emphasis on delivering affordable housing to the north. Six priority regeneration areas are identified in order to address social inequalities and economic disparities in the sub-region. It provides the spatial basis for implementation of the RES vision in this sub-area as well as Objective 6 of the RSS which aims to boost the city regions as economic drivers and deliver renaissance in major cites and towns, such as, Leeds and Bradford. Examples of examples of the RES actions policy LCR1 supports are using potential for synergy between higher education and business; particularly the role of the Universities in Leeds, Bradford, Huddersfield and York, protecting and improving conference and exhibition facilities and establishing complementary, as opposed to competing, roles for Harrogate and Leeds, promoting the development of science, electronics, digital and creative industries that are growing in the Bradford District and in Huddersfield, and taking advantage of the York Science City initiative, and identifying areas with good accessibility for logistics developments utilising road, rail and water borne modes as found in Wakefield. Local authorities are required to work together, under the duty to co-operate, to ensure that strategic policies are properly co-ordinated and reflected in local plans. The Leeds City Region partnership has already been established to support economic growth in the sub-region. Leeds City Region strategies have been developed post-regional strategy for housing and regeneration, transport and green infrastructure (amongst others) which strongly reflect the proposals in Parts A to E of LCR1. The ultimate effects of revoking the policy will depend on local circumstances, but assuming Local Plans reflect the strategies of the Leeds City Region as these have been put in place post-
	Revocation	++	++	++	

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
					regional strategy it is concluded that the effects are likely to remain significant positive in the short to long term.
LCR2 Leeds City Region investment priorities	Retention	++	++	++	This policy sets out the investment priorities required to achieve the strategic development proposed in LCR1 for the Leeds City Region. Retention and revocation would have the same effects on population as detailed for LCR1.
	Revocation	++	++	++	
SY1 South Yorkshire sub-area policy	Retention	++	++	++	This policy sets out the overarching direction for the South Yorkshire Sub-Region which includes the regional city of Sheffield. It seeks to deliver sustainable development by focussing employment and housing on Sheffield. It also seeks to transform the role of the sub-regional towns of Barnsley, Rotherham and Doncaster and support the regeneration of Principal Towns in the sub-region. It provides the spatial basis for implementation of the RES vision in this sub-area as well as Objective 6 of the RES which aims to boost the city regions as economic drivers and deliver renaissance in major cites and towns, such as, Sheffield and secure a strong and diverse rural economy, such as, within the Dearne Valley Local authorities are required to work together, under the duty to co-operate, to ensure that strategic policies are properly co-ordinated and reflected in local plans. The Sheffield City Region partnership has already been established helping to secure funding for economic growth within the area that fell within Yorkshire and Humber but also within the East Midlands region links to which were not brought out in the policy itself. However, in the short-medium term reliance on out of date local plans may mean reduced development in the sub-regional towns hindering their transformation and the regeneration of some South Yorkshire coalfield areas which are lagging in terms of deprivation. The emphasis on developing Doncaster as a logistics centre may also be restricted in the short term since Doncaster's Local Plan was adopted in 1998 (resulting in positive environmental effects) but it is considered the local authority will want to bring these proposals forward long term. It is considered that inter-regional cooperation will continue in respect of regeneration and renewal in the South Yorkshire sub-area given former East Midlands local authorities now fall within the Sheffield City Region Local Economic Partnership. The ultimate effects of revoking the policy will depend on local circumstances as local authorities will have the freedom to set their own local priorities within the NPPF but it is considered that they will reflect the emerging strategies of the Sheffield City Region.
	Revocation	+	+	++	
HE1 Humber sub-area policy	Retention	++	++	++	This policy sets out the overarching direction for the Humber Sub-Region which includes the regional city of Hull. The need to reduce the amount of development in East Riding whilst securing rapid renaissance and increasing development in Hull is identified. Local authorities are required to work together, under the duty to co-operate, to ensure that strategic policies are properly co-
	Revocation	+	+	++	

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
					ordinated and reflected in local plans. The Hull City Region is now covered by the Humber partnership helping to secure funding for economic growth. Its focus is on the economic regeneration of the north and south banks of the Humber. Specifically in relation to ports any proposals for nationally significant port infrastructure along the Humber Estuary will have to have regard to the National Policy Statement for Ports. North Lincolnshire adopted their Core Strategy post-2008 but Hull, East Riding and North East Lincolnshire's Local Plan are pre-2004. Therefore in the short-medium, outside of North Lincolnshire, there are likely to be some limitations on development particularly in respect of the areas requiring renewal and regeneration. The ultimate effects of revoking the policy will depend on local circumstances as local authorities will have the freedom to set their own local priorities within the NPPF.
Y1 York sub-area policy	Retention	++	++	++	This policy sets out the overarching direction for the York Sub-Area. It seeks to deliver sustainable development through its links with the Leeds City Region (Policy LCR1) and developing the role of the sub-regional city and Principal Towns. Policy Y1 also supports the RES Objective 2 action to enhance investment, growth and quality in the region's research and science base by encouraging knowledge and science-based industries and supporting development at the York University and Science City York. Local authorities are required to work together, under the duty to co-operate, to ensure that strategic policies are properly co-ordinated and reflected in local plans. The York sub-area is now covered by the York, North Yorkshire and East Riding Partnership (also covering the Coast sub-area, Tees Valley sub-area, and Remoter Rural sub-area) helping to secure funding for economic growth. The ultimate effects of revoking the policy will depend on local circumstances but in the short-medium there are likely to be some limitations on development given the age of local plans in the sub-area.
	Revocation	0	?	++	
VTL1 Vales and Tees Links sub-area policy	Retention	++	++	++	This policy sets out the overarching direction for the Vales and Tees Links Sub-Area and seeks to develop the role of the Principal Towns of Thirsk, Northallerton, Richmond/Catterick Garrison, and Ripon. The policy flags the need to manage housing growth to prevent long term commuting as a result of economic development in the Leeds and Tees Valley City Regions. Despite this employment opportunities will continue to be more associated with the Leeds City Region and Tees Valley City Region. The ultimate effects of revoking the policy will depend on local circumstances but in the short-medium there are likely to be some limitations on development given the age of local plans in the sub-area.
	Revocation	+	+	++	
C1 Coastal	Retention	++	++	++	This policy sets out the overarching direction for the Coastal Sub-Area which includes the sub-regional town of Scarborough and

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
sub-area policy	Revocation	0	?	++	Principal Towns of Whitby and Bridlington. It seeks to diversity the sub-areas economic base with tourism, sport and recreation and other economic development. Peripherality is likely to limit external investment and growth and the main focus is on unique quality and character, tourism, leisure and cultural industries. Significant business park development is proposed for Scarborough however the sub-area is starting from the position of lowest GDP of all the region's sub-areas. The ultimate effects of revoking the policy will depend on local circumstances but in the short-medium there are likely to be some limitations on development given the age of local plans in the Scarborough and East Riding parts of the sub-area.
RR1 Remoter rural sub-area policy	Retention	++	++	++	This policy sets out the overarching direction for the Remoter Rural Sub-Area and provides the spatial basis for implementation of the RES vision in this sub-area. The majority of the sub-area falls within the North York Moors National Park and Yorkshire Dales National Park. It includes the local service centres of Helmsley, Kirkbymoorside and Pickering in Ryedale; Settle and Bentham in Craven and Leyburn in Richmondshire all located on the edge of the National Parks. This policy directly reflects RES Objective 2 which aims to boost the tourism sector and Objective 6 which aims to promote sustainable economic development in remote rural areas and drive change to support sustainable tourism, farming and land based industries, including the National Parks. Local development plans for the local services centres and Yorkshire Dales National Park are all pre-2004. The only post-regional strategy plan is the Core Strategy and Development Policies for the North York Moors National Park. Therefore in the short-medium term reliance on out of date policy and high level rural policies may mean reduced housing and employment development in these districts and limitations on improving accessibility particularly by public transport so that the needs of communities in terms of accessibility and other services may not be fully addressed. In the long term impacts are slightly less certain as this will be dependent on the extent to which local authorities apply the requirements of the NPPF to their local context. Individual local authorities may change the pattern of development proposed in Policy YH1 and this policy so that inappropriate development takes place; in some parts of the sub-area there is currently insufficient critical mass to support services and facilities and there is a fine balance to be struck in terms of ensuring sufficient development occurs to help create this whilst ensuring protection of the environment. However, as the NPPF expects local authorities to plan new development, its distribution, location and design in ways which limit greenhouse gas emissions and minimise future vulnerability in a changing climate and the LEP has been established to deliver economic aims it is considered that the same significant positive effects on population will result in the long term.
	Revocation	0	?	++	
ENV4 Minerals	Retention	++	++	++	Policy ENV4 seeks to safeguard mineral deposits from sterilisations, but also maximises the use of secondary and

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
	Revocation	++	++	++	recycled sources while ensuring sufficient supply of materials to meet local and national needs; and facilitate sites for reprocessing especially in West Yorkshire. This policy permits continued use of a non-renewable resource but the commitment to maximise use of secondary and recycled sources should minimise primary extraction and deliver only minor negative effects of material assets. Further there should be significant positive effects through use of minerals in meeting society's needs, especially the role of aggregate minerals for use as a construction raw material. Revocation of this policy will not leave actual planned apportionment targets in place for all mineral planning authorities. However, they refer instead to adopting figures agreed by the Aggregate Working Party.
E1 Creating and Successful and Competitive Regional Economy	Retention	++	++	++	This policy seeks to supplement the Core Approach YH1 with guidance on more region-wide economic issues necessary for creating a modern and successful regional economy. It reflects the aims of the RES which sets out a vision for Yorkshire and the Humber to "be a great place to live, work and do business that fully benefits from a prosperous and sustainable economy". The RSS addresses the spatial aspects complementing the actions to support businesses and promote skills in the RES. In the short-medium, although there is generally an oversupply of employment land this may not be located in areas of need, therefore, given 15 out of 23 local authorities have yet to adopt a core strategy, there are likely to be some limitations on improving employment opportunities for currently excluded communities and areas requiring regeneration. However the application of the NPPF's presumption in favour of sustainable development will help where plans or policies are absent, silent or out of date. In the long term impacts are will be dependent on the extent to which local authorities apply the requirements of the NPPF to their local context. However, given the need to have regard to the NPPF it is considered that the same positive effects on population will result.
	Revocation	0	?	++	
E3 Land and Premises for Economic Development	Retention	++	++	++	The policy seeks to support implementation of the RES by providing a framework for the location of employment sites in the region, taking account of expected changes to the economy and the need for additional floorspace for office, retail and leisure uses, thereby enabling job growth. In the short-medium, although there is generally an oversupply of employment land in the region this may not be located in areas of need, therefore, given 15 out of 23 local authorities are yet to adopt a core strategy, there are likely to be some limitations on providing employment land in suitable locations or reallocating it for other purposes. However the application of the NPPF's presumption in favour of sustainable development will help where plans or policies are absent, silent or out of date. In the long term impacts are slightly less certain as this will be dependent on the extent to which local authorities apply the requirements of the NPPF to their local context. However, given the need to have regard to the NPPF it is considered that the same positive effects on population will result.
	Revocation	0	?	++	

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
H1 Provision and distribution of housing	Retention	++	+	?	This policy ensures that housing development is commensurate with development that allows for good quality employment opportunities across the region. The Yorkshire and Humber Plan sets out the need for an annual average of 22,260 additional homes to be provided in the Region between 2008 and 2026. On revocation local planning authorities will determine their housing targets using their evidence base to ensure that their Local Plan meets the full, objectively assessed needs for market and affordable housing in the housing market area. They should prepare a Strategic Housing Market Assessment to identity housing demand, reflecting household and population projections and taking account of migration and demographic change, and the scale of housing supply necessary to meet this demand. National household projections[51] for Yorkshire and the Humber indicate an average annual increase of about 27,000 households in this region during the plan period 2008 – 2026. There are several reasons why housing provision may not equate closely with the latest projections including the need to factor in market considerations, past under-delivery, assumptions on vacancy and policy responses to migration pressures. Nevertheless, the latest projections suggest that if the plan is revoked then the sum of provision in sound local plans is likely to be set at least as high and probably higher housing requirements overall. However, there will be scope to change the housing distribution between districts. Joint working in line with the duty to cooperate will enable local planning authorities to distribute, and where necessary constrain, housing growth in a way that aims not only to fit with needs in each housing market area but also to accord with specific policies in the NPPF. Consequently, whilst recognising uncertainties about possible impacts, it is reasonable to assume that higher overall provision closer to the latest household projections could be distributed in a way that would not have a significant adverse effect.
	Revocation	?	+	++	
H5 Housing Mix	Retention	++	++	++	Retention of this policy would support Policy YH1 and the sub-regional policies in delivering sustainable, mixed communities through a variety of housing in terms of size, type, tenure and price to meet household needs. The policy's emphasis on encouraging the provision of a mix of housing will help to ensure that the housing market reflects the needs of a diverse population, in so doing helping to support a good range of employment opportunities for the diversity of local people. Local Plans will need to take account the NPPF paragraph 47 which highlights the need to meet the housing needs of housing markets 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 been persistent under-delivery. The NPPF in paragraph 50 sets out the LPA should plan for a mix of housing including the appropriate size and type of housing in a local area. Paragraph 156 of the NPPF indicates that this will be
	Revocation	0	?	+	

[51] http://www.communities.gov.uk/documents/housing/xls/140945.xls

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
					done using Strategic Housing Market Assessments. In the short-medium there are likely to be some limitations on improving the mix of housing particularly where the housing market is fragile and failing and under-delivery is the norm. In the long term impacts are slightly less certain as this will be dependent on the extent to which local authorities apply the requirements of the NPPF to their local context.
T4 Freight	Retention	++	++	++	This policy seeks to develop an integrated freight distribution system which makes efficient and effective use of all modes of transport; this will have a significant positive effect in terms of economic development. Individual local authorities will have greater flexibility to determine the infrastructure needs for their area and, as a result may choose not to invest in or safeguard the facilities identified in this policy. However, it is considered given their headline objectives the LEPs will still support the development of freight facilities in the region resulting in the same effects as retention.
	Revocation	++	++	++	
T8 Rural transport	Retention	++	++	++	This policy seeks to ensure that transport contributes to addressing social and economic challenges in the rural part of the region. This policy, if implemented, will have significant positive effects on the population, through increased accessibility to local services and employment and reducing inequalities. This policy's aspirations fit well with the broad thrust of the NPPF including its policy for rural areas. However, revoking this policy will leave it to each local authority working together with public transport organisations serving the area to plan for rural transport need. Policy T8 goes on to list actions, not explicitly referred to in the NPPF, which local planning authorities should consider in order to improve rural communities' access to facilities although most of the actions are outside the scope of the land use planning system. Consequently, whilst recognising uncertainties about possible impacts, it is reasonable to assume that significant positive effects will still occur.
	Revocation	0	?	++	
T9 Transport Investment and Management Priorities	Retention	++	++	++	Policy T9 sets out the framework for delivering the transport investment and management priorities for the region. It places an emphasis on public transport measures and adopts a general presumption against increasing highway capacity except where it is a specific regional priority or localised improvement essential to regeneration or delivering environmental enhancement. The strategic transport priorities include those promoted in the RES: - faster rail services betweens Leeds, Sheffield and Manchester - demand management measures on the M62 - improved north-south rail links from the region to London - improved public transport access to airports - improved road/rail links to the Humber Ports - improved rail capacity into the Leeds city region - improved public transport solution in the Leeds and Sheffield city regions The need to plan for sustainable transport as set out in the NPPF, combined with the duty to co-operate will facilitate work to

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
					promote public transport, ensuring a close and mutually consistent relationship between spatial and local transport plans, to deliver the appropriate sustainable transport needs to their area. The impact of revoking this policy will simplify the planning policy framework, and is likely to have the same effects as retention long term. Benefits to the population may not be seen in the short to medium term as it may be necessary for local authorities to review their transport infrastructure priorities following revocation.
	Revocation	0	?	++	

2.8 Effects of Retention

The effects of retention of the regional strategy have been assessed on the assumption that, in the absence of the legislation and regional architecture enabling updating of the regional strategy, although the general principles of development will remain some policies will become increasing outdated and in some cases in conflict with the national policies in the Framework. The regional strategy will therefore play an increasingly smaller role in plan making and development control over time and this is of particular relevance to Policy H1 providing the quantum of housing provision in the region. The Yorkshire and Humber Plan sets out the need for an annual average of 22,260 additional homes to be provided in the Region between 2008 and 2026. However, in Yorkshire and Humber a partial review of the regional strategy had already commenced following adoption on the basis that higher rates of house building may be necessary over the long term to meet the needs of the population. This partial review[52] had identified that up to 30,000 additional homes might be required per annum in the period to 2026 and a need to make these more affordable. It also identified that additional gypsy and traveller pitches were required with more certainty over where these would be located. 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 term. However, in the long term to 2026 (due to existing shortfalls) retention of the current plan could result in an uncertain effect.

[52] http://www.yhassembly.gov.uk/dnlds/RSS%20Update%20Spatial%20Options.pdf

2.9 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 needed 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 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[53] 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.

This includes:

i) identifying and updating annually, a supply of specific deliverable sites sufficient to provide five years' worth of sites against their locally set targets;

ii) identifying a supply of specific, developable sites or broad locations for growth, for years six to ten and, where possible, for years 11-15; and

iii) considering the production of joint development plans that set targets on a cross-authority basis, to provide more flexibility in identifying sites, particularly if a local planning authority has

[53] http://www.communities.gov.uk/documents/planningandbuilding/pdf/2113371.pdf

special or strict planning constraints across its area.

The “duty to co-operate” will play a key role in enabling local authorities to proactively and positively address economic issues in their local area. It is considered that local authorities will cooperate with their relevant Local Enterprise Partnership and neighbouring local authorities such that in the long-term significant benefits are still considered to occur given the overall direction of development proposed will need to have regard to the Framework, and the five ‘guiding principles’ of sustainable development.

In the short-medium term, revocation of regional strategy could place some limitations on delivering economic growth and the required level of housing provision given the age of local plans in the region and that only 8 of 23 local authorities have adopted core strategies. However, the application of the NPPF’s presumption in favour of sustainable development and its policies to boost the supply of housing will help where plans or policies are absent, silent or out of date.

In the 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. In larger centres effects are likely to be positive but negative effects could arise in terms of addressing social inequalities and economic disparities in the older industrialised parts of South Yorkshire, West Yorkshire and the Humber and as a result of a reversal to a long-distance car-based commuting pattern.

It is anticipated that inter-regional cooperation will continue in respect of regeneration and renewal in the South Yorkshire sub-area and may become stronger given former East Midlands local authorities now fall within the Sheffield City Region Local Economic Partnership instead of under the East Midlands Plan.

Links to the Tees Valley (under the North East Plan) are less certain since the former North East local authorities remain in a separate LEP to those in North Yorkshire.

2.10 Partial-Revocation

2.10.1 Revoking all the Quantified and Spatially Specific Policies

Revocation of the sub-area and quantified policies will not remove the need for housing and economic development in the sub-areas and one of the core planning principles identified in the NPPF is that planning should drive and support sustainable development through positive growth. Higher rates of house building and additional gypsy and traveller pitches may be necessary over the long term to meet the needs of the population. Therefore revocation of the quantitative targets would have significant positive effects on population as a result of an increase in housing supply (above current completion rates) where more people are housed with ensuing socio-economic benefits. Revocation of the quantitative targets would allow the right level of housing and employment provision whilst retaining the benefits of policies relating to addressing social inequalities and economic disparities in the older

industrialised parts of South Yorkshire, West Yorkshire and the Humber and the issues of peripherality in the coastal and rural areas of the region particularly in the short-medium term.

2.10.2 Revoking all Non Quantitative and Spatially Specific Policies

Revocation of the non quantified and spatially specific policies may mean there is a delay in realising benefits to population in the short to medium term due to the time required to put in place up to date local plans and implement the duty to co-operate since the overarching policy direction, particularly in relation to transforming older industrialised parts of South Yorkshire, West Yorkshire and the Humber, will be lost although sub-area policies will remain. Higher rates of house building and additional gypsy and traveller pitches may be necessary over the long term to meet the needs of the population to 2026 (due to existing shortfalls as discussed under retention) therefore retention of the sub-area and quantified policies could result in an uncertain effect.

2.10.3 Retention of Policies, the Revocation of which may lead to likely Significant Negative Environmental Effects

There are no significant negative effects predicted in respect of this topic.

2.11 Mitigation Measures

Given that all likely significant effects identified would be positive no mitigation measures are proposed for this topic. However, it is recognised that local authorities will need to cooperate with their relevant Local Enterprise Partnership and neighbouring local authorities in line with the “duty of co-operate” to ensure benefits are delivered in the long term. Paragraph 218 of the NPPF advises that LPAs can continue to draw on evidence that informed the preparation of regional strategies to support Local Plan policies. The NPPF also provides guidance on how where appropriate local authorities can reflect in their Local Plans regional strategy policies. Local authorities can refer to Policy T8 of the Yorkshire and Humber Plan when preparing their local plans to help ensure significant positive effects will result.

Proposals for Monitoring

Negative and uncertain effects in respect of population relate to:

- Economic activity
- Employment provision
- Population growth
- Housing provision

- Housing affordability
- Gypsy and traveller pitch provision

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, including air, climate change and material assets (waste management).

3.2 Summary of Plans and Programmes

3.2.1 International

The World Health Organization (WHO)[54] 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 requires the consideration of "*the likely significant effects on the environment, including on issues such as …, human health, …*" (European Parliament and 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

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

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 Yorkshire and Humber region

No relevant regional plans or programmes were identified under this topic.

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.[55]

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.[55]

[55] ONS, United Kingdom Health Statistics 2010, http://www.statistics.gov.uk/downloads/theme_health/ukhs4/ukhs4-2010.pdf

In 2007 the main causes of death in the UK were diseases of the circulatory system, and neoplasms (cancers)[55]. 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. [56]

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[57] .

England

In England, during 2006-2008, life expectancy at birth was 77.93 years for males and 82.02 years for females.[58]

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[58] .

The Health Survey for England, published in 2010, includes the following key findings for 2009[59]:

- 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.

[56] 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

[57] ONS, United Kingdom Health Statistics 2010, http://www.statistics.gov.uk/downloads/theme_health/ukhs4/ukhs4-2010.pdf

[58] ONS, United Kingdom Health Statistics 2010, http://www.statistics.gov.uk/downloads/theme_health/ukhs4/ukhs4-2010.pdf

[59] 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

3.3.2 Yorkshire and Humber region

Health and Wellbeing

Over the past five years there has been a steady upward trend in life expectancy across English regions[60]. Yorkshire and Humber is no exception to this positive trend. However, life expectancy in the region is lower than the national average. Male life expectancy at birth is 77.7 years in Yorkshire and the Humber compared to the England average of 78.6 years. Female life expectancy is 81.8 years whereas the England average is 82.6 years[61]. Kingston upon Hull had the lowest life expectancy in the region for both males and females (75.7 and 80.2 years respectively). The highest life expectancy in the region was in both Craven and Hambleton (North Yorkshire) for females (84.2 years) and Hambleton for males (81.0 years).

Recent survey data show that a greater proportion of people in the region participate regularly in moderate intensity sports activities than in any other region. Between October 2010 and October 2011 17.3% of the adult population of Yorkshire and the Humber participated in at least 30 minutes of moderate intensity activities three or more times per week. This compares to 16.3% across England as a whole[62].

The Yorkshire and the Humber strategic health authority had one of the highest rates of adult obesity of anywhere in England though. At 11.3% this was almost one percentage point higher than the national average (of 10.5%)[63]. Obesity can be a significant health problem as it is linked to increased risk of diabetes, heart disease and strokes.

The death rate in the region was 9.6 per 1,000 population in 2009, higher than the figure for England as a whole which was recorded at 8.9 per 1,000 population[64]. In addition, the age-standardised mortality rate, which takes into account the age structure of the population, was 5.8 per 1,000 people, compared to the English average of 5.6[65]. The infant mortality rate in the region was 5.5 per 1,000 live births, compared with an English average of 4.6.

[60] Office for National Statistics (October 2011), *Life expectancy at birth and at age 65 by local areas in the United Kingdom 2004-06 to 2008-10*, 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

[61] Office for National Statistics (February 2012), *Region and Country Profiles: key statistics*, http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-227575

[62] Sport England, *Active People Survey 2010-11*, http://www.sportengland.org/research/active_people_survey/aps5.aspx

[63] National Health Service, *Statistics on obesity, physical activity and diet; England 2012*, http://www.aso.org.uk/wp-content/uploads/downloads/2012/03/2012-Statistics-on-Obesity-Physical-Activity-and-Diet-England.pdf

[64] Office for National Statistics (February 2012), *Region and Country Profiles: key statistics*, http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-227575

[65] Office for National Statistics (June 2011), *Regional Trends online tables; 06: health and social care*

In 2009 the region had one of the highest proportions in Great Britain of men drinking more than eight units and women drinking more than six units of alcohol on at least one day in the week (27 and 18 per cent respectively). More than a fifth of adults (23 per cent of men and 22 per cent of women) in Yorkshire and The Humber smoked cigarettes in 2009, one of the highest two rates in Great Britain.

There are over 800 GP practices, whose distribution varies greatly across the region. North Yorkshire and York Primary Care Trust is best served by general practice.

The number of fatal casualties on the roads in Yorkshire and the Humber was 170 in 2010, which amounts to 11% of the national total. This represents a 17% reduction in fatalities on the previous year, in line with a downward national trend in road deaths. There were 48% fewer fatalities in the region in 2010 compared to the 1994-1998 average, the same as the nationwide reduction. However, the road casualty rate in Yorkshire and the Humber is higher than the England average when measured according to distance driven (764 per billion vehicle miles compared to 694 nationally).[66]

Sense of Community

People who lived in Yorkshire and the Humber reported are equally satisfied with their local area as residents of other parts of England and Wales: 83% of people in the region reported they were either 'very' or 'fairly' satisfied with their local area, the same as the whole of England and Wales. However, a higher proportion of people living in Yorkshire and the Humber were 'very' satisfied than the average for England and Wales[67].

The number of recorded crimes per 100,000 population in Yorkshire and the Humber in 2010-11 was 7,812. This is greater than any other region apart from London; the England average was 7,506. Yorkshire and the Humber had the highest rate of crimes committed against households of any region: 2,736 per 10,000 households compared to the national average of 2,524[68]. Violent crime was around as prevalent in the region as across England as a whole: 3.3% of the population was victimised at least once compared to 3.2% nationally[69]. Other types of personal offence, such as theft from a person, are relatively uncommon though. The overall percentage of the population of Yorkshire and the Humber that were the victim of a personal offence (4.9%) was considerably less than the national average (6%).

As in other areas of the country, public perception of crime is an ongoing issue. In the most recent

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

[67] Department for Communities and Local Government, *2009-10 Citizenship Survey*, http://www.communities.gov.uk/publications/corporate/statistics/citizenshipsurvey200910spirit

[68] Office for National Statistics (February 2012), *Region and Country Profiles: key statistics*, http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-227575

[69] Home Office, *Crime Survey for England and Wales*, http://www.homeoffice.gov.uk/science-research/research-statistics/crime/crime-statistics/british-crime-survey/

Citizenship Survey, in 2009-10, 39% of respondents reported that they were worried about becoming a victim of crime. This means a slightly greater share of people in Yorkshire and the Humber were worried about crime than across England and Wales as a whole (38%)[70].

Safety and Security

In 2010/11 Yorkshire and Humber had the second highest number of crimes recorded per 100,000 population of any region in England. Certain categories of crime are more prevalent in the region than others. Most significantly, Yorkshire and Humber had the highest rates of burglary of all the regions in England, at 1,315 incidences per 100,000 population compared with the English average of 961. In addition, the region had the second highest rates of offences against vehicles, other theft offences, and criminal damage of any region in England. The region recorded some of the lowest rates with regard to violence and sexual offences[71].

Social Exclusion

Deprivation describes a broad range of economic and social issues: unmet needs caused by a lack of resources of all kinds, not just financial. A measure of overall deprivation experienced by people living in an area is provided by the Index of Multiple Deprivation 2010, which is calculated for every Lower layer Super Output Area (LSOA) in England[72]. This index assesses seven aspects of deprivation:

- Income deprivation
- Employment deprivation
- Health deprivation and disability
- Education, skills and training deprivation
- Barriers to housing services
- Crime
- Living environment deprivation

Patterns of deprivation are complex and highly localised. Every region contains some of the most deprived and least deprived LSOAs although the number and concentration of deprived areas differs.

[70] Department for Communities and Local Government, *2009-10 Citizenship Survey*, http://www.communities.gov.uk/publications/corporate/statistics/citizenshipsurvey200910spirit

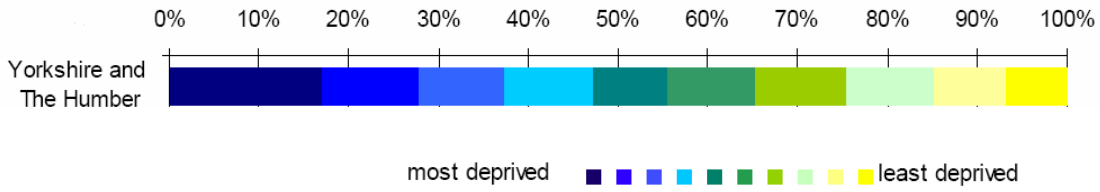
[71] Office for National Statistics (February 2012), *Region and Country Profiles: key statistics*, http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-227575

[72] These geographical areas have an average population of around 1,500

Yorkshire and Humber contains 17% of the very highest Index of Multiple Deprivation ranks (1% most deprived areas), the second highest rate of all the regions, as well as 18% of the 5% most deprived, 17% of the 10% most deprived and 14% of the 20% most deprived. The largest concentrations of deprived areas in the region are within the urban areas of Hull, Bradford, Doncaster, Sheffield and Barnsley.

Out of a total of 3,293 LSOAs in Yorkshire and the Humber, 563 fall within the 10% most deprived areas in all England. This means that 17.1% of all LSOAs in the region are classed as relatively severely deprived. Less than half (44.5%) of areas in Yorkshire and the Humber are classified as within the 50% least deprived LSOAs in England. This is illustrated by the chart below.[73]

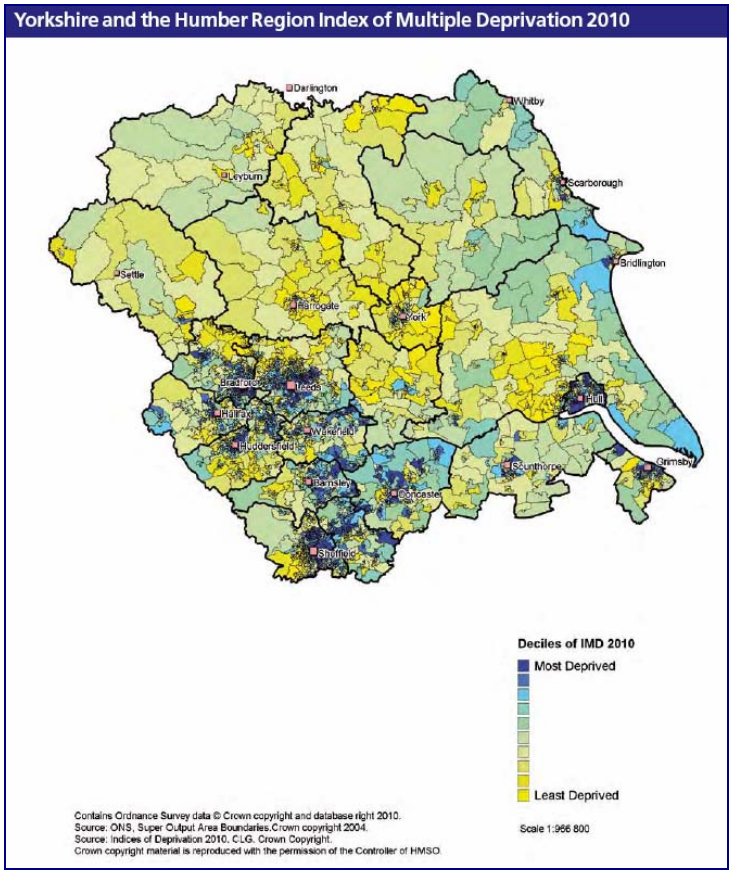
Proportion of LSOAs in Yorkshire and the Humber by IMD decile



Much of Yorkshire and the Humber's severe deprivation is concentrated within towns and cities such as Kingston-upon-Hull, Sheffield, Leeds, Bradford, Kirklees (Huddersfield, Dewsbury) and Rotherham. Severe deprivation is also to be found around the former coalfields of the region, in the districts of Doncaster, Wakefield and Barnsley. The geographic spread of deprivation is shown by the map below.[74]

[73] Department for Communities and Local Government (March 2011), *The English Indices of Deprivation: statistical release*, http://www.communities.gov.uk/documents/statistics/pdf/1871208.pdf

[74] Department for Communities and Local Government (March 2011), *The English Indices of Deprivation 2010: technical report*, http://www.communities.gov.uk/publications/corporate/statistics/indices2010technicalreport



Source: Department for Communities and Local Government[75]

Access to Services

Everyone needs to be able to access key services which are important in going about their day to day lives. These typically include food shops, post offices, doctor's surgeries and schools. One way of measuring the accessibility of these services is the distance that people have to travel by road in order to reach them. There is significant variation between different parts of the Yorkshire and the Humber. The average distance to these services ranges from 220 metres in part of Leeds to 8.4 kilometres in one area of Ryedale[76]. The median for all LSOAs in the region is 1 kilometre.

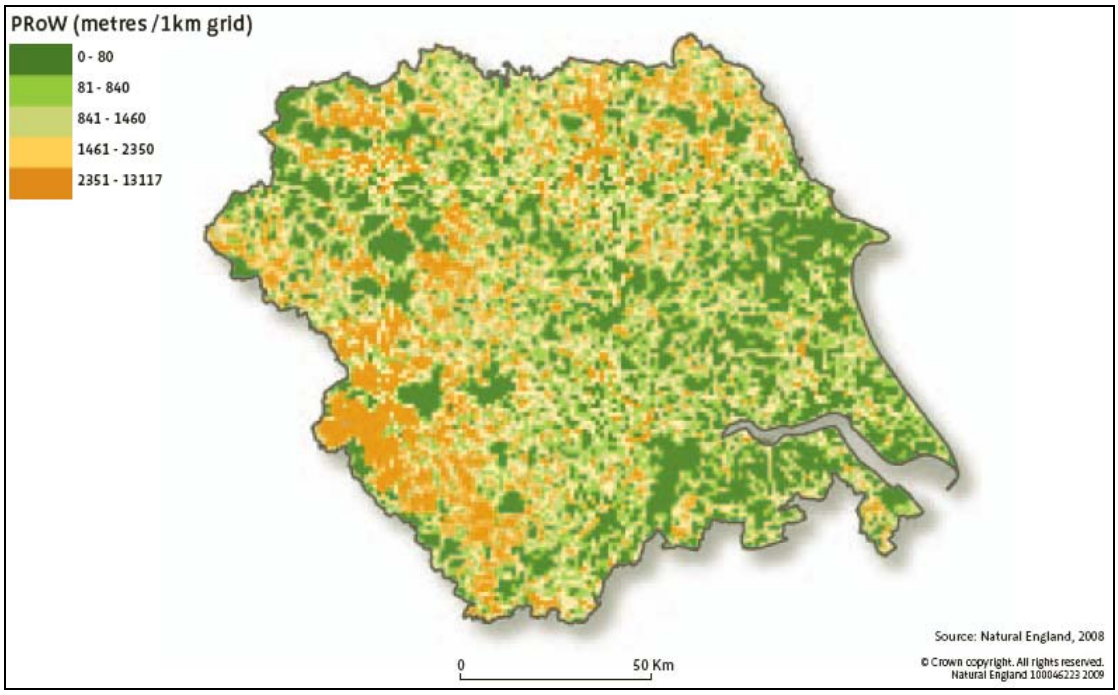
Public rights of way provide essential and recreational access to different areas of the countryside, giving rise to opportunities for leisure activities that improve quality of life such as cycling and walking. They take many forms: footpath, bridleway, byway open to all traffic and restricted byway. The chart below highlights significant differences in the prevalence of public rights of way between upland areas

[75] Ibid

[76] Department for Communities and Local Government, *English Indices of Deprivation 2010: underlying indicators*, http://www.communities.gov.uk/publications/corporate/statistics/indices2010

(Pennines, North York Moors and Yorkshire Dales) and the lowland areas in the south and east of the region.

Public rights of way



Source: Natural England 2008[77]

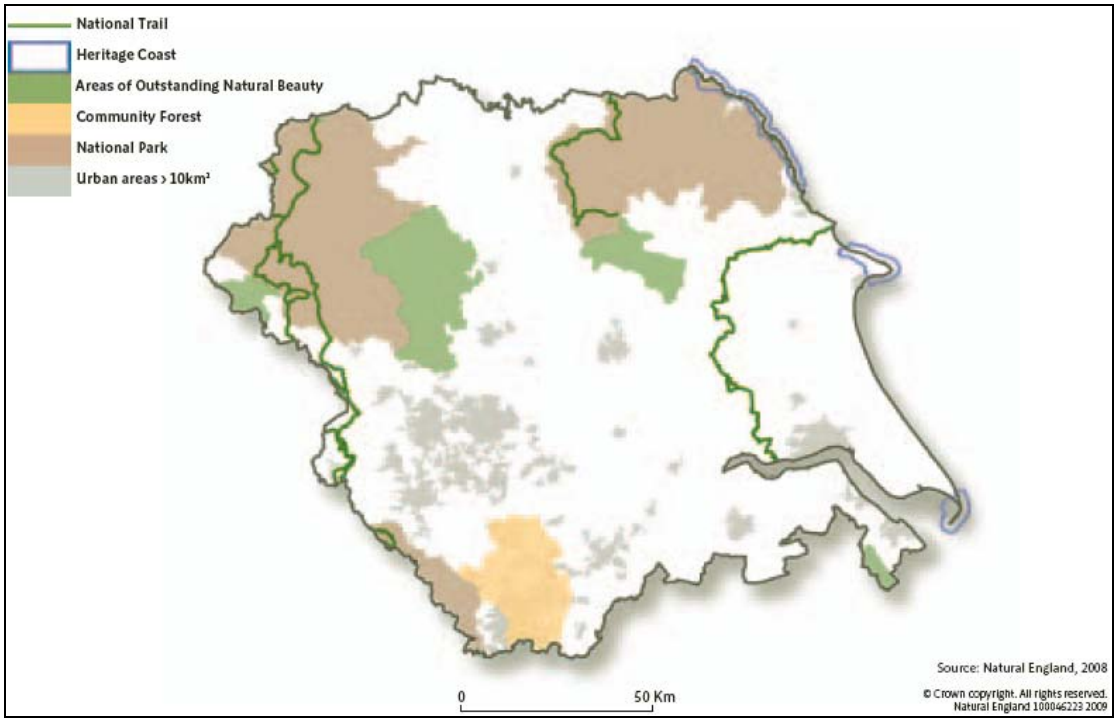
The region is home to 23 Country Parks, 5 Areas of Outstanding Natural Beauty, 3 Heritage Coasts and 35,000 designated historical assets.

There are also two major National Parks in the region: the Yorkshire Dales and the North York Moors. Designated National Parks account for 20% of the land area of Yorkshire and Humber (177,000 hectares), which is more than in any other region. An estimated 62% of this is open access land.

Across England there are 13 National Trails, totalling 3,787 km in length. The length of National Trails varies between regions; Yorkshire and the Humber has 548 km, 14% of the national total. The graphic below plots the location of these trails.

[77] Natural England, *State of the Natural Environment report*, http://www.naturalengland.org.uk/publications/sone/default.aspx

Designated and defined landscapes



Source: Natural England 2008[78]

Living Environment

Millennium Greens and Doorstep Greens are intended to enable communities to create or enhance local green spaces, predominantly in urban settings. In 2008 there were 31 Doorstep Greens and 22 Millennium Greens in the region[79].

An analysis of data on publicly accessible green spaces, including parks, nature reserves, millennium greens, sports pitches and allotments, carried out by the Commission for Architecture and the Build Environment analysis, estimates that there is 1.82 hectares of urban green space per 1,000 population in Yorkshire and the Humber[80]. This is close to the national average of 1.79 hectares. However, people in the Yorkshire and the Humber were found to frequent parks and green spaces less frequently than any other region in the country.

According to estimates by the Campaign for the Protection of Rural England, the proportion of land in the

[78] Ibid

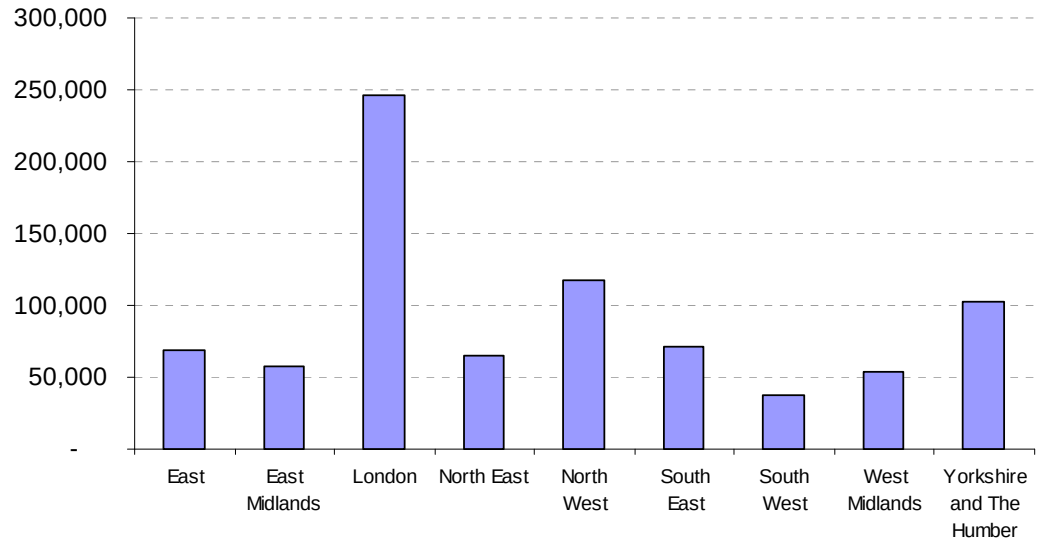
[79] Natural England, *State of the Natural Environment report*, http://www.naturalengland.org.uk/publications/sone/default.aspx

[80] Commission for Architecture and the Built Environment (2010), *Urban green nation: building the evidence base*, http://webarchive.nationalarchives.gov.uk/20110118095356/http:/www.cabe.org.uk/files/urban-green-nation.pdf

Yorkshire and the Humber that is disturbed by noise and/or visual intrusion was almost 46% in 2007[81]. This had risen from 37% in the early 1990s but it remains below the national average (of 50%). North Yorkshire County and East Riding of Yorkshire had the greatest proportion of tranquil places in the region: 73% and 64% of their land area respectively. As might be expected given its urban nature the city of Kingston upon Hull was classified as zero percent undisturbed.

In Yorkshire and the Humber in 2010-11, there were 103,000 reported incidents of waste being dumped illegally, known as fly-tipping. This was a 6% increase on the previous year, whereas the number of fly-tipping incidents in England decreased by 13% over the same period (to 820,000)[82]. The local authority reporting the largest number of incidents was Sheffield City council. The graph below illustrates how the number of fly-tipping incidents reported in Yorkshire and the Humber compares to other English regions.

Number of fly-tipping incidents reported by region, 2010-11



Yorkshire and the Humber is home to the sixteenth busiest airport in the UK (Leeds Bradford International Airport). The airport is located at Yeadon, in the City of Leeds Metropolitan District in West Yorkshire, England, 11 km northwest of Leeds city centre itself. In 2011, according to the Civil Aviation Authority (CAA), 2.9 million passengers passed through the airport. This represents 8% increase on the previous year and resulted in around 51,527 aircraft movements in 2011[83]. Aviation activity can affect

[81] Campaign for the Protection of Rural England, *Tranquil Places*, http://www.cpre.org.uk/resources/countryside/tranquil-places

[82] Department for Environment, Food and Rural Affairs, *Fly tipping in England – annual statistics*, http://www.defra.gov.uk/statistics/environment/waste/flytipping-in-england-annual-statistics/

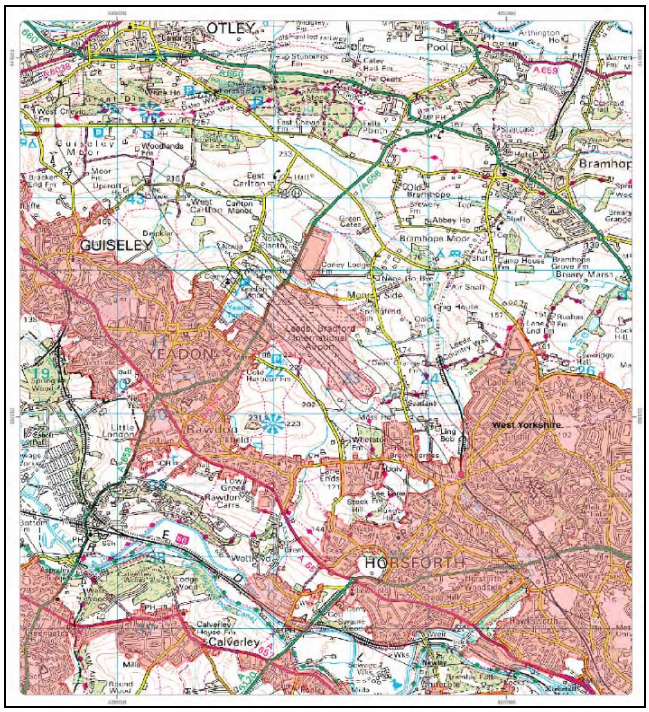
[83] UK Airport Statistics 2011 - *annual Aviation Intelligence*

http://www.caa.co.uk/default.aspx?catid=80&pagetype=88&sglid=3&fld=2011Annual

the living environment through impacts on air quality, noise, waste and transport.

The map below shows how the area surrounding Leeds Bradford International Airport. It plots 55 to 75 decibel noise contours around the airport. In total the outer contour covers an area of 9.7 square kilometres. Around 3,800 dwellings, home to 8,400 people are located within the contours. These dwellings experience average noise levels of at least 55 decibels. The population subject to higher noise levels is considerably lower: 1000 people experience noise of between 60 and 65 decibels and no-one experiences average noise in excess of this.[84]

Leeds Bradford International Airport noise exposure contours (2006, day, evening, night)



Source: Leeds Bradford International Airport, Noise Action Plan, 2010 - 2015

[84] Leeds Bradford International Airport, *Noise Action Plan, 2010 - 2015,* http://www.leedsbradfordairport.co.uk/about-the-airport/environment-and-community/noise-action-plan

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

3.4.1 National

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 Yorkshire and Humber region

The health of people in Yorkshire and the Humber has continued to improve but remains worse than the England average[85]. Levels of deprivation are higher, and life expectancy for both men and women remains lower than the England average. Deaths from all causes and early deaths from heart disease and stroke have improved in Yorkshire and the Humber but still remain worse than the England average.

Adults in Yorkshire and the Humber lead poorer lifestyles than the national average. The region has high levels of poor diet, tobacco smoking, alcohol consumption (as illustrated by binge drinking) and obesity. These lifestyle factors put the population at greater risk of developing poor health and long term conditions such as diabetes, heart disease, hypertension, stroke, and cancer.

The health of children in the region is generally worse than the England average. Poor health starts before birth with higher smoking rates during pregnancy and high rates of teenage pregnancy; then at birth with proportionately less initiation of breast feeding; and subsequently, as children develop there are poorer levels of physical activity and higher rates of tooth decay.

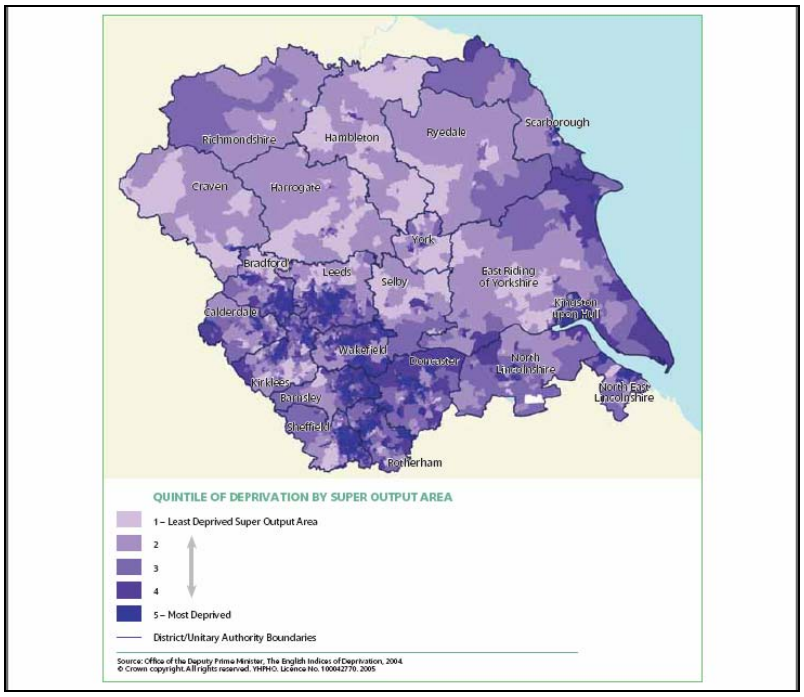
Priorities for the region include: health inequalities, smoking, tackling obesity by focusing on improving physical activity and diet, alcohol (in particular binge drinking) and reducing accidents in rural areas.

There are inequalities within Yorkshire and the Humber, which are closely associated with deprivation. Overall, there are high levels of multiple deprivation, covering a range of issues including lack of

[85] Department of Health, Yorkshire and the Humber Health Profile 2009, www.apho.org.**uk**/resource/view.aspx?RID=85391

affordable housing, low levels of educational attainment and a lack of basic skills, incomes below the national average, growing unemployment, and high levels of crime. However, there are significant disparities between the wealthier and poorer parts of the region, with deprivation particularly concentrated in urban areas including Hull and the Humber Ports and the Sheffield and Leeds sub-regions as shown in Figure 3.1. Reflecting this, the health of people in Harrogate and Craven is generally better than the England average; however, the more urban areas of the region such as Hull, Bradford, Sheffield and Leeds are generally worse than the England average. Environmental aspects of inequality are apparent, for example, as reflected in poor air quality, high rates of traffic congestion and road deaths in the main conurbations and the risk of flooding in low lying areas such parts of Hull.

Figure 3.1 Indices of deprivation



Source: Regional Strategy for Yorkshire and the Humber 2009

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. [86]

England

The current general trend in human health is generally towards improved health, greater life expectancy and reduced mortality from treatable conditions.[87]

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[88]. 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[89].

Yorkshire and Humber region

The SEA Directive requires a consideration of the evolution of the baseline without the proposed plan or programme being in place. Slightly confusingly in this assessment, this actually refers to the plan to revoke the regional strategy. So the evolution of the baseline without the plan will mean, in this instance, the evolution of the baseline with the regional strategy retained. Therefore, the assessment has used the findings of the 2008 Sustainability Appraisal of the Yorkshire and Humber Plan to provide an informed understanding of likely future evolution of the health baseline. Any changes to the baseline that have occurred since 2008 have also been taken into account where information availability allowed.

[86] Office for National Statistics, http://www.statistics.gov.uk/cci/nugget.asp?id=168

[87] 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

[88] ONS (2009) http://www.statistics.gov.uk/pdfdir/liex0611.pdf

[89] Defra 2008

The regional strategy sought to deliver sustainable development by reversing the long-term trend of population and investment dispersal away from Regional and Sub-Regional Cities and Towns, using them as the focus of employment and housing, whilst creating more attractive living and working environments in urban areas. It sought to reduce inequalities and for currently excluded communities and for areas requiring regeneration to have benefited from development and investment. The policy's emphasis will help to provide employment opportunities for local people; economic diversification in the rural economy was particularly promoted with the aim of Principal Towns and Local Service Centres fulfilling their role as a focal point for rural and coastal communities. However, the region has had some of the poorest health in England during the last two decades and, in addition to an ageing population, trends still suggest a future with more ill health.

There are a number of reasons why the proportions of people reporting longstanding illnesses may change overtime, for example:

- Obesity: The Foresight report into the future effects of obesity predicts that based on current trends in England the region will have the sharpest increase in obesity with 65% of women and 70% of men likely to become obese by 2050 without action. Obesity increases the risk of a range of chronic diseases, particularly type 2 diabetes, stroke and coronary heart disease and also cancer and arthritis.

- Public Health Intervention: Public health related initiatives such as the ban on smoking in public places and healthy lifestyle promotions such as Change for Life and the moves to reduce alcohol intake may result in a lower future prevalence of long term conditions or perhaps a move to a pattern of later onset of conditions along with longer life expectancy. There is some evidence from recent General Household Surveys of increased proportions of those with long standing illnesses suffering from multiple conditions which may be related to lengthening life expectancy.

Climate change related impacts are likely to have more severe effects on deprived communities, and there is evidence that due to disparities in wealth, mobility and access, some key groups such as those on low incomes, ethnic minorities and people with disabilities are less likely to participate in health-promoting activities related to the natural environment.

3.6 Assessing Significance

Table 3.1 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 3.1 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.
-	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. Where a box is coloured but also contains a ? this indicates uncertainty over whether the effect could be a minor or significant effect although a professional judgement is expressed.

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

Table 3.2 summarises the significant effects identified in the detailed assessment of the Yorkshire and Humber Plan policies against the health topic.

Table 3.2 Significant effects against the Health topic

Regional Plan Policy	Alternative	Score Retention/Revocation			Commentary
		Short Term	Medium Term	Long Term	
YH1 Achieving Sustainable Development	Retention	++	++	++	This policy sets out the overarching framework for the RSS and provides the spatial basis for implementation of the RES which sets out a vision for Yorkshire and the Humber to "be a great place to live, work and do business that fully benefits from a prosperous and sustainable economy". It seeks to deliver sustainable development by reversing the long-term trend of population and investment dispersal away from Regional and Sub-Regional Cities and Towns, using them as the focus of employment and housing, whilst creating more attractive living and working environments in urban areas. It seeks to reduce inequalities and for currently excluded communities and for areas requiring regeneration to have benefited from development and investment. Improving people's access to health facilities, improving environmental quality, and supporting excluded communities will significantly help to engender good health. Most of the region's Regional and Sub Regional Cities and Towns suffered from population decline during the second half of the twentieth century and this, along with significant economic change, contributed to more concentrated levels of deprivation in urban areas including Hull and the Humber Ports and the Sheffield and Leeds sub-regions as shown in Figure 1. Many parts of the region continue to need to be restructured and the legacies left by past industrialisation addressed. In the short-medium term following revocation there are likely to be some limitations on improving accessibility and reducing inequalities for currently excluded communities and areas requiring regeneration. In the long term impacts are slightly less certain as this will be dependent on the extent to which local authorities apply the requirements of the NPPF to their local context. However, given the need to have regard to the NPPF and the five 'guiding principles' of sustainable development it is considered that the same significant positive effects will result.
	Revocation	+	+	++	
YH2 Climate change and resource use	Retention	++	++	++	This policy sets a framework for local authorities to ensure that mitigating and adapting to the effects of climate change remains at the heart of local authority plan-making through its influence over transport, economic development, housing, energy, waste and infrastructure. The RSS policy includes the 2016 greenhouse gas emissions target set out in the RES. In line with this policy Objective 5 of the RES promotes projects that reduce and mitigate greenhouse gas emissions as well as seeking for high quality design and environmental standards in all publically supported development. Climate change adaptation measures will directly help to reduce flooding risk (thereby invoking greater sense of security) whilst improved housing quality and energy efficiency helps to reduce fuel poverty and reduced traffic and promotion of walking and cycling helps to promote good health through environmental
	Revocation	+	+	++	

Regional Plan Policy	Alternative	Score Retention/Revocation			Commentary
		Short Term	Medium Term	Long Term	
					improvement and opportunities for physical exercise. In the long term it is considered that the same significant positive effects will result since 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 coastal change and flood risk.
YH7 Location of development	Retention	++	++	++	This policy provides a general policy framework for guiding the location of development following distribution of development to settlements. It seeks re-use of previously developed land as a priority followed by urban infill and adopts a transport lead approach. These include compliance with detailed accessibility criteria to maximise accessibility by public transport, walking and cycling which will help to engender good health. This transport led approach is reflective of the RES specifically Objective 4 to encourage access to jobs without a car and Objective 5 relating to better public transport connections to key urban centres and improving rail connections to the Humber Ports. If Part A is revoked there is likely to be no change in the positive effects predicted for retention. Revocation of Part B is likely to lead to more uncertain impacts since, whilst the NPPF states that plans should support a pattern on development which, where reasonable to do so, facilities the use of sustainable modes of transport, it is not prescriptive in the manner of Policy YH7. This leaves discretion to local planning authorities to balance transport sustainability and other sustainable development aspirations; it is considered unlikely that the aspirational transport-orientated approach will be adopted by all local authorities in the absence of national guidance particularly in respect of the small and relatively remote towns and villages in the region. However, as the NPPF expects local authorities to plan new development, its distribution, location and design in ways which limit greenhouse gas emissions and minimise future vulnerability in a changing climate it is considered that positive effects will result in the long term.
	Revocation	+	+	++	
YH8 Green Infrastructure	Retention	++	++	++	This policy seeks to identify areas and networks of green infrastructure (GI) to enable improved accessibility to a healthy environment. Retention of this policy will have a significant positive effect on health as GI is a major resource for physical activity (open space for formal and informal outdoor recreation, as well as green links that allow people to have easier access jobs and services on foot and by cycle) as well as promoting mental well-being in the short to long term. The NPPF includes a concise but strong policy that requires local authorities to plan positively for the creation, protection, enhancement and management of networks of GI. Non-statutory green-infrastructure strategies exist in the region and once established Local Nature Partnerships can be expected to play a key role in supporting their implementation. In the long term it is considered that the same significant positive effects will result.
	Revocation	0	?	++	

Regional Plan Policy	Alternative	Score Retention/Revocation			Commentary
		Short Term	Medium Term	Long Term	
Y1 York sub-area policy	Retention	++	++	++	This policy sets out the overarching direction for the York Sub-Area. It seeks to improve accessibility to and within York, particularly by improved facilities for walking and cycling which would helped to engender good health. It also mentions managing flood risk. The ultimate effects of revoking the policy will depend on local circumstances. In the short-medium there are likely to be some limitations on facilitating improved facilities for walking and cycling through the planning process given the age of local plans in the sub-area. In the long term the NPPF states that plans should support a pattern on development which facilities the use of sustainable modes of transport which should include a walking and cycling option so positive effects should result.
	Revocation	0	?	++	
VTL1 Vales and Tees links sub-area policy	Retention	++	++	++	This policy sets out the overarching direction for the Vales and Tees Links Sub-Area. The policy encourages improved public transport connections "between smaller settlements and rural areas" potentially helping to address well-being by improving accessibility to services and reducing the sense of isolation. The ultimate effects of revoking the policy will depend on local circumstances as in the absence of national guidance local authorities will need to balance transport sustainability with other aspirations; meeting local housing needs is likely to be higher on the agenda.
	Revocation	+	+	++	
ENV11 Health, recreation and sport	Retention	++	++	++	This policy aims to assist delivery of adequate health care facilities in accessible locations and to help improve public health by, for example, providing more green infrastructure and walking and cycling routes. Several targets are linked to the policy including a reduction in health inequality and increasing participation in sport. The policy also seeks to focus, concentrate and support economic development in and around Regional and Sub Regional Cities and Towns, especially Hull and in South and West Yorkshire in order to improve job opportunity and therefore the health and well-being of residents. This policy is reflective of the RES which sets out a vision for Yorkshire and the Humber to "be a great place to live, work and do business that fully benefits from a prosperous and sustainable economy" and specifically Objective 4 which includes a number of actions, such as, employability initiatives in the NHS targeting areas of deprivation and linking young people to sports teams to assist skills, inclusion, regeneration and health. If this policy is revoked local planning authorities will still need to have regard to the strong policy on promoting healthy communities at paragraphs 69 – 78 of the NPPF and the provision of green infrastructure as discussed under YH8. The NPPF also states that plans should support a pattern on development which facilities the use of sustainable modes of transport which should include a walking and cycling option. Therefore in the long term it is considered that the same significant positive effects will result.
	Revocation	+	+	++	

Regional Plan Policy	Alternative	Score Retention/Revocation			Commentary
		Short Term	Medium Term	Long Term	
H5 Housing Mix	Retention	++	++	++	Retention of this policy would support Policy YH1 and the sub-regional policies in delivering sustainable, mixed communities through a variety of housing in terms of size, type, tenure and price to meet household needs. The policy's emphasis on encouraging the provision of a mix of housing will help to ensure that the housing market reflects the needs of a diverse population, in so doing helping to support a good range of employment opportunities for the diversity of local people. Local Plans will need to take account the NPPF paragraph 47 which highlights the need to meet the housing needs of housing markets 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 been persistent under-delivery. The NPPF in paragraph 50 sets out the LPA should plan for a mix of housing including the appropriate size and type of housing in a local area. Paragraph 156 of the NPPF indicates that this will be done using Strategic Housing Market Assessments. In the short-medium there are likely to be some limitations on improving the mix of housing particularly where the housing market is fragile and failing and under-delivery is the norm. In the long term impacts are slightly less certain as this will be dependent on the extent to which local authorities apply the requirements of the NPPF to their local context.
	Revocation	0	?	+	
T5 Transport and tourism	Retention	++	++	++	Policy T5 requires local authorities to identify, protect and develop appropriate facilities for the development and improvement of walking, cycling and horse trails which should help to provide opportunities for physical exercise and thus have a secondary effect on good health. Paragraph 75 of the NPPF requires planning policy to protect and enhance public rights of way and to provide better facilities for users; therefore although there are likely to be some limitations on achieving these enhancements in the short term in the long term it is considered that the same significant positive effects will result.
	Revocation	+	+	++	
T8 Rural transport	Retention	++	++	++	This policy seeks to ensure that transport contributes to addressing social and economic challenges in the rural part of the region. This policy, if implemented, will have significant positive effects on the population, through increased accessibility to local services and employment and reducing inequalities. This policy's aspirations fit well with the broad thrust of the NPPF including its policy for rural areas. However, revoking this policy will leave it to each local authority working together with public transport organisations serving the area to plan for rural transport need. Policy T8 goes on to list actions, not explicitly referred to in the NPPF, which local planning authorities should consider in order to improve rural communities' access to facilities although most of the actions are outside the scope of the land use planning system. Consequently, whilst recognising uncertainties about possible impacts, it is reasonable to assume that significant positive effects will still occur.
	Revocation	0	?	++	

3.8 Effects of Retention

The effects of retention of the regional strategy have been assessed on the assumption that, in the absence of the legislation and regional architecture enabling updating of the regional strategy, although the general principles of development will remain some policies will become increasing outdated and in some cases in conflict with the national policies in the Framework. 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 green infrastructure, and supporting excluded communities will help to engender good health in a region which has some of the some of the poorest health in England. However, as discussed in the population chapter, in the long term to 2026 existing shortfalls in housing delivery could potentially restrict access to quality and affordable housing in the long term. Lack of access to quality and affordable housing could affect well-being and thus retention could result in an uncertain effect on health.

3.9 Effects of Revocation

Following revocation national planning policy will still be applicable including paragraph 156 of the 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 considered that local authorities will cooperate with the local National Health Service and neighbouring local authorities such that in the long-term significant benefits are still considered to occur given the overall direction of development proposed will need to have regard to the Framework, and the five ‘guiding principles’ of sustainable development one of which is ensuring a strong, healthy and just society.

In the short-medium term, revocation of regional strategy could place some limitations on delivering improved access to health facilities, improvements in environmental quality and access to green infrastructure, and supporting excluded communities (in rural areas and older industrialised parts of the region) given the age of local plans in the region. However, the application of the NPPF’s presumption in favour of sustainable development and its policies to boost the supply of housing will help where plans or policies are absent, silent or out of date.

In the 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. In larger centres effects are likely to be positive but negative effects could arise in terms of addressing social inequalities and economic

disparities in the older industrialised parts of South Yorkshire, West Yorkshire and the Humber and as a result of a reversal to a long-distance car-based commuting pattern.

In particular, it is considered unlikely that the aspirational transport-orientated approach set out in Policy YH7 with regards access to public transport, walking and cycling will be adopted by all local authorities in the absence of national guidance particularly in respect of the small and relatively remote towns and villages in the region where meeting local housing needs is likely to be higher on the agenda.

3.10 Effects of Partial-Revocation

3.10.1 Revoking all the Quantified and Spatially Specific Policies

Revocation of the sub-area and quantified policies will not remove the need for housing and economic development in the sub-areas and one of the core planning principles identified in the NPPF is that planning should drive and support sustainable development through positive growth. Higher rates of house building and additional gypsy and traveller pitches may be necessary over the long term to meet the needs of the population. Therefore revocation of the quantitative policies would have significant positive effects on health as a result of an increase in housing supply (above current completion rates) where more people are housed with ensuing socio-economic benefits and benefits to heath. Revocation of the quantitative policies would allow the right level of housing and employment provision whilst retaining the benefits of policies relating to addressing social inequalities and economic disparities in the older industrialised parts of South Yorkshire, West Yorkshire and the Humber and the issues of peripherality in the coastal and rural areas of the region particularly in the short-medium term.

3.10.2 Revoking all Non Quantitative and Spatially Specific Policies

Revocation of the non quantified and spatially specific policies may mean there is a delay in realising benefits to health in the short to medium term due to the time required to put in place up to date local plans and implement the duty to co-operate since the overarching policy direction, particularly in relation to transforming older industrialised parts of South Yorkshire, West Yorkshire and the Humber, will be lost although sub-area policies will remain. Higher rates of house building and additional gypsy and traveller pitches may be necessary over the long term to meet the needs of the population to 2026 (due to existing shortfalls as discussed under retention) therefore retention of the sub-area and quantified policies could result in an uncertain effect.

3.10.3 Retention of Policies, the Revocation of which may lead to likely Significant Negative Environmental Effects

There are no significant negative effects predicted in respect of this topic.

3.11 Mitigation Measures

Given that all likely significant effects identified would be positive no mitigation measures are proposed for this topic. However, it is recognised that local authorities will need to cooperate with their local National Health Service and neighbouring local authorities in line with the "duty of co-operate" to ensure benefits are delivered in the long term. Paragraph 218 of the NPPF advises that LPAs can continue to draw on evidence that informed the preparation of regional strategies to support Local Plan policies. The NPPF also provides guidance on how where appropriate local authorities can reflect in their Local Plans regional strategy policies. This would allow local authorities to refer to the accessibility criteria set out in Table 13.8 and Table 13.9 of the Yorkshire and Humber Plan when preparing their local plans to help ensure significant positive effects will result.

3.12 Proposals for Monitoring

Negative and uncertain effects in respect of health relate to:

- Health statistics
- Health facilities and accessibility
- Deprivation statistics
- Public transport accessibility
- Cycling and walking statistics
- Crime statistics
- Green infrastructure provision and accessibility

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 Environment Protection Act 1990 with

regard compulsory remediation of contaminated land. Environmental Protection Act was also modified in 2006 to cover radioactivity, and then a further modification 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 adds 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 Yorkshire and Humber Region

The Environment Agency has published ***Water For life and livelihoods - A consultation on the draft river basin management plan Humber River Basin District*** which provides advice on protecting the water environment through improved rural land management. This aims to prevent soil erosion leading to sedimentation of water courses.

The ***Climate Change Plan for Y&H*** states that soil quality needs to be managed to benefit from longer growing seasons. It also identifies the need to establish a regional land management forum to provide links between key organisations in land management.

The ***Yorkshire and The Humber Rural Framework*** sought to address the inefficiencies of governance and delivery structures and make best use of the available rural resources. It does this through 10 Rural Priorities and sets out how these need to be addressed, how delivery and funds must be customer-focused and how the priorities are directed by strategies.

Mapping for biodiversity in Y&H: a guide to identifying and mapping biodiversity opportunity areas and ecological networks identifies that green infrastructure can provide benefits to environmental processes and natural resource remediation which includes soil. The Strategic Framework for Trees, Woods and Forests in Yorkshire and The Humber Region provides a strategic framework for the management of trees and woodland in the region. The framework aims at promoting trees and woodland as an important resource for timber production, tourism and meeting related targets within the Regional Biodiversity Strategy.

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.[90]

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 subgrade 3a land. These grades are the best and most versatile land grades as classified under the Agricultural Land Classification System.[91]

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 limestone hills of the Peak District, Exmoor and Dartmoor. [92]

There are an estimated 2,050 geological SSSIs in UK.[93, 94, 95]

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

[90] Agricultural Land Classification, protecting the best and most versatile agricultural land, Natural England, January 2009

[91] England's geology, Natural England, http://www.naturalengland.org.uk/ourwork/conservation/geodiversity/englands/default.aspx

[92] State of the Environment Report 2008, Natural England, 2008, http://naturalengland.etraderstores.com/NaturalEnglandShop/NE85

[93] Geoconservation Sites, http://www.geoconservation.com/sites/sssi.htm

[94] Natural England RIGS, http://www.naturalengland.org.uk/ourwork/conservation/designatedareas/lgs/default.aspx

[95] The Scottish Soil Framework, Scottish Government, May 2009, http://www.scotland.gov.uk/Publications/2009/05/20145602/13

Geomorphological Sites (RIGS)). There are over 50 Local Sites groups in the UK[96].

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)[97].

4.3.2 UK – Land Use

The UK covers an area of 2,472,900 hectares (242,514km^2). England comprises the largest land area in the UK, covering an area of 13,028,100 hectares (130,281km^2). The smallest land area in the UK is Northern Ireland, which covers an area of 1,357,600 hectares (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[98]

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

[96] Geoconservation Sites, http://www.geoconservation.com/sites/sssi.htm

[97] Indicators for Land Contamination, Science Report SC030039/SR, Environment Agency, August 2005

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

Land Type	'000 hectares	% land area
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 [99].

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).

[99] 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

Within England, 87.7% of the land area is classed as agricultural land[100]. 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 [101].

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).

Table 4.2 Land Cover in England in 2007[102]

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

[100] Agricultural land classification (ALC) Statistics from the digital 1:250,000 scale Provisional ALC map (www.magic.gov.uk)

[101] Office of National Statistics, http://www.statistics.gov.uk/geography/uk_countries.asp

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

England Land Cover 2007	'000 ha	% area
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 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.

4.3.3 Yorkshire and Humber region

Around nine per cent of the land in Yorkshire and Humber is urban development.

Agriculture has long since been a dominant land use for the Region. Livestock farming predominates in upland areas and arable farming in lowland areas. Its production of commodities, such as wheat, barley,

potatoes, sugar beet, oilseed rape, peas and beans and grass, is greater than most other regions, and its livestock levels are high. About 10 per cent of the region is covered by excellent or very good quality agricultural land and 37 per cent by good or moderate quality agricultural land as shown in Figure 4.1.

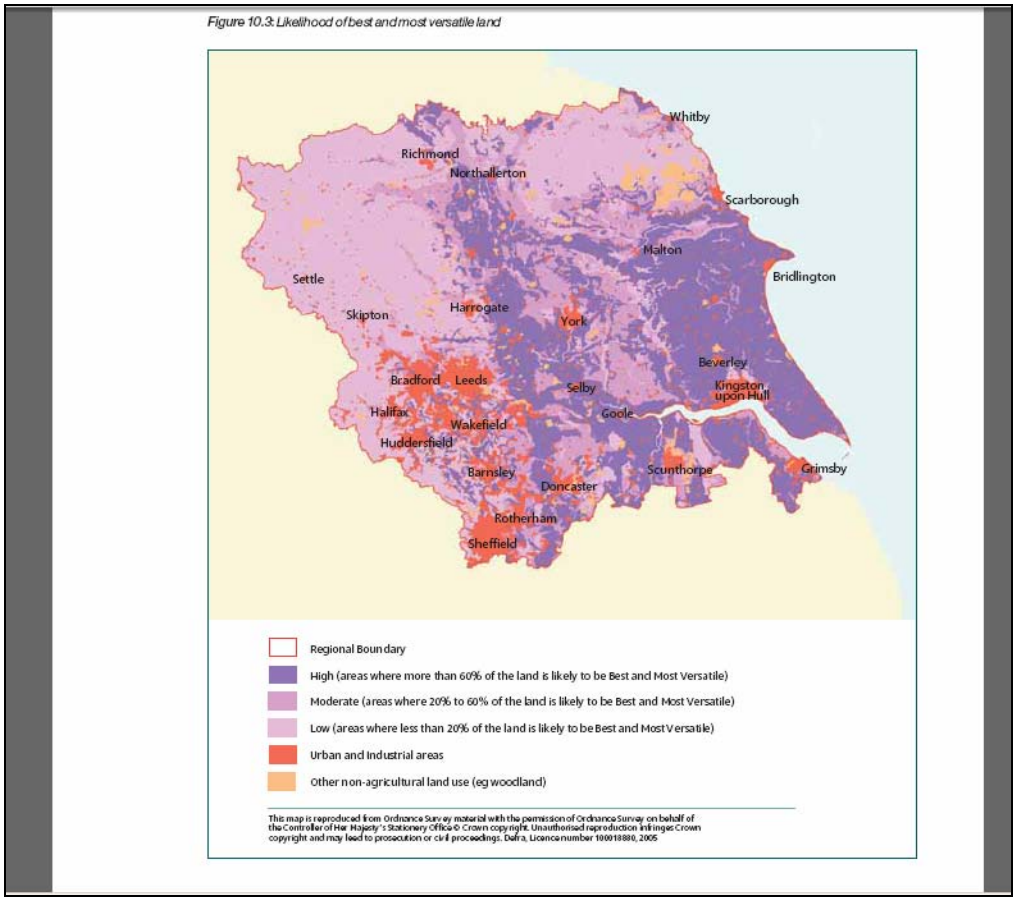
In areas of intensive farming, fertilisers, manures and organic wastes, such as, sewage sludge are added to the soil to improve fertility and pesticides and herbicides applied to control weeds and insects. In doing this farmers have to comply with a range of regulations and need to follow codes of good practice to avoid harm to wildlife and the environment. In upland areas, good land management also very important. Overgrazing and construction of drainage channels can lead to peaty soils being eroded or degraded. This can damage important wildlife habitats, pollute streams and contribute to global warming through release of carbon dioxide. The Environmental Stewardship Scheme and the Catchment Sensitive Farming Initiative encourage and provide funding for farmers and landowners to conserve wildlife, protect natural resources and reduce pollution of rivers and streams.

There were 568 land **pollution incidents** reported to the Environment Agency in 2009; 26 of these were classified as serious.

The region has 2,734 **historic landfill sites** some of which have caused land contamination with hazardous materials and chemicals.

There is a legacy of **contaminated land** from past industrial activities. Local authorities and the Environment Agency have responsibilities for preventing land contamination and cleaning up contaminated land that poses unacceptable risks to human health or the environment.

Figure 4.1 Likelihood of best and most versatile land



Source: Regional Strategy for Yorkshire and Humber 2008

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[103]. 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 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[104]. 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[104].

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

[104] State of the environment and trends – Scotland, http://www.seaguidance.org.uk/11/State-of-the-Environment.aspx

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[105].

- 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[106].

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[107] noted that within rural England, the area of 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.

[105] Environment Strategy for Wales, Welsh Assembly Government, 2006, http://wales.gov.uk/topics/environmentcountryside/epq/envstratforwales/strategy/?lang=en

[106] Planning and Land Contamination, Northern Ireland Environment Agency, http://www.ni-environment.gov.uk/land-home/land-quality.htm

[107] Natural England (2008) http://www.naturalengland.org.uk/publications/sone/default.aspx

4.4.2 Yorkshire and Humber region

The Yorkshire and Humber Plan: Regional Spatial Strategy to 2026 identifies the region as being particularly susceptible to a number of environmental threats including soil degradation. In urban areas land is under pressure from development and pollution.

82% of new dwellings (including conversions were built on previously developed land within the Region in 2008, which was an increase of 13% on the 2003 figures. [108]

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 challenges through looking at pressures and trends and developing scenarios and models, including the consideration of soil issues[109]. 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.

[108] Yorkshire and the Humber Regional Sustainable Development Indicators Factsheet 25 February 2010

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

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[110].

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[111] and is shown in **Table 4.3**. It shows that the area of land cover 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 4.3 Estimated area 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

[110] 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

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

Land Type	1984	1990	1998	2007	% change between 1998 and 2007
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[112].

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

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

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[113]. 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.

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%[114].

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

[113] 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

[114] Communities and Local Government 2008

Grassland (12.6%), Dwarf Shrub Heath (15.1%) and Standing Open Water and Canals (5.3%6). 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[115].

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 Yorkshire and Humber region

The SEA Directive requires a consideration of the evolution of the baseline without the proposed plan or programme being in place. Slightly confusingly in this assessment, this actually refers to the plan to revoke the regional strategy. So the evolution of the baseline without the plan will mean, in this instance, the evolution of the baseline with the regional strategy retained. Therefore, the assessment has used the findings of the 2008 Sustainability Appraisal of the Yorkshire and Humber plan to provide an informed understanding of likely future evolution of the geology and soils baseline. Any changes to the baseline that have occurred since 2008 have also been taken into account where information availability allowed.

Policy YH9 states that the general extent of the Green Belts in the Region have helped to achieve the aims set out in paragraph 15 of PPG2, and that implementation of the regional strategy should not require any change to their extent. However it states there may be a localised need to reconsider the extent of the Green Belt to meet identifiable development needs. The regional strategy proposes significant growth in the Leeds City Region, including increased house building in West Yorkshire from 2008 onwards. It is possible that the most sustainable locations to accommodate some of this development may currently be within the Green Belt and so greenfield land will be lost. In addition, Policy H1 states that the annual average net additions to the dwelling stock 2008-2026 for the region will be 22,260. This growth along with the limited availability of Brownfield resource in some local authorities will necessitate the release of greenfield sites for development.

Policy ENV7 states:

[115] Countryside Survey for England (2007) http://www.countrysidesurvey.org.uk/sites/default/files/pdfs/reports2007/england2007/CS-England-Results2007-Chapter02.pdf

If development of agricultural land is required it should take place on poorer quality land wherever possible and appropriate, and that development or use of agricultural land in appropriate locations will be encouraged for the following:

- *Provision of renewable energy crops, especially biomass for co-firing in power stations in the Selby area*
- *Tourism, especially in the Yorkshire Dales, North York Moors, Yorkshire and Lincolnshire Wolds, Humberhead levels and the coast*
- *Creation of woodland, especially in East, South and West Yorkshire*
- *Positive land management for flood alleviation, and increased water storage capacity on farms, especially in remote rural areas*
- *Wildlife habitat creation schemes, especially links between habitats*
- *Outdoor recreation projects, especially in areas of poor health in South and West Yorkshire*
- *Local produce for sale on site of main farm business*
- *Local waste management schemes, such as composting.*

Therefore the best and most versatile agricultural land should be protected from development. However, in the east of the region the housing required under Policy H1 could mean that the use of best and most versatile land is unavoidable, as much of the area has a greater than 60% likelihood of being best and most versatile land. There are also a range of pressures facing agriculture, with the number of people directly employed in agriculture declining and many farm enterprises needing to undergo restructuring. Reduced agricultural production will have environmental benefits (e.g. reduced soil erosion, improved soil nutrient status) but it may also lower the condition of wildlife habitats due to reduced grazing levels, especially in lowland areas. There are also other opportunities arising from the growing of other commodities such as energy crops that will also drive change.

The ***Climate Change Plan for Y&H*** identifies that the soil moisture annual average may be down by between 5-11% by 2050.

4.6 Assessing significance

Table 4.4 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 4.4 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.
-	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.

Effect	Description	Illustrative Guidance
--	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. Where a box is coloured but also contains a ? this indicates uncertainty over whether the effect could be a minor or significant effect although a professional judgement is expressed.

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

Table 4.5 summarises the significant effects identified in the detailed assessment of the Yorkshire and Humber Plan policies against the soil and geology topic.

Table 4.5 Significant Effects against the Soil and Geology Topic

Regional Plan Policy		Score			Commentary
	Alternative	Short Term	Medium Term	Long Term	
YH2 climate change and resource use	Retention	++	++	++	This policy sets a framework for local authorities to ensure that mitigating and adapting to the effects of climate change remains at the heart of local authority plan-making through its influence over transport, economic development, housing, energy, waste and infrastructure. In line with this policy Objective 5 of the RES promotes projects that reduce and mitigate greenhouse gas emissions as well as seeking for high quality design and environmental standards in all publically supported development. If retained this policy would have significant positive effects on soils. Development will be encouraged on previously developed land under this policy along with a preference for urban development leading to reduced

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
	Revocation	++	++	++	traffic growth and increased use of public transport systems. Increased urban density will help alleviate expansion into greenfield and rural areas. Revocation of this policy would not remove the requirement for local authorities to be consistent with national policy requirements. 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 land. The NPPF expects local authorities to plan new development, its distribution, location and design in ways which encourage the effective use of land by re-using land that has already been previously developed (paragraph 111) as well as protecting and enhancing soils (paragraph 109). Therefore the benefits of this policy would not be lost if the regional strategy was revoked.
YH8 Green Infrastructure	**Retention**	++	++	++	Green infrastructure includes strategic networks of accessible, multifunctional sites (including playing fields, parks, woodland, informal open spaces, nature reserves and historic sites) as well as linkages such as the principal transport corridors, river corridors and floodplains, wildlife corridors and greenways. This policy seeks to identify areas and networks of green infrastructure to enable improved accessibility to a healthy environment whilst protecting sites of international biodiversity value. Indirectly this will have significant positive benefits on soils. Details of location and function are to be determined by local authorities with Part A requiring regionally important green infrastructure and gaps in the network to be identified at the regional level.
	Revocation	0	?	++	If revoked the NPPF still 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 Government's June 2011 Natural Environment White Paper, The Natural Choice, sets out broad proposals to support the development of green infrastructure, including the establishment of a national green infrastructure Partnership and Local Nature Partnerships. Non-statutory green-infrastructure strategies exist in the region and once established Local Nature Partnerships can be expected to play a key role in supporting their implementation. In the long term it is considered that the same significant positive effects will result.
ENV8 Biodiversity	**Retention**	++	++	++	This policy seeks to safeguard and enhance the region's biodiversity and geology, ensuring that the natural environment functions as an integrated network of connected corridors and buffer zones (complementing policy YH8 on green infrastructure) and reversing biodiversity and habitat decline. Retention will deliver strong biodiversity and landscape benefits (through expansion of wildlife habitats and increasing the range of species) which will indirectly have significant benefits on soils. Part B of the policy specifically relates to protecting geological and geomorphological features and processes.
	Revocation	+	+	++	If this policy is revoked local planning authorities will still need to have regard to the strong policy on biodiversity and related matters at paragraphs 109 –

Regional Plan Policy		Score			Commentary
	Alternative	Short Term	Medium Term	Long Term	
					119 of the NPPF. Moreover relevant European Directives will apply where relevant, as will domestic legislation in regard to geological Sites of Special Scientific Interest. The NPPF also includes a concise but strong policy that requires local authorities to plan positively for the creation, protection, enhancement and management of networks of green infrastructure. Non-statutory green-infrastructure strategies exist in the region and once established Local Nature Partnerships can be expected to play a key role in supporting their implementation. Therefore in the long term it is considered that the same significant positive effects will result.

4.7.1 Effects of Retention

The effects of retention of the regional strategy have been assessed on the assumption that, in the absence of the legislation and regional architecture enabling updating of the regional strategy, although the general principles of development will remain some policies will become increasing outdated and in some cases in conflict with the national policies in the Framework. 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 and through directing development towards previously developed land.

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. The Yorkshire and Humber Plan sets out the need for an annual average of 22,260 additional homes to be provided in the Region between 2008 and 2026. However, in Yorkshire and Humber a partial review of the regional strategy had already commenced following adoption on the basis that higher rates of house building may be necessary over the long term to meet the needs of the population. Therefore, development is likely to be of a similar level whether or not the regional strategy is retained or revoked. Economic growth, housing demand and development will continue with the extent of Greenbelt being reconsidered to meet identifiable development needs. This is particularly the case for the Leeds City Region and West Yorkshire where the proposed level of growth and increase accommodation may only be met by utilising greenfield sites.

4.7.2 Effects of Revocation

Ecological legislation will help protect internationally and nationally designated geodiversity sites from pressures associated with development. Furthermore paragraph 113 of the NPPF states: *local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks.* Therefore internationally to locally designated geodiversity sites will remain protected following revocation.

In respect of protecting and enhancing undesignated geodiversity assets in the region there are already many highly effective local partnerships with a focus on different aspects of the natural environment, as discussed in the biodiversity chapter. Local Nature Partnerships will enable local authorities motivated by the "duty to cooperate" to work with a range of partners including land managers, businesses and conservation organisations to identify opportunities to protect and improving soils at local level. It will also be necessary to achieve legally binding targets for contaminated land, air and water quality and these will remain significant contributory factors in improving the quality of soils in the region. Therefore in the long term it is considered that the same significant positive effects in relation to soils will result.

Despite these safeguards, it is far from certain that the overall effect of revocation on soils would be in the short to medium term as local plans may not provide as strong a policy direction. It is also unclear whether existing and future land allocations will affect areas of geodiversity value particularly if increased housing delivery over and above the current allocation is required.

The main adverse impacts on soil are a result of land use development, effects on land use will depend on the resulting scale, nature and location of housing development across the region over the plan period and beyond, linked to growth in local employment, transport and services. The short, medium and long term impacts of the revocation of Policy H1 *Provision and distribution housing* are difficult to quantify as regional housing targets will be lost. However, it is considered that revocation will increase the number of additional homes delivered up to about 30,000 per annum to 2026 (see Population section) and thus the magnitude of the environmental impact. There is likely to remain a need for greenfield development particularly in relation to the West Yorkshire Green Belt, the amount of land required may increase to address local need. Revocation could in theory have a cumulative effect on geology and soils if it lessened existing levels of protection. However, revocation is not considered to affect the policy intent as it will be delivered by other policy and legislation. Statutory duties on environmental protection and policies in the NPPF should provide environmental protection in relation to development.

Policies in the NPPF seek to protect best and most versatile land (i.e. ALC Grades 1-3a) and also seek to direct development towards previously developed land. However, it is probable in some areas that there will be less development on brownfield land and more on greenfield sites than would have occurred with the regional strategy in place.

4.7.3 Effects of Partial-Revocation

The significant positive effects of partial-revocation on soils are similar to retention/revocation.

4.7.4 Revoking all the Quantified and Spatially Specific Policies

Revocation of the quantified and sub-area policies could increase the number of additional homes delivered up to about 30,000 per annum to 2026 (see Population section) and thus the magnitude of the environmental impact. There is likely to remain a need for greenfield development particularly in relation to the West Yorkshire Green Belt, the amount of land required may increase to address local need.

RSS policies along with statutory duties on environmental protection and policies in the NPPF should provide environmental protection in relation to development.

4.7.5 Revoking all Non Quantitative and Spatially Specific Policies

Internationally to locally designated geodiversity sites will remain protected following revocation of the non-quantitative and sub-area policies. It will also be necessary to achieve legally binding targets for contaminated land, air and water quality and these will remain significant contributory factors in improving the quality of soils in the region. However, as with revocation of the whole plan, in the short to medium term, local plans may not provide as strong a policy direction given that only 8 of 23 local authorities have adopted core strategies.

4.7.6 Retention of Policies, the Revocation of which may lead to likely Significant Negative Environmental Effects

There are no significant negative effects predicted in respect of this topic.

4.8 Mitigation Measures

No mitigation measures are proposed however it is recognised that local authorities will need to cooperate

with their Local Nature Partnerships and neighbouring local authorities in line with the “duty of co-operate” to ensure benefits are delivered in the long term.

Policy E8 was supported by an opportunity map which directed delivery to key areas. Much of the biodiversity opportunity mapping within the Regional Strategy is still valid and local authorities will be able to continue to draw on available information, including data from partners, to address cross boundary issues, such as the provision of green infrastructure. Paragraph 218 of the NPPF advises that LPAs can continue to draw on evidence that informed the preparation of regional strategies to support Local Plan policies. The NPPF also provides guidance on how where appropriate local authorities can reflect in their Local Plans regional strategy policies.

4.9 Proposals for Monitoring

Significant and uncertain effects in respect of geology and soils relate to:

- SSSI favourable condition status (geological sites)
- Agricultural land classification
- Greenbelt releases
- % of development on previously developed land
- Green infrastructure provision and accessibility

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) (Directive 2000/60/EEC) 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 WFD 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 WFD) 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 Yorkshire and Humber region

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. Yorkshire Water produced a Draft Drought Plan in January 2012, with a Water Resource Management Plan produced in 2009. Waste Water Services and Water Services in the extreme south of the region are supplied by Severn Trent Water and Anglian Water, with areas in the extreme north of the region supplied by Northumbrian Water.

Figure 5.1 Map of UK Water and Sewerage Services[116]

The EA have produced a River Basin Management Plan for the Humber River Basin District, which focuses on the protection, improvement and sustainable use of the water environment based on the WFD. The plan describes the river basin district, and the pressures that the water environment faces. It shows what this means for the current state of the water environment, and what actions will be taken to address the pressures. It sets out what improvements are possible by 2015 and how the actions will make a difference to the local environment – the catchments, the estuaries and coasts, and the groundwater.

The Environment Agency is developing **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 fitting in with the requirements of the WFD.

[116] (http://www.water.org.uk/home/resources-and-links/links/water-operators/sewerage-operators)

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. CFMPs produced by the EA help to understand the scale and extent of current and future flooding with the aim of promoting sustainable approaches to managing flood risk. CFMPs that are enclosed within or cover part of the Yorkshire and Humber Region include:

- Esk and Coastal Streams Catchment Flood Management Plan Summary Report December 2010
- Don Catchment Flood Management Plan Summary Report 2010
- Calder Catchment Flood Management Plan Summary Report December 2010
- Aire Catchment Flood Management Plan Summary Report December 2010
- Hull and Coastal Streams Catchment Flood Management Plan Summary Report December 2010
- Ouse Catchment Flood Management Plan Summary Report December 2010
- Derwent catchment flood management plan summary report December 2010

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 Yorkshire and Humber region are the: Flamborough Head to Gibraltar Point SMP and Tyne to Flamborough Head SMP.

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.[117]

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 WFD objectives because of diffuse pollution.

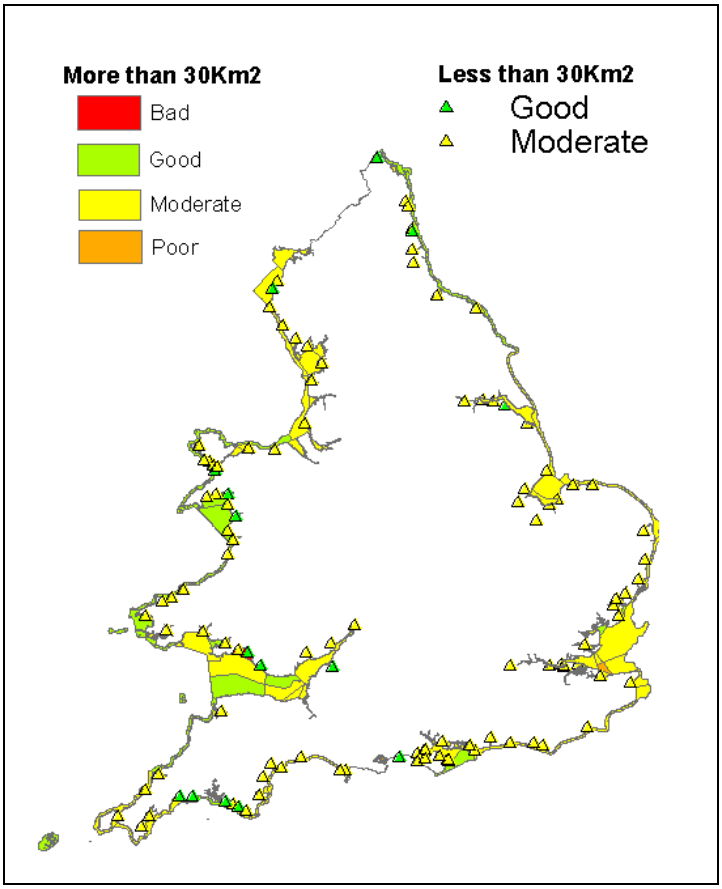
As the majority of data regarding water resources and quality is collected by the Environment Agency (covering both England and Wales), Scottish Environment Protection Agency and Northern Ireland's Department of Ireland, there is little available data on a UK level and therefore for this chapter the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

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

Figure 5.2 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[118] 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.

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

The consumption of water abstracted from non-tidal surface and groundwater in England and Wales has fallen from an estimated 41.2 thousand megalitres/day in 2000 to 33.6 thousand megalitres/day in 2009..

5.3.2 Yorkshire and Humber region

Water supply

In Yorkshire and Humber, domestic water consumption is about 150 litres per person per day, but the total water footprint is about 4,600 litres per person per day. The water footprint measures all water used by us, including that used indirectly both in the UK and overseas to make the industrial and agricultural products we consume. Downstream of Elvington lock the River Derwent was formerly tidal until the construction of the Barmby Barrage in 1975. The Barmby Barrage impounds the natural flow of the Derwent so that its water can be abstracted by Yorkshire Water for public water supply.

River System

There are 4,000 kilometres of rivers in the region and the Humber catchment is the largest in England (including the catchment of the rivers Ouse, Aire, Calder and Don). The Humber River Basin District is one of the most diverse regions in England, ranging from the upland areas of the Peak District, South Pennines and the North York Moors, across the Derbyshire and Yorkshire Dales and the fertile river valleys of the Trent and Ouse, to the free-draining chalk of the Wolds, with the River Esk being the main salmon and sea trout river in Yorkshire, with 237km of river protected under the European Freshwater Fish Directive.

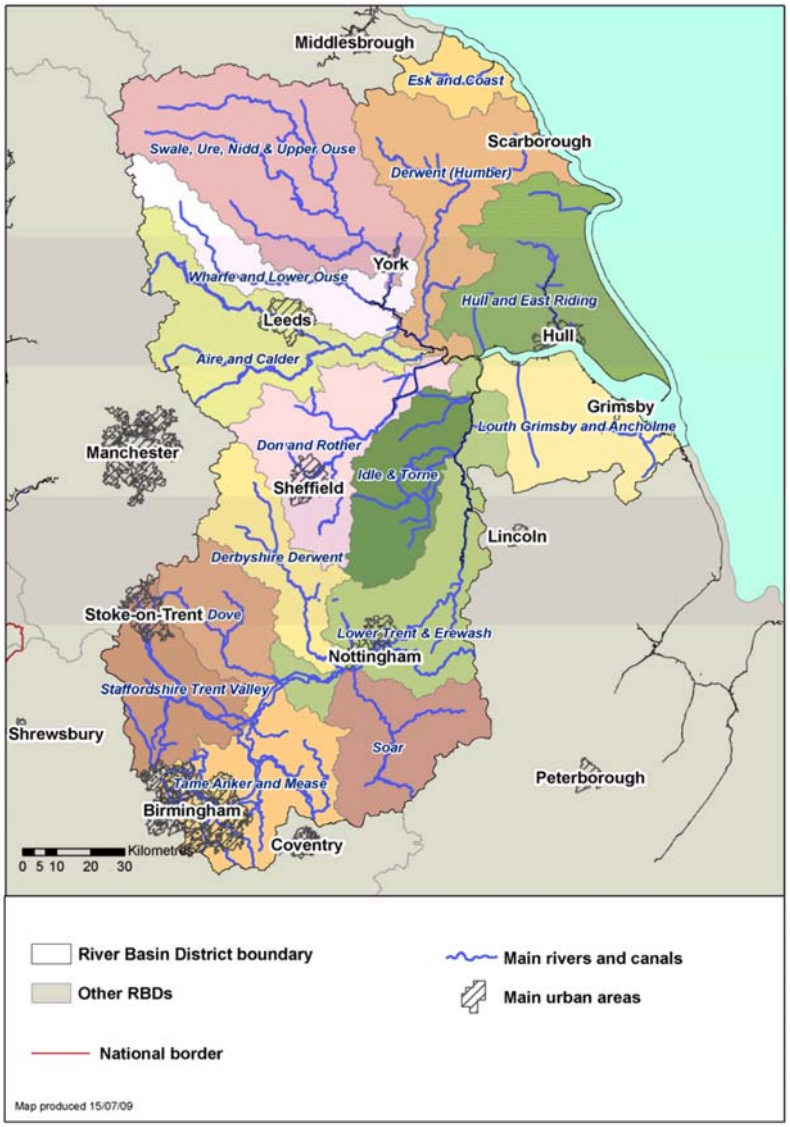
Water quality in the rivers of the region has improved significantly in the last 20 years as a result of better treatment of sewage and industrial waste water. The table below shows the comparison of biological quality for the percentage of river length. Over the period 1995 to 2008 about 15 per cent of the length of region rivers improved markedly in terms of biological quality. Much of the improvement was in the industrial and urban catchments of the Aire, Calder and Don.

Table 5.1 River biological quality in the Region (EA, 2009, State of the Environment, Yorkshire and Humber)

	Good	Fair	Poor	Bad
1995	55.4%	28%	12.4%	4.2%
2009	62.5%	28.8%	8.2%	0.5%

However, an assessment under the Humber River Basin District River Basin Management Plan 2009 stated that only 18% of surface waters were classified as good or better ecological status/potential.

Figure 5.3 River Catchments in Humber River Basin District

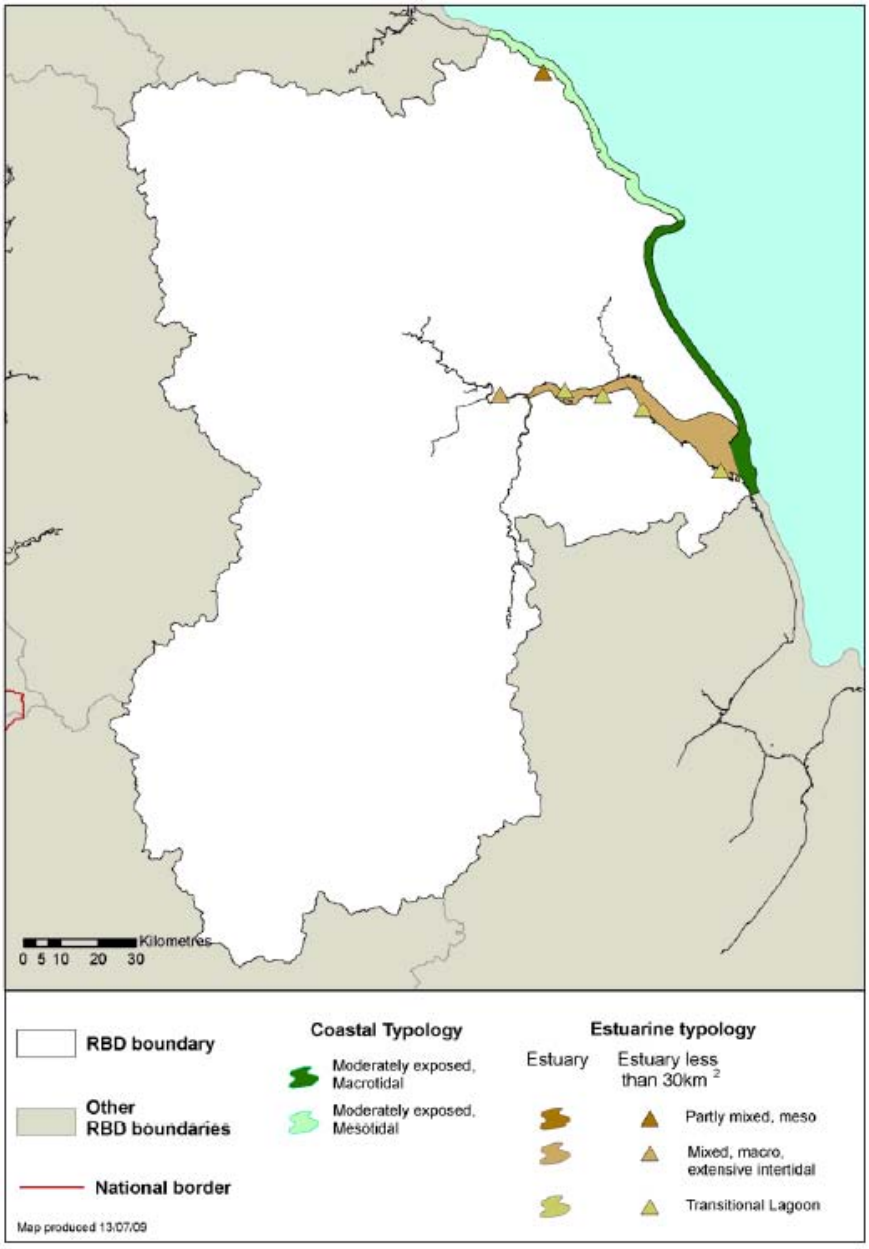


Environment Agency River Basin Management Plan, Humber River Basin District, December 2009.

Estuaries and Coastal Water Bodies

The Yorkshire and Humber region has the North Sea along its eastern margin running from Whitby in the north down to the Humber estuary in the south of the region. The River Humber is a major tidally-influenced estuary along the regions eastern reaches.

Figure 5.4 Estuarine and coastal water body types in Humber river basin district



Environment Agency River Basin Management Plan, Humber River Basin District, December 2009.

The northern section of the Region's coast, from Bridlington Bay to the regional boundary is characterised by headlands, cliffs and bays backing inland to upland areas, moors and valleys, with the North York Moors National Park north of Scarborough including a Heritage Coast., North of Bridlington is Flamborough Head with a range of designations including Heritage Coast, SPA, SAC, SSSI and European Marine Site. Between Scarborough and Flamborough the coast embodies many of the values of the adjoining Heritage Coast areas. South of Bridlington the coast is characterised by fast eroding low clay cliffs. Spurn Head at the mouth of the Humber Estuary and the landward estuary mud flats have a number of national and international designations.

The region's coast includes a number of internationally important biodiversity sites: Beast Cliff to Whitby SAC, Flamborough Head and Bempton Cliffs SPA, Flamborough Head SAC, Hornsea Mere and parts of the Humber Estuary SPA, pSPA and Ramsar site.

Bathing water quality has improved significantly. In 1990, six bathing waters failed the mandatory health standards required by the EU Bathing Waters Directive. In 2009, 21 bathing waters were monitored and there were no failures. This is as a result of better sewage treatment, including disinfection of treated sewage discharges to reduce bacterial levels.

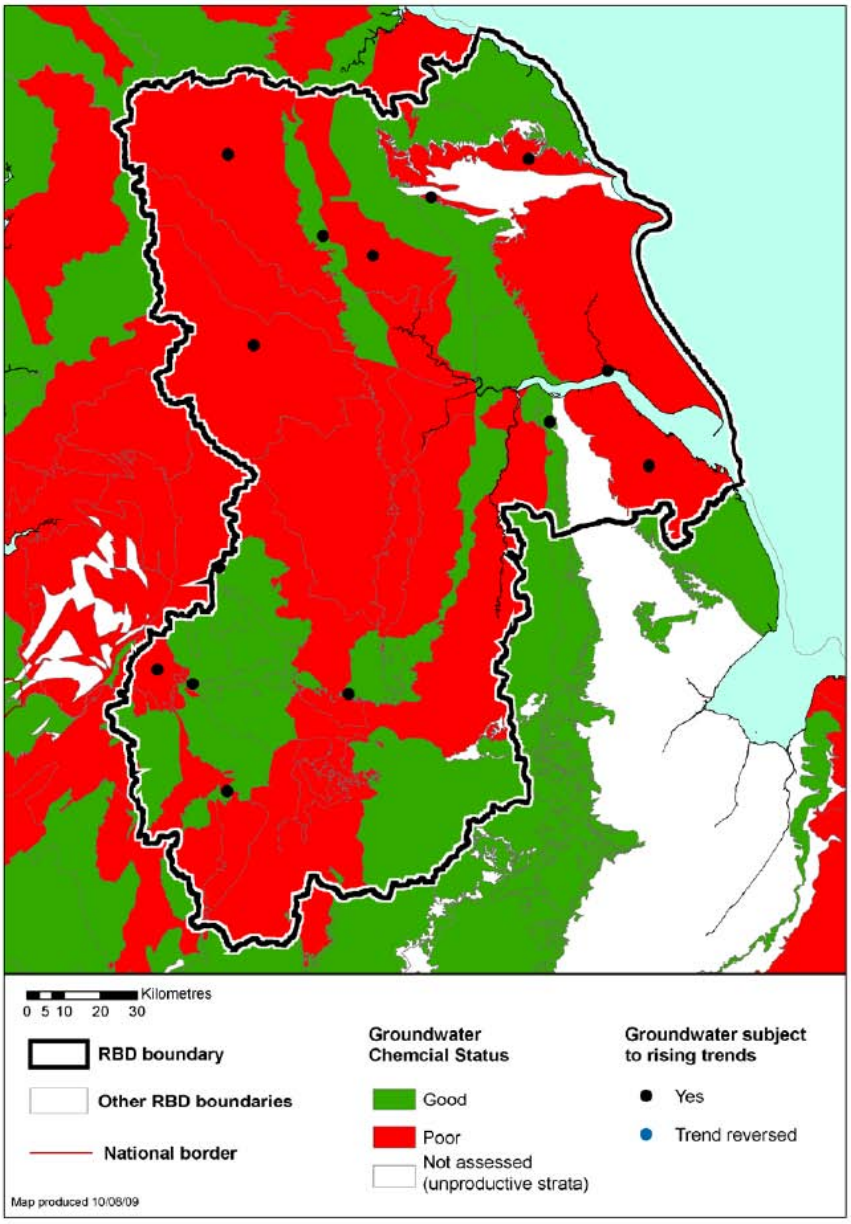
Flood risk

Some 15% of the land area lies in flood plains and the National Flood Risk Assessment in 2008 found that 400,000 people live in areas at significant or moderate risk of flooding. The tidal surge on the east coast of England in November 2007 caused widespread inundation of freshwater habitat by salt water, and not all such areas will return to their former freshwater state.

Groundwater

The Humber RBD River Basin Management Plan of 2009 found that 60% of the groundwater bodies were of a good or better quantitative status, with 54% at a good chemical status.

Figure 5.5 Chemical Status and trends for groundwater



Environment Agency River Basin Management Plan, Humber River Basin District (RBD), December 2009.

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 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.[119]

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 WFD) have designated a number of freshwater (surface and groundwater), transitional (estuaries) and coastal water bodies in England as failing to meet "*Good Ecological Status*" (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 Yorkshire and Humber region

Water Quality

The **EU Water Framework Directive (WFD)** requires higher environmental quality standards to be achieved in rivers, estuaries, coastal waters and groundwater. River Basin Management Plans are being developed with actions to resolve existing issues and achieve these higher standards by 2027. The Humber RBD River Basin Management Plan of 2009 found that 18 per cent of surface waters meet good status or better with 82 per cent not meeting good status (918 water bodies). 60 per cent of groundwater bodies were

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

at good quantitative status with the rest being poor status.

The relative number of artificial and heavily modified waters (and their classification) influences the statistics for both good ecological status or potential and biological status. 13 per cent of the 607 artificial and heavily modified water bodies in the Humber River Basin District were classified as at good ecological potential in the 2009 Humber RBD River Basin Management Plan. This is compared to 23 per cent of the 508 natural surface water bodies having good or better ecological status. This higher percentage of poor and bad water bodies reflects the fact that even where all mitigation measures are in place to allow an artificial/heavily modified water body to be classified as good, the use of the water body may mean that biology is still impacted.

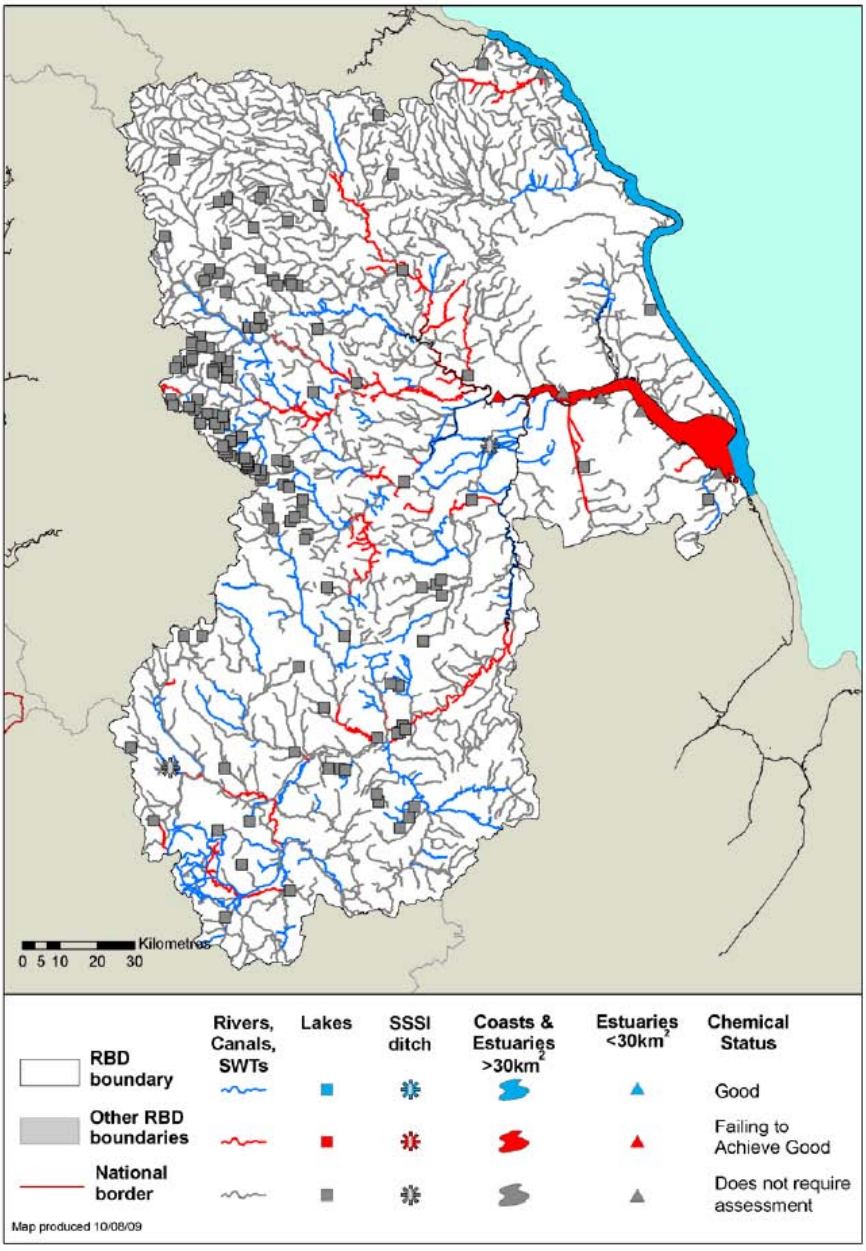
The reasons for surface waters failing to meet 'good' ecological status include point source discharges from water industry sewage works, diffuse source pollution from agriculture, abstraction, mine waters and physical modifications.

For rivers, which comprise the majority of water bodies in the Humber river basin district, the main elements indicating that the standards for good ecological status/potential are not being achieved are fish, invertebrates and phosphate. One of the legacies of the industrial past in the Humber RBD is the large number of weirs and other obstructions found in the rivers. Where barriers to such movement exist they can restrict the ability of fish populations to achieve their full potential and in turn can mean that water bodies can fail to achieve their ecological potential. As a result of the WFD, these barriers to fish movement have become a prime focus.

Another legacy from the industrial past is minewater, with active pumping and treatment still occuring at three pumping house locations, Carr House, Woolley and Hope Shaft, in the Don and Rother CAMS area. Carr House (Rotherham) discharges minewater into the River Don, Woolley (Barnsley) pumps into the River Dearne and Hope Shaft (Caphouse Mining Museum) protects the on-site mining museum. Gravitational surface outflows also exist in the area and are caused by minewaters gradually filling voids and flowing out through surface cracks and fissures. Flows may not be large but are likely to continue into the future, with a risk of new surface outflows as available void space fill and pumping is reduced leading to an overall rise in minewater levels.

The main reasons for poor status of groundwater quality according to the Humber RBD River Basin Management Plan are high or rising nitrate concentrations with failures for pesticides and chemicals associated with mine working. Nitrate concentrations at many groundwater monitoring points are already higher than average or are increasing to levels which make them unsuitable for use as drinking water if not treated. This is due to the use of large amounts of nitrate fertiliser in agriculture over many years. Groundwater quality in a small part of the East Yorkshire Chalk around Hull is also at risk from saline intrusion.

Figure 5.6 Chemical Status for rivers, lakes, estuarine and coastal waters



Environment Agency River Basin Management Plan, Humber River Basin District, December 2009.

Esk and Coast Catchment

Diffuse pollution from agriculture and natural mineralisation are key reasons for failures in the Esk and Coast catchment within the Humber River Basin.

Swale, Ure, Nidd and Upper Ouse Catchment

Point source discharges from industry sewage works, water industry storm discharges and diffuse pollution from agriculture are listed as the key reasons for failures to meet good or better ecological or biological status. Physical modification and flood protection, urbanisation and water storage and supply have also played a key role in defining the status of surface water bodies in the catchment.

Yorkshire Derwent Catchment

The key reasons listed for waterbodies in the catchment failing to meet good or better ecological status/potential or biological status are: physical modification for flood protection and land drainage and point source discharges for water industry sewage works and trade.

Wharfe and Ouse Catchment

Diffuse pollution from agriculture and point source discharges from water industry sewage works were reasons for failures for waterbodies to meet good status. Groundwater quality risks were present from nitrate and pesticide use in agriculture and horticulture.

Hull and East Riding Catchment

The catchment is dominated by networks of man-made drains and pumped ditches as well as the Hull Tidal Surge Barrier which protects the city of Hull. There are several streams on the Yorkshire Wolds that only flow when groundwater levels are high, including Gypsey Race which flows into the sea at Bridlington. The River Hull and Gypsey Race are the most northerly chalk streams in Britain with the Hard Cretaceous chalk forming the prominent ridge of the Yorkshire Wolds. As of the 2009 River Basin Management Plan there were 68 river water bodies and one lake in the catchment. 49 were artificial or heavily modified. Diffuse pollution from agriculture is the key reason for failures in the catchment. Point source discharges from the water industry sewage works and storm discharges, along with physical modifications for land drainage also play a key role in determining the status of rivers and lakes in this catchment. Groundwater quality in a small part of the East Yorkshire Chalk around Hull is at risk from saline intrusion.

Don and Rother Catchment

As of the 2009 River Basin Management Plan there were 78 river water bodies and 18 lakes in the catchment. 78 were artificial or heavily modified. Point source discharges from water industry sewage works and storm discharges are key reasons for failures in the catchment with diffuse pollution from agriculture

and physical modification due to urbanisation and water storage and supply also playing a key role in determining the status.

Active pumping and treatment of minewater still occurs at three pumping house locations (Carr House, Woolley and Hope Shaft) in the Don and Rother CAMS area. Carr House (Rotherham) discharges minewater into the River Don and prevents water from Silverwood and adjoining mines migrating eastwards and flooding the Rossington and Maltby Mines. Woolley (Barnsley) pumps into the River Dearne and prevents flooding of Caphouse Mining Museum and polluting discharges to the River Calder. Hope Shaft (Caphouse Mining Museum) protects the on-site mining museum. Approximately 20 gravitational surface outflows in the Don and Rother CAMS area are caused by minewaters gradually filling voids and flowing out through surface cracks and fissures. Consented outflows can be found at Blacks, Cresswell, Harlington, Oxcroft and Williamthorpe mines on the River Rother; Silkstone mine on the River Dearne and at Fender Colliery on Barlow Brook. Flows may not be large but may continue into the future, with a risk of new surface outflows as available void space fill and pumping is reduced leading to an overall rise in minewater levels.

Aire and Calder

The Aire and Calder CAMS area includes the surface water catchments of the River Aire, River Calder, River Worth and the River Colne. There is an extensive canal network in the Aire and Calder catchment including the Leeds Liverpool Canal and the Aire and Calder Navigation. As of the 2009 River Basin Management Plan there were 79 river water bodies and 50 lakes in the catchment. 111 were artificial or heavily modified. Discharges from water industry storm systems and sewage works were cited as key reasons for failures in the catchment. Physical modifications due to water storage and supply, flood protection and urbanisation, along with diffuse pollution from agriculture and acidification also play a key role in determining the status of rivers and lakes in this catchment.

Idle and Torne

As of the 2009 River Basin Management Plan there were 38 river water bodies and six lakes in the catchment. 19 were artificial or heavily modified. Point source discharges from water industry sewage work are key reasons for failures in the catchment, with physical modification due to land drainage, flood protection and recreation, along with abstraction also playing a key role in determining the status.

Louth, Grimsby and Ancholme

The principal aquifers in this catchment are the Lincolnshire Limestone and the Lincolnshire Chalk. These are regionally important in terms of public water supply, industry and agriculture. Abstraction for public water supply accounted for 75% of total licensed quantity in this area in 2009.

As of the 2009 River Basin Management Plan there were 42 river water bodies and two lakes in the catchment. 26 were artificial or heavily modified. Diffuse pollution from agriculture is the key reason for failures in the catchment with point source discharges from water industry sewage works and physical modifications for flood protection and land drainage also playing a key role in determining the status

Lower Trent and Erewash

The Lower Trent and Erewash catchment covers an area of 2,045km^2, extending from the River Dove confluence with the River Trent, south west of the city of Derby, to the Humber Estuary. The catchment covers part of the county of Nottinghamshire together with areas of Derbyshire, Leicestershire, Lincolnshire and South Yorkshire. Only the Northern section of this catchment where is joins the Humber Estuary is within the Yorkshire and Humber Region.

As of the 2009 River Basin Management Plan there were 76 river water bodies and nine lakes in the catchment. 30 were artificial or heavily modified. Diffuse pollution from agriculture and point source discharges from water industry sewage works are key reasons for failures in the catchment with physical modifications for flood protection and abstractions also playing a key role in determining the status.

Water resources

The primary reason for poor quantitative status is that abstraction levels – mainly for drinking water – exceed the rate at which aquifers recharge. The RBD River Basin Management Plan identifies a range of actions to prevent deterioration and improve groundwater elements, as well as investigations to improve the confidence in groundwater classification. For Groundwater Resource Management Unit (GRMU) and Water Resource Management Unit (WRMU) that are over licensed, licenses not in use will be revoked with an aim to reach no water available status.

Water resource availability status is categorised as the following:

- Water available - Water is likely to be available at all flows including low flows. Restrictions may apply.
- No water available - No water is available for further licensing at low flows. Water may be available at higher flows with appropriate restrictions.
- Over-licensed - Current actual abstraction is such that no water is available at low flows. If existing licences were used to their full allocation they could cause unacceptable environmental damage at low flows. Water may be available at high flows, with appropriate restrictions.
- Over-abstracted - Existing abstraction is causing unacceptable damage to the environment at low flows. Water may still be available at high flows, with appropriate restrictions.

Swale, Ure, Nidd and Upper Ouse Catchment

The two major aquifers in this catchment are the Sherwood Sandstone and Magnesian Limestone, which have groundwater quality risks relating to urban and rural inputs from use of nitrates and pesticides in agriculture and horticulture. The Sherwood Sandstone aquifer is heavily used for drinking water supplies with the EA preventing further abstractions where the environment is at risk of deterioration. The minor aquifers are dominated by carboniferous Limestone and Millstone Grit. The drift deposits over the Magnesian Limestone in the River Ure and Nidd are generally <3m and as such the groundwater and surface water are hydraulically connected, with the groundwater a valuable source of baseflow, especially in summer. Water availability in the WRMUs within the CAMS are as follows:

- Naburn: No water available
- River Foss: No water available
- Skelton: No water available
- River Kyle: No water available
- River Nidd: No water available
- Hunsingore: No water available
- River Crimple: No water available
- Birstwith: No water available
- River Ure: No water available
- Westwick: No water available
- Kilgram: No water available
- River Swale: No water available
- Bat Bridge: No water available
- Crakehill: No water available
- Cod Beck: No water available
- River Wiske: No water available
- Bedale Beck: No water available

- Morton-on-Swale: No water available
- Ure Magnesian Limestone: No Water available
- Nidd Magnesian Limestone : No Water available
- Swale Magnesian Limestone: Water available
- Upper Ouse Sherwood Sandstone: Water available
- Swale Sherwood Sandstone: Water available

Yorkshire Derwent Catchment

This catchment has three major aquifers, the Sherwood Sandstone, the Chalk and the Corallian Limestone, the later of which gains significant amounts of water from the Tiver Rye and River Derwent, providing all of Scarborough's public water supply. The Sherwood Sandstone is used heavily for drinking water supplies with the EA preventing and futher abstractions where the environment is at risk of deterioration. According to the Derwent CAMS (2006) the dominant abstraction use was for public water supply. Two major public water supply abstractions at Loftsome Bridge and Elvington serve Leeds, Wakefield, Sheffield and Hull as well as smaller towns within the area. A smaller proportion of water is abstracted for spray irrigation, fish farming, industrial and commercial, and domestic and agricultural use. Water availability in the WRMU within the Derwent CAMS are as follows:

- East Cottingwith WRMU: Water available
- Sutton upon Derwent WRMU: Water available
- Buttercrambe and Kirkham Bridge WRMU: No water available
- Low Marishes: Water available
- River Hertford: Water available
- West Ayton: Over licensed and over abstracted
- Howe Bridge: No water available
- Ness: No water available

Wharfe and Ouse Catchment

The greatest use of water in this catchment is for fish farming, public water supply and industrial and commercial activities. Recreation and leisure activities take place on the rivers although navigation is limited

along much of the River Wharfe. The two major aquifers in the catchment are the Sherwood Sandstone and Magnesian Limestone. The Sherwood Sandstone aquifer is used heavily for drinking water and in the 2009 River Basin Management Plan was identified as being over-licensed in the area.

Water availability in the WRMU within the Wharfe and Ouse CAMS are as follows:

- Tadcaster: No Water available
- River Wharfe: No Water available
- River Washburn: No Water available
- Addinghma: Over licensed
- River Dibb: No Water available
- Cock Beck: Water available
- Magnesian Limestone (Groundwater): Water available

Hull and East Riding Catchment

The catchment is dominated by networks of man-made drains and pumped ditches as well as the Hull Tidal Surge Barrier which protects the city of Hull. The River Hull and Gypsey Race are the most northerly chalk streams in Britain with the Hard Cretaceous chalk forming the prominent ridge of the Yorkshire Wolds. The chalk is a major aquifer of national importance and is used extensively for public water supply, industry, agriculture and private water supply. The chalk groundwater also provides much of the baseflow of the River Hull and its headwaters. Water availability in the WRMUs within the CAMS are as follows:

- Kelk Beck: No water available
- Upper West Beck: No water available
- Upper Hull: No water available
- Driffield Canal: No water available
- Upper Mires Beck: Over-licensed
- Lower Mires Beck: No water available
- River Foulness: Water available
- Back Delfin: Water available

- Market Weighton Canal: Water available
- North: No water available
- South: No water available
- West: Over-licensed
- East: Over-licensed

Aire and Calder

The catchment typically has 990 mm of rain each year. This varies from a maximum of over 1500 mm in the high Pennines to around 600 mm close to the confluence of the Aire with the tidal Ouse. Almost all of the CAMS area is underlain either by minor or major aquifer. Water availability in the WRMUs within the Aire and Calder CAMS are as follows:

- Upper Aire: Water available
- River Worth: No water available
- Upper Mid Aire: Water available
- Lower Mid Aire: Water available
- Upper Mid Calder: Water available
- River Colne: Over-licensed
- Lower Aire and Lower Calder: Water available
- Sherwood Sandstone (Groundwater Management Unit GWMU): No water available

Don and Rother Catchment

The River Don is the main river in the catchment with the upper reaches extensively impounded to create a reservoir system used for public water supply. There is an extensive public water supply and distribution system in the Don and Rother CAMS area with water abstracted from reservoirs in the west for public water supply. Rainfall quantities vary greatly across the catchment with the average annual rainfall in the Pennines being 1580mm and in Doncaster being 580mm. The western edge of the Don and Rother CAMS area is underlain by the Millstone Grit formation while further east lies the shallow Coal Measure deposits of the Yorkshire Coalfield. Both the Millstone Grit and Coal Measures are classified as minor aquifers. A ridge of Permian Magnesian Limestone runs north-south through the region. Although classified as a major aquifer,

yields are variable. Groundwater baseflow from the Magnesian Limestone aquifer provides an important contribution to surface water flows in the River Went with the Sherwood Sandstone aquifer, which forms the low-lying floodplain between Doncaster and Goole, to the east. The Sherwood Sandstone and Magnesian Limestone are extensively used for industrial, agricultural, public and private potable water supply. The greatest use of abstracted water within the Don and Rother CAMS area is for industry (excluding public water supply abstraction), with the majority along the River Don and river Rother. Agricultural abstraction in concentrated on the River Went catchment.

Water availability in the WRMUs within the Don and Rother CAMS are as follows:

- River Sheaf WRMU: Water available
- Upper Don WRMU: Water available
- Upper Rother WRMU: Water available
- Lower Rother WRMU: Water available
- Upper Dearne WRMU: Water available
- Lower Dearne WRMU: Water available
- Middle Don WRMU: Water available
- Upper Went WRMU: Over-licensed
- Lower Went WRMU: Water available
- Coal Measures GWMU: Water available
- Millstone Grit GWMU: Water available
- Magnesian Limestone 1 GWMU: Water available
- Magnesian Limestone 2 GWMU: Water available
- Magnesian Limestone 3 GWMU: Water available

Esk and Coast

There are no major aquifers in the catchment, with the 2007 CAMS stating that there were ten abstraction licenses which authorise a total abstraction volume of 7,781,037 cubic metres a year, with the main reason for abstraction being public water supply. Water discharges in to rivers within the catchment are predominantly from waste water treatment works. Water availability in the WRMUs within the CAMS are as

follows:

- Lower Esk: No water available
- Murk Esk: No water available
- Upper Esk: No water available
- Staithes: Water available

Idle and Torne

Water availability in the WRMUs within the CAMS are as follows:

- River Meden: No Water available
- River Poulter: No Water available
- Oldcotes Dyke: No Water available
- River Idle: Over abstracted
- River Torne: Over abstracted

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[120]. 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-

[120] Defra, Sustainable Development Indicators, 2009, http://www.defra.gov.uk/sustainable/government/progress/documents/SDIYP2009_a9.pdf

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[121]. 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[122]. 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 is improved to meet the increased standards.[123]

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.[124]

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;

[121] Natural England. http://www.naturalengland.org.uk/ourwork/marine/protectandmanage/mpa/mcz/default.aspx

[122] Defra, Environmental Statistics – Key Facts Dec 2011

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

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

- 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.[125]

Environment Agency aims to enhance water supply by up to 1,100Ml/d above present levels by the improvement of existing schemes and the development of some new resources. [126.]

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%[127].

5.5.2 Yorkshire and Humber region

The SEA Directive requires a consideration of the evolution of the baseline without the proposed plan or programme being in place. Slightly confusingly in this assessment, this actually refers to the plan to revoke the regional strategy. So the evolution of the baseline without the plan will mean, in this instance, the evolution of the baseline with the regional strategy retained. Therefore, the assessment has used the findings of the 2008 Sustainability Appraisal of the Yorkshire and Humber plan to provide an informed understanding of likely future evolution of the water baseline. Any changes to the baseline that have occurred since 2008 have also been taken into account where information availability allowed.

In Yorkshire and Humber there is sufficient water to meet needs and protect the environment, but water resources are under pressure as a result of population growth and climate change. Supply of water to existing developments along with forecasted growth will be a key issue. The population of the region is expected to increase by 20 per cent by 2030, and climate change could result in summer rainfall reducing

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

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

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

by up to 37 per cent by 2050. Water resources will have to be managed carefully in order to avoid shortages of water in the summer months and damage to river and wetland ecology as a result of low flows in rivers.

The target under the WFD is for all water bodies achieving good status by 2015, or where this is not possible and subject to criteria set out in the Directive, aim to achieve good status by 2021 or 2027. However the pressures on the water environment will change during this period, partly due climate change, but also due to the population in the river basin district continuing to increase, with further urbanisation. Agriculture will respond to climate change as well as market conditions, financial incentives and regulatory pressures. Solutions to address the pressures will improve with advances in technology, but the rate of application will depend on the economic climate. To make significant improvements will require great changes in land use and water infrastructure, such as a major programme to separate foul and surface water sewers across most of the river basin district. Changes on this scale are unlikely to be economically or socially acceptable. For some waters therefore, achieving good status by 2027 could be not technically feasible or disproportionately costly.

Table 5.2 Qualitative assessment of increased risk from climate change by 2050 and beyond

Pressure	Increased risk
Abstraction and other artificial flows	Very high
Nutrients (nitrogen and phosphate)	High
Sediment	High
Physical modification	Medium
Biological (invasive non-native species)	Medium
Microbiology (including organisms indicating presence of faeces)	Medium
Organic pollution (sanitary determinands)	Medium
Salinity	Medium
Biological (fisheries management)	Low/Medium
Acidification	Low: freshwater Medium/High: marine waters
Priority substances, priority substances and specific pollutants (including pesticides)	Low
Temperature of point source discharges	Low

Environment Agency River Basin Management Plan, Humber River Basin District, December 2009.

Under the Humber River Basin Management Plan targets for 2015 include an improvement in 14% of surface waters (152 water bodies) for one or more of the elements measured. This will require investment in the water industry to address high nutrient levels in sewage effluent to reduce phosphate in some surface water bodies and improve dissolved oxygen levels. Groundwater status was identified in the plan as not deteriorating by 2015, with improvements taking place over longer timescales.

CFMPs show predicted climate change is a primary driver for future flood risk. CFMPs show some catchments within the Yorkshire and Humber region sensitive to land management change with future scenarios explored in the Ouse CFMP showing up to 10 per cent decrease with slowing runoff by large scale changes to agricultural practices. If followed this could also reduce sediment runoff to help deliver WFD objectives. Other catchments show sensitivity to climate change with increased intensity of rainfall predicated in the CFMPs increasing the occurrence of surface water and sewer flooding decreasing water quality.

The Strategy for water resources is to move WRMU that have available water to no water available by allowing new licenses to be granted without constraints until the flow in the river reaches Q95 which is the nationally recognised measure of low flow for 95% of the time. Once this is reached applications for abstraction licenses without constraints that do not return the majority of the water locally are unlikely to be acceptable. Groundwater licenses may also be tied to hands-off level conditions when the WRMU reaches no water available to protect surface water flows. For WRMU at no water available status, new licenses will be time limited to a common end date of 31 March 2015. No new consumptive licenses permitted at times of low flow with water only available with HOF conditions during period of higher flow. For GRMU that are over licensed the target is to reach no water available status with the strategy in the CAMS to revoke licenses not used to reduce the risk of the unit becoming over-abstracted. Areas of the Sherwood in the vicinity of Selby have dropped below sea level. To prevent this occurring further north, where groundwater level is at sea level or higher some abstraction may be permitted however where the level is less than sea level then no water will be available for further abstraction.

5.6 Assessing significance

Table 5.3 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 5.3 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. Where a box is coloured but also contains a ? this indicates uncertainty over whether the effect could be a minor or significant effect although a professional judgement is expressed.

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

Table 5.4 summarises the significant effects identified in the detailed assessment of regional strategy policies against the water topic.

Table 5.4 Significant Effects against the Water Topic

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
YH2 Climate change and resource use	**Retention**	++	++	++	This policy sets a framework for local authorities to ensure that mitigating and adapting to the effects of climate change remains at the heart of local authority plan-making through its influence over transport, economic development, housing, energy, waste and infrastructure. In line with this policy Objective 5 of the RES promotes projects that reduce and mitigate greenhouse gas emissions as well as seeking for high quality design and environmental standards in all publically supported development. The policy would have significant positive effects on water through improvements in efficiency in water use, and adapting to climate change affects on flooding. Considering the effects of climate change on availability of water resources in planning will help promote a sustainable approach and build in resilience to supply, with greater storage within catchments in response to increased flood/drought events. Climate change adaptation measures in urban planning and development will improve water quality through the management of urban run-off and SUDs. Promoting redevelopment of previously developed land and increased development in cities and towns will reduce run-off from developing greenfield land. Effects will depend on implementation by and co-operation of local authorities collaborating together with the Environment Agency and water companies, informed by the water companies Water Resource Management Plan and EA River Basin Management Plan. Revocation of this policy would not remove the requirement for local authorities to be consistent with legal and national policy requirements. 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. Therefore, the same significant positive effects are considered to result.
	Revocation	++	++	++	
YH8 – Green Infrastructure	**Retention**	++	++	++	Green infrastructure includes strategic networks of accessible, multifunctional sites including river corridors and floodplains. This policy seeks to identify areas and networks of green infrastructure to enable improved accessibility to a healthy environment whilst protecting sites of international biodiversity value. Details of location and function are to be determined by local authorities with Part A requiring regionally important green infrastructure and gaps in the network to be identified at the regional level. Retention of this policy will have a significant effect on water quality by helping to achieve ecological and biological targets to reach good status in water bodies. It also works to deliver climate change benefits through mitigation of flood risk and provision for renewable energy infrastructure. The NPPF 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 Government's June 2011 White Paper, The Natural Choice, sets out broad proposals to support the development of green infrastructure, including the establishment of a national Green Infrastructure Partnership and Local Nature Partnerships. Local Nature Partnerships, once established, can be expected to play a positive role in

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
	Revocation	-	?	++	supporting improved networks of green infrastructure. Local authority involvement with the Environment Agency and Yorkshire Water will also be required under the Water Framework Directive to meet ecological and biological water quality targets. Revocation is therefore likely to have the same significant positive effect in the long term. Leeds and South Yorkshire already have non-statutory green infrastructure strategies in place which were given weight in the development of core strategies due to the RSS policy. However, not all areas currently have such strategies in place and it would be up to Local Nature Partnerships to develop them. This may mean that in the short to medium term important green infrastructure could be lost to development, particularly given only 8 out of 23 local authorities have an up to date core strategy in place. Land allocations in older Local Plan policies may not have adequately considered the green infrastructure concept or measures required under the Water Framework Directive to meet ecological and biological water quality targets.
SY1 South Yorkshire Sub Area Policy	**Retention**	++	++	++	This policy sets out the overarching direction for the South Yorkshire Sub-Region. Environmental protection is provided through reference to the need to avoid depletion of the Sherwood Sandstone aquifer which will have significant positive effects short term to long term. There is reference in adopted core strategies to protection of the Sherwood sandstone aquifer. It is therefore considered that the effects of revocation on the environment will be the same as for retention.
	Revocation	++	++	++	
Y1 York Sub Area Policy	**Retention**	++	++	++	This policy sets out the overarching direction for the York Sub-Region. Environmental protection is provided through reference to the need to avoid depletion of the Sherwood Sandstone aquifer which will have significant positive effects short term to long term. Since all three districts still need to define the approach to development in their district the effect of revoking this policy on water resources is likely to be neutral in the short term and positive in the long term assuming the same development patterns are adopted since statutory duties will still need to be met.
	Revocation	0	?	+	
C1 Coastal Sub Area Policy	**Retention**	++	++	++	This policy sets out the overarching direction for the Coastal Sub-Region. Environmental protection is provided through reference to the need to avoid depletion of the Sherwood Sandstone aquifer which will have significant positive effects short term to long term. Since both Scarborough and East Riding still need to define the approach to development in their district the effect of revoking this policy on water resources is likely to be neutral in the short term and positive in the long term assuming the same development patterns are adopted since statutory duties will still need to be met.
	Revocation	0	?	++	

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
ENV2 – Water Resources	**Retention**	++	++	++	Retention of this policy will encourage sustainable management of water resources (through safeguarding water resources and promoting water efficiency (e.g. Sustainable Drainage Systems, BREEAM, and Code for Sustainable Homes)) to meet the region's needs and allow the region to adapt to climate change. It will enable surface and ground water resources to maintain the integrity of the region's internationally important biodiversity sites. This policy, along with the EA CAMS and River Basin Management Plans, will promote more sustainable management of water resource within the Sherwood Sandstone aquifer, which is already over committed, to avoid it becoming depleted. There is therefore a need for the Region to avoid water-intensive uses and development (e.g. food production industries) especially in South Yorkshire to avoid negative effects on the aquifer. Surface and ground water resources are also important to the maintenance of the region's biodiversity and proposals for any additional abstraction will be subject to Appropriate Assessment in, conjunction with the EA CAMS, to determine whether they would result in adverse effects on biodiversity sites of international importance. Delivery of this policy will depend on continued investment by water companies of adequate infrastructure, in line with their water resource plans required under the Water Resources Management Plan Regulations 2007. Following revocation is assumed that the Environment Agency will continue to work with OFWAT, the water companies and other partners through River Basin Management Planning and CAMS to ensure the timely provision of the appropriate additional infrastructure for water supply to cater for the levels of development in the area. It is also assumed that local planning authorities will operate in accordance with their statutory duties on environmental protection in terms of meeting water quality standards under the WFD and affording the appropriate level of protection to designated habitats, protected species and climate change including managing flood risk in plan-making and that they have due regard to the policies in the NPPF in plan making and development management decisions. Revocation of Part A is therefore likely to have the same effects as retention. Part B specifically protects the Sherwood Sandstone aquifer. The supporting text also refers to measures which developers should take to meet this objective. The impact of revoking this policy is uncertain. Whilst the same policies and legislative requirements which ensure the sustainable use of resources remain, removal of this policy may result in less specific protection of the aquifer.
	Revocation	+	+	+	

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
ENV3 – Water Quality	**Retention**	++	++	++	The purpose of this policy is to maintain high water quality standards by preventing polluting development and ensuring an adequate sewage and waste treatment system in line with the Water Framework Directive. It seeks to raise bathing and coastal water quality standards and protect and improve water quality at internationally important biodiversity sites at Denby Grange Colliery Ponds, Hornsea Mere, Kirk Deighton and the Humber Estuary. Delivery of this policy will depend on continued investment by water companies of adequate infrastructure. Surface and ground water quality are important to the maintenance of the region's biodiversity and proposals for any additional discharges or abstraction will be subject to Appropriate Assessment to determine whether they would result in adverse effects on biodiversity sites of international importance. Following revocation it is assumed that the Environment Agency will continue to work with OFWAT, the water companies and other partners through River Basin Management Planning to ensure the timely provision of the appropriate additional infrastructure for wastewater treatment to cater for the levels of development in the area. It is also assumed that local planning authorities will operate in accordance with their statutory duties on environmental protection in terms of meeting water quality standards in plan-making and therefore the same significant positive effects will occur.
	Revocation	++	++	++	

5.7.1 Effects of Retention

The effects of retention of the regional strategy have been assessed on the assumption that, in the absence of the legislation and regional architecture enabling updating of the regional strategy, although the general principles of development will remain some policies will become increasing outdated and in some cases in conflict with the national policies in the Framework.

Retaining the regional strategy is likely to result in the environmental baseline continuing to evolve as identified in section 5.5.2 above. Retention of policy ENV2 will encourage sustainable management of water resources (through safeguarding water resources and promoting water efficiency (e.g. Sustainable Drainage Systems, BREEAM, and Code for Sustainable Homes)) to meet the region's needs and allow the region to adapt to climate change. It will enable surface and ground water resources to maintain the integrity of the region's internationally important biodiversity sites. This policy, along with the EA CAMS and River Basin Management Plans, will promote more sustainable management of water resource within the Sherwood Sandstone aquifer, which is already over committed, to avoid it becoming depleted. Retention of policy ENV3 will help to maintain water quality standards by preventing polluting development and ensuring an adequate sewage and waste treatment system in line with the Water Framework Directive. It seeks to raise bathing and coastal water quality standards and protect and improve water quality at internationally

important biodiversity sites at Denby Grange Colliery Ponds, Hornsea Mere, Kirk Deighton and the Humber Estuary.

The greatest impact of the planning system on water quality and resources is through the level of growth of transport linked to the anticipated level of growth in homes and employment. Policy H1 states an increase of 348,460 households would, at current levels of resource use per household, lead

- increased demand for 127 million litres of water per day for household use not including leakages, employment use etc;
- increased sewerage production of about 107 million litres per day from households only;

EA CAMS already identify catchments in the region that are over abstracted, over-licensed or have no-water available, with the Sherwood Sandstone aquifer at risk at becoming depleted in the south Yorkshire area. The additional housing growth option proposed will also result in greenfield releases. The impact of such releases to water quality and flood risk will be dependent on how in practice housing is implemented in terms of its location, design and construction. Implementation of water efficiency measures will also depend on some factors outside the planning system, such as, Building Regulations.

The policy T4 seeks to develop an integrated freight distribution system which makes efficient and effective use of all modes of transport. The primary impact on water quality will be the expansion of the Humber Ports, which also presents environmental challenges although the supporting text notes any development must be consistent with Policy ENV8.

5.7.2 Effects of Revocation

The EU Water Framework Directive introduced a more integrated system of water management based on river basin districts, with a view to reducing water pollution, reducing the effects of floods and droughts, preventing the deterioration of wetlands, improving aquatic habitats for wildlife and ensuring that most inland and coastal waters attain at least “good” ecological status by 2015. It also requires no deterioration from current water status. Statutory requirements under the EU Water Framework Directive will be implemented in accordance with river basin management plans which provide the main machinery for protecting and enhancing water quality in the future. In addition the Flood and Water Management Act 2010 contains provisions that cover water resources e.g. the list of uses of water that water companies can control during periods of water shortage. In addition, Paragraph 156 of the NPPF requires local planning authorities to work with other authorities and providers to assess the quality and capacity of infrastructure of water supply. Public bodies have a duty to co-operate on planning issues that cross administrative boundaries particularly those which relate to strategic priorities.

Following revocation is assumed that the Environment Agency will continue to work with OFWAT, the water companies and other partners through River Basin Management Planning and CAMS to ensure the timely provision of the appropriate additional infrastructure for water supply to cater for the levels of development in the area in line with their water resource plans required under the Water Resources Management Plan Regulations.

It is also assumed that local planning authorities will operate in accordance with their statutory duties on environmental protection in terms of meeting water quality standards under the WFD and affording the appropriate level of protection to designated habitats, protected species and climate change including managing flood risk in plan-making and that they have due regard to the policies in the NPPF in plan making and development management decisions.

Part B of ENV 2 specifically protects the Sherwood Sandstone aquifer. The supporting text also refers to measures which developers should take to meet this objective. The impact of revoking this policy is uncertain. Whilst the same policies and legislative requirements which ensure the sustainable use of water resources remain, removal of this policy may result in less specific protection of the aquifer, and lead to potentially adverse effects. However, negative effects should be avoided by the fact that abstraction from the aquifer will be governed by River Basin Management Planning, CAMS and groundwater abstraction licences to manage any over-abstraction. Surface and ground water resources are important to the maintenance of the region's biodiversity and proposals for any additional abstraction will be subject to Appropriate Assessment in, conjunction with the EA CAMS, to determine whether they would result in adverse effects on biodiversity sites of international importance.

The short, medium and long term impacts of the revocation of Policy H1 *Provision and distribution housing* are unknown as regional housing targets will be lost. However, it is considered that the same if not greater level of housing will be provided resulting in the same negative effects on water quality and resources in the long term. There will however be scope to change the housing distribution between districts. Revocation could alter the pattern of development in this or adjacent regions and thus the magnitude of the environmental impact, for example, increasing pressure on the Sherwood Sandstone aquifer. However, revocation is not considered to affect the policy intent as it will be delivered by other policy and legislation by a range of organisations therefore the cumulative effect is considered to be neutral.

The same rationale also applies to those policies associated with employment development, port, freight and airport development, although it will be up to local authorities to determine the direction of their local plan, and they may decide not to take them forward, the overall impact of these policies is still considered to be negative as with retention. If facilities are taken forward it is assumed that local planning authorities will operate in accordance with their statutory duties on environmental protection in terms of meeting water quality standards and affording the appropriate level of protection to designated habitats and managing flood risk.

5.8 Effects of Partial-Retention

The significant positive effects of partial-revocation on water are similar to retention/revocation.

5.8.1 Revoking all the Quantified and Spatially Specific Policies

Revocation of the quantified and sub-area polices could increase the number of additional homes delivered up to about 30,000 per annum to 2026 (see Population section) and thus have a secondary effect on demand for water resources and increased wastewater requiring treatment. RSS policies along with statutory duties on environmental protection and policies in the NPPF should provide environmental protection in relation to development.

5.8.2 Revoking all Non Quantitative and Spatially Specific Policies

Local planning authorities will still need to operate in accordance with their statutory duties on environmental protection in terms of meeting water quality standards under the WFD and affording the appropriate level of protection to designated habitats, protected species and climate change including managing flood risk in plan-making and that they have due regard to the policies in the NPPF in plan making and development management decisions. However, as with revocation of the whole plan, in the short to medium term, local plans may not provide as strong a policy direction given that only 8 of 23 local authorities have adopted core strategies.

5.8.3 Retention of Policies, the Revocation of which may lead to likely Significant Negative Environmental Effects

There are no significant negative effects predicted in respect of this topic.

5.9 Mitigation Measures

Water quality improvements will be driven by the Water Framework Directive through the EA with help of local authorities and Yorkshire Water.

The main mitigation measures to address water resource will be through adequate assessment and management using the EA CAMS and River Basin Management Plans in conjunction with Yorkshire Water's Water Management Plan. Over abstraction can be avoided through these plans and the EA control over abstraction licenses with local authority and water companies working in partnership to plan for adequate supply and treatment of water for planned developments.

5.9.1 Proposals for Monitoring

Significant and uncertain effects in respect of water quality relate to:

- Good ecological status of water bodies
- Bathing water quality
- Over-abstraction status
- Properties at risk of flooding

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, including 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 Yorkshire and Humber

Part IV of the Environment Act 1995 imposes a duty on the Secretary of State to prepare and publish an air quality strategy setting out standards and objectives for air quality, and the measures to be taken by local

authorities and others for the purpose of achieving those objectives (section 80). It places a duty on local authorities to review the quality of air in their areas, and to assess whether or not the standards and objectives set out in the strategy are likely to be met (section 82). The Act requires that local authorities designate air quality management areas (AQMAs) to include any areas where they conclude that standards and objectives are unlikely to be achieved (section 83). Once an AQMA is declared, it requires that the authority undertake a further assessment of the nature of the problems in the AQMA and an action plan setting out what measures they propose to take 'in pursuit of the achievement of air quality standards and objectives' (section 84). AQMA action plans within the Yorkshire and Humber region include:

- 2011 Air Quality Action Plan for Ryedale District Council
- Scarborough Air Quality Action Plan
- City of York Local Transport Plan 2006-2011 Annex U – Air Quality Action Plan
- City of Bradford Air Quality Action Plan
- Calderdale Air Quality Action Plan
- Kirklees Air Quality Action Plan
- City of Wakefield Metropolitan District Local Air Quality Management Plan
- Doncaster Air Quality Action Plan
- Leeds City Air Quality Action Plan
- Barnsley Metropolitan Borough Council Air Quality Action Plan
- Kingston-upon-Hull Air Quality Action Plan
- North Lincolnshire Council Action Plan for the Scunthopre PM10 AQMA
- Sheffield Air Quality Action Plan
- No plan for North East Lincolnshire AQMA available at the time of writing.

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.[128] 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.

A recent review of local air quality management for Defra [129] 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 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. PM10 ambient concentrations include significant contributions either formed by chemical reactions in the atmosphere or from emissions not characterised within emission inventories.

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

[129] 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)

Polluting emissions from industry regulated by the Environment Agency have reduced over the last 10 years. The reductions for small particles (known as PM10s), nitrogen oxides and sulphur oxides were 30 per cent, 27 per cent and 66 per cent respectively.

Areas where pollution levels exceed standards are targeted by local authorities through the implementation of Air Quality Management Areas (AQMAs). Most of the Air Quality Management Areas that have been declared in the UK are in urban areas and result from traffic emissions of nitrogen dioxide (NO_2) or PM_{10}. Road traffic emissions are the main source in almost 91% of the AQMAs; only a few have been designated as a result of other sources, such as industrial or domestic emissions.

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.[130] 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.[130]

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.[130]

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 than the 35 days were recorded as being in exceedence of a 24 hour average value of 50µg.m^{-3}.[131]

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

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

[131] 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

of road exceedance.[131]

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.[131]

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.[131]

Natural England report that air pollution is a reason for 7.8 per cent of Sites of Special Scientific Interest (SSSI) areas in England being in adverse condition and this is regarded as an underestimate of the damage.

6.3.2 Yorkshire and Humber region

15 local authorities in Yorkshire and Humber have designated Air Quality Management Areas (AQMAs)[132]. Between 1999 and 2009 the flow of traffic on the region's roads and motorways increased by 8.4 per cent. The AQMA are predominantly situated around motorways and A roads with NO_2 being the pollutant identified of concern. There are AQMA identified for PM10 and SO_2 with the majority of the PM10 AQMA being in the south of the region within North Lincolnshire, North East Lincolnshire, Rotherham and Sheffield. Details of all the AQMA in the region are outlined below with the pollutant identified in within the AQMA in brackets.

- Ryedale District – Malton AQMA, an area in the centre of Malton along the B1248 and B1257 (NO_2)
- Scarborough – AQMA covering the majority of the village of Staithes for Sulphur dioxide (SO2) and Particulate Matter <10 um (PM10)
- York:
  - AQMA 1 covering a number of main roads and properties in central York (NO_2)
  - AQMA 2 covering the carriageway along Fulford Rad, Main Street and Selby Road (NO_2).
- City of Bradford:
  - AQMA 1 Junction of Manchester Road and Mayo Avenue (NO_2)

[132] http://aqma.defra.gov.uk/maps-newk.php?

- AQMA 2 Junction of Manningham Lane and Queens Road (NO_2)
- AQMA 3 encompassing a number of properties on Thornton Road in the vicinity of the Junction with Princess Way (NO_2)
- AQMA 4 encompasses the junction of Shipley Airedale Road and Church Bank on the inner ring road (NO_2)

- Calderdale:
  - AQMA 1 encompasses an area along ht A629 between 2 Elm View and 389 Huddersfield Road (NO_2)
  - AQMA 2 covering an area adjacent to West Mills, West Street, Sowerby Bridge and extending along Town Hall Street and Wharf Street ending in Upper Bolton Brow (NO_2)
  - AQMA 3 covering an area along the A646 in Hebden Bridge (NO_2)
  - AQMA 4 covering part of Burnley Road through Luddendenfoot (NO_2)
  - AQMA 5 covering parts of the Bradford and Leeds Roads in Stump Cross, Halifax (NO_2)
  - AQMA 6 encompassing the main roads and surrounding buildings in the centre of Brighouse (NO_2)
- Kirklees AQMA encompassing properties along two sections of the A62 Leeds Road in the vicinity of the junctions with the A6107 and A644 (NO_2)
- Wakefield:
  - M1 AQMA (NO_2) along the entire M1 motorway within the district
  - A1 AQMA (NO_2) along the A1(T) between J33 of the M62 and Wentbridge
  - M62 AQMA (NO_2) along the entire M62 within the district
  - Wakefield City AQMA (NO_2) covering the majority of the Wakefield Urban area
  - Castleford AQMA (NO_2) covering an area of Castleford around the A6032 and A656
  - Featherstone AQMA (NO_2) covering the junction o the A645 Wakefiled/Pontefract Road and Station Lane/Girnhall Lane
  - Pontefract AQMA (NO_2) covering an area in central Pontefract surrounding the junction of the A639 Jubilee Way/Mill Hill Road and A645 Wakefield Road/Southgate

- Knottingley AQMA (NO_2) encompassing the area of Knottingley east of Wakefield near the junction of the A1 (M) and M62.

- Doncaster:
  - Covering central Doncaster along the A630 (NO_2)
  - Surrounding Junction 36 of the A1(M) and extending along the A18 into Doncaster town centre (NO_2)
  - Covering a section of the A18 between Junction with the A638 Bawtry Road and A638 Tafford Way (NO_2)
  - Covering a section of the M18 crossing the A638 Bawtry Road and extending into the Hatchell Wood up to Warning Toungue Lane (NO_2)
- Leeds AQMA covers 6 areas for NO_2:
  - 2 to 28 (evens only) Burmantofts Street and 19 to 93 (odds only), Haslewood Close
  - 11 to 25 Ladybeck Close
  - Caspar Apartments, 55 North Street
  - 1, 3 & 5 Norman Street. 1, 1a, 2, 3, 4 & 6 Norman Row. 1, 2, 2a, 3, 4 & 5 Norman View. 1, 2, 3, 4 & 6 Norman Grove. 1 to 5 Norman Mount. 1, 2, 3, 4 & 6 De Lacy Mount. 68/70 Abbey Road
  - odd numbered properties on Tilbury Road. All properties on Tilbury Row, Tilbury View, Tilbury Terrace and Tilbury Mount. All properties on Euston Terrace, Euston Mount and Euston Grove. All properties on Ingram Crescent, and
  - Queenscourt, Morley
- Barnsley:
  - AQMA 1 along the M1 between Junction 35a and Junction 38, inculding Haigh, Darton, Cawthorne Dike, Higham, Dodworth, Gilroyd, Rockley, Birdwell, and Tankersley. The area exends 100m either side of the central reservation (NO_2)
  - AQMA 2a encompassing the A628 from junction 37 of the M1 to Town End roundabout, including part of Summer Lane from Town End roundabout to Wharncliffe Street (NO_2)
  - AQMA 2b encompassing the A628 from junction 37 of the M1 to Dodworth Level Crossing (NO_2)

- AQMA 3 encompassing the junction of the A61 Wakefield Road and Burton Road (NO_2)
- AQMA 4 encompassing the southbound carriageway of the A61 Harborough Hill Road from the 'PC World' gyratory to the southbound slip road of the A61 near to its junction with Queens Road (NO_2)
- AQMA 5 encompassing the junction of Rotherham Road and Burton Road (NO_2)

- Kingston-upon-Hull AQMA covers an area of the City Centre bordered to the west by Coltman Street, Hessle Road and Strickland Street, to the north by Anlaby Road, Carr Lane, Whitefriargate, Scale Lane and Silver Street, and the south and east by the Rivers Humber and Hull respectively (NO_2)
- North Lincolnshire Council:
  - Scunthorpe AQMA incorporating part of the town of Scunthorpe and an area to the east of Scunthorpe including the site of the steelworks (PM10)
  - Low Santon AQMA area of land surrounding 3 houses at Low Santon. Santon is a small village adjacent to the North Eastern boundary of the local integrated steel works (PM10)
- Sheffield area covering entire eastern part of the City containing the major built up areas (now declared for annual and 1-hour NO2 objectives, and the 24-hour PM10 objective)
- North East Lincolnshire:
  - Immingham AQMA encompassing parts Kings Road, part of Pelham Road and Part of Hawthorn Avenue in Immingham (PM10)
  - Grimsby AQMA encompassing properties along Cleethorpe Road (No pollutants declared on Defra website)
- Rotherham
  - AQMA 1 consists of four areas: area along the M1 between Upper Whiston (in the east) and the boundary with Sheffield City Council to the west and extending on either side to encompass Brinsworth Catcliffe, area to the west of the M1 motorway between Meadowbank Road to the south and New Droppingwell Road to the north and extending east to West Hill Kimberworth, area of Wales, Rotherham encompassing a small number of properties on either side of the M1 where the B6059, School Road crosses the motorway, area extending the 2001 AQMA - encompassing the area next to the M1 around Barber Wood Road and New Droppingwell Road in Blackburn. (NO_2)
  - AQMA 2 housing in Brampton Bierlow encompassed by Pontefract Road, Milking Lane and the parish boundary running along Knoll Beck (SO_2)

- Fitzwilliam AQMA encompassing properties along the Fitzwilliam Road, Rotherham between the St Ann's roundabout and the Mushroom roundabout (NO_2)
- Wellgate AQMA area along Wellgate, Rotherham between Clifton Bank and Hare Road (extending NE/SW as far as Clifton Lane and Warwick Street) (NO_2)
- Wortley Road area encompassing the Wortley Road and surrounding properties between it's junction with the Old Wortley Road and the roundabout with Wilton Gardens (NO_2)
- Fitzwilliam Road AQMA area along Fitzwilliam Road bounded by St Leonard's Road to the south, Milton Road/Cottenham Road to the East and Hatherley Road to the North (PM10)

Roads affecting the AQMAs in the region are: the M1 (in Barnsley, Rotherham and Sheffield), the A1 (Leeds), the A1(M) (Doncaster),M62 and the M18 (Doncaster). These are concentrated in the South Yorkshire area and around the southwest of the region where the large urban areas are clustered (Regional Network Report for Yorkshire and Humber 2008).

Air pollution was moderate or higher on 52 days in Leeds city centre and 29 days in Sheffield city centre in 2008. These figures were typical of the situation in recent years although numbers do vary from year to year depending on weather conditions.

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.

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.[133]

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

In 2005, roughly 40% of the 85 monitoring network sites exceeded the Air Quality's Strategy objective for O_3.[133]

Air pollution is a significant cause of decline in the condition of 55 of UK SSSIs.[134] 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.[134]

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[135]. 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[136], 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[137].

6.4.2 Yorkshire and Humber region

Road traffic accounts for the majority of the AQMA in the region with NO_2 the identified pollutant. All the main urban areas have AQMA in place along main roads, city centres and in the case of Sheffield covering the entire eastern part of the city containing the major built up areas

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

[135] 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

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

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

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[138].

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).[139]

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:[140]

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[141].

[138] http://www.defra.gov.uk/sustainable/government/progress/documents/SDIYP2009_a9.pdf

[139] http://www.defra.gov.uk/evidence/statistics/environment/eiyp/

[140] http://www.airquality.co.uk/reports/reports.php?action=category&section_id=17

[141] 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.[142]

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 Yorkshire and Humber region

The SEA Directive requires a consideration of the evolution of the baseline without the proposed plan or programme being in place. Slightly confusingly in this assessment, this actually refers to the plan to revoke the regional strategy. So the evolution of the baseline without the plan will mean, in this instance, the evolution of the baseline with the regional strategy retained. Therefore, the assessment has used the findings of the 2008 Sustainability Appraisal of the Yorkshire and Humber plan to provide an informed understanding of likely future evolution of the air quality baseline. Any changes to the baseline that have occurred since 2008 have also been taken into account where information availability allowed.

The policies in the Yorkshire and Humber plan are likely to increase levels of traffic which will lead to additional pressure on the road network and decreasing levels of air quality, particularly within urban areas where housing and growth is aimed, and around strategic transport corridors and the Humber ports and region's airports.

Annual net housing growth is likely to rise from below the 2008-2026 average to above it for Hull, Bradford, Leeds, Wakefield, Kirklees, Scarborough, Rotherham and North East Lincolnshire, with associated increases in traffic in these areas. Development of the Humber ports and the region's airports would lead to increased traffic from freight to and from these transport hubs.

The spatial strategy has generally avoided allocating growth to the most rural districts. Benefits to rural areas and their associated ecosystems will therefore develop from the overall policy direction to focus growth and development in urban areas and promote walking and cycling as modes of transport. Increased urban development will also mean shorter commuting distances and so reduced trunk road traffic in remoter rural

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

areas.

From 2008 an increase of 348,460 households would, at current levels of resource use per household, lead to increase carbon dioxide emissions of 8.7 million tonnes per year; increased use of 714 billion kWh of gas per year; and increased use of 166 billion kWh of electricity per year with associated emissions.

Higher temperatures experienced during the summer as a result of a changing climate can be expected to amplify the negative effects of poor air quality. However background air quality across the UK can be expected to improve as a result of tightening EU emission standards for cars and lorries and cleaner energy generation.

6.5.3 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*
++	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.

Effect	Description	Illustrative Guidance
--	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. Where a box is coloured but also contains a ? this indicates uncertainty over whether the effect could be a minor or significant effect although a professional judgement is expressed.

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

Table 6.2 summarises the significant effects identified in the detailed assessment of the Yorkshire and Humber Plan policies against the air quality topic.

Table 6.2 Significant effects against the air quality topic

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
YH1 Achieving sustainable development	**Retention**	++	++	++	This policy sets out the overarching framework for the RSS with positive impacts on air quality arising from: • Promoting sustainable development by reversing the long-term trend of population and investment dispersal away from Regional and Sub-Regional Cities and Towns, using them as the focus of employment and housing, whilst creating more attractive living and working environments in urban areas. • Promoting sustainable modes of transport and seeking to address transport related emissions. It also seeks to respond pro-actively to the effects of climate change through renewable energy generation, biodiversity enhancement and increased tree cover (important absorber of pollutants).
	Revocation	+	+	++	Revocation of the policy will not have a significant change in the long term as the purpose of the planning system is to contribute towards the achievements of sustainable development, as set out in section 39(3) in the Planning and Compulsory Purchase Act 2004 and reiterated in paragraph 6 of the NPPF. Positive, responsible environment management will be vital to safeguard and improve the region's environment, including air quality. The

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
					2004 Act, places statutory duties particularly with regard to environmental protection, sustainable development and climate change, when local authorities prepare their local plans. It is assumed that local planning authorities will operate in accordance with their statutory duties on environmental protection in terms of meeting air quality standards and sustainable development and climate change in plan-making and that they have due regard to the policies in the NPPF. In the short-medium there are likely to be some limitations on improving accessibility by public transport and thus have a secondary effect on reducing air pollution. However, in the long term the same significant positive effects are considered to result.
YH2 climate change and resource use	**Retention**	++	++	++	This policy sets a framework for local authorities to ensure that mitigating and adapting to the effects of climate change remains at the heart of local authority plan-making through its influence over transport, economic development, housing, energy, waste and infrastructure. Targets include reducing GHG in 2016 by 20-25% compared to 1990 levels; this target is directly reflective of the 2016 greenhouse gas emissions target set out in the RES. In line with this policy Objective 5 of the RES promotes projects that reduce and mitigate greenhouse gas emissions as well as seeking for high quality design and environmental standards in all publically supported development.
	Revocation	+	+	++	The policy would have significant positive effects on air as climate change adaptation measures will improve air quality through energy efficiency helping to reduce fuel useage, reduced traffic and promotion of sustainable modes of transport including walking and cycling helping to reduce traffic emissions to air. Local planning authorities will take actions within their remit to deliver the required policy targets. Revocation of this policy would not remove the requirement for local authorities to be consistent with legal and national policy requirements, such as paragraph 17 of the NPPF which supports the transition to a low carbon future, taking full account of flood risk and coastal change, and encourage the reuse of existing resources. Therefore in the long term significant positive effects are considered to result.
YH7 Location of development	**Retention**	++	++	++	This policy provides a general policy framework for guiding the location of development following distribution of development to settlements in accordance with YH4-YH6. It seeks to re-use of previously developed land as a priority followed by urban infill and adopts a transport lead approach. These include compliance with detailed accessibility criteria to maximise accessibility by walking and cycling and to maximise the use of rail and water travel by freight helping to reduce air quality issues form traffic emissions. This transport led approach is reflective of the RES specifically Objective 4 to encourage access to jobs without a car and Objective 5 relating to better public transport connections to key urban centres and improving rail connections to the Humber Ports. There are unlikely to be significant environmental effects if Part A is revoked because local planning authorities will still be able to rely on the strong

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
	Revocation	+	+	++	policies at paragraphs 110 – 111 of the NPPF which supports effective use of previously developed land (generally located closer to urban centres) provided it is not of high environmental value. This will still protect areas of woodland and green infrastructure important for maintaining good air quality. Revocation of Part B is likely to lead to more uncertain impacts since, whilst the NPPF states that plans should support a pattern on development which, where reasonable to do so, facilities the use of sustainable modes of transport, it is not prescriptive in the manner of Policy YH7. This leaves discretion to local planning authorities to balance transport sustainability and other sustainable development aspirations; it is considered unlikely that the aspirational transport-orientated approach will be adopted by all local authorities in the absence of national guidance particularly in respect of the small and relatively remote towns and villages in the region. This could lead to increased air quality impacts form emissions from transport.
ENV5 Energy	**Retention**	+	+	++	Retention of this policy would have significant environmental effects in the long term as increased provision of renewable energy and increased energy efficiency would contribute to reducing emissions with improvement in air quality. This assessment assumes that the renewable energy targets will be met by the end of the Yorkshire and Humber Plan period. Part A of this policy sets out goals for reducing greenhouse gas emissions, improving energy efficiency and maximising the use of power sources. Climate change is one of the core land use planning principles which the NPPF expects should underpin both plan-making and decision-taking. Reductions in greenhouse gas emissions will be achieved through transport solutions which support reductions in greenhouse gas emissions; actively supporting energy efficiency improvements to existing buildings; and promoting energy from renewable and low carbon sources all helping to reduce air pollution. Part B of this policy sets targets for renewable energy capacity at sub-regional level and for offshore, with the sum for onshore broken down into indicative figures at local authority level. The overall regional target is about 1860MW of installed capacity by 2021, representing 22.5% of estimated regional electricity consumption. If achieved, this would represent an adequate contribution to the current national target for the UK to meet its target of generating 15% of all energy from renewables by 2020. If this policy were to be revoked it is possible that 1862MW or more will still be consented and, at least, this target actually implemented by 2021. If so then the effect of revoking this policy would be the same as retention. However, it is possible that some local authorities, in following the policy on renewable energy in the NPPF, may decide not to consent significant additional capacity due to the weight they place on unavoidable adverse environmental impacts, e.g. on landscape, from renewable energy sources such as wind. Part B also required developments of more than 10 dwellings or 1000m square residential floorspace should secure at least 10% of their energy from decentralised and renewable or low-carbon sources, unless, having regard to the type of development involved and its design, this is not feasible
	Revocation	+	+	+	

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
					or viable. The loss of strong policy direction on revocation means that although long term effects will be positive they may not be significant.
T1 Personal travel reduction and modal shift	**Retention**	++	++	++	This policy does not have specific spatial outcomes but provides a generic framework to support sustainable transport whilst delivering the other objectives in the RSS, especially the potential level of housing growth (policy H1) and employment growth (policy E1). In particular, this policy seeks to address major traffic growth and congestion through measures to reduce travel demand, traffic growth and promote more sustainable modes of travel through a combination of demand management measures. It results in positive effects in terms of improving air quality and reducing emissions. Many of the effects 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. The NPPF and other relevant Government policies reflect the Government's transport related policy context for local authorities to take into account when preparing their local plans. In particular paragraphs 29-41 of the NPPF sets out the Government's objectives for promoting sustainable transport, whilst paragraphs 162 and 178-181 require local authorities to consider transport infrastructure, and to work with neighbouring authorities and transport providers to develop strategies for its provision to support sustainable development. The duty to co-operate will assist with this strategic approach. Demand management will be a matter for local authorities to consider in consultation with their communities and business partners. The legal powers available under the Transport Acts would not be affected by the revocation of this policy. It will be for local authorities to consider whether to charge for road use, in consultation with their communities and business partners, using powers available under the Transport Acts. Revoking this policy will simplify the planning policy framework for local authorities, and will leave it to each authority, working together with public transport organisations such as West Yorkshire Metro, to plan for the transport needs of their area. The actual effect in the long term is likely to be positive.
	Revocation	+	+	+	
T3 Public Transport	**Retention**	++	++	++	This policy explores the specific contribution that public transport could make in promoting modal shift, including through the use of public transport accessibility criteria. Section B identifies spatial priorities for developing public transport schemes. This will improve emissions provided public transport substitutes for car journeys, rather than adding to them, and if park and ride is implemented in ways which reduce car journeys and support existing public transport. There is a need to plan for sustainable transport in the NPPF but removal of Part A will have a negative effect as there is no similar criteria in national policy that can be used by local authorities in allocating land for development to ensure sustainable transport. It will be through Local Transport Plans that local authorities should plan for investment in public transport programmes. These plans, along with the need to plan for sustainable transport in the NPPF, combined with the duty to co-operate will facilitate work to promote public transport, ensuring a close and mutually consistent relationship between spatial and local transport
	Revocation	+	+	+	

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
					plans, to deliver the appropriate sustainable transport needs to their area. Removal of Part B removes the strategic priorities for particular areas. The impact of this is that these areas might not have sufficient funding when transport plans are revised. However, as set out in the NPPF, it is for each local authority to work together, along with other provides to assess the quality and capacity of, and then deliver transport infrastructure.
T5 Transport and Tourism	**Retention**	++	++	++	This policy seeks to improve access to all the region's main tourist destinations, including National Parks and coastal resorts by more sustainable modes of transport in line with T1-T3 and to complement policy E6. The policy will have positive effects by helping to provide employment opportunities in tourism and the main thrust of policy is to open up tourism to people travelling other than by car.
	Revocation	+	+	++	The NPPF paragraphs 29-41 set out expectations on local authorities to deliver sustainable transport solutions, which include access to tourist destinations. Local authorities will continue to work together, using policies in the NPPF and assisted by the duty to co-operate to plan for access to tourism facilities. Therefore the same significant benefits are considered to result in the long term.
T6 Airports	**Retention**	--	--	--	This policy responds to national policy and the demand for air travel. The aim of this policy is to limit and optimise the impacts of air travel by ensuring that airport growth is linked to regeneration, surface transport to airports is improved particularly by public transport, and any airport expansion meets the 'principles of sustainable development' as demonstrated through a Sustainability Appraisal. Reductions in impacts from shifting journeys to airports from car to public transport are trivial compared to the impacts of the flying itself. Furthermore flights out of Yorkshire and Humber airports are expected to treble in the next 25 years, so the overall impact of surface transport would still worsen in the longer term. Consequently this policy will have negative impact by increasing exposure to air pollution. The Air Transport White Paper 2003 supports additional terminal capacity for Leeds Bradford International Airport, improving surface access to the airport is a priority. Furthermore, Robin Hood Airport is also growing and increased surface access to the airport is important. It is recognised as an important opportunity to deliver South Yorkshire's spatial potential. Humberside Airport has an important role in serving the offshore oil and gas industry but it is likely to be affected by competition from an expanding Robin Hood Airport. If the policy is revoked it will be for local planning authorities to decide on the extent of future expansion at Leeds Bradford, Robin Hood and Humberside airport. Airport planning will still have to take account of relevant aspects of policy on transport at paragraphs 29 – 41 of the NPPF. Local plans should take account of the NPPF as well as the principles set out in the relevant national policy statements. Proposals for airport development will most likely be subject to EIA at planning application stage. The overall impact of this policy is uncertain since it will be up to local authorities to determine the direction
	Revocation	--	--	--	

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
					of their local plan but it is considered that the same significant negative effects (as with retention) will result.

6.6.1 Effects of Retention

The effects of retention of the regional strategy have been assessed on the assumption that, in the absence of the legislation and regional architecture enabling updating of the regional strategy, although the general principles of development will remain some policies will become increasing outdated and in some cases in conflict with the national policies in the Framework.

Many of the policies 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, such as, policies T1, T3, T5 and YH8 would have a beneficial role. ENV6 which seeks to increase the area of woodland (an important absorber of pollutants) could also play a beneficial role.

Retaining the regional strategy is likely to result in the environmental baseline continuing to evolve as identified in section 6.5.2 above. The greatest impact of the planning system on air quality is through the level of growth of transport linked to the anticipated level of growth in homes and employment. Policy H1 states an increase of 348,460 households would, at current levels of resource use per household, lead to increased carbon dioxide emissions of 8.7 million tonnes per year. Effects will depend on the resulting scale, nature and location of housing development across the region over the plan period and beyond, linked to growth in local employment, transport and services and the uptake of less polluting forms of travel, local parking provision and access to green space.

6.6.2 Effects of Revocation

The regional strategy 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. Taken together the transport policies have the potential, if implemented, to reduce the impact of traffic emissions, and contribute to improving air quality with the related benefits to human health and biodiversity. However, much will depend on a number of factors including whether the population does change its behaviour,

pricing policy on public transport, technological advances in engine efficiency and emission standards. 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, the 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.

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

The short, medium and long term impacts of the revocation of Policy H1 *Provision and distribution housing* are unknown as regional housing targets will be lost. However, it is considered that the same if not greater level of housing will be provided resulting in the same negative effects on air quality in the long term. There will however be scope to change the housing distribution between districts. Revocation could therefore alter the pattern of development in this or adjacent regions and thus the magnitude of the environmental impact by increasing the amount of traffic generated. However, revocation is not considered to affect the policy intent as it will be delivered by other policy and legislation therefore the cumulative effect of revocation on air quality is considered to be neutral.

The same rationale also applies to those policies associated with employment development, port and airport development, although the overall impact of these policies is uncertain since it will be up to local authorities to determine the direction of their local plan.

The revocation of other policies in the plan could also have implications for air quality depending on the pattern of development that local authorities decide to adopt. The current focus on development within existing urban areas, required by Policies YH1 and YH7 could change; more concentrated or dispersed development could change private car use, depending on the locations in question, but could also result in a better or worse air quality in urban areas compared to the situation with the plan. For example, Policy YH1, in terms of location, seeks to manage the spread of the benefits of the growth of the Leeds economy and transform conditions in the older industrialised parts of South Yorkshire, West Yorkshire and the Humber. In taking a market led approach development planned for these areas could instead centralise in Leeds increasing pollution in the urban area.

Part B of policy ENV5 sets targets for renewable energy capacity at sub-regional level and for offshore, with the sum for onshore broken down into indicative figures at local authority level. It is possible that the full 1862MW or more will still be consented and, at least, this target actually implemented by 2021. If so then significant benefits would still occur. However, it is possible that some local authorities, in following the policy on renewable energy in the NPPF, may decide not to consent significant additional capacity due to the weight they place on unavoidable adverse environmental impacts, e.g. on landscape, from renewable energy sources such as wind. Long term this could have an effect on meeting EU and UK targets for increasing energy produced from renewable sources and reducing carbon dioxide emissions.

6.7 Partial-Revocation

The significant positive effects of partial-revocation on air are similar to retention/revocation.

6.7.1 Revoking all the Quantified and Spatially Specific Policies

Revocation of the quantified and sub-area policies could increase the number of additional homes delivered up to about 30,000 per annum to 2026 (see Population section) and thus have a secondary effect by increasing emissions to air due to associated traffic generation. RSS policies and statutory duties on environmental protection and policies in the NPPF should provide environmental protection in relation to development.

Whilst national policy encourages renewable energy, local authorities would not have to allow this type of development within their area. Revocation of Policy ENV5 could mean that some local authorities, in following the policy on renewable energy in the NPPF, may decide not to consent significant additional capacity due to the weight they place on unavoidable adverse environmental impacts, e.g. on landscape, from renewable energy sources such as wind. Long term this could have an effect on meeting EU and UK targets for increasing energy produced from renewable sources and reducing carbon dioxide emissions.

6.7.2 Revoking all Non Quantitative and Spatially Specific Policies

Air quality will remain protected under national legislation and the NPPF if all the non- quantified and sub-area policies are revoked. Retaining Policy ENV5 and the regional energy targets will have a significant positive effect.

6.7.3 Retention of Policies, the Revocation of which may lead to likely Significant Negative Environmental Effects

For policy T6 there are significant negative effects predicted, however, this is the same issue for both retention and revocation of the whole plan and will require a similar concerted effort by all interested parties to resolve, irrespective of the presence of the regional strategy.

6.8 Mitigation Measures

It is recognised that local authorities will need to cooperate with the Environment Agency and neighbouring local authorities in line with the "duty of co-operate" to ensure air quality benefits are delivered in the long term. Consideration should also be given by local authorities to the accessibility criteria set out in Table 13.8 and Table 13.9 of the Yorkshire and Humber Plan when preparing their local plans to help ensure significant positive effects will result although there will be no statutory requirement for implementation.

6.9 Proposals for Monitoring

Significant and uncertain effects in respect of air quality relate to:

- Number of AQMA
- Air pollution levels
- Decline in favourable condition of SSSI due to air quality

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, including 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 (carbon dioxide) 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 carbon dioxide 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 Yorkshire and Humber region

The **Climate Change Plan for Yorkshire and the Humber (2009 – 2014)** sets a strategic direction for managing and combating climate change in the Yorkshire and Humber region until 2014. The plan does not give detailed actions, specific carbon dioxide targets or provides a breakdown of how any targets will be achieved, but is intended to inform and influence developments. The plan also identifies gaps and sets out proposals for partnership working rather than providing mitigation and adaptive actions.

The plan's purpose is to demonstrate the principles for regional and local leaders, and for decision makers in all sectors of what is required to help the region adapt to climate change, and to reduce the contribution to its causes, covering areas where joint action will be required. Its framework for action is divided into 10 priority areas:

- Strategy and Monitoring;
- The Built Environment;
- Transport;
- Health Services;

- Business;
- Land Management;
- Citizen Engagement;
- Energy;
- Waste; and
- Water.

Whilst the **Climate Change Plan for Yorkshire and the Humber (2009 – 2014)** sets out a strategic direction for managing and combating climate change, it does not give detailed actions, specific carbon dioxide targets or provide a breakdown of how any targets will be achieved. However, local authorities have been producing strategies and plans which deal with climate change, setting out targets for reducing emissions and clear actions to manage this issue. A number of local level plans have been produced by local authorities within Yorkshire and Humber, a selection of these are discussed in further detail below:

Harrogate Borough Council published the **Harrogate District Climate Change Strategy** in September 2009. The main aim of this strategy is to set out how the council intends to reduce carbon dioxide emissions, and how it can help residents to reduce carbon dioxide emissions. The strategy states:

"Our ultimate aim is to make a 40% reduction in carbon dioxide emissions from the council's own operations by 2020 and an 80% reduction by 2050; and to help make a 40% reduction in carbon dioxide emissions across the district as a whole by 2020 and an 80% reduction by 2050."

In 2011 the City of York Council, in partnership with the Without Walls Partnership published **A Climate Change Framework for York (2010 – 2015)** and a separate Action Plan. The overall aim of this strategy is to ensure that York is a sustainable city which tackles climate change and reduces its impact on the environment while maintaining the city's special qualities and enabling it to grow and thrive. It sets out the key issues for York and a framework for reducing carbon dioxide emissions. The overall vision is: *"To reduce greenhouse gas emissions across York and better prepare and adapt York's communities and businesses for the likely impacts associated with climate change."* This strategy sets out targets to reduced carbon dioxide emissions by 20 per cent by 2020 and 80 per cent by 2050. It also seeks to reduce the average residents' carbon footprint from 12.61 tonnes in 2006 by 80 per cent to 3.36 tonnes by 2050.

Other councils have produced climate change strategies or plans with the region and these set out similar targets and aims for reducing human impact on the environment and carbon dioxide emissions.

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 (Mtcarbon dioxidee)[143]. This was 3.1%higher than 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 Mtcarbon dioxidee), and the energy supply sector, up by 2.8%(5.6 Mtcarbon dioxidee). Emissions from all other sectors were relatively stable, compared to 2009 levels.

Carbon dioxide (carbon dioxide) 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[144].

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[144]. Sea levels are rising, and are greater in the south of the UK than the north[144]. 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 carbon dioxide (by end user) were estimated to be 372 million tonnes, giving an estimate of 7.2 tonnes of carbon dioxide emissions per capita[145]. This compares to emissions of 433 million tonnes, giving an estimate of 8.6 tonnes of carbon dioxide emissions per capita in 2005.

[143]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

[144] 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

In 2008, 29% of carbon dioxide emissions were from the energy supply sector, 20.3% from road transport, 31.1% from business and 24.1% from residential fossil fuel use.[146]

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.

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 Yorkshire and Humber region

In 2009, the Yorkshire and Humber net emissions of carbon dioxide (by end user) were estimated to be 43 million tonnes, giving an estimate of 8.2 tonnes of carbon dioxide emissions per capita[147]. This compares to emissions of 53 million tonnes, giving an estimate of 10.4 tonnes of carbon dioxide emissions per capita in 2005.

[145] DECC Statistical Release September 2011, http://www.decc.gov.uk/assets/decc/11/stats/climate-change/2750-statistical-summary-la-carbon dioxide-emissions.pdf

[146] DECC http://www.decc.gov.uk/assets/decc/Statistics/climate_change/localAuthoritycarbon dioxide/457-local-regional-carbon dioxide-2005-2008-full-data.xls

[147] DECC Statistical Release September 2011, http://www.decc.gov.uk/assets/decc/11/stats/climate-change/2750-statistical-summary-la-carbon dioxide-emissions.pdf

Table 7.1 Carbon Emissions (by End User)

Year	Industry and Commercial	Domestic	Road Transport	LULUCF	Total (kt carbon dioxide)	Population ('000s, mid-year estimate)	Per Capita Emissions (t)
2005	28,169	13,140	11,448	306	53,063	5,111	10.4
2006	27,863	12,999	11,314	295	52,470	5,147	10.2
2007	26,963	12,537	11,445	278	51,224	5,182	9.9
2008	25,787	12,439	10,986	248	49,460	5,218	9.5
2009	21,245	11,272	10,473	257	43,247	5,258	8.2

Yorkshire and Humber has the most carbon-intensive economy in England. Greenhouse gas emissions from the region's industry regulated by the Environment Agency are dominated by emissions from large coal fired power stations and can vary from year to year depending on production. These emissions have reduced by 12 per cent compared to the 1990.

The impact on flooding (from river and the sea), droughts, storm intensities and heat waves have potentially major implications on agriculture, industry, wildlife, and health. In the region around 15 per cent of land is at risk of flooding with 6.7 per cent being at significant risk, much of this being in low-lying areas around the Humber estuary. In total 385,000 properties are at risk from flooding from rivers and the sea and over 65,000 properties are at significant risk.

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[148].

The Climate Change Risk Assessment[149] (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 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).

[148] DECC (2007) http://www.decc.gov.uk/en/content/cms/what_we_do/lc_uk/loc_reg_dev/ni185_186/ni185_186.aspx
[149] Defra (2012) http://randd.defra.gov.uk/Document.aspx?Document=Summary_of_Key_Findings.pdf

The UK is experiencing sea level rise of approximately 1mm per year. Global sea-level is rising at about 3mm per year[150]. Central England's temperature has risen by about 0.7ºC over the last century, with 2004 being the warmest on record[151]. 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[150] .

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).

7.4.2 Yorkshire and Humber region

Current threats from climate change in Yorkshire and Humber include:

- continued erosion of the east coast;
- increased flood risk and loss of inter-tidal habitats in the Humber Estuary;
- loss of montane heathland in the Pennines;
- loss of peat bogs in the North Yorks Moors and Humberland Levels;
- increased winter flood risk in the Vale of York and Aire/Calder river catchments;
- increased pressure on urban water supply and drainage systems; and
- increased risk of Sherwood Sandstone aquifer depletion.

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

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 carbon dioxide 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 carbon dioxide equivalent were emitted giving an increase of 2.8% compared to 2009 values[152].

UKCP09 provides the following prediction on changes to climate within the UK based on the medium emission scenario with 90% probability[153]:

- **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.
- **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.

[152] 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

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

- 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 +5 cm. Changes in the annual maxima are projected to be between –1.5 and +1 m.

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)[154].

The Carbon Plan 2011 explains that if the UK is to cut emissions by 80% by 2050, there will have to be 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 carbon dioxide 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

[154] Committee on Climate Change (2010) Fourth Carbon Budget, http://www.theccc.org.uk/reports/fourth-carbon-budget

sources by 2020.

The latest climate change projections have been made as part of the UK Climate Impacts Programme (UKCIP 2009). We cannot say for sure what the climate of Yorkshire and Humber will be like in the future, but these protections indicate that the region is likely to become wetter in the winter and drier in the summer, leading to an increased risk of extreme weather events such as storms, floods and droughts. Climate change could result in summer rainfall reducing by up to 37 per cent by 2050.

The UKCIP climate change projections are based on computer modeling which takes into account natural variation and human influence. The main human influence is the emission of greenhouse gases created as we burn fossil fuels (coal, gas and oil) to generate electricity, for transport and to heat our houses and businesses.

The UKCIP model projections identify that the climate in Yorkshire and Humber is likely to change significantly by the 2080s if we do not achieve major reductions in greenhouse gas emissions. The central estimates from the medium emissions scenario are:

- winter average temperatures rise by 3C
- winter average rainfall increases by 15 per cent
- summer average temperatures rise by 3.3C
- summer average rainfall decreases by 23 per cent[155]

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 carbon dioxide equivalent which is a 29.5% decrease compared to emissions in 1990[156].

UKCP09 provides the following changes in climate for England in 2080 based on a medium emission scenario with 90% probability[157]:

[155] The Yorkshire and Humber Assembly, 2007, Regional Strategies and Climate Change *Evaluating the Contribution that Key Regional Strategies Make Towards Addressing Climate Change, http://www.yhassembly.gov.uk/dnlds/ARUP%20climate%20change%20exec%20summary.pdf*

[156] 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

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

- **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. 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 Yorkshire and Humber region

The SEA Directive requires a consideration of the evolution of the baseline without the proposed plan or programme being in place. Slightly confusingly in this assessment, this actually refers to the plan to revoke the regional strategy. So the evolution of the baseline without the plan will mean, in this instance, the evolution of the baseline with the regional strategy retained. Therefore, the assessment has used the findings of the 2008 Sustainability Appraisal of the Yorkshire and Humber plan to provide an informed understanding of likely future evolution of the climate change baseline. Any changes to the baseline that have occurred since 2008 have also been taken into account where information availability allowed.

Policy YH2 of the Yorkshire and Humber RSS sets out targets to reduce greenhouse gas emissions in the region in 2016 by 20-25% compared to 1990 levels, with further reductions thereafter by:

1. Increasing population, development and activity in cities and towns
2. Encouraging better energy, resource, and water efficient buildings
3. Minimising resource demands from development
4. Reducing traffic growth through appropriate location of development, demand management, and improving public transport and facilities for walking and cycling
5. Encouraging redevelopment of previously developed land
6. Facilitating effective waste management

7. Increasing renewable energy capacity and carbon capture.

It also states that plans, strategies, investment decisions and programmes in the region should plan for the successful adaptation to the predicted impacts of climate change by minimising threats (e.g. coastal erosion, increased flood risk, habitat disturbance etc), and maximise opportunities (e.g. increased growing season, greater tourism potential, and warmer urban environments). It also seeks to ensure that the average home energy rating is increased and all new publicly funded housing meets at least level 3 of the Code for Sustainable Homes. The regional strategy would have an impact on greenhouse gases through increased urban density and related public transport networks, especially in the Leeds City Region.

Modelling carried out for the Yorkshire and Humber Regional Adaptation Study (2009) assessed current climate variability and trends in the region, and 'downscaled 'climate projections for the region (UK Climate Impacts Programme 02, medium-high emissions scenario) using the Environment Agency's Rainfall and Weather Impact Generator (EARWIG). Key changes to the Yorkshire and Humber region to 2050 included:

- Annual average daily temperature rising by almost 2°C;
- Extreme hot temperatures to increase, with summer temperatures more regularly reaching 34°C;
- Reduced annual rainfall by up to 6% (less in upland areas);
- Greater seasonality of rainfall with increases in winter and significant reductions in summer;
- Greater number of extreme rainfall events in northern and upland areas;
- Increase in the number of dry spells (over 10 consecutive days without rain);
- Reductions in the number of days of frost and snow;
- Marginal increases in winter average wind speeds, with summer and autumn speeds slightly reduced; and.
- Sea level rises by around 0.35 meters.

Changes in our climate, such as more severe storms and wetter winters, will increase the risk of flooding. In addition, the region has large stores of carbon locked-up in its peat soils. These are at risk of releasing this carbon if temperatures increase and soils dry out.

7.6 Assessing significance

Table 7.2 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 7.2 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. Where a box is coloured but also contains a ? this indicates uncertainty over whether the effect could be a minor or significant effect although a professional judgement is expressed.

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

Table 7.3 summarises the significant effects identified in the detailed assessment of the Yorkshire and Humber Plan policies against the climate change topic.

Table 7.3 Significant effects against the climate change topic

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
YH1 **Achieving sustainable development**	**Retention**	++	++	++	This policy sets out the overarching framework for the RSS and provides the spatial basis for implementation of the RES which sets out a vision for Yorkshire and the Humber to "be a great place to live, work and do business that fully benefits from a prosperous and sustainable economy". Retention of the policy will promote reductions in greenhouse gas emissions through sustainable development and reduced transport through urbanisation, reversing the long-term trend of population and investment dispersal away from Regional and Sub-Regional Cities and Towns. The policy also promotes accessibility including sustainable modes of transport and seeks to address transport related emissions. It also seeks to respond pro-actively to the effects of climate change through avoiding increased flood risk, and managing land and river catchments for flood mitigation, renewable energy generation, biodiversity enhancement and increased tree cover.
	Revocation	+	+	++	Revocation of the policy will not have a significant change in the long term as the purpose of the planning system is to contribute towards the achievements of sustainable development, as set out in section 39(3) in the Planning and Compulsory Purchase Act 2004 and reiterated in paragraph 6 of the NPPF. Specific reference is made to the five 'guiding principles' of sustainable development set out in the UK Sustainable Development: Strategy Securing the Future. These are: living within the planet's environmental limits; ensuring a strong, healthy and just society; achieving a sustainable economy; promoting good governance; and using sound science responsibly. The policies in paragraphs 18 to 219, taken as a whole, constitute the Government's view of what sustainable development in England means in practice for the planning system. The 2004 Act, places statutory duties particularly with regard to environmental protection, sustainable development and climate change, when local authorities prepare their local plans. In the short-medium there are likely to be some limitations on improving accessibility by public transport and thus reducing greenhouse gas emissions. However, in the long term the same significant positive effects are considered to result.

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
YH2: climate change and resource use	**Retention**	++	++	++	This policy sets a framework for local authorities to ensure that mitigating and adapting to the effects of climate change remains at the heart of local authority plan-making through its influence over transport, economic development, housing, energy, waste and infrastructure. This policy would have significant positive effects on water, air and climate change. Targets include reducing GHG in 2016 by 20-25% compared to 1990 levels; this target is directly reflective of the 2016 greenhouse gas emissions target set out in the RES. Perhaps the greatest impact the RSS can have on greenhouse gases is through increased urban density and related public transport networks, especially in the Leeds City Region. Although improved housing quality, energy efficiency and reduced traffic as well as promotion of walking and cycling helping to reduce GHG emission. There are factors outside the town and country planning system which will determine whether or not this policy will be met. For example, over 50% of greenhouse gas emissions come from three coal fired power stations in the region (Drax, Eggborough and Ferrybridge) and the planning system also has little direct influence over emissions from existing housing, power generation infrastructure, industry and commerce, with only influence possible on transport choice and behaviour. Revocation of this policy would not remove the requirement for local authorities to be consistent with legal and national policy requirements, such as paragraph 17 of the NPPF which supports the transition to a low carbon future, taking full account of flood risk and coastal change, and encourage the reuse of existing resources. Therefore in the long term significant positive effects are considered to result.
	Revocation	+	+	++	
YH7 Location of development	**Retention**	++	++	++	This policy provides a general policy framework for guiding the location of development following distribution of development to settlements in accordance with YH4-YH6. It seeks to re-use of previously developed land as a priority followed by urban infill and adopts a transport lead approach. These include compliance with detailed accessibility criteria to maximise accessibility by walking and cycling and to maximise the use of rail and water travel by freight to reduce GHG emissions. This transport led approach is reflective of the RES specifically Objective 4 to encourage access to jobs without a car and Objective 5 relating to better public transport connections to key urban centres and improving rail connections to the Humber Ports. There are unlikely to be significant environmental effects if Part A is revoked because local planning authorities will still be able to rely on the strong policies at paragraphs 110 – 111 of the NPPF which supports effective use of previously developed land (generally located closer to urban centres) provided it is not of high environmental value. Revocation of Part B is likely to lead to more uncertain impacts since, whilst the NPPF states that plans should support a pattern on development which, where reasonable to do so, facilities the use of sustainable modes of transport, it is not prescriptive in the manner of Policy YH7. This leaves discretion to local planning authorities to
	Revocation	+	+	++	

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
					balance transport sustainability and other sustainable development aspirations; it is considered unlikely that the aspirational transport-orientated approach will be adopted by all local authorities in the absence of national guidance particularly in respect of the small and relatively remote towns and villages in the region.
YH8 Green Infrastructure	**Retention**	++	++	++	Green infrastructure includes strategic networks of accessible, multifunctional sites (including playing fields, parks, woodland, informal open spaces, nature reserves and historic sites) as well as linkages such as the principal transport corridors, river corridors and floodplains, wildlife corridors and greenways. Retention of this policy will have a significant effect on green infrastructure which helps to provide more wildlife habitats; connect existing wildlife habitats thus facilitating movement of species (including in the longer term in response to climate change) and make people more aware of wildlife so retention will contribute greatly to the maintaining the region's environment. It also works to deliver climate change benefits through mitigation of flood risk and provision for renewable energy infrastructure.
	Revocation	-	?	++	The NPPF 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 Government's June 2011 White Paper, *The Natural Choice*, sets out broad proposals to support the development of green infrastructure, including the establishment of a national Green Infrastructure Partnership and Local Nature Partnerships. Local Nature Partnerships, once established, can be expected to play a positive role in supporting improved networks of green infrastructure. Revocation is therefore likely to have the same significant positive effects in the long term. Leeds and South Yorkshire already have non-statutory green infrastructure strategies in place which were given weight in the development of core strategies due to the RSS policy. However, not all areas currently have such strategies in place and it would be up to Local Nature Partnerships to develop them. This may mean that in the short to medium term important green infrastructure could be lost to development, particularly given only 8 out of 23 local authorities have a core strategy in place and land allocations in older Local Plan policies may not have adequately considered the green infrastructure concept and just focussed on avoiding the development of designated sites.
ENV5 Energy	**Retention**	+	+	++	Retention of this policy would have significant environmental effects in the long term as increased provision of renewable energy and increased energy efficiency would contribute to reducing greenhouse gas emissions. Part A of this policy sets out goals for reducing greenhouse gas emissions, improving energy efficiency and maximising the use of power sources. The NPPF foresees a substantial role from planning in helping shape places to secure radical reductions in greenhouse gas emissions and
	Revocation	+	+	+	

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
					supporting the delivery of green energy and associated infrastructure. In doing so, the NPPF lays out a clear set of expectations on local planning authorities. They are required to adopt proactive strategies to mitigate climate change, including planning for new development in locations and ways which reduce greenhouse gas emissions (not least through transport solutions which support reductions in greenhouse gas emissions); actively supporting energy efficiency improvements to existing buildings; and promoting energy from renewable and low carbon sources. These strategies are expected (paragraph 94) to be in line with the objectives and provisions of the Climate Change Act 2008 which introduced a statutory target of reducing carbon dioxide emissions to at least 80% below 1990 levels by 2050, with an interim target of at least 34% by 2020. In addition to the statutory requirement to take the NPPF into account in the preparation of local plans, Section 19 of the Planning and Compulsory Purchase Act 2004 puts a specific duty on local planning authorities to ensure their local plan (taken as a whole) includes policies designed to tackle climate change and its impacts. Part B of this policy sets targets for renewable energy capacity at sub-regional level and for offshore, with the sum for onshore broken down into indicative figures at local authority level. The overall regional target is about 1860MW of installed capacity by 2021, representing 22.5% of estimated regional electricity consumption. If achieved, this would represent an adequate contribution to the current national target for the UK to meet its target of generating 15% of all energy from renewables by 2020. If this policy were to be revoked it is possible that 1862MW or more will still be consented and, at least, this target actually implemented by 2021. If so then the effect of revoking this policy would be the same as retention. However, it is possible that some local authorities, in following the policy on renewable energy in the NPPF, may decide not to consent significant additional capacity due to the weight they place on unavoidable adverse environmental impacts, e.g. on landscape, from renewable energy sources such as wind. Part B also required developments of more than 10 dwellings or 1000m square residential floorspace should secure at least 10% of their energy from decentralised and renewable or low-carbon sources, unless, having regard to the type of development involved and its design, this is not feasible or viable. The loss of strong policy direction on revocation means that although long term effects will be positive they may not be significant.

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
T1: Personal travel reduction and modal shift	**Retention**	++	++	++	This policy does not have specific spatial outcomes but provides a generic framework to support sustainable transport whilst delivering the other objectives in the RSS, especially the potential level of housing growth (policy H1) and employment growth (policy E1). In particular, this policy seeks to address major traffic growth and congestion through measures to reduce travel demand, traffic growth and promote more sustainable modes of travel through a combination of demand management measures. Retention of this policy will result in positive effects against reducing greenhouse gas emissions. Revocation of the policy will not remove the emphasis on promoting sustainable travel. Paragraphs 29-41 of the NPPF sets out the Government's objectives for promoting sustainable transport, whilst paragraphs 162 and 178-181 require local authorities to consider transport infrastructure, and to work with neighbouring authorities and transport providers to develop strategies for its provision to support sustainable development. The duty to co-operate will assist with this strategic approach. Revoking this policy will simplify the planning policy framework for local authorities, and will leave it to each authority, working together with public transport organisations such as West Yorkshire Metro, to plan for the transport needs of their area. The actual effect in the long term is likely to be positive.
	Revocation	+	+	+	
T3 Public transport	**Retention**	++	++	++	This policy explores the specific contribution that public transport could make in promoting modal shift, including through the use of public transport accessibility criteria. Part A sets out the public transport accessibility criteria (e.g. journey time to primary schools) which should be used by local authorities to guide the allocation of development sites and transport infrastructure. Part B identifies spatial priorities for developing public transport schemes. Retaining this policy will have an indirect significant positive effect since it will improve greenhouse gas emissions by reducing car journeys There is a need to plan for sustainable transport in the NPPF but removal of Part A on revocation will have a less positive effect especially in the short-medium term but potentially also in the long term since there is no similar criteria in national policy that can be used by local authorities in allocating land for development to ensure sustainable transport. Removal of Part B removes the strategic priorities for particular areas. The impact of this is that these areas might not have sufficient funding when transport plans are revised. However, as set out in the NPPF, it is for each local authority to work together, along with other providers to assess the quality and capacity of, and then deliver transport infrastructure so the impact of revoking this part of the policy is likely to be neutral.
	Revocation	+	+	+	

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
T5: Transport and tourism	**Retention**	++	++	++	This policy seeks to improve access to all the region's main tourist destinations, including National Parks and coastal resorts by more sustainable modes of transport in line with T1-T3 and to complement policy E6. The main thrust of policy is to open up tourism to people travelling other than by car. It will therefore have positive effects by promoting sustainable modes of transport and so limiting GHG emissions.
	Revocation	+	+	++	The NPPF requires local planning authorities to plan positively to meet the needs of their area. This is supplemented by a range of policies which impact on the ability to promote sustainable tourism, as set out in the commentary to policy E6. Additionally paragraphs 29-41 set out expectations on local authorities to deliver sustainable transport solutions, which include access to tourist destinations. Local authorities will continue to work together, using policies in the NPPF and assisted by the duty to co-operate to plan for access to tourism facilities. Therefore the same significant benefits are considered to result in the long term.
T6: Airports	**Retention**	--	--	--	This policy responds to national policy and the demand for air travel. The aim of this policy is to limit and optimise the impacts of air travel by ensuring that airport growth is linked to regeneration, surface transport to airports is improved particularly by public transport, and any airport expansion meets the 'principles of sustainable development' as demonstrated through a Sustainability Appraisal. Providing for further growth in air travel is incompatible with the need to address climate change. Reductions in impacts from shifting journeys to airports from car to public transport are trivial compared to the impacts of the flying itself. Furthermore flights out of Yorkshire and Humber airports are expected to treble in the next 25 years, so the overall impact of surface transport would still worsen in the longer term. Consequently this policy will have a potentially a significant negative impact on climate change.
	Revocation	--	--	--	The Air Transport White Paper 2003 supports additional terminal capacity for Leeds Bradford International Airport, improving surface access to the airport is a priority. Furthermore, Robin Hood Airport is also growing and increased surface access to the airport is important. It is recognised as an important opportunity to deliver South Yorkshire's spatial potential. Humberside Airport has an important role in serving the offshore oil and gas industry but it is likely to be affected by competition from an expanding Robin Hood Airport. If the policy is revoked it will be for local planning authorities to decide on the extent of future expansion at Leeds Bradford, Robin Hood and Humberside airport. Airport planning will still have to take account of relevant aspects of policy on transport at paragraphs 29 – 41 of the NPPF. In promoting airport development local plans should take account of the NPPF as well as the principles set out in the relevant national policy statements. Proposals for airport development will most likely be subject to EIA at

Regional Plan Policy	Alternative	Score			Commentary
		Short Term	Medium Term	Long Term	
					planning application stage. The overall impact of this policy is uncertain since it will be up to local authorities to determine the direction of their local plan but it is considered that the same significant negative effects (as with retention) will result.

7.7.1 Effects of Retention

The effects of retention of the regional strategy have been assessed on the assumption that, in the absence of the legislation and regional architecture enabling updating of the regional strategy, although the general principles of development will remain some policies will become increasing outdated and in some cases in conflict with the national policies in the Framework. By setting out the overarching direction within which local plans should be developed retention of the regional strategy would have significant benefits on climate change in the short to long term.

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. However, there are factors outside the town and country planning system which will determine whether or not the policies in the RSS will be met. For example, over 50% of greenhouse gas emissions come from three coal fired power stations in the region (Drax, Eggborough and Ferrybridge) and the planning system also has little direct influence over emissions from existing housing development, power generation infrastructure, industry and commerce, with only influence possible on transport choice and behaviour.

7.7.2 Effects of Revocation

There are two key aspects to climate change considered in this assessment.

The first is the extent to which the region contributes to global emissions of greenhouse gases. Growth of housing, economic development, transport movement, waste generation and energy use are areas where increases in carbon dioxide emissions could be seen. The short, medium and long term impacts of the revocation of Policy H1 *Provision and distribution housing* are unknown as regional housing targets will be lost. However, it is considered that the same if not greater level of housing will be provided resulting in the same negative effects (as with retention) on climate change in the long term. Revocation could alter the pattern of development in this or adjacent regions and thus the magnitude of the environmental impact by increasing the amount of traffic generated. However, revocation is not considered to affect the policy intent

(to move towards a low carbon economy) as it will be delivered by other policy and legislation therefore the cumulative effect of revocation on climate change is considered to be neutral.

The second is the extent to which planning policy facilitates adaption and mitigation of the impacts of climate change. The Climate Change Act 2008 as explained above 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 5 year period) to 2022. In addition, 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 planning system will have an important, but not necessarily leading role in taking this forward.

In this respect revocation of the regional strategy and the removal of regional policies will not have any material effect in the long term although in the short-medium there are likely to be some limitations on improving accessibility through increased urban density and related public transport networks and thereby 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, 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 in line with the provisions of the Climate Change Act 2008.

The NPPF seeks to support the move to a low carbon future, 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.

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 cooperate under the Floods and Water Management Act 2010. Paragraph 156 of the NPPF requires local planning authorities to set out the strategic priorities for the area in the local plan, including strategic policies to deliver the provision of infrastructure for flood risk and coastal change management. Shoreline Management Plans should continue to inform the evidence base for planning in coastal areas (paragraph 168). The prediction of future impacts should include the longer term

nature and inherent uncertainty of coastal processes (including coastal landslip), and take account of climate change.

The exception to this is the removal of policy ENV5 (Energy) which required a total of 1862MW of installed grid-connected renewable energy capacity by 2021 (22.5% of estimated regional electricity consumption). On revocation this would be replaced by the national target of 15% electricity consumption from renewable sources, with no specific regional target to be met. Whilst national policy encourages renewable energy, local authorities would not have to allow this type of development within their area. Long term this could have significant issues on EU and UK targets for increasing energy produced from renewable sources and reducing carbon dioxide emissions.

Data collated by the Department of Energy and Climate Change indicates that at 2011 only about 200MW of capacity had been completed onshore in the region. There is therefore still some way to go to meeting the target. However about a further 1370MW has been consented in the region and if all the consented schemes were to be implemented the residual shortfall would be only about 290MW. Therefore, if this policy were to be revoked it is possible that the full 1862MW or more will still be consented and, at least, this target actually implemented by 2021. If so then significant benefits would still occur. However, it is possible that some local authorities, in following the policy on renewable energy in the NPPF, may decide not to consent significant additional capacity due to the weight they place on unavoidable adverse environmental impacts, e.g. on landscape, from renewable energy sources such as wind.

7.8 Partial Revocation

The significant positive effects of partial-revocation on climatic factors are similar to retention/revocation.

7.8.1 Revoking all the Quantified and Spatially Specific Policies

Revocation of the quantified and sub-area policies could increase the number of additional homes delivered up to about 30,000 per annum to 2026 (see Population section) and thus increase greenhouse gas emissions due to associated traffic generation and increased demand for energy resources. RSS policies and statutory duties on environmental protection and policies in the NPPF should provide environmental protection in relation to development, retaining the guidance on transport access will have a significant positive effect on climate factors.

Whilst national policy encourages renewable energy, local authorities would not have to allow this type of development within their area. Revocation of Policy ENV5 could mean that some local authorities, in following the policy on renewable energy in the NPPF, may decide not to consent significant additional capacity due to the weight they place on unavoidable adverse environmental impacts, e.g. on landscape,

from renewable energy sources such as wind. Long term this could have an effect on meeting EU and UK targets for increasing energy produced from renewable sources and reducing carbon dioxide emissions.

7.8.2 Revoking all Non Quantitative and Spatially Specific Policies

Revocation of the non-quantitative and sub-area polices is not considered to affect the policy intent (to move towards a low carbon economy) as it will be delivered by other policy and legislation. Retaining Policy ENV5 and the regional energy targets has a significant positive effect.

7.8.3 Retention of Policies, the Revocation of which may lead to likely Significant Negative Environmental Effects

For policy T6 there are significant negative effects predicted, however, this is the same issue for both retention and revocation and will require a similar concerted effort by all interested parties to resolve, irrespective of the presence of the regional strategy.

7.9 Mitigation Measures

It is recognised that local authorities will need to cooperate with the Environment Agency and neighbouring local authorities in line with the “duty of co-operate” to ensure climate change benefits are delivered in the long term.

7.10 Proposals for Monitoring

Significant and uncertain effects in respect of climate change relate to:

- Public transport accessibility
- Cycling and walking statistics
- Green infrastructure provision and accessibility
- Renewable energy installed
- Carbon dioxide emissions from power stations

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. Once formally adopted, these will come into force in 2010. 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 Yorkshire and Humber

Waste and Minerals

In July 2003 the Yorkshire and Humber Assembly published the ***Yorkshire and Humber Regional Waste Strategy – Let's take it from the tip***. This was developed by a steering group of organisations with an interest in ensuring that the region's waste is managed in a more sustainable way. This strategy sets out how the three priorities to improve the long term environment of the region will be implemented. These priorities include:

- Reduce the amount of waste produced and improve levels of recycling;

- Reduce the activities which are having a negative effect on our climate; and
- Improve conditions for wildlife in the region.

The strategy also outlines four objectives that aim to take forward the overall aim to develop more sustainable waste management systems across the region. These objectives are:

Objective 1 – Gain community support and involvement in the delivery of the strategy

Objective 2 – Reduce waste production and increase re-use, recycling and composting

Objective 3 – Manage residual waste in the most sustainable way

Objective 4 – Provide technical support and advice (including good practice on waste management, updates and interpretation on new legislation and facilitate discussions to inform consultation responses to UK and EU Governments).

In addition there are a number of relevant local level plans and strategies in the region with regarding waste and minerals including:

Integrated Waste Strategy for Leeds – adopted in 2006, this plan runs from 2005 – 2035 and describes how government targets for recycling and reducing waste sent to landfill will be met. This strategy states *"Our vision is of a zero waste city, whereby we reduce, re-use, recycle and recover value from all waste, waste becomes a resource and no waste is sent to landfill."* In order to meet this aspiration, the following principles are set out:

- Reducing consumption;
- Reducing growth in waste per household;
- Ensuring that products are made to be re-used, repaired, recycled or composted;
- Maximising recycling; and
- Minimising residual waste.

Target 45+ Sustainable Waste Management Strategy – this strategy was developed in partnership by Kingston upon Hull City Council and the East Riding of Yorkshire Council, setting out how the Councils plan to manage waste produced in the area. The strategy was jointly adopted by both councils in 2006 and set out the strategic aims and targets for waste collection, recycling and disposal over a 15 year period from 2006 – 2020. This strategy was reviewed in 2012 to set out the current position and explain proposed updated strategic aims and targets. The review proposes the following updated aims:

1. Deal with municipal waste in the most sustainable way by moving waste management practice up the waste hierarchy

2. Raise public awareness and responsibility for waste

3. Provide a network of local recycling facilities for residents and ensure that waste is processed through treatment facilities in accordance with relevant legislation and where appropriate with due recognition of the local planning process

4. Divert biodegradable waste from landfill

5. Provide leadership in dealing with the Council's own internal waste

6. Provide a sustainable waste management service for households and businesses which achieves value for money and high levels of customer satisfaction and which aims to achieve top 10% performance

7. Work with local and regional stakeholders to ensure delivery of the Council's strategic objectives

8. To reduce the climate change impact of the Council's waste services

A Municipal Waste Management Strategy for the City of York and North Yorkshire 'Lets Talk Less Rubbish' – this strategy was developed by the York & North Yorkshire Waste Partnership in 2006 and provides the strategic vision for managing wastes and improving recovery in York and North Yorkshire. The strategy contains the policies, aims, objectives, and targets for the partnership areas and relates to the period of 2006 – 2026.

This was developed in response to the significant challenged facing the management of municipal waste. These include local, national and international obligations, changing environmental targets and policies, and an increasing requirement to adopt more sustainable practices in the management of waste. The overall aim is to work towards an overall vision to:

"Work with the community and stakeholders of York and North Yorkshire to meet their waste needs and deliver a high quality, sustainable, customer-focussed and cost effective waste management service."

In order to meet this aim, the strategy identifies the need to reduce the amount of waste produced in the area; and promote the value of waste as a natural and viable resource.

Sheffield's Waste Management Strategy – Sheffield City Council approved a new waste strategy in 2009 which sets out how waste in Sheffield will be managed until 2020. The strategy sets out a vision to *"Reduce the environmental impact of Sheffield's waste and to exceed the expectations of our customers."* To achieve this, three objectives have been developed which aim to:

- Reduce Sheffield's waste (by reducing household waste by 2% per year from 2009 to 2014);
- Help Sheffield residents and businesses to recycle; and

- Minimise Sheffield's waste that goes to landfill (to less than 10% by 2020).

Barnsley, Doncaster and Rotherham Joint Waste Plan – adopted in March 2012, this Joint Waste Plan sets out the overall approach to managing waste across Barnsley, Doncaster and Rotherham over the next 15 years. It indicates:

- **What** waste facilities are required;
- **Where** they will be located;
- **When** they will be provided; and
- **How** they will be delivered and monitored.

Joint Waste Local Plan – This joint plan was adopted in November 2004 by Hull City Council and East Riding of Yorkshire Council, setting out land-use policies for managing waste in the area. A Joint Waste Development Plan Document is currently being prepared by Hull and East Riding of Yorkshire Councils which will replace the Joint Waste Local Plan once adopted.

Yorkshire Dales Minerals and Waste Local Plan (saved policies, 2008) – This plan establishes a comprehensive set of land use policies to specifically guide and control minerals and waste disposal development within the National Park and to provide a basis for determining planning applications. This provides a detailed policy framework for controlling mineral working, waste disposal and ancillary development in order to minimise any adverse effects on the environment. One of the main aims of the plan is to safeguard and conserve mineral resources and to encourage the use of secondary and recycled materials wherever possible, whilst working towards the objective of sustainability in minerals and waste planning.

Joint Minerals Local Plan – This plan was adopted in April 2004 and covers the Hull and East Riding area. It seeks to ensure minerals are extracted in a controlled way that respects the local environment, whilst providing for the need of industry. A Joint Minerals Development Plan Document is currently being prepared by Hull and East Riding of Yorkshire Councils which will replace the Joint Minerals Local Plan once adopted.

Additional Considerations

It should also be noted that North Yorkshire County Council currently have in place two specific Local Plans which deal with Minerals and Waste, which will eventually be replaced by the **Minerals and Waste Development Framework** (MWDF) currently being produced. The MWDF will set out a local basis for minerals and waste planning within North Yorkshire and will contain policies and proposals to guide minerals and waste planning decisions. As part of this, specific Waste Core Strategy and **Minerals Core Strategy** are being prepared by North Yorkshire County Council which will guide planning decisions up to 2030. The aim of these strategies is to deal with key issues about the future of waste and minerals

developments such as the location of development, when development should take place, what sort of development is acceptable, and how suitable development should be implemented.

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[158].

In 2002, 41% of commercial and industrial waste arisings were landfilled; 33% were recycled; 9% were reused; 4% were treated; 4% were thermally treated; 4% were unrecorded; 3% went to land recovery; 2% were transferred; and 1% was unsampled[159].

The total hazardous waste produced in UK in 2009 was 4,437,212 tonnes[160].

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[161].

The generation of household waste continued to decrease between the financial years 2009/10 and

[158] Defra, Sustainable Development Indicators in your Pocket 2009,

http://www.defra.gov.uk/sustainable/government/progress/documents/SDIYP2009_a9.pdf

[159] Defra, edigest waste statistics,

http://www.defra.gov.uk/environment/statistics/waste/wrindustry.htm

[160] Environment Agency 2009 Hazardous Waste Arisings figures, http://www.environment-agency.gov.uk/static/documents/Research/EWHaz09_Final.xls

[161] Waste Strategy for England 2007, Defra,

http://www.defra.gov.uk/environment/waste/strategy/strategy07/documents/waste07-strategy.pdf

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.[162]

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.[163]

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, 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.[164]

[162] http://www.defra.gov.uk/statistics/files/mwb201011_statsrelease_v2.pdf

[163] http://www.environment-agency.gov.uk/research/library/data/132641.aspx

[164] Environment Agency 2009 Hazardous Waste Arisings figures, http://www.environment-agency.gov.uk/static/documents/Research/EWHaz09_Final.xls

8.3.2 Yorkshire and Humber

Waste

Yorkshire and Humber produces around 16 million tonnes of waste a year. This is made up of 2.5 million tonnes of household waste, 13 million tons of industrial/commercial and construction/demolition waste and 0.5 million tonnes of hazardous waste. The region landfilled 6.7 million tonnes of waste in 2008 and the remaining landfill capacity was estimated as 97 million tonnes.[165]

Great strides have been made in recycling and recovery of household waste. The amount landfilled has reduced and the amount recycled and recovered has increased from 7.3 per cent in 2000/01 to 33.8 per cent in 2008/09. In 2009/10 this figure improved again, with local authorities in the region recycling 37 per cent of household waste during that period. However, this is lower than the English average of 40 per cent.[166]

In addition, the region produced 500,000 tonnes of hazardous waste in 2007, an increase of nearly three per cent.[167]

Large amounts of energy and raw materials are needed to make the food, clothes and products we consume in our everyday lives. It includes land for our homes, our food, the energy we use directly plus that used to produce all the products we buy. When this is added together, the average person in Yorkshire and Humber has an eco-footprint of about five hectares. If everyone in the world used this amount of land, we would need three planets on which to live on.

Minerals

Yorkshire and Humber has extensive reserves of aggregate minerals which are worked commercially to support the construction industry. Sand and gravel is present in glacial and alluvial deposits in the lowland areas and hard rock more so in the upland areas. They are a finite resource which can only be worked where they occur. While extraction can have significant environmental impacts, there may be opportunities for biodiversity enhancement and other improvements to the landscape on completion of restoration. The Government policy aim is to ensure that there is an adequate supply of minerals to meet the needs of society, but that this must be done within environmental limits.

[165] Yorkshire and the Humber Waste Information 2008, Environment Agency, http://www.environment-agency.gov.uk/research/library/data/97857.aspx

[166] Regional Profiles Summary Yorkshire and The Humber, 2011, Office for National Statistics, http://www.ons.gov.uk/ons/rel/regional-trends/regional-trends/no--43--2011-edition/regional-profiles---summary---yorkshire-and-the-humber.html

[167] Yorkshire and the Humber, 2007, Environment Agency, http://www.environment-agency.gov.uk/research/library/data/97857.aspx

The region has a varied geology comprising a range of rock types of differing economic potential, including limestones, mudstones, shalk, sands, gravel, clay and silt. The minerals waste and industrial by-products used as aggregates include unburnt colliery spoil, metallurgical slags and power station wastes.

In total there are over 100 sites producing primary aggregate in Yorkshire and Humber region. In 2008 total sales of primary aggregate minerals in the region were 3.8 million tonnes of land-won sand and gravel, and 10.3 million tonnes of crushed rock, these figures have been steadily reducing from 2003. The proportion of sales from National Parks and AONBs continue to be on an upward trend. Around a quarter of all primary aggregate sales in the region are from sites in national parks. Since the closure of the two aggregate quarries in the North York Moors NP, all of these sales are from quarries with the Yorkshire Dales. In total, just under a third of sales come from national parks and AONBs.[168]

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[169, 170].

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 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.

[168] Yorkshire and Humber Region Aggregates Working Party, Annual Report 2009, http://www.communities.gov.uk/documents/planningandbuilding/pdf/1392764.pdf

[169] Wales Waste Information 2008, Environment Agency, http://www.environment-agency.gov.uk/research/library/data/111408.aspx

[170] 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

Yorkshire and Humber

In terms of supporting good waste management practices, there is evidence to suggest that parts of the region are under performing in terms of waste minimisation and recycling, but it is not thought that this is indicative of any inherent constraints that cannot be addressed through investment.

With regard to minerals, the key issue for the region is the need to seek a progressive reduction in aggregate production from National Parks and Areas of Outstanding Natural Beauty. Currently aggregate production has been steadily increasing within these areas. However, strategies are being developed at the local level which seek to provide suitable protection for these sites.

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.[171]

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.[172]

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 licenced landfill sites: with falls from 50% to 44% for industrial and commercial waste between 1998/99 and 2002/03.4 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[173]. 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.

[171] Waste Strategy for England 2007, Defra

[172] Environment Agency Waste Trends, http://www.environment-agency.gov.uk/research/library/data/123472.aspx

[173] Commercial and Industrial Waste in England: Statement of aims and actions 2009, Defra, October 2009, http://www.defra.gov.uk/environment/waste/topics/documents/commercial-industrial-waste-aimsactions-091013.pdf

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.[174]

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 waste by 2020.

8.5.2 Yorkshire and Humber

The SEA Directive requires a consideration of the evolution of the baseline without the proposed plan or programme being in place. Slightly confusingly in this assessment, this actually refers to the plan to revoke the regional strategy. So the evolution of the baseline without the plan will mean, in this instance, the evolution of the baseline with the regional strategy retained. Therefore, the assessment has used the findings of the 2008 Sustainability Appraisal of the Yorkshire and Humber plan to provide an informed understanding of likely future evolution of the material assets baseline. Any changes to the baseline that have occurred since 2008 have also been taken into account where information availability allowed.

Waste

Waste management is a significant issue facing the UK and throughout Yorkshire and Humber. The national trend in waste being disposed of to landfill has been reflected in Yorkshire and Humber, with a 42 per cent decrease of inputs to landfill between 2000/01 and 2007. During this period, waste through treatment facilities nearly quadrupled to over three million tonnes.

A number of local level waste strategies have been produced by local authorities and these include figures for expected waste production, as well as targets for recycling and recovery. For example, the adopted Barnsley, Doncaster and Rotherham Joint Waste Plan (March 2012) expects:

- an increase of around one per cent a year in municipal waste, with the plan area already producing approximately 400,000 tonnes each year;
- a decrease by around five per cent of commercial and industrial waste;
- a constant level of growth (less than 0.6 per cent) in construction, demolition and excavation waste; and
- a significant decrease (estimated at around 40 per cent) of agricultural waste.

In addition, the following targets have been set out:

[174] Waste Strategy for England 2007, Defra

- 45 per cent of all household waste produced to be recycled or composted by 2015 which will increase to 50% by 2021;
- 90 per cent of municipal waste to be diverted from landfill; and
- 80 per cent of commercial and industrial waste to be diverted from landfill by 2015, and increasing to 90 per cent by 2026.

Current targets are not available across all local authorities within the region, but it is expected that authorities will be working towards similar targets in order to reduce the amount of waste going to landfill, and increase recycling.

Minerals

Mineral resources are an important element in the region's economy, providing raw materials for the construction, manufacturing and agricultural industries, as well as significant employment. However, the working of minerals can also have significant effects on the natural environment through damage to and destruction of habitats and landscapes, and the human environment through noise, dust, traffic and loss of agricultural land.

An important aspect of mineral planning is the fact that the resources can only be worked where they lie. Within Yorkshire and Humber, a large proportion of minerals come from National Parks and Areas of Outstanding Natural Beauty. This is a contentious issue and presents a special challenge in terms of protecting the environment, whilst meeting the need for minerals and economic stability. There is a need to protect designated areas and reduce mineral workings however, mineral protection has been steadily increasing over time with a just under a third of all minerals in Yorkshire and Humber being produced within National Parks and AONBs. It is expected that the production of mineral workings from these areas will be gradually reduced over time.

8.6 Assessing significance

Table 8.1 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 8.1 Approach to determining the significance of effects on material assets

Effect	Description	Illustrative Guidance
++	Significant positive	• Option will increase capacity of waste management infrastructure. • Option would create no additional hazardous or non-recyclable waste, whilst maximising the proportion of materials that are re-useable or recyclable. • Option will ensure the safe handling of radioactive and hazardous wastes.
+	Positive	• Option would not create an increase in the volume of hazardous and non-recyclable wastes that require disposal. • Option would increase the volume of materials reused and recycled. • Option will ensure the safe handling of radioactive and hazardous wastes.
0	No (neutral effects)	• Option would not create an increase in the volume of hazardous and non-recyclable wastes that require disposal. • Option will have no effect on the capacity of waste management infrastructure.
-	Negative	• Option will result in an increase in radioactive waste for disposal. • Option will increase volumes of hazardous and non-recyclable waste that would require disposal. • Option may have a limited adverse impact on the capacity of existing waste management systems.
--	Significant negative	• Option will generate high volumes of radioactive waste for disposal. • Option will generate a high volume of hazardous and non-recyclable waste that would require disposal. • Option will impede the achievement of government and national targets for minimising, recovering and recycling waste. • Option 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). • Option 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 option would have on this objective is uncertain. Where a box is coloured but also contains a ? this indicates uncertainty over whether the effect could be a minor or significant effect although a professional judgement is expressed.

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

Table 8.2 summarises the significant effects identified in the detailed assessment of the Yorkshire and Humber Plan policies against the material assets topic.

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
YH2 Climate change and resource use	**Retention**	++	++	++	This policy states that resource demands from development should be minimised, and encourages effective waste management. The significant positive effects of the policy are medium to long term, and as they reflect national policy and a general presumption to move waste up the hierarchy these benefits would not be lost if the regional strategy was revoked.
	Revocation	++	++	++	
ENV12 Regional waste management objectives	**Retention**	++	++	++	This policy is specific to waste management in the region and encourages sustainable waste management practices. Part C specifically requires the provision of waste management facilities and initiatives through a combination of: moving waste up the waste hierarchy, meeting statutory waste management performance targets and managing waste at the nearest appropriate location. Ensuring timely provision of appropriate facilities will have significant benefits on human health whilst potentially reducing traffic levels and having benefits for the quality of air. The reduction in the amount of waste disposed of to landfill will reduce the risk of water contamination and emission of greenhouse gases (i.e. methane) although modern waste management practice seeks to prevent this. The benefits of this policy are short to long term. The impact of revocation will be the same as retention as the key objectives will continue to be delivered through national policy and legislative requirements.
	Revocation	++	++	++	
ENV13 Provision of waste management and treatment facilities	**Retention**	++	++	++	Policy ENV13 provides specific guidance regarding the provision of waste management and treatment facilities. Specifically, this policy sets out the need to increase the capacity of treatment and recovery facilities, the change waste management facilities will require in the future and the need for planning authorities to meet nationally set targets. The benefits of this policy are medium to long term. The UK's Waste Strategy (2007) sets out specific national targets for waste management which have been translated into specific local targets for planning authorities within Yorkshire and Humber. However, revocation of this policy should still lead to the same long term benefit once waste local plans are in place to provide the necessary local guidance.
	Revocation	+	+	++	
E1 Creating and successful and competitive regional economy	**Retention**	--	--	--	This policy seeks to supplement the Core Approach YH1 with guidance on more region-wide economic issues necessary for creating a modern and successful regional economy. Tables associated with the policy provide details of anticipated job growth. The policy reflects the aims of the RES which sets out a vision for Yorkshire and the Humber to "be a great place to live, work and do business that fully benefits from a prosperous and sustainable economy". The RSS addresses the spatial aspects complementing the actions to support businesses and promote skills in the RES. The scale of economic development proposed under retention will have a significant negative effect on material assets due to the increased resource use (energy and materials) and waste generation associated
	Revocation	--	--	--	

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
					with it. Paragraphs 18-22 of the National Planning Policy Framework sets out the need to plan proactively to meet the needs of business. On revocation the scale of economic development taken forward at a local level is also still likely to have a significant negative effect (as with retention) on material assets due to increased resource use (energy and materials) and waste generation.
E3 land and premises for economic development	**Retention**	--	--	--	The policy seeks to support implementation of the RES by providing a framework for the location of employment sites in the region, taking account of expected changes to the economy and the need for additional floorspace for office, retail and leisure uses, thereby enabling job growth. Tables associated with the policy provide details of anticipated job growth. The policy reflects the aims of the RES which sets out a vision for Yorkshire and the Humber to "be a great place to live, work and do business that fully benefits from a prosperous and sustainable economy". The RSS addresses the spatial aspects complementing the actions to support businesses and promote skills in the RES. The scale of economic development proposed under retention will have a significant negative effect on material assets due to increased resource use (energy and materials) and waste generation associated with it. Paragraphs 18-22 of the National Planning Policy Framework sets out the need to plan proactively to meet the needs of business. Therefore, on revocation the scale of economic development taken forward at a local level is also still likely to have a significant negative effect (as with retention) on material assets due to increased resource use (energy and materials) and waste generation.
	Revocation	--	--	--	
H1 Provision and distribution housing	**Retention**	- -	- -	- -	This policy seeks to increase and improve the region's housing stock, taking account of strong economic growth in the Leeds City Region, regeneration and increasing economic growth in South Yorkshire and the Humber Estuary sub area, and the need to place a greater emphasis on meeting local needs in rural areas. The policy sets out specific targets for the average annual net additions to the dwelling stock. Whilst it does not specifically mention material assets, the increase in housing stock will lead to an increased demand on minerals for construction, and additional housing stock will also lead to more waste being produced. This policy therefore has significant negative impacts on the region's material assets. In terms of revocation, it is difficult to determine what impact this will have as the regional targets for housing stock will be removed. However, it is considered that the same if not greater level of housing will be provided resulting in the same significant negative effects (as with retention) in the long term.
	Revocation	--	--	--	
T6 airports	**Retention**	--	--	--	The aim of this policy is to limit and optimise the impacts of air travel by ensuring that airport growth is linked to regeneration, surface transport to airports is improved particularly by public transport, and any airport expansion meets the 'principles of sustainable development' as demonstrated through a Sustainability Appraisal. Under retention a tripling of flights from the region will require increased terminal capacity which will increase use of resources (energy and materials) and waste generation having a significant negative effect on material assets.
	Revocation	--	--	--	

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
					The Air Transport White Paper 2003 supports additional terminal capacity for Leeds Bradford International Airport. DTI's July 2012 draft Aviation Policy Framework also supports the growth of regional airports and identifies that a terminal development project is underway at Leeds Bradford to provide this additional capacity. Robin Hood Airport is also growing and the July 2012 draft Aviation Policy Framework identifies funding has been awarded for construction of a link road between Doncaster and Robin Hood airport. If the policy is revoked it will be for local planning authorities to decide on the extent of future expansion at Leeds Bradford, Robin Hood and Humberside airport. However, it is considered the same level of airport development will take place resulting in the same significant negative effects (as with retention) on materials assets.

8.7.1 Effects of Retention

The effects of retention of the regional strategy have been assessed on the assumption that, in the absence of the legislation and regional architecture enabling updating of the regional strategy, although the general principles of development will remain some policies will become increasing outdated and in some cases in conflict with the national policies in the Framework. By setting out the overarching direction within which waste and minerals local plans should be developed retention of the regional strategy would have significant benefits in the short to long term.

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. It is expected that the development of sustainable waste management will improve over time in line with the waste hierarchy such that there is an increase in recycling and reduction in waste going to landfill. It is also expected that retention would result in continued mineral extraction throughout the region.

8.7.2 Effects of Revocation

Waste management and the protection of minerals are key issues within Yorkshire and Humber and this is highlighted through a number of policies within the Yorkshire and Humber Plan which seek to conserve and manage minerals and waste. However, the need for sustainable waste management is identified through national policy and specific targets have been set so the revocation of the regional strategy is unlikely to lead to a loss of the benefits provided through the relevant policies as set out above. However, there may be greater effects on the management and protection of minerals and the surrounding landscapes.

The loss of regional renewable energy targets would result if the regional strategy is revoked. Yorkshire

and Humber is home to three coal fired power stations and produces over 17% of the UK's entire energy production. If renewable energy targets are lost at this level no specific targets will be in place and it is uncertain how much of this type of energy will be developed throughout the region as local authorities may refuse certain applications due to their impact on the environment (e.g. wind farms and landscape issues). This may mean that there will be a continued need for increased mineral extraction long term as it would result in continued dependence on coal fired power stations.

In addition, the short, medium and long term impacts of the revocation of Policy H1 *Provision and distribution housing* is also unknown as regional housing targets will be lost along with policies on economic development and airports. However, it is considered that the same if not greater level of housing will be provided along with economic and airport development resulting in the same significant negative effects (as with retention) in the long term.

8.8 Partial-Revocation

8.8.1 Revoking all the Quantified and Spatially Specific Policies

By setting out the overarching direction within which waste and minerals local plans should be developed retention of the non-quantitative and sub-area policies would have significant benefits in the short to long term.

Revocation of the quantitative and sub-area policies could increase the number of additional homes delivered up to about 30,000 per annum to 2026 (see Population section) and thus have a secondary effect on demand for mineral resources in construction. RSS policies along with statutory duties on environmental protection and policies in the NPPF should provide environmental protection in relation to development.

8.8.2 Revoking all Non Quantitative and Spatially Specific Policies

The need for sustainable waste management is identified through national policy and specific targets have been set so revocation of the non-quantitative and sub-area policies is unlikely to lead to a loss of the benefits provided through the relevant policies as set out above.

8.8.3 Retention of Policies, the Revocation of which may lead to likely Significant Negative Environmental Effects

For Policies E1, E3, H1 and T6 there are significant negative effects predicted, however, this is the same issue for both retention and revocation of the whole plan and will require a similar concerted effort by all interested parties to resolve, irrespective of the presence of the regional strategy.

8.9 Mitigation Measures

Resource minimisation and waste management will be driven by national legislation through the Environment Agency and local authorities responsible for waste management.

8.10 Proposals for Monitoring

Significant and uncertain effects in respect of waste and minerals relate to:

- Waste generation
- Recycling rates
- Waste to landfill
- Minerals extraction
- Renewable energy installed
- Carbon dioxide emissions from power stations

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, including landscape and material assets (land use and materials).

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 Yorkshire and Humber region

The regional **Historic Environment Strategy for Yorkshire and Humber (2009 – 2013)** presented a framework of guidance and support for the management of the region's historic environment, as well as providing a basis to guide policy direction and focus for local development. The Strategy facilitates the implementation of ENV9 by advocating the benefits of the historic environment as well as developing regional priorities for its future management.

The Strategy focuses on the historic environment defined as: *"all aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible or buried, and deliberately planted or managed flora"*. The Strategy sets out Yorkshire and Humber's designated historic assets including:

- 31,331 listed buildings, of which 6.9 per cent are Grade I or Grade II
- Over 900 designated historic places of worship
- 2,632 scheduled monuments
- 779 conservation areas
- 120 registered parks and gardens
- 7 register battlefields including Stamford Bridge, Towton and Marston Moor
- 2 World Heritage Sites – Saltaire and Fountains Abbey and Studley Royal
- 1 historic wreck
- 3 National Parks – Yorkshire Dales, North York Moors and part of the Peak District
- 2 Areas of Outstanding Natural Beauty – Nidderdale and the Howardian Hills and parts of the Forest of Bowland and Lincolnshire Wolds
- 3 wetlands of international importance – Humberflats Marshes and Coast, Lower Derwent Valley, and Malham Tarn
- 3 sections of heritage coast – Spurn Peninsula, Flamborough Headland and part of the North Yorkshire and Cleveland coast.

The purpose of the strategy is to:

- Act as an advocacy document – to broaden awareness and understanding and change the way organisations perceive and value the historic environment, clarifying and emphasising why it matters
- Act as a basis for integrating the historic environment with the ambitions of other agencies – providing a framework to support, guide and inform the development of regional and local policy e.g Integrated Regional Strategy, Local Area Agreements, Local Development Frameworks, Sustainable Community Plans, City Regional and Sub-Region Plans
- Provide a focus to inspire historic environment work in the region – giving a clear direction for activity and outlining priorities to secure the effective management of our historic environment in the future.

In addition, **A cultural heritage strategy for the Yorkshire Dales National Park Authority** (2010 –

2013) was adopted by the National Park in January 2010 and is due for review in January 2013. This strategy is specifically concerned with the cultural heritage of the National Park and sets out how the special qualities of the Yorkshire Dales will be managed and protected. It should be noted that the strategy does not deal with the aspects of cultural heritage that are subject to regulatory control under the relevant planning legislation. These areas are address through the planning process in accordance with Local Plan policies and other national/regional policy.

The overall aim for cultural heritage in the National Park is:

"The historic and cultural environment of the Yorkshire Dales National Park will be recognised, understood, appreciated and used, contributing directly to our understanding of ourselves, our sense of identity and pride of place. This rich inheritance will be conserved and enhanced for future generations, including though well-designed and appropriately sites additions to the built environment.

Thriving and active local communities in the National park will enjoy a high quality of life that helps to sustain the environment, local traditions and contemporary culture."

Other Regional Strategies and Plans with an impact on Historic Environment include:

- Y & H Rural Framework
- Regional Biodiversity Strategy
- Y & H Environmental Enhancement Strategy
- Regional Forestry Strategy

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.[175]

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'.

[175] Department of Culture, Media and Sport, 2009, http://www.culture.gov.uk/4168.aspx

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.[176]

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;
- 17% of protected wreck sites[177].

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[178]. 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%).

[176] English Heritage, http://www.english-heritage.org.uk/caring/listing/what-can-we-protect/listed-buildings/
[177] English Heritage, 2010, Heritage at Risk Summary, http://www.english-heritage.org.uk/publications/har-2010-summary/
[178] http://www.english-heritage.org.uk/content/publications/publicationsNew/heritage-at-risk/Conservation_Areas_at_Risk/caar-booklet-acc.pdf

9.3.2 Yorkshire and Humber region

Yorkshire and the Humber is also characterised by historic environments, not all of which are subject to specific protection. These include the prehistoric landscapes of Ilkley and Rombalds Moors and the Vale of Pickering, medieval landscapes and settlements on the Humber, North York Moors and Yorkshire Dales, and the industrial revolution heritage throughout South and West Yorkshire and in the east coast ports. Archaeological assets are found at these and many other locations.

Yorkshire and the Humber's heritage includes 7 registered battlefields, 3 designated heritage coastlines, 772 Conservation Areas, 2,624 scheduled monuments and over 31,000 listed buildings (including 686 Grade I listed buildings), including important castles and abbeys, historic country houses, medieval buildings, and the City of York with two thousand years of dense and complex settlement. There are World Heritage Sites at Fountains Abbey and Studley Royal near Ripon and Saltaire Village near Bradford.[179]

38 Historic Houses Association properties in the region were open to the public in 2010/11, providing employment for over 2,000 people.

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[180]. 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

[179] English Heritage, 2010, Heritage at Risk Summary, http://www.english-heritage.org.uk/publications/har-2010-summary/

[180] English Heritage, Heritage at Risk Report 2010, http://www.english-heritage.org.uk/publications/har-2010-report/

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 Yorkshire and Humber regions

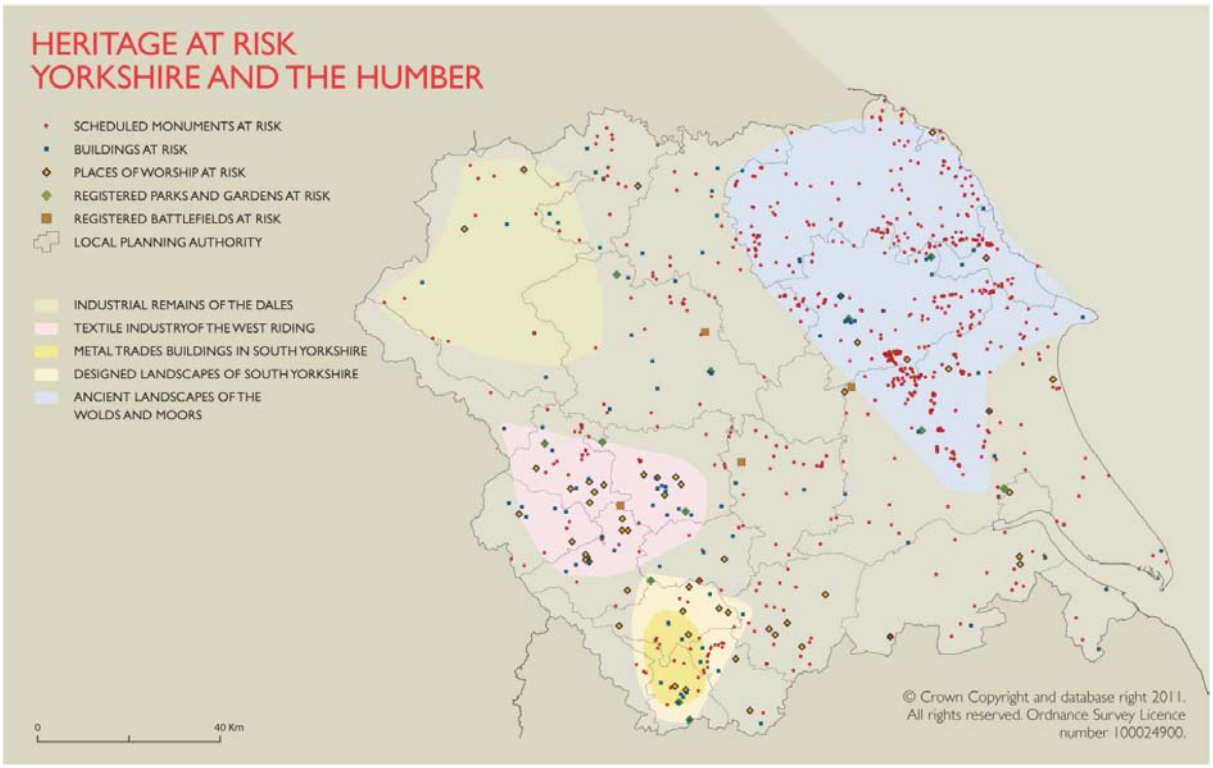
The 2011 English Heritage: Heritage at Risk report showed that Yorkshire and Humber had:

- 93 Grade I and II* buildings at risk (4.2%);
- 701 scheduled monuments at risk (26.7%);
- 12 registered parks and gardens at risk (10.3%);
- All 28 historic cemeteries in the Region have suffered irreversible changes;
- Of the 843 conservation areas in the Region52 (6.2%) are at risk; and
- Out of the 7 registered battlefields in the Region, 4 are at risk.

In 2011, 4.2 per cent of high grade (grade I and II*) listed buildings were at risk, a decrease from 7.1 per cent in 1999. Since 2006, the number of scheduled monuments at risk has been reduced from 880 to 701. However, with 21 per cent of monuments at risk, the region still has the highest proportion of monuments at risk of any region in the country[181].

[181] English Heritage, 2010, Heritage at Risk Summary, http://www.english-heritage.org.uk/publications/har-2010-summary/

Figure 9.1 Heritage at Risk



Source: English Heritage - Heritage at Risk 2011 Summary Leaflets (Yorkshire and the Humber). (http://www.english-heritage.org.uk/publications/har-2011-local-summaries/)

Heritage assets play a key part in attracting UK holidaymakers with current economic pressures encouraging more UK residents to holiday at home rather than going abroad. However the same economic conditions have put pressure on public finances available for the maintenance of historic assets. The presence of out of use heritage buildings in town centres can have a disproportionately high impact on the perception and vitality of a town.

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.[182]

[182] http://www.english-heritage.org.uk/hc/upload/pdf/HC08_National_Acc.pdf)

English Heritage report that there has been little change in the total number of historic assets between 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.[183]

9.5.2 Yorkshire and Humber region

The SEA Directive requires a consideration of the evolution of the baseline without the proposed plan or programme being in place. Slightly confusingly in this assessment, this actually refers to the plan to revoke the regional strategy. So the evolution of the baseline without the plan will mean, in this instance, the evolution of the baseline with the regional strategy retained. Therefore, the assessment has used the findings of the 2008 Sustainability Appraisal of the Yorkshire and Humber plan to provide an informed understanding of likely future evolution of the heritage baseline. Any changes to the baseline that have occurred since 2008 have also been taken into account where information availability allowed.

Yorkshire and Humber represents the national trend of a reduction in the number of heritage assets at risk over the years, a trend which is predicted to continue. However the percentage of listed industrial buildings at risk is three times greater than the national average, according to the English Heritage *Heritage at Risk 2011* report. Many are at risk due to functional redundancy and although have great potential for re-use, require significant investment which is less available with pressure on public and private sector funding forecast to remain for several years. However, Policy ENV9 would have helped to safeguard and enhance the heritage that contributes to the distinctive character of Yorkshire and Humber including Roman military and civil settlements and maritime archaeological assets etc.

Impacts on heritage assets from climate change may increase in future, with erosion and flood damage caused by increased frequency of intense rainfall due to climate change. Subsidence risks increase with extremes of drought and flood, with buried archaeology also affected by the impact on hydrological conditions. Rising sea levels and increased storminess may also cause damage to heritage assets in coastal areas.

9.6 Assessing Significance

Table 9.1 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.

[183] English Heritage, Heritage Counts 2009, England, http://hc.english-heritage.org.uk/upload/pdf/HC09_England_Acc.pdf?1286268742

Table 9.1 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.
--	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. Where a box is coloured but also contains a ? this indicates uncertainty over whether the effect could be a minor or significant effect although a professional judgement is expressed.

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

Table 9.2 summarises the significant effects identified in the detailed assessment of the Yorkshire and Humber Plan policies against the cultural heritage topic.

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
YH8 Green Infrastructure	**Retention**	++	++	++	This policy states that areas and networks of green infrastructure will be identified, protected, created, extended, enhanced, managed, and maintained throughout the region to ensure that an improved, accessible and healthy environment is available. The policy states that local development frameworks should define a multiple hierarchy of green infrastructure, in terms of location, function, size and levels of use, based on analysis of natural, historic, cultural and landscape assets, and the identification of areas where additional green infrastructure is required. This provides protection to historic and cultural assets. The significant positive effects of the policy are short to long term. The NPPF includes a concise but strong policy that requires local authorities to plan positively for the creation, protection, enhancement and management of networks of green infrastructure. Non-statutory green infrastructure strategies exist in the region and once established Local Nature Partnerships can be expected to play a key role in supporting their implementation. It is considered that consideration of
	Revocation	0	?	++	

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
					green infrastructure will still take into account historic and cultural assets so in the long term it is expected that the same significant positive effects will result if the regional strategy was revoked.
YH9 Green Belt	**Retention**	+	+	+	This policy states that the general extent of Green Belts in North, South and West Yorkshire should not be amended but that localised review of the boundaries may be required to deliver the core approach. Policy YH9 encourages the definition of Green Belt boundaries around York as a means to protect its special character and historic value from the level of development proposed, which will have a positive effect on cultural heritage. The NPPF maintains strong protections for Green Belt land (paragraphs 79 – 92) so overall revoking Policy YH9 is unlikely to result in a significant effect on heritage. Although Green Belt revisions could have a negative or uncertain effect on heritage, depending on the precise nature of them, the policy is locationally unspecific in relation to review of the West Yorkshire and South Yorkshire Green Belt. However, the situation at York is different and there is the potential for a significant negative effect to result in respect of revoking Part C of the policy as discussed under Policy Y1. In the long term it is clear from their draft Core Strategy and the fact that a draft Green Belt has been in place since the 1950s that York City Council do intend to formally adopt outer and inner Green Belt boundaries therefore effects on heritage are considered to be positive.
	Revocation	-	?	+	
LCR1 Leeds City Region sub area policy	**Retention**	++	++	++	This policy refers specifically to the Leeds City Region and seeks to provide protection and encourage enhancement of the City Region's historic towns, the World Heritage Site at Saltaire and its setting. This brings short, medium and long term benefits. The guidance in this policy is covered by national policy and revocation of the policy would therefore have the same significant benefits in the short, medium and long term.
	Revocation	++	++	++	
SY1 South Yorkshire sub area policy	**Retention**	++	++	++	Referring specifically to the South Yorkshire sub area, this policy seeks to safeguard and harness industrial heritage in the area. Whilst the NPPF and legislation provides protection to designated cultural heritage assets and seeks to encourage good design in urban areas to reduce the impact of development on the settings of cultural heritage features, no specific regard is given to this area or industrial heritage which is of local or regional importance. The guidance in this policy is covered by national policy and revocation of the policy and adopted Core Strategies for the sub-area reflect the RSS. Revocation would therefore have the same significant benefits in the short, medium and long term.
	Revocation	++	++	++	

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
Y1 York sub area policy	**Retention**	++	++	++	This policy provides protection and enhancement to the nationally significant historical and environmental character of York, including its historic settings, views of the Minster and important open areas. The significant positive effects of this policy are short, medium and long term. National policy on Green Belt is unchanged following publication of the NPPF. Revocation of this policy would remove the policy pressure for review of the Green Belt in West Yorkshire and York but wouldn't prevent a local authority undertaking a review if considered appropriate subject to consistency with national policy. Given the uncertainties surrounding implementation, since statutory duties will still need to be met, the impacts of revocation are considered largely to be neutral in the short term and positive in the long term. The exception to this (resulting in an overall negative effect in the short term) relates to the revocation of Part C1, York Green Belt. York is one of a handful of settlements in England which has a Green Belt whose primary purpose is to preserve the setting and special character of a historic town. Of those settlements, York is unique insofar as it is the only one whose precise Green Belt boundaries have yet to be formally defined in an adopted Development Plan (other than for certain parts of its outer boundary which lie within neighbouring authorities). Policy YH9 Part C states: *'The detailed inner boundaries of the Green Belt around York should be defined in order to establish long term development limits that safeguard the special character and setting of the historic city. The boundaries must take account of the levels of growth set out in this RSS and must also endure beyond the Plan period.'* Policy Y1 provides further policy at this location: *'In the City of York LDF,* [the council should] *define the detailed boundaries of the outstanding sections of the outer boundary of the York Green Belt about 6 miles from York city centre and the inner boundary in line with policy YH9C.'* These assets include the architecture and archaeology of its historic centre, its skyline, views, street patterns, the Minster and its precinct, the Medieval and Roman walls, Clifford's Tower, Museum Gardens and other open spaces. Beyond the City Centre, the key radial routes are of particular importance, and the surrounding villages and green infrastructure, including its valued strays, river corridors and open spaces that contribute to the City's setting. By focussing development on built-up York this is likely to reinforce the compact nature of the city which can be appreciated in views from the Minster Tower, conversely it will also afford views of the Minster from outlying suburbs. The majority of land outside the built up area has been designated as draft Green Belt since the 1950s with the principle of York's Green Belt being established through a number of plans. However, the detailed inner boundaries have never been formally approved. North Yorkshire County Council did develop a York Green Belt Local Plan which went to public inquiry it was never formally adopted. In the absence of adopted boundaries the maps in this Green Belt Local Plan have been informally used for development control purposes and were included as 'draft' in the 2005 York Local Plan. The York Local Plan was prepared in 2005 but has never been formally adopted. Since it does not provide a statutory basis for the Green Belt there could be negative effects on heritage and its setting
	Revocation	-	?	+	

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
					in the short-medium term if the relevant parts of Policies YH9 and Y1 were to be revoked before a new local plan incorporating inner and outer Green Belt boundaries is adopted. Furthermore York Council concluded public consultation on a draft Core Strategy in November 2011. The next stage is to bring it forward to examination in public. However the draft Core Strategy does not currently propose detailed inner Green Belt boundaries, instead leaving this for a future Allocations Development Plan Document which is unlikely to be completed in the short to medium term. Examination of the Core Strategy was also suspended in May to November 2012 so the LPA could provide more evidence including justification and establishment of Green Belt boundaries in accordance with the NPPF paragraphs 83-86 so it too will not be adopted in the short term. If the Regional Strategy were to be revoked ahead of the adoption of a sound Local Plan that provides for development needs in York in a sustainable way and in conjunction with fully defined outer and inner Green Belt boundaries, then there would be a risk during the period between revocation and Local Plan adoption of development being approved on land which would otherwise have been incorporated into the York Green Belt. Although an individual development is unlikely to have a significant effect, given general policies in the NPPF to protect heritage assets, cumulative erosion of the Green Belt could potentially have a significant negative effect on the special character and setting of York in the medium term. In the long term it is clear from their draft Core Strategy and the fact that a draft Green Belt has been in place since the 1950s that York City Council do intend to formally adopt outer and inner Green Belt boundaries therefore effects on heritage are considered to be positive.
VTL1 Vales and Tees links sub area policy	**Retention**	++	++	++	This policy has specific regard to the Vales and Tees links sub area. In particular it seeks to protect and enhance the historic character of the area's Principal Towns, Local Service Centres and countryside. Whilst the NPPF and legislation provides protection to designated cultural heritage assets and seeks to encourage good design in urban areas to reduce the impact of development on the settings of cultural heritage features, no specific regard is given to this area or historic sites which are of local or regional importance. The guidance in this policy is covered by national policy and revocation of the policy and adopted Core Strategies for the sub-area reflect the RSS. Revocation would therefore have the same significant benefits in the short, medium and long term.
	Revocation	++	++	++	
C1 Coast sub area policy	**Retention**	++	++	++	This policy provides protection to the unique character, heritage and biodiversity of the undeveloped coast, in particular the natural beauty of the North York Moors National Park coast, the Flamborough Head coast, and Spurn Head. It also seeks to protect the integrity of historic seaside character of coastal settlements and their settings. The policy also states that economic development proposals should not compromise environmental, landscape and heritage assets. The benefits of this policy will be seen in the short, medium and the long term. This policy reflects national policy (e.g. paragraph 114 of the NPPF, the protection of heritage coasts) and legislation but the ultimate effects of revoking the policy will depend on local circumstances. Local plans for Scarborough and East Riding date from 1999 and 1996 and may not provide as strong a policy direction. It is also unclear whether existing and future land allocations will affect them.
	Revocation	0	?	++	

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
					The effect of revoking this policy is therefore likely to be neutral in the short term and uncertain in the medium term depending on when new Local Plans are adopted. However, in the long term it is expected that local plans will conform to the NPPF and positive effects will be seen.
ENV9 Historic Environment	**Retention**	++	++	++	This policy specifically deals with the protection, conservation and enhancement of the historic environment. It identifies a number of locations, such as Saltaire World Heritage Site, Fountains Abbey and Studley Royal World Heritage Site, the North York Moors, the Yorkshire Dales, Roman military and civil settlements, and the city of York to be protected. It is a core planning principal that local authorities 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. Paragraph 126 of the NPPF requires local authorities to set out in their Local Plan a positive strategy for the conservation and enjoyment of the historic environment. The protection provided in this policy for heritage sites of national interest is also provided within the NPPF (national policy) and legislation. However, other sites of local and regional are not protected to the same degree by national policy, for example, Roman military and civil settlements and maritime archaeological assets etc. Revocation of the policy could therefore result in short term negative effects on the special regional assets identified in policy ENV9 since inappropriate development may be approved if the regional policy was removed. The medium term effects are unknown. This will be dependent upon local circumstances and the future direction of the local plan.
	Revocation	-	?	+	
T5 Transport and tourism	**Retention**	++	++	++	This policy seeks to improve access to the region's main tourist destinations by more sustainable modes of transport. In particular it seeks to promote the journey component of tourism by encouraging improved services on the region's scenic railways (e.g. Yorkshire Coast, Penistone and Esk Valley lines), support the development of Heritage Railways (Wensleydale and North York Moors), and investigate the reopening of the Skipton to Graddington, and Malton to Pickering rail lines. Whilst the NPPF encourages sustainable methods of transport, it provides no benefits in terms of promoting and development the link between heritage, tourism and transport. If the regional strategy is revoked, the impact due to the loss of this policy is neutral in the short, medium and long term as it will be dependent on local circumstances and the future direction of tourism development.
	Revocation	0	0	0	

9.7.1 Effects of Retention

The effects of retention of the regional strategy have been assessed on the assumption that, in the absence of the legislation and regional architecture enabling updating of the regional strategy, although the general principles of development will remain some policies will become increasing outdated and in some cases in conflict with the national policies in the Framework. The regional strategy contains a number of policies which seek to protect or enhance cultural heritage in the region. 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. Retention of the regional strategy is likely to result in continuation of the baseline (subject to factors such as the level of English Heritage funding available) because of the strong planning policy direction, most damaging activities will be caused by factors outside of the control of the planning system (such as, severe weather conditions and abandonment of buildings).

9.7.2 Effects of Revocation

Currently 21 per cent of monuments within Yorkshire and Humber are at risk, the highest proportion of any region in the country. In addition, in 2011, 4.2 per cent of high grade (grade I and II*) listed buildings were at risk, although this represents a decrease from 7.1 per cent in 1999. The Yorkshire and Humber Plan Policy ENV9 was specifically concerned with the protection and enhancement of the historic environment.

Revocation will not affect the intent behind the policy in terms of nationally important cultural heritage features as existing legislation protecting listed buildings, scheduled monuments, and registered parks and gardens remain in place. Therefore national heritage will remain protected following revocation. However, national policy provides no protection for designated and undesignated heritage features such as Roman military and civil settlements and maritime archaeological assets which are not of national importance.

It is a core planning principal in the NPPF that local authorities 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. Paragraph 132 of the NPPF states that when considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation. The more important the asset, the greater the weight should be. Despite these safeguards, it is far from certain that the overall effect of revocation on local and regional cultural heritage assets would be in the short to medium term as local plans may not provide as strong a policy direction, this means that negative effects could be felt in the short term if inappropriate development is permitted. It is also unclear whether existing and future land allocations will affect areas of local and regional cultural heritage value particularly if increased housing delivery over and above the current allocation is required, therefore the medium to long term effects are unknown.

Following revocation of regional strategies, local authorities would still need to continue to work together

under the “duty to cooperate” on conservation, restoration and enhancement of the heritage and historic environment. Paragraph 126 requires local authorities to 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 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.

Although the overall effect of revoking Policy YH9 *Green belts* and Y1 *York sub area policy* on heritage will not be significant, revocation of the policy sections relating specifically to the York Green Belt may lead to a significant cumulative negative effect in the short term. There would be a risk during the period between revocation and Local Plan adoption of development being approved on land which would otherwise have been incorporated into the York Green Belt. Although an individual development is unlikely to have a significant effect, given general policies in the NPPF to protect heritage assets, cumulative erosion of the Green Belt could potentially have a significant negative effect on the special character and setting of York. In the long term it is clear from their draft Core Strategy and the fact that a draft Green Belt has been in place since the 1950s that York City Council do intend to formally adopt outer and inner Green Belt boundaries therefore effects on heritage are considered to be positive.

9.8 Effects of Partial-Revocation

9.8.1 Revoking all the Quantified and Spatially Specific Policies

On revocation of the quantitative and sub-area policies, because the York sub-area policy includes a specific action in relation to the York Green Belt which would be revoked, there would be a risk during the period between revocation and Local Plan adoption of development being approved on land which would otherwise have been incorporated into the York Green Belt with potentially significant adverse impacts on the special character and setting of York. However, Policy YH9 in the spatial vision and core approach will be retained. This provides the policy basis for review of the Green Belt, cross-referencing Policy Y1 in relation to the outer boundary being set approximately 6 miles outside the city centre with the inner boundary still to be defined such that negative effects due to removal of Policy Y1 relating to the York Green Belt would be reduced. Specific reference to protection of the protection of undesignated cultural heritage has a significant positive effect on cultural heritage.

9.8.2 Revoking all Non Quantitative and Spatially Specific Policies

On revocation of the non-quantitative and sub-area policies, because Policy YH9 includes a specific action in relation to the York Green Belt which would be revoked, there would be a risk during the period between revocation and Local Plan adoption of development being approved on land which would otherwise have been incorporated into the York Green Belt with potentially significant adverse impacts on the special character and setting of York. However, Policy Y1 in the sub-area policies will be retained. This cross-references Policy YH9 in relation to the outer boundary being set approximately 6

miles outside the city centre with the inner boundary still to be defined such that negative effects due to removal of Policy YH9 relating to the York Green Belt would be reduced.

9.8.3 Retention of Policies, the Revocation of which may lead to likely Significant Negative Environmental Effects

Several consultees' responses to the October 2011 draft Environmental Report expressed concern about potential adverse environmental effects if the relevant parts of Policies YH9 and Y1 are revoked before the a new Local Plan for York is adopted. York is one of a handful of settlements in England which has a Green Belt whose primary purpose is to preserve the setting and special character of a historic town. Of those settlements, York is unique insofar as it is the only one whose precise Green Belt boundaries have yet to be formally defined in an adopted Development Plan (other than for certain parts of its outer boundary which lie within neighbouring authorities).

York Council concluded public consultation on a draft Core Strategy in November 2011. The next stage is to bring this Strategy forward to examination in public. However, this has been delayed because the Inspector appointed to examine it has expressed concern about the soundness of the draft Strategy. York City Council is considering what further technical work is required and this may delay adoption by at least 6 months. Moreover, the draft Core Strategy does not propose detailed inner Green Belt boundaries and instead leaves this for a future Allocations Development Plan Document.

The assessment has found that retention of sections of two policies in the York and Humber Plan, **Policy YH9 Part C and Policy Y1 Parts C1, C2 and the Key Diagram** will result is a significant positive effect on cultural heritage by helping to protect the special character and setting of York whilst revocation has the potential to cause negative effects on cultural heritage in the short term, possible becoming significant in the medium term. These two sections of policy relate to a specific action to define the inner boundaries of the York Green Belt in order to safeguard the special character and historic value of the city from the level of development proposed. . Policy YH9 Part C states: *'The detailed inner boundaries of the Green Belt around York should be defined in order to establish long term development limits that safeguard the special character and setting of the historic city. The boundaries must take account of the levels of growth set out in this RSS and must also endure beyond the Plan period*.' Policy Y1 Part C1 provides further and specific policy at this location: *'In the City of York LDF, [the council should] define the detailed boundaries of the outstanding sections of the outer boundary of the York Green Belt about 6 miles from York city centre and the inner boundary in line with policy YH9C.'*

The majority of land outside the built up area has been designated as draft Green Belt since the 1950s with the principle of York's Green Belt being established through a number of plans. However, the detailed inner boundaries have never been formally approved. Retention of these two sections of policy therefore has the benefit of enabling the special character and setting of York to be protected until the City of York Council are able adopt their Local Plan and define the boundaries of the Green Belt. It

ensures that the likelihood of land being designated as part of the Green Belt is considered in development control decisions in the short to medium term.

If the Regional Strategy were to be revoked ahead of adoption of a sound Local Plan that provides for development needs at York in a sustainable way and in conjunction with fully defined Green Belt boundaries, then the time lag between revocation and Local Plan adoption could give rise to added complexity in interpreting the presumption in favour of sustainable development in the National Planning Policy Framework. A risk is that applications might be approved, perhaps on appeal, on land which would otherwise have been incorporated into the York Green Belt, with potentially significant permanent adverse impacts on the special character and setting of York. Given the general policies in the NPPF to protect heritage assets, an individual development is unlikely to have a significant effect, however, the longer the transition period is till a Local Plan is adopted, the greater the opportunity for the cumulative effects of development in the Green Belt to have a significant negative effect on the special character and setting of York.

The above comments are only in relation to a specific action to review the inner and fully define the outer boundaries of the York Green belt to safeguard the special character and historic value of the city from the level of development proposed. Overall revocation of Policy YH9 and Policy Y1 is unlikely to result in a significant effect. Revocation of the other sections of Policy YH9 and Policy Y1 is unlikely to result in a significant negative effect. Although Green Belt revisions could have a negative or uncertain effect on landscape, air, climatic factors and cultural heritage, depending on the precise nature of them, the policy is locationally unspecific in relation to review of the West Yorkshire and South Yorkshire Green Belt.

9.9 Mitigation Measures

The risk of a short term significant negative cumulative impact could be mitigated by considering the reasonable alternative of retaining for a transitional period a policy, the revocation of which is likely to have a significant environmental effect. Policies YH9 Part C and Y1 Parts C1, C2 and the Key Diagram could be ‘saved’ for a transitional period until Green Belt boundaries are fully defined in the York Local Plan.

9.10 Proposals for Monitoring

Significant and uncertain effects in respect of cultural relate to:

- Development permissions in York (Green Belt)
- Scheduled Monuments at Risk
- Listed Buildings at Risk
- Registered Parks and Gardens at Risk

- Green infrastructure delivery and accessibility

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 aeas 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 Yorkshire and Humber region

No relevant regional plans or programmes were identified under this topic, however there are a number of local level strategies and plans which are relevant. These include:

Areas of Outstanding Natural Beauty Management Plans – AONB Management Plans are spatial strategies which address the need to manage change in the interests of maintaining natural beauty across a wide range of issues. They provide an integrated vision for the future of the AONB and seek to

maintain the distinctiveness of the landscape. For example, the **Howardian Hills AONB Management Plan (2009)** sets out a 25 year vision for local people and partner organisations to work towards:

"The Howardian Hills will continue to be a tranquil and well-managed rural area. It will still be notable for its extensive woodland, rolling agricultural fields, large country houses and designed parklands. Natural and cultural resources will be sympathetically managed within a diverse and prosperous rural econonmy. Active communities will have increased opportunities for people of all ages to live and work in the area. Residents and visitors alike will be able to enjoy and appreciate the AONB in an environmentally sustainable way."

Other relevant management plans include:

- Nidderdale Area of Outstanding Natural Beauty Management Plan (2009 – 2014);
- North Pennines Area of Outstanding Natural Beauty Management Plan (2009 – 2014);
- Forest of Bowland Area of Outstanding Natural Beauty Management Plan (2009 – 2014); and
- Lincolnshire Wolds Area of Outstanding Natural Beauty Management Plan (2004 – 2009) (This is currently undergoing review and a new Draft Lincolnshire Wolds AONB Management Plan has been published covering the period 2012 – 2017).

In addition, management plans are also in place for the North York Moors National Park (2004) (This is undergoing review and a new plan is due to be published in 2012) and Yorkshire Dales National Park (2000, updated 2006 to cover the period 2007 – 2012). These identify the key issues and a strategy for the protection of the distinctive landscape character.

Local authorities have also produced Landscape Character Assessments for specific local areas. Management plans are also in place for the coastal landscapes within the region, for example, the North **Yorkshire and Cleveland Heritage Coast Management Plan** 2008 – 2013.

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.[184]

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[185] and (excluding Scotland) 49 AONBs[186]. 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[187]. 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).[188]

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.[189] 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 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.

[184] JNCC, landscape designations, http://www.jncc.gov.uk/page-1527
[185] Association of National Park Authorities, http://www.nationalparks.gov.uk/
[186] National Association of AONB, http://www.aonb.org.uk
[187] http://www.nationalparks.gov.uk/learningabout/factsandfigures.htm
[188] http://www.naturalengland.org.uk/ourwork/landscape/englands/character/areas/default.aspx
[189] 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)

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.[190]

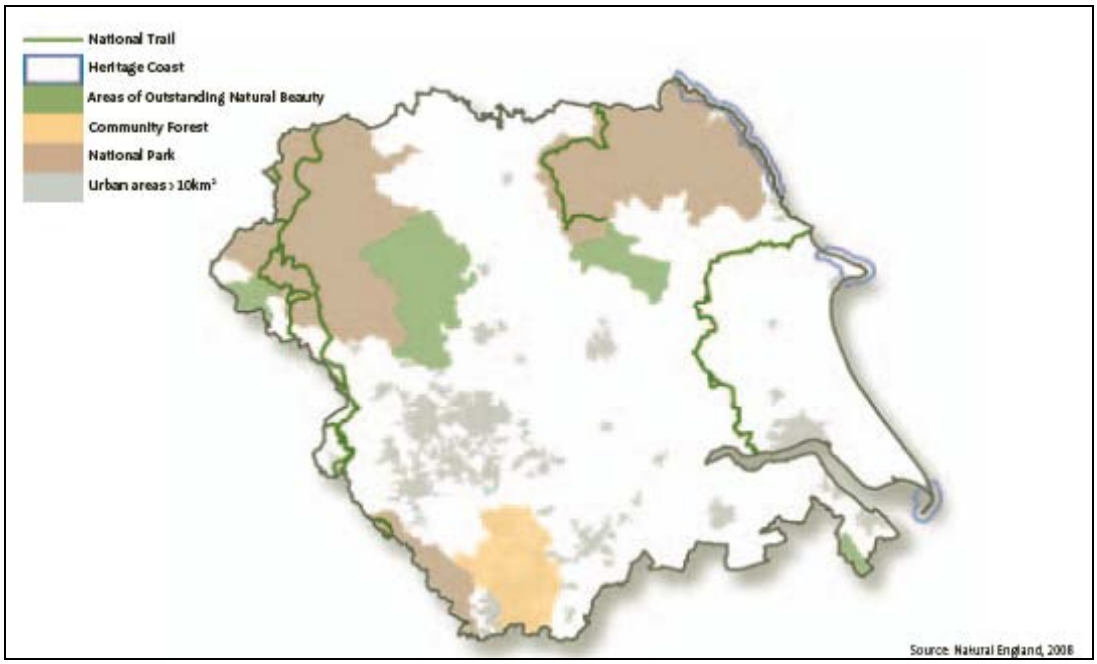
10.3.2 Yorkshire and Humber region

Yorkshire and Humber is an attractive and vibrant region containing a diverse range of urban and rural environments. The cities of Leeds, Bradford and Sheffield are complemented by the port of Hull and some of northern England's most stunning rural landscapes. Upland dales, moors and wolds in the north of the region give way to the lowlands of the Vales of York and Pickering, Holderness and the Humberhead levels. The region has a long eastern coastline facing the North Sea. To the west, the Pennine Hills separate it from the North West region. Four-fifths of the region is rural, not only the Dales and Moors, but also less obvious areas such as the Pennine fringes of West and South Yorkshire.

The region is home to several landscapes of national importance including the North York Moors National Park, the Yorkshire Dales National Park, and the Peak District National Park, as well as all or part of five Areas of Outstanding Natural Beauty, including the Howardian Hills, North Pennines, Nidderdale, and parts of Forest of Bowland and of Lincolnshire Wolds. As Figure 10.1 indicates, the three National Parks cover 21% of the Region's area (more than any other Region) and a further 6% of land is designated as Areas of Outstanding Natural Beauty. There are over 90,000 hectares of woodland, covering some 5.8% of the land area, but below the average of other parts of England. The coastline includes areas of great heritage value (over half is designated as Heritage Coast) but also some of the fastest eroding coastlines in North West Europe.

[190] http://whc.unesco.org/en/list/

Figure 10.1 Designated Landscapes



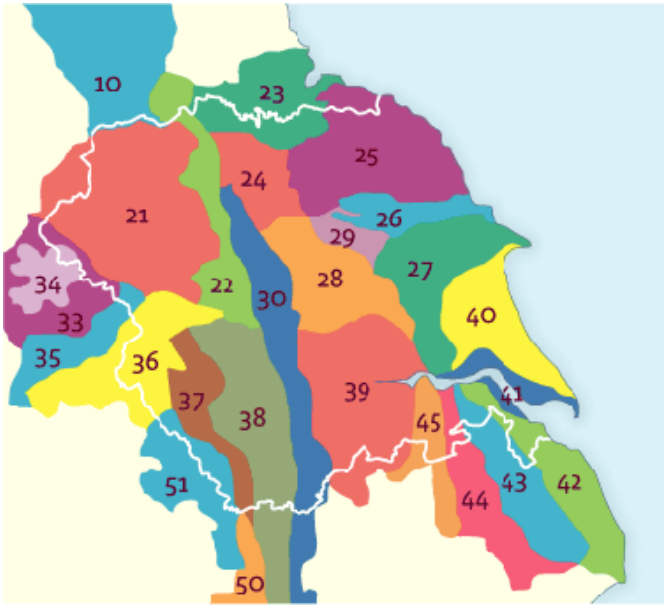
Such landscapes are a major asset to the region in terms of both quality of life for its residents and as an attraction for visitors. However, 27 per cent of the region's landscapes showed loss or neglect over the period 1999 to 2003.[191]

In total, there are 26 National Character Areas either wholly or partially within the Yorkshire and the Humber region. [192]. These are illustrated in Figure 10.2.

[191] Land Use Consultants for Natural England (2008) Yorkshire and Humber Regional Landscape Framework – draft Feasibility Study

[192] http://www.naturalengland.org.uk/publications/nca/yorkshireandhumber.aspx

Figure10.2 National Character Areas in Yorkshire and Humber



Key:

10. North Pennines
21. Yorkshire Dales
22. Pennine Dales Fringe
23. Tees Lowlands
24. Vales of Mowbray
25. North Yorkshire Moors & Cleveland Hills
26. Vale of Pickering
27. Yorkshire Wolds
28. Vale of York
29. Howardian Hills
30. Southern Magnesian Limestone
33. Bowland Fringe & Pendle Hill
34. Bowland Fells
35. Lancashire Valleys
36. Southern Pennines
37. Yorkshire Southern Pennine Fringe
38. Nottinghamshire, Derbyshire & Yorkshire Coalfield
39. Humberhead Levels
40. Holderness
41. Humber Estuary
42. Lincolnshire Coast & Marshes
43. Lincolnshire Wolds
44. Central Lincolnshire Vale
45. Northern Lincolnshire Edge with Coversands
50. Derbyshire Peak Fringe & Lower Derwent
51. Dark Peak

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[193].

10.4.2 Yorkshire and Humber 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;
- 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.

Despite these changes which have taken place throughout the region, change in much of Yorkshire and Humber's landscape has been slow and of limited impact. The nationally important designated sites

[193] http://www.naturalengland.org.uk/ourwork/landscape/threats/default.aspx

including the national parks and AONB have experienced little change and the landscape character of these areas have been retained.

Whilst most of the protected landscapes in the region have resisted change there continues to be growing pressures on these environments including change to agricultural practices (i.e. intensification of farming), impact of built development, roads and services infrastructure, and other human activity such as recreation. These pressures could lead to an adverse impact on the landscape and a lack of distinctiveness both within and between character areas. Up to date Management Plans are therefore vital to ensure that the special landscape areas are protected.

10.5 Likely evolution of the baseline

10.5.1 National

UK

Over the last century the following landscape character trends have been experienced: [194]

- 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[195]:

- **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

[194] Natural England, State of the Natural Environment 2008, Landscape Characterisation and Change, http://www.naturalengland.org.uk/publications/sone/sections.aspx
[195] Natural England (2008) State of the Natural Environment http://www.naturalengland.org.uk/publications/sone/default.aspx

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 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. [196]

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[197].

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.

[196] Natural England, State of the Natural Environment 2008, Landscape Characterisation and Change, http://www.naturalengland.org.uk/publications/sone/sections.aspx
[197] Forestry Commission England, 2008, Delivery Plan 2008-2012: England's Trees, Woods and Forests

10.5.2 Yorkshire and Humber region

The SEA Directive requires a consideration of the evolution of the baseline without the proposed plan or programme being in place. Slightly confusingly in this assessment, this actually refers to the plan to revoke the regional strategy. So the evolution of the baseline without the plan will mean, in this instance, the evolution of the baseline with the regional strategy retained. Therefore, the assessment has used the findings of the 2008 Sustainability Appraisal of the Yorkshire and Humber plan to provide an informed understanding of likely future evolution of the landscape baseline. Any changes to the baseline that have occurred since 2008 have also been taken into account where information availability allowed.

The nationally important designated sites in the region including the national parks and AONB are likely to experience little change and the landscape character of these areas will be retained.

Pressures on undesignated landscape environments including change to agricultural practices (i.e. intensification of farming), impact of built development, roads and services infrastructure, and other human activity such as recreation are likely to remain. However, Policy ENV10 would have helped to safeguard and enhance the landscapes that contribute to the distinctive character of Yorkshire and Humber including coastal landscapes, the derelict and despoiled urban fringe landscapes, especially in the former coalfield and older industrial parts of South and West Yorkshire, and degraded rural landscapes especially in parts of the Vale of York and Humberhead Levels. Policy ENV6 sought to safeguard, manage and enhance the existing woodland resource in line with the Regional Forestry Strategy and to increase the woodland resource by approximately 500 ha per annum to 2021 as well as improving the woodland network, particularly in South and West Yorkshire so as to safeguard ancient woodlands. If implemented there would have been an increase in woodland area from 6% to 6.5% of total land area. It also sought to improve public accessibility to and within woodlands in or near towns or cities such that 70% of the population have one area of accessible woodland no less than 20 ha within 4km of their homes by 2021.

10.6 Assessing significance

Table 10.1 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 10.1 Approach to determining the significance of effects on landscape and townscape

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. Where a box is coloured but also contains a ? this indicates uncertainty over whether the effect could be a minor or significant effect although a professional judgement is expressed.

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

Table 10.2 summarises the significant effects identified in the detailed assessment of the Yorkshire and Humber Plan policies against the landscape topic.

Table 10.2 Significant effects against the Landscape and Townscape topic

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
YH8 Green Infrastructure	Retention	++	++	++	This policy states that areas and networks of green infrastructure will be identified, protected, created, extended, enhances, managed, and maintained throughout the region to ensure that an improved, accessible and healthy environment is available. The policy states that local development frameworks should define a multiple hierarchy of green infrastructure, in terms of location, function, size and levels of use, based on analysis of natural, historic, cultural and landscape assets, and the identification of areas where additional green infrastructure is required. The policy defines assets of particular significance as national and inter-regional trails, floodplains, woodlands, biodiversity, heritage, and distinctive landscapes. The significant positive effects of the policy are short to long term. The NPPF includes a concise but strong policy that requires local authorities to plan positively for the creation, protection, enhancement and management of networks of green infrastructure. Non-statutory green-infrastructure strategies exist in the region and once established Local Nature Partnerships can be expected to play a key role in supporting their implementation. In the long term it is considered that the same significant positive effects will result.
	Revocation	0	?	++	
C1 Coast sub area policy	Retention	++	++	++	This policy provides protection to the unique character, heritage and biodiversity of the undeveloped coast, in particular the natural beauty of the North York Moors National Park coast, the Flamborough Head coast, and Spurn Head. It also seeks to protect the integrity of historic seaside character of coastal settlements and their settings. The policy also states that economic development proposals should not compromise landscape assets. This policy reflects national policy (e.g. the protection of heritage coasts) and legislation but the ultimate effects of revoking the policy will depend on local circumstances. Local plans for Scarborough and East Riding date from 1999 and 1996 and may not provide as strong a policy direction. It is also unclear whether existing and future land allocations will affect them. The effect of revoking this policy is therefore likely to be neutral in the short term and uncertain in the medium term depending on when new Local Plans are adopted. However, in the long term it is expected that local plans will conform to the NPPF and significant positive effects will be seen.
	Revocation	0	?	++	
RR1 Remoter Rural sub area policy	Retention	++	++	++	This policy states that plans, strategies, investment decisions and programmes should seek to ensure that the environmental quality of the region is protected. In particular, this policy identifies the region's upland natural environment including the Yorkshire Dales and North York Moors National Parks, the Howardian Hills, Nidderdale and Forest of Bowland AONBs for protection. It also seeks to safeguard the unique built environment. The significant policy effects of the policy are short to long term. This policy reflects national policy and legislation but the ultimate effects of revoking the policy will depend on local circumstances. Existing local plans may not provide as strong a
	Revocation	0	?	++	

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
					policy direction. It is also unclear whether existing land allocations will affect them. The effect of revoking this policy is therefore likely to be neutral in the short term and uncertain in the medium term depending on when new Local Plans are adopted. However, it is expected that local plans will conform to the NPPF in the long term and significant positive benefits will be seen.
ENV1 Development and flood risk	Retention	++	++	++	The purpose of this policy is to inform development on the basis of strategic flood risk assessments and ensure flood management reflects economic as well as environmental objectives, including the need to maintain the integrity of internationally important biodiversity sites on the Humber through managed realignment. Flood risk is also considered in Objective 5 of the RES which includes an action to analyse and respond to flood risks associated with climate change in, for example, the Humber Estuary and renaissance programmes. Although the policy or its supporting text makes no reference to landscape, by calling for the provision of positive land management for flood alleviation, particularly in the upland areas of the Yorkshire Dales, the North York Moors, the Howardian Hills and the Pennines, there will be significant benefits for the landscape. The effects of retention will be short, medium and long term. Section 10 of the NPPF relates to fluvial and coastal flooding and requires local authorities to 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 NPPF includes a concise but strong policy that requires local authorities to plan positively for the creation, protection, enhancement and management of networks of green infrastructure; this should include land associated with flood alleviation. The River Basin Management Plan for the Humber also includes actions that cover the land management issues in this policy which would benefit the ecological network. In the long term it is considered that the same significant positive effects will result.
	Revocation	+	+	++	
ENV6 Forestry	Retention	++	++	++	Managing, safeguarding and enhancing by approximately 500 hectares per year the region's existing woodland resource, including ancient woodland, will have significant positive effects in terms of enhancing landscape resources. The loss of regional woodland creation target would result if the regional strategy is revoked so long term the same significant benefits may therefore not be seen. However, the NPPF 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 as discussed in YH8. Therefore, revocation of this policy would still be likely to have a positive effect on the environment in the short to long term.
	Revocation	+	+	+	

Regional Plan Policy	Alternatives	Score			Commentary
		Short Term	Medium Term	Long Term	
ENV8 Biodiversity	Retention	++	++	++	This policy seeks to ensure that biodiversity and geological heritage sites are protected including geological and geomorphologic features and processes, especially cave systems, karst landscapes and dinosaur remains on the East Coast. It also supports the protection and recovery of biodiversity in the floodplains, peat lands and saline lagoons of the Humber, grasslands, heaths and bogs, limestone pavements and meadows. As habitats and landscapes are interlinked the policy will have a significant effect on the conservation and enhancement of the landscape. The effects of retention are short, medium to long term. Paragraph 109 of the NPPF requires local authorities to minimise impacts on and provide net gains in biodiversity. The NPPF also includes a concise but strong policy that requires local authorities to plan positively for the creation, protection, enhancement and management of networks of green infrastructure. Non-statutory green-infrastructure strategies exist in the region and once established Local Nature Partnerships can be expected to play a key role in supporting their implementation. Therefore in the long term it is considered that the same significant positive effects will result.
	Revocation	+	+	++	
ENV10 Landscape	Retention	++	++	++	This policy requires local planning authorities to safeguard and enhance a number of identified landscapes that contribute to the distinctive character of Yorkshire and the Humber. The landscapes include both nationally designated areas and undesignated landscape areas in particular need of protection and enhancement. Retention of this policy would have significant positive benefits on the landscape by helping to maintain distinctive local character. In terms of protecting and enhancing the undesignated landscapes in Parts C and D of the policy both Leeds and South Yorkshire already have non-statutory green infrastructure strategies in place which were given weight in the development of core strategies due to the RSS policy. However, not all areas have such strategies in place and it would be up to Local Nature Partnerships to develop them. Local Nature Partnerships, once established, can be expected to play a positive role in supporting improved networks of green infrastructure including undesignated landscapes although the extent to which non-statutory green infrastructure strategies are implemented will be down to the co-operation of local authorities with the Local Nature Partnerships.
	Revocation	0	?	+	

10.7.1 Effects of Retention

The effects of retention of the regional strategy have been assessed on the assumption that, in the absence of the legislation and regional architecture enabling updating of the regional strategy, although the general principles of development will remain some policies will become increasing outdated and in some cases in conflict with the national policies in the Framework. The regional strategy contains a

number of policies which seek to conserve or enhance the rural and urban landscape in the region. 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. It is expected, 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.

10.7.2 Effects of Revocation

Yorkshire and Humber is home to several landscapes of national importance and the need to protect these designations is highlighted through a number of policies in the Yorkshire and Humber Plan. Following revocation, national legislation will help protect nationally designated landscapes from pressures associated with development. Furthermore paragraph 115 of the NPPF states: *Great weight should be given to conserving landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to landscape and scenic beauty.* Therefore the North York Moors and Yorkshire Dales National Parks, the five AONBs in the region and the expanse of Heritage Coast will remain protected following revocation. Policy ENV9 (Historic Environment) together with policy ENV8 (biodiversity) by seeking to conserve and enhance heritage and habitats in the region also provide important landscape benefits; following revocation protection of these assets will also largely be covered by national legislation.

In respect of protecting and enhancing landscape assets in the region there are already many highly effective local partnerships with a focus on different aspects of the natural environment. The Government is encouraging existing partnerships to join-up and integrate action to achieve multiple benefits – for example, on water and air quality, biodiversity, climate change adaptation and provision of green infrastructure all of which contribute to the landscape character. The White Paper on the Natural Environment sets out how the Government will help such groups to come together to become Local Nature Partnerships. Local Nature Partnerships will enable local authorities motivated by the “duty to cooperate” to work with a range of partners including land managers, businesses and conservation organisations to identify opportunities to protect and improving nature at local level. Local Nature Partnerships will link action to protect and improve the natural environment with wider national and local social and economic priorities. They are encouraged to make links with Local Enterprise Partnerships and Health and Wellbeing Boards and create new Nature Improvement Areas where there are significant opportunities to enhance and reconnect nature. It will also be necessary to achieve legally binding targets for air and water quality and these will remain significant contributory factors in improving landscape character. Therefore in the long term it is considered that the same significant positive effects in relation to the landscape.

Despite these safeguards, it is far from certain that the overall effect of revocation on landscape would be in the short to medium term as local plans may not provide as strong a policy direction. It is also unclear whether existing and future land allocations will affect areas of landscape value particularly if increased housing delivery over and above the current allocation is required.

10.8 Effects of Partial Revocation

The significant positive effects of partial-revocation on landscape are similar to retention/revocation.

10.8.1 Revoking all the Quantified and Spatially Specific Policies

Revocation of the quantitative policies could increase the number of additional homes delivered up to about 30,000 per annum to 2026 (see Population section) and thus the magnitude of the environmental impact. There is likely to remain a need for greenfield development particularly in relation to the West Yorkshire Green Belt, the amount of land required may increase to address local need. RSS policies and statutory duties on environmental protection and policies in the NPPF should provide environmental protection in relation to development.

The Yorkshire and Humber Plan gave strong protection to trees and woodland and in particular ancient woodland. However, the loss of regional woodland creation target of creating 500ha per annum would result if the quantitative policies are revoked, so long term the same significant benefits for woodland habitat may not be seen. Removal of this regional policy driver on woodland creation may lead to fewer local authorities adopting ambitious targets in this respect.

10.8.2 Revoking all Non Quantitative and Spatially Specific Policies

Designated landscapes will remain protected under national legislation and the NPPF if all the non-quantified and sub-area policies are revoked. However, as with revocation of the whole plan, in the short to medium term, local plans may not provide as strong a policy direction given that only 8 of 23 local authorities have adopted core strategies. Retaining Policy ENV6 and the regional woodland target has a significant positive effect.

10.8.3 Retention of Policies, the Revocation of which may lead to likely Significant Negative Environmental Effects

There are no significant negative effects predicted in respect of this topic.

10.9 Mitigation Measures

Given that all likely significant effects identified would be positive no mitigation measures are proposed for this topic. However, it is recognised that local authorities will need to cooperate with their Local Nature Partnerships and neighbouring local authorities in line with the “duty of co-operate” to ensure benefits are delivered in the long term. They should also have due regard to non-statutory green infrastructure strategies and management plans.

10.10 Proposals for Monitoring

Significant and uncertain effects in respect of landscape relate to:

- Change in National Parks (area, threats and quality)
- Change in AONB (area, threats and quality)
- Change in Heritage Coast (area, threats and quality)
- Green infrastructure delivery and accessibility