# Northumberland County Council's LTP3 2011 – Habitat Regulations Assessment

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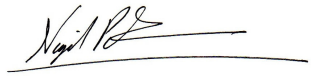
Checked by:  .....

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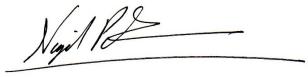
Approved by:  .....

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# 1 Introduction

## 1.1 Background

Northumberland County Council (NCC) is developing its third local transport plan which is intended to cover transport activities in Northumberland between 2011 and 2026. Under the European Directive 92/43/EEC (The Habitats Directive), and as part of the preparation of the LTP3, NCC are required to undertake a Habitat Regulations Assessment (HRA) to ascertain whether the policies and proposals within LTP3 are likely to have a significant effect on any European Sites (defined below) within the plan area or in adjacent areas.

## 1.2 The Habitats Directive

European Directive 92/43/EEC on the 'Conservation of Natural Habitats and Wild Fauna and Flora', referred to as the 'Habitats Directive', provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Articles 3 - 9 provide the legislative means to protect habitats and species of Community interest.

In particular, Article 6 (3) of the Directive states:

"*Any plan or project not directly connected with, or necessary to, the management of the [European] site, but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives*".

A 'European Site' or Natura 2000 Site includes Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). As a matter of policy listed Ramsar sites also receive the same protection as designated SPAs and SACs. Most Ramsar sites are also SPAs or SACs.

Article 6(4) of the Habitats Directive explains the alternative solutions, the test of 'imperative reasons of overriding public interest' and compensatory measures:

"*If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted*."

## 1.3 The Habitats Regulations

In October 2005, the European Court of Justice ruled that the UK had failed to correctly transpose the provisions of Articles 6(3) and (4) of the Habitats Directive into national law; in that it had failed to ensure land use plans were subject to Appropriate Assessment where they might have a significant effect on a European Site.

Following this ruling, the Department for Environment, Food and Rural Affairs (DEFRA) published the amended Habitat Regulations 2010 – formally known as the Conservation (Natural Habitats, & c.) Regulations 1994 – to transpose the requirements in accordance with these amendments of the Habitats Directive into domestic legislation for England. An Appropriate Assessment is required for national, regional and local planning documents, including the LTP.

Part II, Paragraph 10 of the Habitat Regulations provides a definition of the term "European Sites" which it identifies as including Special Areas of Conservation (SAC) and Special Protection Areas (SPA) as well as candidate/proposed sites (cSAC and pSPA) which are being consulted on or are pending a European Commission decision. However, the Habitats Regulations do not provide statutory protection for potential Special Protection Areas (pSPAs) or to candidate Special Areas of Conservation (cSACs) before they have been agreed with the European Commission. For the purposes of considering development proposals and their likely impacts on such sites, as a matter of policy, the Government wishes those pSPAs and cSACs, that have been included in a list sent to the European Commission, to be considered in the same way as if they had already been classified or designated.

Please note that from hereon in the term European Site will be used to represent all of the following designations: SAC, cSAC, SPA, pSPA, Ramsar and cRamsar sites.

### 1.4 Application to the LTP3

In accordance with the legislation set out in Sections 1.2 and 1.3, the Habitats Directive and Habitats Regulations require a Habitats Regulations Assessment (HRA), to be carried out to assess the potential impacts of the LTP3 on the Conservation Objectives of any of European Sites identified and to enable NCC to ascertain whether or not it will significantly affect the integrity of any European Site.

Where significant effects are identified, alternative options (e.g. NCC interventions or proposals) should be examined, or avoidance and mitigation measures should be included in the plan to prevent the plan from detrimentally influencing the site's conservation objectives.

### 1.5 Habitat Regulations Assessment

The methodology for the HRA will at all times take cognisance of the EU guidance document '*Assessment of plans and projects significantly affecting Natura 2000 sites, Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*'.

It has become generally accepted that a stage by stage approach should be followed for an HRA as proposed by the latest European Commission guidance. These stages are:

- Stage One: **Screening** — the process which identifies whether there are likely to be any effects upon a Natura 2000 site as a result of the project or plan, either alone or in combination with other projects or plans, and considers whether these effects are likely to be significant;
- Stage Two: **Appropriate Assessment** — the consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are significant impacts, an assessment of the potential mitigation of those impacts;
- Stage Three: **Assessment of alternative solutions** — the process which examines alternative ways of achieving the objectives of the project or plan that avoid significant impacts on the integrity of the Natura 2000 site identified at Stage Two;
- Stage Four: **Assessment where no alternative solutions exist and where adverse impacts remain** — an assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed.

Each stage determines whether a further stage in the process is required. If, for example, the conclusions at the end of Stage One are that there are no likely significant effects on the Natura 2000 sites, there is no requirement to proceed further. This is reflected in the approach and method applied to the LTP3 as set out in Table 1.1 below.

**Table 1 Stages in the HRA for LTP3**

| Stages / Tasks | | Description | |
|---|---|---|---|
| **1** | **Likely Significant Effects or 'Screening'** | ▪ Assess whether the interventions and associated proposals either alone or in combination with other plans or projects is likely to have a significant effect on the site(s). | |
| **2** | **Appropriate Assessment** | ***2A*** | ▪ Analysing the site(s) and the reasons for its designation, and the underlying trends affecting it |
| | | ***2B*** | ▪ Analysing the intervention, including key components and how the proposals would be implemented in practice |
| | | ***2C*** | ▪ Analysing other plans and projects that could contribute to 'in combination' effects |
| | | ***2D*** | ▪ Analysing how the interventions and proposals in combination with other plans and projects and the site will 'interact' come implementation of the proposals i.e. |

| Stages / Tasks | | Description | |
|---|---|---|---|
| | | | Appropriate Assessment |
| | | ***2E*** | ▪ Where applicable, propose and assess mitigation measures for addressing adverse effects |
| | | ***2F*** | ▪ Preparing an Appropriate Assessment Report for consultation with key stakeholders including Natural England |
| **3** | **Assessment of Alternative Solutions** | ▪ Reassessing alternatives if effective mitigation proves impossible and develop / select a different alternative that does not harm the integrity of the site(s). If no such alternatives exist the process continues to Stage 4 | |
| **4** | **Assessment where no alternative solutions remain and where adverse impacts remain** | ▪ Assessing whether a proposal can be justified by 'imperative reasons of overriding public interest' (IROPI). Permitted on the grounds of social, economic, and human health reasons, public safety or primary beneficial consequences for the environment. Where IROPI is proven, compensatory measures need to be developed and agreed.<br>▪ At this stage proposals which even with mitigation, still have a significant effect on the integrity of the site(s), and where IROPI cannot be proven, should be dropped. | |

# 2 Description of the Plan

## 2.1 Introduction

The previous LTPs (LTP1 and LTP2) covered five year periods. The LTP3 will cover a longer period in order to bring the LTP3 into alignment with the emerging Local Development Framework (LDF) for the area. The process commenced with the preparation on the LTP3 'Issues Paper' which was issued for consultation in February 2010. The comments received on the Issues Paper will help to identify the main priorities for transport within Northumberland to be set out within LTP3.

The LTP3 is a strategy document and, as such, it does not contain comprehensive details of individual schemes but rather will set out overarching programmes for action with examples of the types of measures that could be implemented. LTP3 will set out the main objectives for highways and transport for the 15-year period 2011 to 2026 together with the strategies and policies necessary to achieve them.

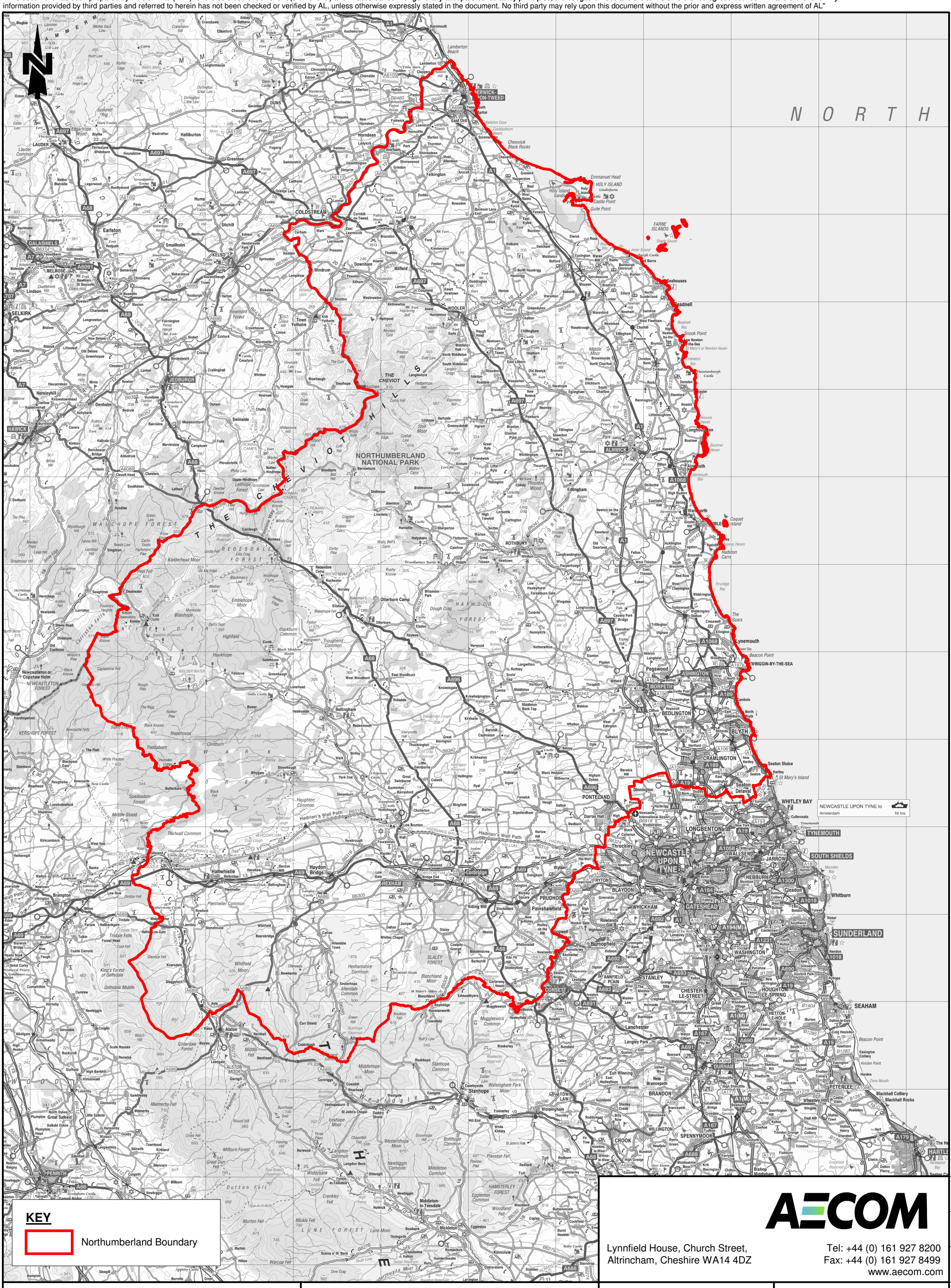
The Transport Act 2000 made it a statutory requirement for local highway authorities to produce LTPs. LTPs must be consistent with national and local objectives for highways and transport and in particular the policies contained in national planning guidance, and the emerging LDF.

The LTP3 for Northumberland will set out the long term plans of the local authority for maintaining and improving transport provision in the area between 2011 and 2026. The following packages have been produced by dividing the options identified at the planning stage into five distinct levels described below;

| | |
|---|---|
| **Support Economic Growth -** | Support Northumberland's economic competitiveness and growth by delivering reliable and efficient transport networks |
| **Reducing Carbon Emissions** | Minimise the environmental impact of transport by reducing carbon emissions and addressing the challenge of climate change |
| **Safer and Healthier Travel** | Improve transport safety and Vulnerable Road Users security and promote healthier travel |
| **Improving Access to Services** | Promote greater equality of opportunity by improving peoples' access to services |
| **Quality of Life** | Ensure that transport helps to improve quality of life for residents, employers and visitors |

## 2.2 LTP3 Area

Northumberland is the most northerly of all English counties. It borders Scotland to the north, Cumbria to the west and Tyneside and Durham to the south. Northumberland is the least populated county in England with a population of approximately 310,600. It is essentially a rural county with expansive open countryside to the north and east and a more populated area to the south east. Northumberland is the sixth largest county in England by size with a land area of 500,000 ha. The County's coastline is 133 miles in length and has ports at Blyth, Amble and Berwick. The coast line stretching from Berwick to the Coquet estuary is designated as an Area of Outstanding Natural Beauty which is approximately 39 miles in length. Northumberland is characterised by rural countryside much of which is of the highest landscape quality. Northumberland National Park is situated in the west of the county. There is an uneven distribution of population with over half living in the urbanised south east which covers only 5% of the County's area. There is a very low population density in the rural north and west which creates particular challenges for the delivery of services. Figure 1 illustrates the Northumberland study area.




**KEY**

Northumberland Boundary

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| Client: | NORTHUMBERLAND COUNTRY COUNCIL |
| Project: | NORTHUMBERLAND LTP3 HRA |
| Title: | NORTHUMBERLAND LTP3 REGION |

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# 3 European Sites

## 3.1 Introduction

This section of the report provides an introduction to the different designations under which a European Site may be classified and lists all the relevant sites that are located within the area of influence of the LTP3.

## 3.2 European Designations

As referred to in section 1.2, there are three European designations that are to be considered under the HRA. These are discussed below.

*Ramsar Sites*

Ramsar sites are wetlands of international importance that have been designated under the Ramsar Convention (1971). Sites are selected for their international significance relating to all ecology, botany, zoology, limnology or hydrology wetland components. The designation recognises the importance of wetlands as economic, social and environmental entities, and the need to conserve them.

*Special Protection Areas (SPA)*

Special Protection Areas (SPA) are strictly protected sites that have been implemented to protect rare and vulnerable bird species and their habitats. They are classified in accordance with the European Birds Directive (79/409/EEC) and aim to safeguard bird species and populations that are listed in Annexes I and II of the Directive.

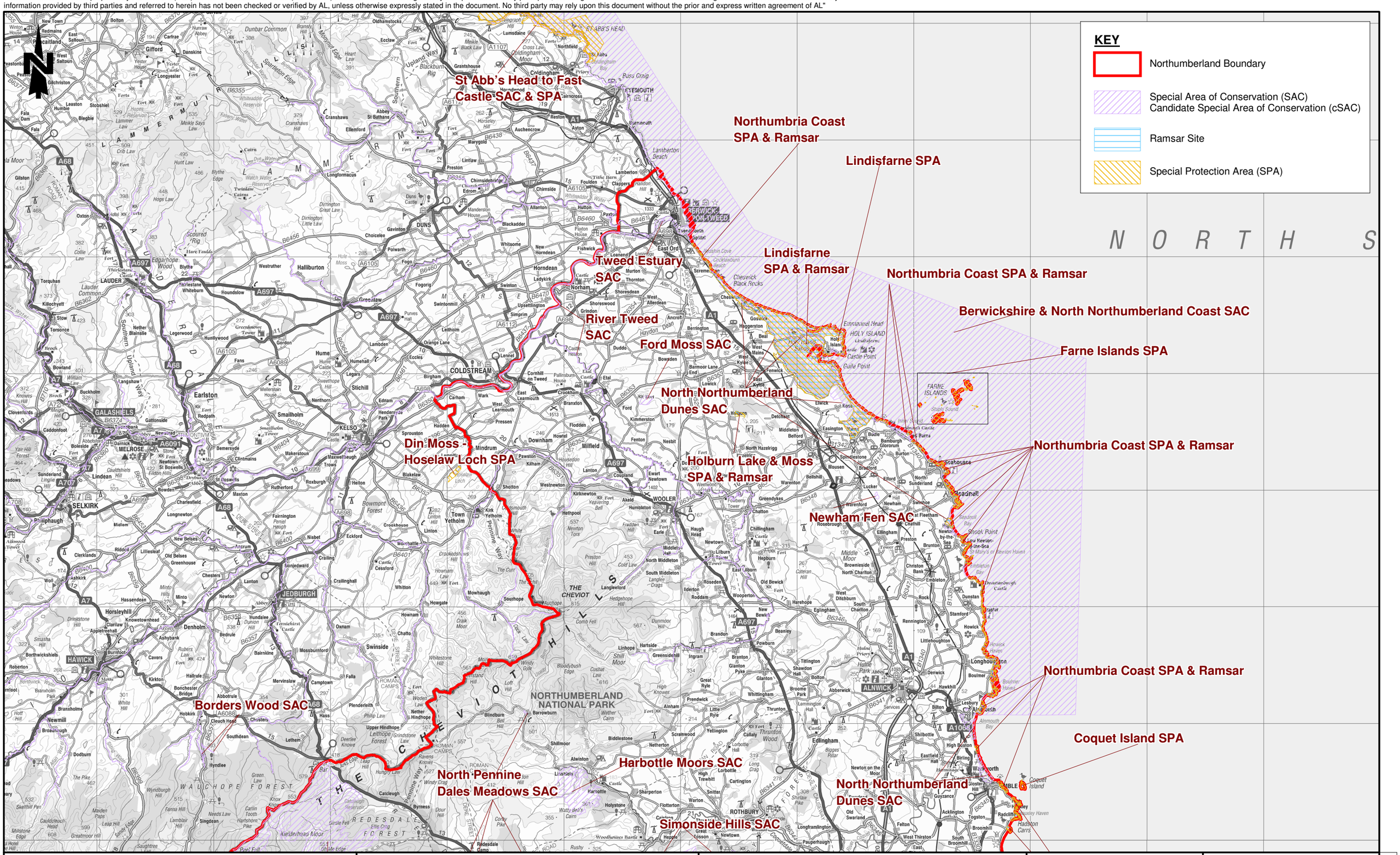
*Special Areas of Conservation (SAC)*

Special Areas of Conservation (SAC) are high quality conservation sites that have been given strict protection under the European Habitats Directive (92/43/EEC). These important sites are selected to conserve rare and vulnerable animals, plants and habitats (excluding birds) that are listed in Annexes I and II of the Directive (as amended).

Candidate (c) and potential (p) designations (cSAC, pSPA, pRamsar) are sites that have been submitted to the appropriate authorities and are currently in the process of being considered for formal designation and have been included in this assessment.

## 3.3 List of Relevant Natura 2000 and Ramsar Sites

Within the Northumberland LTP3 boundary and along the coast line there are 7 SPA, 13 SACs and 4 Ramsar sites. These are listed in Table 3.1-3.5 below and are shown in Figures 2.Natura 2000 and Ramsar sites adjacent to the Northumberland LTP3 boundary may still be affected by the plan and are also listed below.

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| Project: | NORTHUMBERLAND LTP3 HRA | | |

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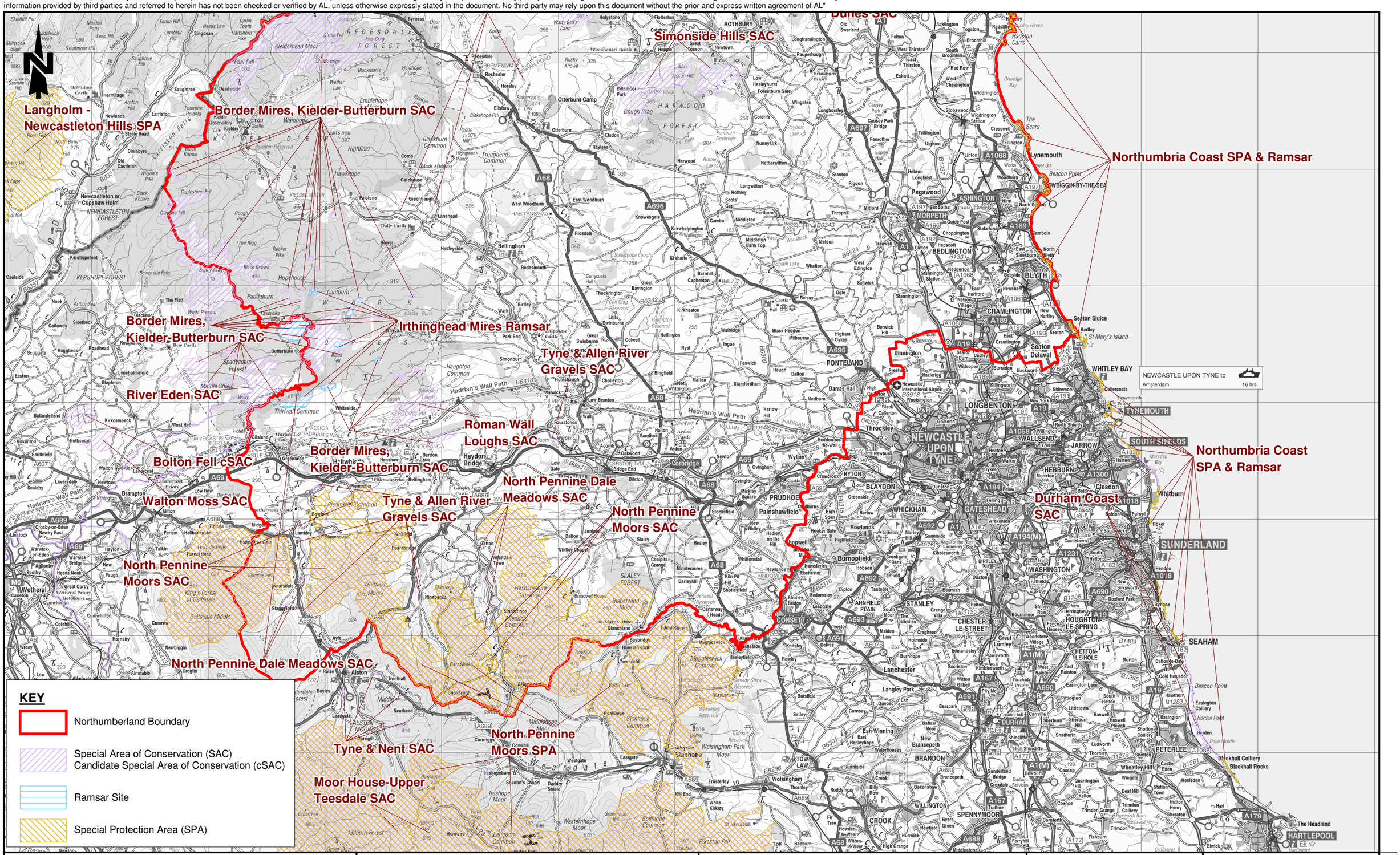


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| Project: | NORTHUMBERLAND LTP3 HRA | | |

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**Table 3.1: SACs and cSACs within the Northumberland boundary**

| Name of Site, Location and area (ha)* | Qualifying Features | Conservation Objectives | Threats to Site Integrity |
|---|---|---|---|
| Berwickshire and North Northumberland Coast SAC<br>NU 206 401<br>65,334.94 ha | **Annex I habitats that are a primary reason for selection of this site**<br>▪ Mudflats and sandflats not covered by seawater at low tide<br>▪ Large shallow inlets and bays<br>▪ Reefs<br>▪ Submerged or partially submerged sea caves<br>**Annex II species that are a primary reason for selection of this site**<br>▪ Grey seal *Halichoerus grypus* | To maintain in (or restore to) a favourable condition the:<br>▪ reefs, in particular the extent, distribution, diversity and species richness of reef communities.<br>▪ fixed dunes with herbaceous vegetation ("grey dunes")<br>▪ embryonic shifting dunes<br>▪ shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")<br>▪ intertidal mud and sandflats not covered by sea water at low tide, with particular the extent of eelgrass bed communities and mussel *Mytilus edulis* communities and the diversity of infaunal communities<br>▪ habitats for the population of Annex 1 bird species, migratory bird species, seabirds which contribute to the breeding seabird assemblage and waterfowl with particular reference to sandy beaches, shallow inshore waters; intertidal mudflats and sandflats, saltmarsh, eelgrass beds, sandunes and offshore islands.<br>▪ partially submerged sea caves, in particular the diversity of sea cave communities and their characteristic zonation.<br>▪ habitats for the grey seal *Halichoerus grypus*, in particular, the extent and suitability of Grey Seal *Halichoerus grypus* breeding habitat on the Farne Islands<br>▪ dunes with *Salix repens* ssp. argentea (*Salicion arenariae*).<br>▪ humid dune slacks.<br>▪ habitats for the populations of Petalwort (*Petalophyllum ralfsii*) | Habitat degradation though physical disturbance (recreational uses such as fishing, diving and water sports etc).<br>In the case of diving, the most popular areas are subject to a voluntary code of practice. Any difficulties arising from recreational activities would be addressed by the site management scheme.<br>Wastewater discharges could have a localised effect on the site (the estuarine reef communities support an important crustacean fishery whilst offshore fisheries exist for Nephrops and some pelagic and demersal fish species but will be subject to EC water quality legislation |
| Border Mires, Kielder-Butterburn SAC<br>NT 684 013<br>11,851.77 ha | **Annex I habitats that are a primary reason for selection of this site**<br>▪ Blanket bogs *<br>▪ Transition mires and quaking bogs<br>**Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:**<br>▪ Northern Atlantic wet heaths with *Erica tetralix*<br>▪ Petrifying springs with tufa formation (*Cratoneurion*) *<br>▪ European dry heaths | To maintain in (or restore to) a favourable condition the<br>▪ Blanket bogs<br>▪ European dry heaths<br>▪ Northern Atlantic wet heaths with *Erica tetralix*<br>▪ Petrifying springs with tufa formation (*Cratoneurion*)<br>▪ Transition mires and quaking bogs | Forestry drainage and conifer planting (including natural seeding) has encroached onto the bogs and has resulted in drying-out and degradation of the habitat in places.<br>A small area on the forest margins and on the highest elevation parts of the site are overgrazed by livestock and suffer some damage from burning.<br>Drains created in the bog in the past to form a dummy runway have caused some damage. |
| Ford Moss SAC<br>NT 9703 77<br>61.14 ha | **Annex I habitats that are a primary reason for selection of this site**<br>▪ Active raised bogs * | To maintain in (or restore to) favourable condition the active raised bog | Typical bog communities are present though they have been degraded to some extent from past attempts at drainage, owing to previous coal mining operations, together with afforestation, burning and grazing. The site is rainfall-fed and its sheer size has contributed to its continued survival. The restriction of trees and the subsequent damming should re-wet the site to a degree. |
| Harbottle Moors SAC<br>NT 907 041<br>936.3 ha | **Annex I habitats that are a primary reason for selection of this site**<br>▪ European dry heaths | To maintain in (or restore to) favourable condition the dry heathland. | The main pressures are from managed burns and accidental wildfires. The heath habitat is sensitive to heavy burns and can take a long time to show signs of recovery. In some areas weathering of these burn sites has led to localised areas of erosion. Areas of blanket mire and crags are particularly sensitive to burning.<br>Visitor pressure appears to be low.<br>Overall this site suffers from less controlled burning than many upland sites but it is at greater risk of a large wildfire set off by unexploded ordnance landing within part of the designated area. |
| Newham Fen SAC<br>NU 169 295<br>13.49 ha | **Annex I habitats that are a primary reason for selection of this site**<br>▪ Alkaline fens | To maintain in (or restore to) favourable condition the alkaline fen, with particular reference to the M13 mire. | Scrub and woodland have spread at the expense of fen vegetation due to changes in spring flow and drainage.<br>Woodland has been removed and a borehole installed and this has led to re-wetting of the fen. The site is also cut and grazed to maintain species richness. |
| North Northumberland Dunes SAC<br>NU 126 435 | **Annex I habitats that are a primary reason for selection of this site**<br>▪ Embryonic shifting dunes<br>▪ Shifting dunes along the shoreline with marram, *Ammophila arenaria* (`white dunes`)<br>▪ Fixed dunes with herbaceous vegetation (`grey dunes`) *<br>▪ Dunes with creeping willow *Salix repens* ssp. *argentea* | To maintain in (or restore to) favourable condition the<br>▪ fixed dunes with herbaceous vegetation ("grey dunes")<br>▪ embryonic shifting dunes<br>▪ shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")<br>▪ intertidal mud and sandflats not covered by sea water at low tide, with particular reference to the extent of eelgrass bed communities and mussel *Mytilus edulis* communities and the diversity of infaunal communities<br>▪ habitats for the population of Annex 1 bird species and regulatory occurring migratory bird species and waterfowl, with particular reference to | Insufficient grazing management and damage by overintensive overwintering of cattle and sheep.<br>Invasion by the non-native plant *Acaena novae-zealandiae*. |

| Name of Site, Location and area (ha)* | Qualifying Features | Conservation Objectives | Threats to Site Integrity |
|---|---|---|---|
| 1147.56 ha | (*Salicion arenariae*)<br>▪ Humid dune slacks<br>**Annex II species that are a primary reason for selection of this site**<br>▪ Petalwort *Petalophyllum ralfsii* | rocky shores, sandy beaches and shallow inshore water, intertidal mudflats and sandflats, saltmarsh, eelgrass beds and sandunes<br>▪ dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*).<br>▪ humid dune slacks.<br>▪ habitats for the populations of Petalwort (*Petalophyllum ralfsii*)<br>▪ extent, distribution, diversity and species richness of reef communities<br>▪ diversity of sea cave communities and their characteristic zonation | Impact of recreational activities on the dunes. |
| North Pennine Dales Meadows SAC<br>NY 931 256<br>497.09 ha | **Annex I habitats that are a primary reason for selection of this site**<br>▪ Mountain hay meadows<br>**Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site**<br>▪ Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) | To maintain in (or restore to) favourable condition the Mountain hay meadows. | These grasslands are dependent upon traditional agricultural management, with hay-cutting and no or minimal use of agrochemicals. Such management is no longer economic. |
| North Pennine Moors SAC<br>SE 137 749<br>103,109.42 ha | **Annex I habitats that are a primary reason for selection of this site**<br>▪ European dry heaths<br>▪ *Juniperus communis* formations on heaths or calcareous grasslands<br>▪ Blanket bogs *<br>▪ Petrifying springs with tufa formation (*Cratoneurion*) *<br>▪ Siliceous rocky slopes with chasmophytic vegetation<br>▪ *Old sessile* oak woods with *Ilex* and *Blechnum* in the British Isles<br>**Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site**<br>▪ Northern Atlantic wet heaths with *Erica tetralix*<br>▪ Calaminarian grasslands of the *Violetalia calaminariae*<br>▪ Siliceous alpine and boreal grasslands<br>▪ Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)<br>▪ Alkaline fens<br>▪ Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani)*<br>▪ Calcareous rocky slopes with chasmophytic vegetation<br>**Annex II species present as a qualifying feature, but not a primary reason for site selection**<br>▪ Marsh saxifrage *Saxifraga hirculus* | To maintain in (or restore to) favourable condition the<br>▪ habitats for populations of Annex 1species, and migratory bird species, with particular reference to Upland Moorland<br>▪ Blanket bogs<br>▪ European dry heaths<br>▪ North Atlantic wet heaths with *Erica tetralix*<br>▪ *Juniperus communis* formation on heaths | All interest features have been affected by excessive livestock grazing levels across parts of the site.<br>Drainage of wet areas can also be a problem; drains have been cut across many areas of blanket bog, disrupting the hydrology and causing erosion, but in most parts these are being blocked and the habitat restored under agreements.<br>Burning is a traditional management tool on these moorlands, which contributes to maintaining high populations of SPA breeding birds. However, over-intensive and inappropriate burning is damaging to heath and blanket bog and further agreements are needed with the landowners to achieve sympathetic burning regimes.<br>Acid and nitrogen deposition continue to have damaging effects on the site. |
| River Tweed SAC<br>NT 503 338<br>3795.88 | **Annex I habitats that are a primary reason for selection of this site**<br>▪ Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation<br>**Annex II species that are a primary reason for selection of this site**<br>▪ Atlantic salmon *Salmo salar*<br>▪ Otter *Lutra lutra*<br>**Annex II species present as a qualifying feature, but not a primary reason for site selection**<br>▪ Sea lamprey *Petromyzon marinus*<br>▪ Brook lamprey *Lampetra planeri*<br>▪ River lamprey *Lampetra fluviatilis* | To maintain in (or restore to) favourable condition the river habitat for<br>▪ floating formations of water crowfoot (*Ranunculus*) of plain and sub-mountainous rivers;<br>▪ populations of Atlantic salmon (*Salmo salar*)<br>▪ populations of brook lamprey (*Lampetra planeri*), river lamprey (*Lampetra fluviatilis*) and sea lamprey (*Petromyzon marinus*);<br>▪ populations of otter (*Lutra lutra*); | The main impacts on the river are from pollution, acidification and eutrophication, river-works and bankside management, genetic pollution and disease, abstraction and impoundment management. |
| Roman Wall Loughs SAC<br>NY 775 695<br>684.26 ha | **Annex I habitats that are a primary reason for selection of this site**<br>▪ Natural eutrophic lakes with pondweed vegetation *Magnopotamion* or *Hydrocharition*-type vegetation | To maintain in (or restore to) favourable conservation status the natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation | The lakes are vulnerable to excess nutrient enrichment resulting from certain farming activities. |
| Simonside Hills SAC<br>NY 982 970<br>2,082.6 ha | **Annex I habitats that are a primary reason for selection of this site**<br>▪ European dry heaths<br>**Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site**<br>▪ Blanket bogs * | To maintain in (or restore to) favourable condition the qualifying features | Blanket bog is particularly vulnerable to burning as this can affect the hydrology of the mire.<br>Active drains on the blanket bog are currently affecting the hydrology of the mire and the species composition.<br>There are several permissive footpaths and these have resulted in significant erosion, in particular on the areas of peat around Millers Moss and Simonside Ridge.<br>Bracken and rhododendron are a particular problem on the lower dry heath slopes and within the open gully |

| Name of Site, Location and area (ha)* | Qualifying Features | Conservation Objectives | Threats to Site Integrity |
|---|---|---|---|
| | | | woodlands. This is spreading across the dry heath and outshading the dwarf shrubs and also preventing natural regeneration within the woodlands. |
| Tweed Estuary SAC<br><br>NT 993 531<br><br>155.93 ha | **Annex I habitats that are a primary reason for selection of this site**<br>▪ Estuaries<br>▪ Sea lamprey Petromyzon marinus.<br>▪ Mudflats and sandflats not covered by seawater at low tide<br><br>**Annex II species present as a qualifying feature, but not a primary reason for site selection**<br>▪ Sea lamprey *Petromyzon marinus*<br>▪ River lamprey *Lampetra fluviatilis* | Subject to natural change, to maintain in (or restore to) favourable condition the estuaries and intertidal mud and sandflats<br><br>To maintain in (or restore to) favourable condition the habitats for the populations of river and sea lampreys. | The Tweed catchment is large and dominated by arable, leading to increased nutrient inputs. There are small scale coast protection works proposed, and small-scale and infrequent dredging operations are undertaken in the Tweed dock. |
| Tyne and Allen River Gravels SAC<br><br>NY 689 624<br><br>36.84 ha | **Annex I habitats that are a primary reason for selection of this site**<br>▪ Calaminarian grasslands of the *Violetalia calaminariae* | To maintain in (or restore to) favourable condition the calaminarian grassland | These special habitats have been created by deposition of minerals out of the rivers Tyne and Allen onto gravel banks. Mining activities upstream have virtually stopped, thus reducing the amount of metals carried by the rivers. In places the rivers have changed course, isolating the shingle banks. |

(*) beside a qualifying feature indicates that the feature is listed as a priority habitat on Annex I of the Habitats Directive.

European Sites adjacent to the LTP3 boundary and within 15km of the plan area may still be impacted by wider ranging impacts and have been listed below.

**Table 3.2: SPAs within the Northumberland boundary**

| Name of Site, Location and area (ha)* | Qualifying Features | Conservation Objectives | Threats to Site Integrity |
|---|---|---|---|
| Coquet Island SPA<br><br>NU 293 046<br><br>22.28 ha | **Annex I bird species and regularly occurring migratory bird species not listed on Annex I:**<br>▪ *Sterna paradisaea* Arctic tern<br>▪ *Sterna sandvicensis* Sandwich tern<br>▪ *Sterna hirundo* Common tern<br>▪ *Sterna dougallii* Roseate tern | To maintain in (or restore to) favourable condition the habitats for the populations of migratory species (arctic tern, common tern, puffin, roseate tern and sandwich tern) and for breeding seabird assemblage of European importance with particular attention to offshore islands. | The site is not currently open to visitors.<br><br>The thin soils on the island are easily disturbed by burrowing rabbits and puffins which has lead to concern over loss of vegetation and subsequent erosion. The RSPB are currently undertaking vegetation management trials to limit erosion problems. |
| Farne Islands SPA<br><br>NU 221 363<br><br>101.86 ha | **Annex I bird species and regularly occurring migratory bird species not listed on Annex I:**<br>▪ *Sterna paradisaea* Arctic tern<br>▪ *Sterna sandvicensis* Sandwich tern<br>▪ *Sterna hirundo* Common tern | To maintain in (or restore to) favourable condition the<br>▪ habitats for the populations of migratory bird species and seabirds which contribute to the breeding seabird assemblage<br>▪ reefs, in particular the extent, distribution, diversity and species richness of reef communities<br>▪ partially submerged sea caves, in particular the diversity of sea cave communities and their characteristic zonation.<br>▪ habitats for the grey seal *Halichoerus grypus*, in particular, the extent and suitability of Grey Seal *Halichoerus grypus* breeding habitat on the Farne Islands | Two islands are open to visitors, though access is controlled and managed.<br><br>The thin soil cap found on the islands is easily disturbed by burrowing rabbits and puffins and by seals during their breeding season. Management of the vegetation/ soil cap and the pupping areas for seals is undertaken by the National Trust.<br><br>Marine activities including inshore fishing, recreation and pleasure craft are currently being monitored to assess any potential impact within the SPA. |
| Holburn Lake and Moss SPA<br><br>NU 050 365<br><br>28.03 ha | **Annex I bird species and regularly occurring migratory bird species not listed on Annex I:**<br>▪ *Anser anser* Wintering greylag goose | To maintain in (or restore to) favourable condition the raised mire and dry heathland used by greylag goose | The majority of the site is managed as a nature reserve by the Northumberland Wildlife Trust in accordance with a management plan agreed with English Nature. The management plan includes the removal of plantation woodland and ditch damming, to restore the hydrological integrity of the site. Limited wildfowling occurs on the site but is compatible with the SPA objectives.<br><br>An adjacent peat extraction site is not currently considered to be affecting the SPA though monitoring of this activity will continue to be undertaken by Northumberland County Council and the Northumberland Wildlife Trust. |
| Lindisfarne SPA<br><br>NU 101 421<br><br>3,679.22 ha | **Annex I bird species and regularly occurring migratory bird species not listed on Annex I:**<br>▪ *Cygnus cygnus* Whooper swan<br>▪ *Anser anser* Greylag goose<br>▪ *Branta bernicla hrota* Light-bellied brent goose<br>▪ *Tadorna tadorna* Common shelduck<br>▪ *Anas Penelope* Eurasian wigeon<br>▪ *Somateria mollissima* Common eider<br>▪ *Clangula hyemalis* Long-tailed duck<br>▪ *Melanitta nigra* Black (common) scoter<br>▪ *Mergus serrator* Red-breasted merganser<br>▪ *Charadrius hiaticula* Ringed plover<br>▪ *Pluvialis apricaria* European golden plover<br>▪ *Pluvialis squatarola* Grey plover<br>▪ *Calidris alba* Sanderling<br>▪ *Calidris alpina alpina* Dunlin<br>▪ *Limosa lapponica* Bar-tailed godwit<br>▪ *Tringa tetanus* Common redshank<br>▪ *Sterna dougallii* Roseate tern<br>▪ *Sterna albifrons* Little tern<br>▪ Waterfowl assemblage | To maintain in (or restore to) favourable condition the:<br>▪ fixed dunes with herbaceous vegetation ("grey dunes").<br>▪ dunes with *Salix repens* ssp. argentea (*Salicion arenariae*).<br>▪ embryonic shifting dunes.<br>▪ humid dune slacks.<br>▪ habitats for the populations of Petalwort (*Petalophyllum ralfsii*)<br>▪ extent, distribution, diversity and species richness of reef communities<br>▪ diversity of sea cave communities and their characteristic zonation<br>▪ extent of eelgrass bed communities and mussel *Mytilus edulis* bed communities<br>▪ diversity of infaunal communities<br>▪ habitats for the populations of Annex 1 species, regulatory occurring migratory species and waterfowl with particular reference to Intertidal mudflats and sandflats, rocky shores, saltmarsh, eelgrass beds and sandunes | The principal threats from human influences are water quality problems (from sewage discharges and agricultural run-off), wildfowling and recreational disturbance including bait-digging. Colonisation by *Spartina* poses a long-term threat to intertidal habitats. A metalled road to Holy Island across the intertidal area has had localised effects on the areas of saltmarsh, intertidal flats and sand dunes and may be resulting in longer-term changes to sediment patterns within the Fenham Flats area of the SPA. |
| North Pennine Moors SPA<br><br>NY 840 291<br><br>147,246.41 ha | **Annex I bird species and regularly occurring migratory bird species not listed on Annex I:**<br>▪ *Circus cyaneus* Hen harrier<br>▪ *Falco columbarius* Merlin<br>▪ *Falco peregrinus* Peregrine falcon<br>▪ *Pluvialis apricaria* Golden plover | To maintain in (or restore to) favourable condition the:<br>▪ habitats for populations of Annex 1 species, migratory bird species with particular reference to Upland Moorland and Upland Pasture.<br>▪ Blanket bogs<br>▪ European dry heaths<br>▪ North Atlantic wet heaths with *Erica tetralix*<br>▪ *Juniperus communis* formation on heaths | The habitats and qualifying breeding bird populations are mostly dependant upon stock grazing and burning at sympathetic levels. The continuation of these practices relies on their profitability, including any subsidy or incentive payments.<br><br>Over-grazing, over-burning and other forms of intensive agricultural or sporting management (e.g. drainage) may be damaging.<br><br>Recreational activity may be problematic but is addressed through Site Management Statements and through continuing working with Local Authorities to manage access.<br><br>Acidic and nitrogen deposition are having damaging effects on the vegetation and hence on the bird populations. |
| Northumbria Coast SPA<br><br>NU 260 192<br><br>1107.98 ha | **Annex I bird species and regularly occurring migratory bird species not listed on Annex I:**<br>▪ *Calidris maritime* Purple sandpiper<br>▪ *Arenaria interpres* Ruddy turnstone<br>▪ *Sterna albifrons* Little tern | To maintain in (or restore to) favourable condition the<br>▪ reefs, in particular the extent, distribution, diversity and species richness of reef communities.<br>▪ partially submerged sea caves, in particular the diversity of sea cave communities and their characteristic zonation.<br>▪ intertidal mud and sandflats not covered by sea water at low tide, in particular the extent of eelgrass bed communities and mussel *Mytilus edulis* communities and the diversity of infaunal communities.<br>▪ The habitats for the population of Annex 1 bird species, of European importance, regulatory occurring migratory bird species and waterfowl with particular reference to intertidal mudflats and sandflats, rocky | Little terns are vulnerable to disturbance by tourists in the summer causing reduced breeding success. |

| Name of Site, Location and area (ha)* | Qualifying Features | Conservation Objectives | Threats to Site Integrity |
|---|---|---|---|
| | | shores, eelgrass beds, sandunes, saltmarsh, sandy beaches and shallow inshore waters;<br>▪ fixed dunes with herbaceous vegetation ("grey dunes").<br>▪ dunes with *Salix repens* ssp. argentea (*Salicion arenariae*).<br>▪ embryonic shifting dunes.<br>▪ humid dune slacks.<br>▪ habitats for the populations of Petalwort (*Petalophyllum ralfsii*) | |
| St Abb's Head to Fast Castle SPA<br><br>NT 805 313<br><br>1736.52 ha | **Annex I bird species and regularly occurring migratory bird species not listed on Annex I:**<br>▪ *Uria aalge* Common Guillemot<br>▪ *Phalacrocorax aristotelis* Shag<br>▪ *Larus argentatus* Herring Gull<br>▪ *Alca torda* Razorbill<br>▪ *Rissa tridactyla* Black-legged kittiwake<br>▪ Seabird assemblage | To maintain in (or restore to) favourable condition the site for the populations of Annex 1 species and species included in the internationally important assemblage of species. | Visitor numbers are high but they are not thought to cause significant disturbance to the interest at present. |

(*) beside a qualifying feature indicates that the feature is listed as a priority habitat on Annex I of the Habitats Directive.

**Table 3.3: Ramsar sites within the Northumberland boundary**

| Name of Site, Location and area (ha)* | Qualifying Features | Conservation Objectives | Threats to Site Integrity |
|---|---|---|---|
| Holburn Lake and Moss Ramsar Site<br>NU 050 365<br>28.03 ha | ▪ Lowland raised bog<br>▪ Winter roost for internationally important numbers of greylag goose<br>▪ Inland roost for mallard (*Anas platyrhynchos*), wigeon (*Anas Penelope)* and teal (*Anas creccaduring*) unfavourable weather.<br>▪ Shelduck (*Tadorna tadorna*), shoveler (*Anas clypeata*) and tufted duck (*Aythya fuligula*) | To maintain in (or restore to) favourable condition the raised mire and dry heathland used by greylag goose | No factors adversely affecting the site's ecological character have been reported |
| Irthinghead Mires Ramsar Site<br>NY 673 762<br>792.08 ha | ▪ Active blanket bog<br>▪ Notable variety of Sphagnum mosses<br>▪ Rare species:<br>*Carex magellanica*<br>*Sphagnum imbricatum*<br>*S. pulchrum*<br>*S. magellanicum*<br>*Eboria caliginosa* | To maintain in (or restore to) favourable condition the<br>▪ Blanket bogs<br>▪ European dry heaths<br>▪ Northern Atlantic wet heaths with *Erica tetralix*<br>▪ Petrifying springs with tufa formation (*Cratoneurion*) | No factors adversely affecting the site's ecological character have been reported |
| Lindisfarne Ramsar Site<br>NU 101 421<br>3,679.22 ha | ▪ Extensive intertidal flats, saltmarsh and major sand dune system with well developed dune slacks.<br>▪ Wintering waterfowl assemblage of international importance.<br>▪ Internationally important migratory/wintering populations of<br>*Branta bernicla hrota* Light-bellied brent goose<br>*Anas Penelope* Wigeon<br>*Charadrius hiaticula* Ringed plover<br>*Tringa totanus tetanus* Redshank<br>*Anser anser anser* Greylag goose<br>*Limosa lapponica lapponica* Bar-tailed godwit<br>▪ Rare plants:<br>*Petalophyllum ralfsii* Petalwort<br>*Epipactis sancta Dune helleborine* (endemic on Lindisfarne) | To maintain in (or restore to) favourable condition the:<br>▪ fixed dunes with herbaceous vegetation ("grey dunes").<br>▪ dunes with *Salix repens* ssp. argentea (*Salicion arenariae*).<br>▪ embryonic shifting dunes.<br>▪ humid dune slacks.<br>▪ habitats for the populations of Petalwort (*Petalophyllum ralfsii*)<br>▪ extent, distribution, diversity and species richness of reef communities<br>▪ diversity of sea cave communities and their characteristic zonation<br>▪ extent of eelgrass bed communities and mussel *Mytilus edulis* bed communities<br>▪ diversity of infaunal communities<br>▪ habitats for the populations of Annex 1 species of European importance, regulatory occurring migratory bird species and waterfowl with particular reference to intertidal mudflats and sandflats, rocky shores, saltmarsh, Eelgrass beds and sandunes | Non-native species Pirri pirri burr *Acaena* invading dunes. |
| Northumbria Coast<br>Ramsar Site<br>NU 260 192<br>1,107.98 ha | ▪ Internationally important breeding population of little tern<br>▪ Internationally important wintering populations of purple sandpiper and turnstone | To maintain in (or restore to) favourable condition<br>▪ reefs, in particular the extent, distribution, diversity and species richness of reef communities.<br>▪ partially submerged sea caves, in particular the diversity of sea cave communities and their characteristic zonation.<br>▪ intertidal mud and sandflats not covered by sea water at low tide, in particular the extent of eelgrass bed communities and mussel *Mytilus edulis* communities and the diversity of infaunal communities.<br>▪ habitats for the population of Annex 1 bird species, of European importance, with particular reference to Sandy beaches and Shallow inshore waters; | No factors adversely affecting the site's ecological character have been reported |

(*) beside a qualifying feature indicates that the feature is listed as a priority habitat on Annex I of the Habitats Directive.

**Table 3.4: SACs and cSACs adjacent to or within 15km of the Northumberland boundary**

| Name of Site, Location and area (ha)* | Qualifying Features | Conservation Objectives | Threats to Site Integrity |
|---|---|---|---|
| River Eden SAC<br><br>NY 462 237<br><br>2463.23 ha | **Annex I habitats that are a primary reason for selection of this site**<br>▪ Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*<br>▪ Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation<br>▪ Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) *<br><br>**Annex II species that are a primary reason for selection of this site**<br>▪ White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes*<br>▪ Sea lamprey *Petromyzon marinus*<br>▪ Brook lamprey *Lampetra planeri*<br>▪ River lamprey *Lampetra fluviatilis*<br>▪ Atlantic salmon *Salmo salar*<br>▪ Bullhead *Cottus gobio*<br>▪ Otter *Lutra lutra* | To maintain in (or restore to) favourable condition the:<br>▪ Floating formations of water crowfoot<br>▪ Oligotrophic to mesotrophic standing waters<br>▪ Residual alluvial forest<br>▪ the habitats for the populations of:<br>– Atlantic salmon<br>– Bullhead<br>– Brook lamprey<br>– River lamprey<br>– Sea lamprey<br>– White-clawed crayfish<br>– Otter | The maintenance of breeding and nursery areas for the species on this site depends on the habitat quality of streams and their margins. The water-crowfoot communities as well as the species are sensitive to water quality, particularly eutrophication. Many of the streams within the site suffer from overgrazing of riverbanks and nutrient run-off.<br><br>Practices associated with sheep-dipping pose a potential threat.<br><br>Much of the alluvial forest cover is fragmented and/or in poor condition. |
| Bolton Fell Moss cSAC<br><br>NY 490 688<br><br>374.74 | **Annex I habitats that are a primary reason for selection of this site**<br>▪ Degraded raised bogs still capable of natural regeneration | To maintain in favourable condition the active raised bog, and to restore to favourable condition the degraded raised bogs. | A small but significant part of this site supports mire vegetation in near-favourable condition, but to date the majority of the site has been subject to commercial peat-extraction under an existing planning permission. |
| Durham Coast SAC<br><br>NZ 455 407<br><br>393.63 ha | **Annex I habitats that are a primary reason for selection of this site**<br>▪ Vegetated sea cliffs of the Atlantic and Baltic coasts | To maintain in (or restore to) favourable condition the habitats for the populations of Annex 1 species, migratory bird species and waterfowl with particular reference to intertidal sand and mudflats sand dunes and coastal waters, rocky shores and artificial high tide roost sites | Vegetated sea cliffs range from vertical cliffs in the north with scattered vegetated ledges, to the Magnesian limestone grassland slopes of the south. Parts of the site are managed as National Nature Reserve, and plans provide for the non-interventionist management of the vegetated cliffs. The majority of the site is in public ownership and an agreed management plan is being developed to protect nature conservation interests. |
| St Abb's Head to Fast Castle SAC<br><br>NT 878 696<br><br>127.52 ha | **Annex I habitats that are a primary reason for selection of this site**<br>▪ Vegetated sea cliffs of the Atlantic and Baltic coasts | To avoid deterioration of the qualifying habitat thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features.<br><br>To ensure for the qualifying habitat that the following are maintained in the long term:<br><br>▪ Extent of the habitat on site<br>▪ Distribution of the habitat within site<br>▪ Structure and function of the habitat<br>▪ Processes supporting the habitat<br>▪ Distribution of typical species of the habitat<br>▪ Viability of typical species as components of the habitat<br>▪ No significant disturbance of typical species of the habitat | Visitor management forms part of the overall plan, to protect the area from recreational pressure. The cliffs themselves are largely inaccessible and not subject to the same recreational and grazing pressures as the grasslands bordering the cliffs. |
| Tyne and Nent SAC<br><br>NY 715 448<br><br>36.84 ha | **Annex I habitats that are a primary reason for selection of this site**<br>▪ Calaminarian grasslands of the *Violetalia calaminariae* | To maintain in (or restore to) favourable condition the calaminarian grassland | These grasslands occur in two distinct heavy metal-rich habitats: spoil heaps associated with past lead-mining, and river gravels that have been partially derived from the erosion of metal-rich spoil heaps upstream. They are dependent on the maintenance of a high metal content in the substrate. Loss of metallophytes through successional processes is beginning to occur on one site.<br><br>Motorcycle scrambling on part of another site could also represent a threat to the adjacent calaminarian grassland.<br><br>On river gravel sites concerns exist that depletion of the upstream supply of metal-rich waste following the decline of mining will result in a loss of metallophytes. |
| Walton Moss SAC<br><br>NY 504 665<br><br>285.89 ha | **Annex I habitats that are a primary reason for selection of this site**<br>▪ Active raised bogs *<br>▪ Degraded raised bogs still capable of natural regeneration | To maintain in favourable condition the active raised bog, and to restore to favourable condition the degraded raised bogs. | Significant portions of this site support mire vegetation in near-favourable condition, and includes land managed as a National Nature Reserve. Remedial measures will be necessary to enable its recovery to favourable conservation status from damage caused by previous land-drainage operations and inappropriate grazing regimes. A hydrological monitoring regime is in preparation to inform remedial measures and grazing on the site has been tackled by exclosure and by Countryside Stewardship agreements. |

**Table 3.5: SPAs and cSPAs adjacent to or within 15km of the Northumberland boundary**

| Name of Site, Location and area (ha)* | Qualifying Features | Conservation Objectives | Threats to Site Integrity |
|---|---|---|---|
| Din Moss - Hoselaw Loch SPA<br><br>50.59 ha | **Annex I bird species and regularly occurring migratory bird species not listed on Annex I:**<br>▪ *Anser brachyrhynchus* Pink-footed goose<br>▪ *Anser anser* Greylag goose | To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained.<br><br>To ensure for the qualifying species that the following are maintained in the long term:<br>▪ Population of the species as a viable component of the site<br>▪ Distribution of the species within site<br>▪ Distribution and extent of habitats supporting the species<br>▪ Structure, function and supporting processes of habitats supporting the species<br>▪ No significant disturbance of the species | There is some disturbance of the site through shooting and recreation but it is not thought to be significant. |
| Langholm – Newcastleton Hills SPA<br><br>7544.87 ha | **Annex I bird species and regularly occurring migratory bird species not listed on Annex I**<br>▪ *Circus cyaneus* Hen harrier | To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and<br><br>To ensure for the qualifying species that the following are maintained in the long term:<br>▪ Population of the species as a viable component of the site<br>▪ Distribution of the species within site<br>▪ Distribution and extent of habitats supporting the species<br>▪ Structure, function and supporting processes of habitats supporting the species No significant disturbance of the species | Threats to the moorland which supports hen harrier populations include degradation and loss of heather and peat erosion through inappropriate muirburn, overgrazing, public/vehicular access and the spread of bracken. These are being addressed through bracken control, and management agreements for heather restoration, stocking levels and sensitive muirburn. Breeding hen harriers are potentially vulnerable to disturbance from agricultural practices, game management and recreational activities (i.e. walking and birdwatching) on the site. |

# 4 Potential Adverse Impacts of the Northumberland LTP3

## 4.1 Introduction

This chapter sets out the potential significant ecological effects that the Northumberland LTP3 proposals could have on identified Natura 2000 and Ramsar sites within the Northumberland region. The objectives of the LTP3 are designed to create a modal shift towards use of sustainable transport rather than implement interventions that would lead to a substantial increase in traffic. The overall aim of the LTP3 is to be of beneficial value to the surrounding environment however specific proposals set out in the plan could have potential to have a significant effect.

## 4.2 Northumberland LTP3 Proposals

In order to achieve the objectives of the LTP3 which are set out in Chapter 2 a series of proposals have been identified. The LTP3 was reviewed and the relevant main proposals extracted from the plan; these are listed in **Appendix A**.

### *4.2.1 Possible adverse ecological effects of the LTP3*

To understand whether the European Sites listed in Chapter 3 would potentially be affected by the LTP3 it is necessary to firstly identify whether the proposals could affect species and habitats, and what those effects would be. The implementation of the proposals may lead to specific transport infrastructure development or changes to transport movements that could have associated significant effects on European Sites. Impacts from climate change were not considered relevant as the policies proposed are aimed at a modal shift towards more sustainable transport and therefore impacts to habitats and species are considered unlikely. Proposals where there are no significant effects anticipated to the European Site, as they are general intentions, audits or developing strategies/campaigns were scoped out during the preliminary screening assessment and not taken any further in the assessment. Potential significant impacts are presented in Table 4.1 below with descriptions of their origin.

**Table 4 Potential Significant Effects**

| Potential Ecological Impacts |
|---|
| E1 Water Pollution |
| Surface water runoff and groundwater sub-surface flow generated from construction works or from increased traffic levels can transport polluting materials and sediments to nearby watercourses:<br><br>E1.1 Water pollution (chemical contamination): There is potential for an increased transport of chemical contaminants reaching the aquatic environment from runoff or spray during construction and operation. This could range from concrete leaks and hydrocarbon leaks (oil and diesel) during construction and vehicle emissions and surface runoff during operation. Changes to water quality can have harmful effects on populations of fauna and flora, which can be a result of lowered oxygen levels, direct toxic effects and changes to ecosystem function.<br><br>E1.2 Water pollution (sediments): Increased sediment loads from construction works can increase turbidity levels and sediment deposition within aquatic systems. This can adversely impact on associated wildlife by causing shading effects that can inhibit plant and algal growth and smother organisms thereby limiting productivity and survival. |
| E2 Air Pollution |
| The construction phase of proposals can generate dust emissions from operating machinery that can cause localised smothering of vegetation or potential health issues in large animals e.g. birds. An intervention may also lead to increased traffic levels and associated increases in the nitrogen oxide deposition levels on surrounding sensitive habitats. |
| E3 Land Take |
| The construction of transport infrastructure could lead to a direct loss of habitat availability and/or indirectly fragment inter-connecting habitats that are important for species movement and population viability. |
| E4 Disturbance |

| Potential Ecological Impacts |
|---|
| Increased noise levels and human presence have the potential to disturb fauna and impact on habitats (e.g. trampling on plants). |
| E5 Changes to Hydrology |
| During both the construction and operational phases of infrastructure developments there is potential to alter the hydrology of sensitive habitats and species by either increasing or decreasing runoff or water percolation into aquifers. |
| E6 Lighting |
| Increased lighting from construction works or infrastructure operation has the potential to impact on the behaviour of certain species and deter the usage of habitats by certain species, e.g. lighting can have adverse impacts on breeding & foraging birds, and act as a barriers to specific types of commuting bat species. |
| E7 Pests / Invasive Species |
| During construction there is potential for invasive species to be inadvertently introduced to European Sites. Such species could out-compete and replace desirable native organisms. |

Table 5 below lists potential ecological effects that were assessed against the qualifying features of the European Sites that are situated within and 15km from the LTP3 boundary area.

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**Table 5 Potential Ecological Impacts on the Qualifying Features of European Sites within and adjacent to the Northumberland region**

| Qualifying Features | Water Pollution | Air Pollution | Land Take | Disturbance | Changes to Hydrology | Lighting | Pests |
|---|---|---|---|---|---|---|---|
| Purple sandpiper *Calidris maritime* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Ruddy turnstone *Arenaria interpres* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Little tern *Sterna albifrons* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Whooper swan *Cygnus cygnus* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Greylag goose *Anser anser* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Pink-footed goose *Anser brachyrhynchus* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Light-bellied brent goose *Branta bernicla hrota* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Common shelduck *Tadorna tadorna* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Eurasian wigeon *Anas Penelope* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Common eider *Somateria mollissima* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Long-tailed duck *Clangula hyemalis* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Black (common) scoter *Melanitta nigra* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Red-breasted merganser *Mergus serrator* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Ringed plover *Charadrius hiaticula* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| European golden plover *Pluvialis apricaria* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Grey plover *Pluvialis squatarola* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Sanderling *Calidris alba* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Dunlin *Calidris alpina alpina* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Bar-tailed godwit *Limosa lapponica* | ✓ | ✓ | v | ✓ | × | ✓ | × |
| Common redshank *Tringa tetanus* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Roseate tern *Sterna dougallii* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Extensive intertidal flats, saltmarsh and major sand dune system with well developed dune slacks. | × | × | ✓ | ✓ | × | × | × |
| Redshank *Tringa totanus tetanus* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Petalwort *Petalophyllum ralfsii* | ✓ | ✓ | ✓ | ✓ | × | × | × |
| *Dune helleborine Epipactis sancta* | × | × | × | × | × | × | × |
| Arctic tern *Sterna paradisaea* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Sandwich tern *Sterna sandvicensis* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Common tern *Sterna hirundo* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |

| Qualifying Features | Water Pollution | Air Pollution | Land Take | Disturbance | Changes to Hydrology | Lighting | Pests |
|---|---|---|---|---|---|---|---|
| Embryonic shifting dunes | × | × | ✓ | ✓ | × | × | × |
| Shifting dunes along the shoreline with marram, *Ammophila arenaria* (`white dunes`) | × | × | ✓ | ✓ | × | × | × |
| Fixed dunes with herbaceous vegetation (`grey dunes`) | × | ✓ | ✓ | ✓ | × | × | × |
| Dunes with creeping willow *Salix repens* ssp. argentea (*Salicion arenariae*) | × | ✓ | ✓ | ✓ | × | × | × |
| Humid dune slacks | × | × | ✓ | ✓ | × | × | × |
| European dry heaths | × | × | ✓ | ✓ | × | × | × |
| Blanket bogs | ✓ | ✓ | ✓ | ✓ | ✓ | × | × |
| Transition mires and quaking bogs | ✓ | ✓ | ✓ | ✓ | ✓ | × | × |
| Northern Atlantic wet heaths with *Erica tetralix* | ✓ | ✓ | ✓ | ✓ | ✓ | × | × |
| Petrifying springs with tufa formation (*Cratoneurion)* | × | ✓ | ✓ | ✓ | × | × | × |
| Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea* | ✓ | ✓ | ✓ | ✓ | × | × | × |
| Water courses of plain to montane levels with the *Ranunculion fluitantis* and Callitricho-Batrachion vegetation | ✓ | ✓ | ✓ | ✓ | × | × | × |
| Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, *Alnion incanae, Salicion albae*) | × | ✓ | ✓ | ✓ | × | × | × |
| White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes* | ✓ | × | × | ✓ | × | × | × |
| Sea lamprey *Petromyzon marinus* | ✓ | × | × | × | × | × | × |
| Brook lamprey *Lampetra planeri* | ✓ | × | × | × | × | × | × |
| River lamprey *Lampetra fluviatilis* | ✓ | × | × | × | × | × | × |
| Atlantic salmon *Salmo salar* | ✓ | × | ✓ | ✓ | × | × | × |
| Bullhead *Cottus gobio* | ✓ | × | ✓ | ✓ | × | × | × |
| Otter *Lutra lutra* | ✓ | ✓ | ✓ | ✓ | × | × | × |
| Calaminarian grasslands of the *Violetalia calaminariae* | × | ✓ | ✓ | ✓ | × | × | × |
| Natural eutrophic lakes with pondweed vegetation *Magnopotamion* or *Hydrocharition*-type vegetation | ✓ | ✓ | ✓ | ✓ | × | × | × |
| *Juniperus communis* formations on heaths or calcareous grasslands | × | ✓ | ✓ | ✓ | × | × | × |
| Petrifying springs with tufa formation (*Cratoneurion*) | ✓ | × | ✓ | × | ✓ | × | × |
| Siliceous rocky slopes with chasmophytic vegetation | × | ✓ | ✓ | ✓ | × | × | × |
| Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles | × | × | × | ✓ | × | × | × |
| Northern Atlantic wet heaths with *Erica tetralix* | ✓ | ✓ | ✓ | ✓ | ✓ | × | × |
| Siliceous alpine and boreal grasslands | × | ✓ | ✓ | ✓ | × | × | × |
| Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) | × | ✓ | ✓ | ✓ | × | × | × |

| Qualifying Features | Water Pollution | Air Pollution | Land Take | Disturbance | Changes to Hydrology | Lighting | Pests |
|---|---|---|---|---|---|---|---|
| Alkaline fens | × | ✓ | ✓ | ✓ | × | × | × |
| Siliceous scree of the montane to snow levels (*Androsacetalia* alpinae and *Galeopsietalia ladani*) | × | ✓ | ✓ | ✓ | × | × | × |
| Calcareous rocky slopes with chasmophytic vegetation | × | ✓ | ✓ | ✓ | × | × | × |
| Marsh saxifrage *Saxifraga hirculus* | × | ✓ | ✓ | ✓ | × | × | × |
| Hen harrier *Circus cyaneus* | × | ✓ | ✓ | ✓ | × | ✓ | × |
| Merlin *Falco columbarius* | × | ✓ | ✓ | ✓ | × | ✓ | × |
| Peregrine falcon *Falco peregrinus* | × | ✓ | ✓ | ✓ | × | ✓ | × |
| Mountain hay meadows | × | ✓ | ✓ | ✓ | × | × | × |
| Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae)* | × | ✓ | ✓ | ✓ | × | × | × |
| Active raised bogs | ✓ | ✓ | ✓ | ✓ | ✓ | × | × |
| Degraded raised bogs still capable of natural regeneration | ✓ | ✓ | ✓ | ✓ | ✓ | × | × |
| Active blanket bog | ✓ | ✓ | ✓ | ✓ | ✓ | × | × |
| Notable variety of *Sphagnum* mosses (rare species):<br>- *Carex magellanica*<br>- *Sphagnum imbricatum*<br>- *S. pulchrum*<br>- *S. magellanicum*<br>- *Eboria caliginosa* | × | ✓ | ✓ | ✓ | ✓ | × | × |
| Vegetated sea cliffs of the Atlantic and Baltic coasts | × | ✓ | ✓ | ✓ | × | × | × |
| Lowland raised bog | × | ✓ | ✓ | ✓ | ✓ | × | × |
| Mallard *Anas platyrhynchos* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Teal *Anas creccaduring* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Shelduck *Tadorna tadorna* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Shoveler *Anas clypeata* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Tufted duck *Aythya fuligula* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation | ✓ | ✓ | × | ✓ | × | × | × |
| Estuaries | ✓ | × | ✓ | × | × | × | × |
| Mudflats and sandflats not covered by seawater at low tide | ✓ | × | ✓ | × | × | × | × |
| Large shallow inlets and bays | ✓ | × | ✓ | × | × | × | × |
| Reefs | ✓ | × | ✓ | ✓ | × | × | × |
| Submerged or partially submerged sea caves | × | × | ✓ | ✓ | × | × | × |
| Grey seal *Halichoerus grypus* | ✓ | ✓ | × | ✓ | × | × | × |
| Common Guillemot *Uria aalge* | ✓ | ✓ | ✓ | ✓ | × | × | × |
| Shag *Phalacrocorax aristotelis* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Herring Gull *Larus argentatus* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |
| Razorbill *Alca torda* | ✓ | ✓ | ✓ | ✓ | × | ✓ | × |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Black-legged kittiwake *Rissa tridactyla* | ✓ | ✓ | × | ✓ | × | ✓ | × |
| **Qualifying Features** | **Water Pollution** | **Air Pollution** | **Land Take** | **Disturbance** | **Changes to Hydrology** | **Lighting** | **Pests** |
| Seabird assemblage | ✓ | ✓ | × | ✓ | × | ✓ | × |

Some of the proposals do not contain sufficient design and spatial information in order to fully assess their potential impact on European Sites and therefore a potential likely significant effect cannot be ruled out at this stage. Any future proposals arising from the LTP3 will be screened when further spatial and design information becomes available to establish whether potential significant effects are considered likely and a full HRA is required. Any proposal which fails to demonstrate no adverse effect on the integrity of a European Site will not be permitted as it will be not in accordance with the LTP3.

# 5 Screening Methodology

## 5.1 Introduction

The principle aim of this chapter is to identify any proposals that are likely to have a significant effect upon the European Sites identified in Chapter 3. It forms an initial part of the screening process that uses informed judgment to determine whether a proposal will have significant effects on the integrity of a European Site in terms of its conservation objectives. A precautionary approach is taken when insufficient information is available to make a judgment, by assuming that a significant effect is possible.

## 5.2 Aim and Objectives

Stage 1 (Screening) has four main stages and aims to determine whether the LTP3 associated proposals, will require a full HRA (including an Appropriate Assessment). Determination of the requirement for a full HRA will require the following activities:

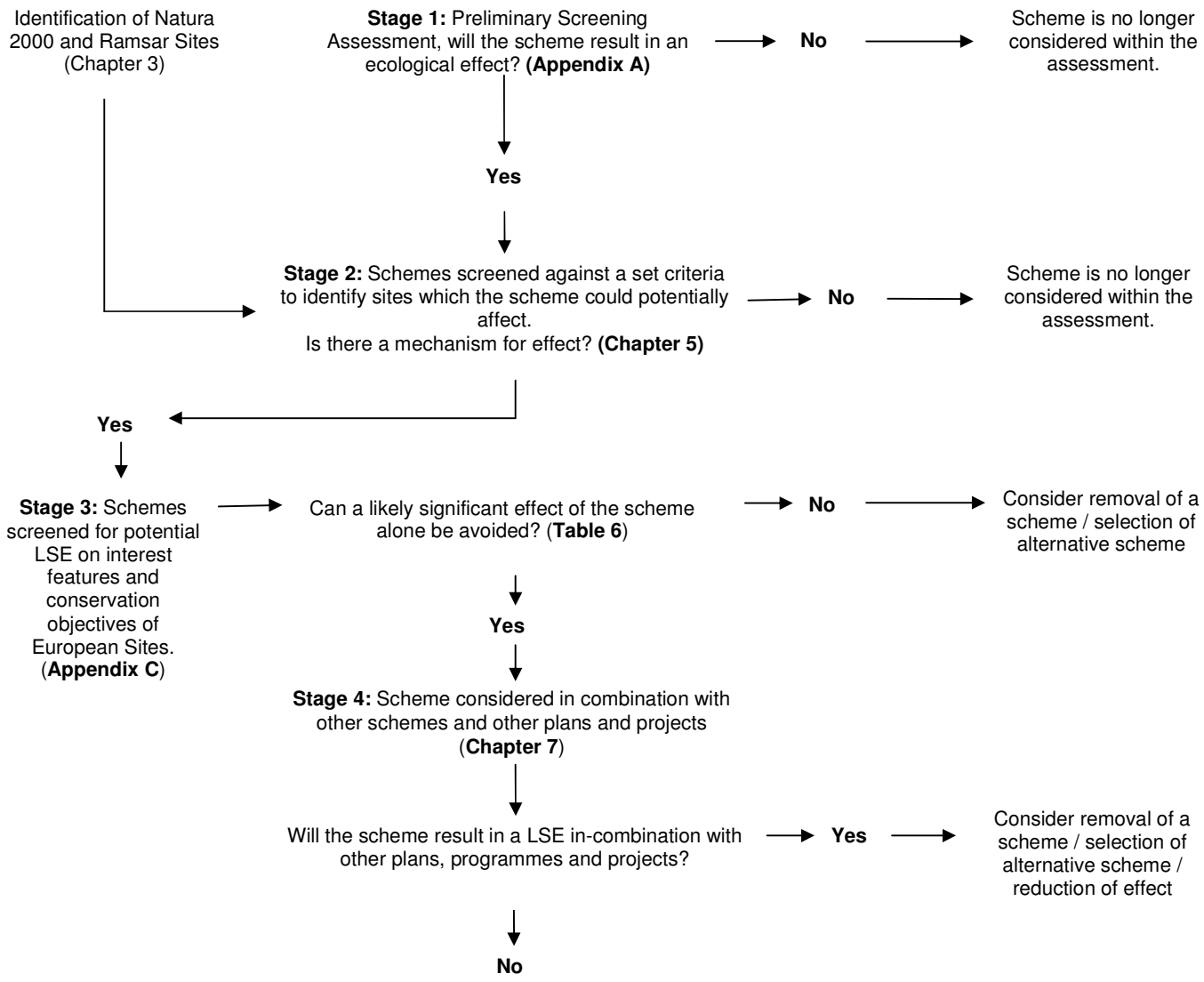
- Identifying European Sites that lie within the LTP3 boundary and those that are outside the boundary area that may be affected by the LTP3;
- Confirming the Interest Features and Conservation Objectives for these European Sites;
- Determining whether the plan is directly connected with or necessary to the management of the site – if it is, then no further assessment is required (this is unlikely to be the case with LTP3 proposals);
- Identifying the broad elements of the LTP3 proposals that may interact with European Sites
- Collating information on other plans and projects that may have "in combination effects". In-combination effects refers to the cumulative effects caused by the LTP3 together with other projects or plans that are currently under consideration any existing or proposed projects or plans;
- Identifying the potential effects and ascertaining whether the European Site(s) are at risk of a significant effects from the LTP3;
- Consulting with Natural England to determine which proposals should be assessed within the Appropriate Assessment; and
- Providing recommendations for the following stages of the HRA.

## 5.3 Approach and Methodology

Diagram 5.1 below illustrates the staged approach to screening of the LTP3. This has been done in four stages:

- **Stage 1**: Preliminary Screening Assessment
- **Stage 2**: Identification of sites where a mechanism exists
- **Stage 3**: Identification of potential for Likely Significant Effect (LSE) on interest features and conservation objectives of European Sites by the schemes contained within the plan.
- **Stage 4**: Identification of the potential for Likely Significant Effect (LSE) by the LTP3 schemes in combination with other plans, programmes and projects.

Each stage informs the next and is presented in Chapters 6-8.


Identification of Natura 2000 and Ramsar Sites (Chapter 3)
Stage 1: Preliminary Screening Assessment, will the scheme result in an ecological effect? (Appendix A)
No
Scheme is no longer considered within the assessment.
Yes
Stage 2: Schemes screened against a set criteria to identify sites which the scheme could potentially affect.
Is there a mechanism for effect? (Chapter 5)
No
Scheme is no longer considered within the assessment.
Yes
Stage 3: Schemes screened for potential LSE on interest features and conservation objectives of European Sites. (Appendix C)
Can a likely significant effect of the scheme alone be avoided? (Table 6)
No
Consider removal of a scheme / selection of alternative scheme
Yes
Stage 4: Scheme considered in combination with other schemes and other plans and projects (Chapter 7)
Will the scheme result in a LSE in-combination with other plans, programmes and projects?
Yes
Consider removal of a scheme / selection of alternative scheme / reduction of effect
No

### *5.3.1 Preliminary Screening Assessment*

The LTP3 was reviewed and the relevant proposals extracted which are presented in **Appendix A** within this report. Due to the large scale of the plan a preliminary screening assessment has been carried out on the proposals. The preliminary assessment has been designed to reduce the long list of proposals to those that have the potential to have an impact on local biodiversity. Potential ecological impacts could arise from the construction and/or operation of transport and its associated infrastructure. Proposals which express general intentions or develop transport related strategies/campaigns and which do not involve the construction/operation of any new infrastructure have been screened out by this preliminary screening assessment as no ecological impacts were envisaged. This preliminary screening assessment does not identify a proposal's proximity to a European Site, the potential for hydrological links or potential effects associated with increased emissions; it simply provides an indication of whether the intervention/proposal itself could potentially have an ecological impact. The result of this preliminary screening assessment is a condensed list of interventions/proposals that have some potential to impact on a European Site and are taken forward to screening. Please refer to Appendix A which lists the proposals taken forward for Stage 2 of screening which are highlighted as yellow in the table.

The preliminary screening assessment has identified a number of proposals which are yet to be developed and for which the location is yet to be determined. Proposals highlighted as blue in Appendix A lack spatial and design detail and therefore it is not considered possible to determine whether the proposals would have a likely significant effect either alone or in combination on a European Site. It will be necessary to screen these proposals when further design and spatial information becomes available to establish whether potential significant effects are considered likely and a full (project level) HRA is required. Any proposal which fails to demonstrate no adverse effect on the integrity of a European Site will not be permitted as it will be not in accordance with the LTP3. However, as a general guide, all possible ecological impacts have been considered against non-spatial & design proposals as a result of its implementation and are listed in Appendix B.

### *5.3.2 Screening Assessment*

From the results of the preliminary screening assessment proposals that were identified as having the potential to have an ecological effect were further screened to determine whether they are likely to have significant effects on a European Site. Where screening identifies a likely significant effect of a proposal on a European Site, The Conservation of Habitats and Species Regulations 2010 require that the impact of the particular proposal is considered in combination with other plans and projects. These possible in-combination effects are illustrated in Chapter 7 Assessment Matrices, presented in Appendix D.

The screening assessment has considered the proximity of the specific proposals to each of the European Sites listed in Chapter 3. The proximity of the proposal, whether it is hydrologically connected, and whether the proposal would result in an increase in emissions, are relevant factors to take into consideration when assessing whether proposals are likely to affect European Sites. Factors that would trigger a potential likely significant effect on a European Site are given below:

- Any European Site within 2km of a proposal will automatically be identified as having the potential to have a likely significant effect;
- Any European Site that is likely to be hydrologically connected to a proposal. This includes all proposals upstream of European Sites, all peatland and wetland sites with significant hydrological links, direct impacts on main rivers e.g. sediment disturbance, increased runoff or disturbance to mobile species;
- Any European Site outside of the plan area that may be affected through related infrastructure and;
- Individual consideration of proposals to determine whether they are likely to have any wider ranging impacts that could propagate further than the 2km radius, such as increased emissions or recreational pressures which could affect European Sites both within and outside of the LTP3 boundaries.

The screening assessment has been presented in Appendix C. Where a potential LSE cannot be ruled out at this stage, due to insufficient design and spatial information, the proposal will be screened to determine whether potential significant effects are considered likely and whether a full HRA at project/scheme design stage is required. Any proposal which fails to demonstrate no

adverse effect on the integrity of a European Site will be not be permitted as it will not be in accordance with the LTP3. This is only considered appropriate where the following criteria specified in *Tyldesley, D.2009 Draft Guidance for Plan Making* apply*:*

- The higher tier plan (LTP3) cannot reasonably assess the effects on a European Site in a meaningful way whereas;
- The HRA assessment of the lower tier plan will identify more precisely the nature, scale or location of development, and thus its potential effects. NCC will be able to change the proposal if an adverse effect on the site's integrity cannot be ruled out, because the tier plan is free to change the nature and/or scale and/or location of the proposal in order to avoid adverse effects on the integrity of any European Site and;
- The plan or project and HRA of the project is required as a matter of law or by Government policy.

Refer to Appendix B for details of possible ecological effects as a result of the implementation of non-spatial/design information related proposals.

### 5.4 Screening Matrices

An assessment has also been made to determine whether a likely significant effect can be identified at this stage based on current information. All of the potential impacts on Natura 2000 and Ramsar sites should also be considered at project level when detailed design is fixed.

Screening matrices have been prepared for all Natura 2000 and Ramsar sites which fell under the set criteria in the screening methodology when assessing proposals against European Sites. All matrices can be found in Appendix D. These matrices are based on the criteria outlined by the European Commission (EC, 2001) and are structured as follows:

- A brief description of the European Site;
- A list of the interest features for which it is designated;
- A summary of the pressures to which the European Site's integrity is currently vulnerable;
- A description of the individual elements of the LTP3 to which the European Site may be vulnerable;
- A description of any likely direct, indirect or secondary impacts of the LTP3 (either alone or in combination with other plans or projects) on the European Site;
- A description of the likely changes to site integrity as a result of the LTP3;
- A description of the likely impacts on the European Site as a whole; and
- A description of where impacts are likely to be significant, or where the scale or magnitude of the impacts is not known.

The Standard Data Forms for each European Site can be found on the Joint Nature Conservation Committee (JNCC) website www.jncc.gov.uk. The matrices are presented to allow for a comparison of the site designations to the LTP3 proposals presented in the previous chapter. Should any of the proposals be considered to have the potential for likely significant effects on the sites, the proposals will be subjected to a more detailed Appropriate Assessment. A statement will be produced to inform the Appropriate Assessment for consideration and evaluation by the relevant authority which will then determine its outcome.

### 5.5 Wider ranging Impacts

Any proposal which could contribute to increased emissions and/or increased recreational pressures could have wider ranging impacts on European Sites outside the LTP3 boundary as well as those inside.

Increased emissions from transport proposals could affect nitrogen deposition and acidification impacting on the critical loads of European Sites many of which are currently above their critical loads. Therefore European Sites outside of the LTP3 boundary which are not hydrologically linked have been included within the screening matrices. The screening matrixes for all sites include a sub matrix detailing which of the features are sensitive to nitrogen deposition and acidification.

All European Sites which may experience adverse significant impacts from recreational pressures from surrounding tourist attractions have been considered throughout this assessment.

# 6 Results of Screening

## 6.1 Introduction

The screening process identified the potential for likely significant effects on European Sites up to 15km from the LTP3 proposals. Appendix C lists the European Sites that have been identified as having the potential to be significantly affected by one or more of the proposals contained within the LTP3. For a number of the proposals identified as having the potential to cause ecological impacts, it was not possible to then determine whether these would have a likely significant effect on any European Site as insufficient detail is available in their current form and specific proposals have not yet been developed. For these proposals, we cannot conclude that these interventions will not have a likely significant effect upon European Sites. Reference should be made to Appendix B which details all of the potential effects that European Sites may experience through the implementation of the LTP3 proposals dependant on their location and design. As a result it is not practical to undertake the assessment at this stage. It will be necessary to screen these proposals when further spatial and design information becomes available to establish whether potential significant effects are considered likely and a full HRA is required. Any proposal which fails to demonstrate no adverse effect on the integrity of a European Site will not be permitted as it will not be in accordance with the LTP3.

Avoidance/cancellation and reduction "best practice" measures could be implemented during construction or operation to reduce likely significance effects on European Sites listed in Appendix C. Avoidance/cancellation measures are designed to eliminate/cancel out potential adverse effects on European Sites. Reduction measures are designed to reduce likely significant effects perhaps to a level that is insignificant or in a way that makes them unlikely to occur. Best practice mitigation measures available to address potential likely significance impacts are detailed below in Tables 6.1 and 6.2.

**Table 6.1 Best Practice Avoidance / Cancellation Measures to address Potential Significant Impacts**

| Reason for Potential Likely Significant Effect upon Natura 2000 or Ramsar Sites as a result of the implementation of the proposal | Proposed Avoidance / Cancellation Measures | Proposals where avoidance/cancellation measures can be applied to avoid the potential for likely significant effects |
|---|---|---|
| Air pollution & dust generated from construction machinery and activities and during operation could adversely affect sensitive habitats and species within 15km of contaminant source | ▪ Appropriate review of local air quality and pollutant modelling to be undertaken if appropriate when detailed design is finalised and mitigation is implemented<br>▪ Vehicles carrying dusty materials will be covered<br>▪ Construction vehicles conform to at least Euro III standards<br>▪ Protect activities and exposed materials from wind<br>▪ Use water sprays/spray curtains to moisten material | ▪ Ashington-Tyne freight line improvements to capacity and signalling<br>▪ Improve passenger information along the Tyne Valley Line<br>▪ Improve station facilities at Hexham train station.<br>▪ Increase car parking facilities at Morpeth & Cramlington train station<br>▪ Improving ECML train line and local stopping services<br>▪ Re-opening of Belford train station<br>▪ New/Improvements to Hexham, Ashington and Blyth bus station<br>▪ Improve Coach facilities in Berwick, Hexham, Alnwick & Morpeth<br>▪ Establish Cycle hubs in Wooler & Haltwhistle<br>▪ Re-opening of Ashington-Tyne line to passenger services<br>▪ Increasing local services on the Tyne Valley Line<br>▪ Increasing accessibility for the mobility impaired at Alnmouth, Cramlington & Morpeth, Railway Station |

| Reason for Potential Likely Significant Effect upon Natura 2000 or Ramsar Sites as a result of the implementation of the proposal | Proposed Avoidance / Cancellation Measures | Proposals where avoidance/cancellation measures can be applied to avoid the potential for likely significant effects |
|---|---|---|
| Water pollution from surface runoff either from construction or during operation could adversely affect sensitive habitats and species if allowed to discharge uncontrolled into water bodies | Normal controls / licences would be required at a project level. However the following mitigation measures would be included (subject to the detailed project level HRA) in the LTP3 for these schemes:<br>▪ Good practices undertaken should be in accordance with the EA Pollution Prevention Guidelines PPG 1, PPG 2, PPG 6, PPG 7, PPG 8, PPG 18, PPG 21, PPG 26<br>▪ Where any chemicals are required these would be stored appropriately on site away from watercourses and in bunded areas with isolated drainage systems.<br>▪ Any vehicles that are required during construction would be inspected before and regularly during their use. Drip trays fitted where appropriate and spill kits available if required. Emergency plans in the event of a spillage would be developed.<br>▪ the required level of runoff attenuation and treatment and measures to contain any potential spillages<br>▪ Any proposed bridge structures would be set back from the river banks and working within the river would be avoided to prevent any potential species disturbance | ▪ A19 (T) Moor Farm junction improvements<br>▪ A19 (T) Seaton Burn junction improvements<br>▪ Ashington-Tyne freight line improvements to capacity and signalling<br>▪ Improve passenger information along the Tyne Valley Line<br>▪ Improve station facilities at Hexham and Prudhoe train station<br>▪ Increase car parking facilities at Morpeth train station<br>▪ Improving ECML train line and local stopping services<br>▪ Re-opening of Belford train station<br>▪ New/Improvements to Hexham and Blyth bus station<br>▪ Improve Coach facilities in Berwick, Hexham & Morpeth<br>▪ Establish Cycle hubs in Wooler & Haltwhistle<br>▪ Re-opening of Ashington-Tyne line to passenger services<br>▪ Increasing local services on the Tyne Valley Line<br>▪ Increasing accessibility for the mobility impaired at Alnmouth & Morpeth Railway Station |

| Reason for Potential Likely Significant Effect upon Natura 2000 or Ramsar Sites as a result of the implementation of the proposal | Proposed Avoidance / Cancellation Measures | Proposals where avoidance/cancellation measures can be applied to avoid the potential for likely significant effects |
|---|---|---|
| Noise and Vibration disturbance from construction activities and during operation could adversely affect sensitive species and habitats. | ▪ Any construction activity would aim to avoid periods where passage, breeding and over-wintering birds for which the Natura 2000 sites are designated for are using the site in significant numbers. Wintering and migration bird surveys may be required.<br>▪ Development of appropriate conditions to avoid environmental impacts during the construction of these schemes from disturbing species and sensitive habitats such as appropriate fencing or barriers. | ▪ Increasing accessibility for the mobility impaired at Alnmouth Railway Station<br>▪ Improvements to Tyne Valley rail passenger information<br>▪ Increase local Tyne Valley rail services<br>▪ Re-opening of Belford train station<br>▪ Improvements to Berwick train station and increase car parking facilities<br>▪ Increase car parking facilities at Alnmouth train station<br>▪ Increase and improve Berwick coach facilities<br>▪ Establish Cycle hubs in Wooler<br>▪ Increasing accessibility for the mobility impaired at Alnmouth, Cramlington and Morpeth Train Station |
| Land take or habitat fragmentation from the location of schemes could adversely affect sensitive habitats and species | ▪ The location of schemes should avoid being sited within or adjacent to European Sites | ▪ Improvements to Tyne Valley passenger information and local services<br>▪ Improve Coach facilities in Berwick<br>▪ Establish Cycle hubs in Wooler |

| Reason for Potential Likely Significant Effect upon Natura 2000 or Ramsar Sites as a result of the implementation of the proposal | Proposed Avoidance / Cancellation Measures | Proposals where avoidance/cancellation measures can be applied to avoid the potential for likely significant effects |
|---|---|---|
| Close proximity of schemes to site could result in physical and visual disturbance to sensitive habitats and species on site during construction or operational phases of the scheme | ▪ Protected species surveys undertaken prior to works commence and standard mitigation measures implemented to protect specific species (such as otters and GCN) and their territories. Any work which may destroy or affect a sensitive species habitat must be discussed with Natural England and the EA.<br>▪ Fencing and buffer zones would also be incorporated as part of the overall scheme to prevent protected species such as otters gaining access to the construction compound.<br>▪ Any proposed bridge structures would be set back from the river banks and working within the river would be avoided to prevent any potential species disturbance.<br>▪ Any temporary crossings that are required would be designed to the criteria laid down for permanent works.<br>▪ Any new bridge would provide a safe passage for mammals<br>▪ Any works would be carried outside the of the spawning period for salmonids<br>▪ Fish passage conditions must be maintained at all times. | ▪ Improvements to ECML line and local stopping services<br>▪ Improvements to Tyne Valley passenger information<br>▪ Re-opening of Belford train station<br>▪ Improve Coach facilities in Berwick<br>▪ Establish Cycle hubs in Wooler<br>▪ Increasing local services on the Tyne Valley Line<br>▪ Increase accessibility for the mobility impaired at Morpeth and Cramlington train station |

| Reason for Potential Likely Significant Effect upon Natura 2000 or Ramsar Sites as a result of the implementation of the proposal | Proposed Avoidance / Cancellation Measures | Proposals where avoidance/cancellation measures can be applied to avoid the potential for likely significant effects |
|---|---|---|
| Increased lighting from operational infrastructure could cause increased illumination to sensitive habitat and species on site. | ▪ Using low or high pressure sodium lights instead of mercury or metal halide lamps.<br>▪ Direct lighting to where needed and avoid spillage e.g. direct lighting towards the scheme and design the luminaire appropriately, including the use of hoods, cowls, shields etc to avoid spillage onto features of ecological interest.<br>▪ Only light areas which need to be lit, and use the minimal level of lighting required to comply with guidance such as Institute of Lighting Engineers Guidance Notes for the Reduction of Obtrusive Light (2005).<br>▪ Do not use a lamp greater than 150W for security lighting. | ▪ Establish Cycle hubs in Haltwhistle |

**Table 6.2 Best Practice Reduction Measures to address Potential Significant Impacts**

| Reason for Potential Likely Significant Effect upon Natura 2000 or Ramsar Sites as a result of the implementation of the proposal | Proposed Avoidance / Cancellation Measures | Proposals where reduction measures can be applied to avoid the potential for likely significant effects |
|---|---|---|
| Air pollution & dust generated from construction machinery and activities and during operation could adversely affect sensitive habitats and species within 15km of contaminant source | ▪ A speed limit of 10mph will be enforced on all construction traffic travelling on all unpaved roads within the construction boundary and 15mph adjacent to residential and commercial areas.<br>▪ Solid hoardings at least 2m high will be installed to reduce the transfer of dust and air pollutants travelling to sensitive areas during construction. | ▪ Ashington-Tyne freight line improvements to capacity and signalling<br>▪ Improve passenger information along the Tyne Valley Line<br>▪ Improve station facilities at Hexham train station<br>▪ Increase car parking facilities at Morpeth& Cramlington train station<br>▪ Improving ECML train line and local stopping services<br>▪ Re-opening of Belford train station<br>▪ New/Improvements to Hexham, Ashington and Blyth bus station<br>▪ Improve Coach facilities in Berwick, Hexham, Alnwick & Morpeth<br>▪ Establish Cycle hubs in Wooler & Haltwhistle<br>▪ Re-opening of Ashington-Tyne line to passenger services<br>▪ Increasing local services on the Tyne Valley Line<br>▪ Increasing accessibility for the mobility impaired at Alnmouth, Cramlington & Morpeth Railway Station |

| Reason for Potential Likely Significant Effect upon Natura 2000 or Ramsar Sites as a result of the implementation of the proposal | Proposed Avoidance / Cancellation Measures | Proposals where reduction measures can be applied to avoid the potential for likely significant effects |
|---|---|---|
| Water pollution from surface runoff either from construction or during operation could adversely affect sensitive habitats and species if allowed to discharge uncontrolled into water bodies | Normal controls / licences would be required at a project level. However the following mitigation measures would be included (subject to the detailed project level HRA) in the LTP3 for these schemes:<br>▪ Measures to control the generation of sediment laden runoff would be implemented prior to and during construction.<br>▪ Wheel wash facilities or road sweepers would be in place on entrance and exit points to construction sites in accordance with EA PPG 13 and vehicles made to use them. | ▪ A19 (T) Moor Farm junction improvements<br>▪ A19 (T) Seaton Burn junction improvements<br>▪ Ashington-Tyne freight line improvements to capacity and signalling<br>▪ Re-opening of Ashington-Tyne line to passenger services<br>▪ Improve passenger information along the Tyne Valley Line<br>▪ Improve station facilities at Hexham and Prudhoe train station<br>▪ Increase car parking facilities at Morpeth train station<br>▪ Improving ECML train line and local stopping services<br>▪ Re-opening of Belford train station<br>▪ New/Improvements to Hexham and Blyth bus station<br>▪ Improve Coach facilities in Berwick, Hexham & Morpeth<br>▪ Establish Cycle hubs in Wooler & Haltwhistle<br>▪ Increasing local services on the Tyne Valley Line<br>▪ Increasing accessibility for the mobility impaired at Alnmouth & Morpeth Railway Station |
| Land take or habitat fragmentation as a result of the location of schemes could adversely affect sensitive habitats and species | ▪ Habitat corridors should be retained if land take is required and these corridors should be enhanced where possible. | ▪ Improve Coach facilities in Berwick<br>▪ Establish Cycle hubs in Wooler<br>▪ Increasing local services and passenger information systems on the Tyne Valley Line |

| Reason for Potential Likely Significant Effect upon Natura 2000 or Ramsar Sites as a result of the implementation of the proposal | Proposed Avoidance / Cancellation Measures | Proposals where reduction measures can be applied to avoid the potential for likely significant effects |
|---|---|---|
| Close proximity of schemes to site could result in physical and visual disturbance to sensitive habitats and species on site during construction or operational phases of the scheme | ▪ Fencing to be implemented into the design of the scheme and restrict access to sensitive areas to reduce disturbance to wintering, breeding and passage birds and other species. | ▪ Improve Coach facilities in Berwick<br>▪ Increasing local services and passenger information systems on the Tyne Valley railway line<br>▪ Establish Cycle hubs in Wooler<br>▪ Increase accessibility for the mobility impaired at Cramlington and Morpeth train station |
| Increased lighting from operational infrastructure could cause increased illumination to sensitive habitat and species on site. | ▪ Use movement sensors or timers on security lighting.<br>▪ Care should also be taken with temporary lighting during the construction period. This would only be used during the hours of work and switched off at night. | ▪ Establish Cycle hubs in Haltwhistle |

The majority of significant impacts identified against the implementation of the proposals can be addressed through the adoption of best practice avoidance measures detailed in Table 6. Chapter 9 Appropriate Assessment details potential likely significant effects from the implementation of the proposals that cannot be avoided through the adoption of best practice in design, construction and operation.

# 7 In-Combination Effects

## 7.1 Introduction

The Habitats Regulations state that when considering whether a specific plan or project is likely to have a significant effect on a European Site, this should consider the effect of the proposal in isolation and in-combination with other plans or projects. Part of the HRA process is to identify the plans, programmes and projects that could have in-combination effects. In assessing in combination effects the following projects should be considered:

- Projects which have already been implemented or completed;
- Projects which have been given consent but which have not yet been implemented or completed;
- Projects for which applications for consent have been made; and
- Ongoing projects that are subject to periodic regulatory reviews, such as discharge consents or waste management licences.

## 7.2 Other plans, programmes, projects

In summary, a series of other plans and projects have been reviewed when determining possible in-combination effects. A full list of relevant plans considered relevant and that could result in-combination effects on European Sites have been considered in this assessment. The plans which have been researched and included in this section have been listed in Table 7 below.

**Table 7 Other plans, programmes and projects**

| Plans, Projects & Programmes | Description | Potential for In-Combination Effects? |
|---|---|---|
| National | | |
| A Future for Transport: A network for 2030 | ▪ Benefit from mobility and access while minimising the impact on other people environment, now and in the future<br>▪ Network to meet challenges of growing economy and the increasing demand but can also achieve environmental objectives<br>▪ Making walking and cycling a real alternative for local trips | ✓ |
| Active Travel Strategy for England, Scotland, Wales and Northern Ireland (2007) | The UK Government and the devolved administrations published the latest Air Quality Strategy for England, Scotland, Wales and Northern Ireland in July 2007 - setting out a way forward for work and planning on air quality issues and the air quality standards and objectives to be achieved; introducing new policy framework for tackling fine particles and identifying potential new national policy measures which modalling indicates could give further health benefits and move closer towards meeting the Strategy's objectives. | × |
| Climate Change: The UK Programme (2006) | The Climate Change Programme sets out the policies and priorities for action in the UK and internationally. The programme strives to secure global action on the scale needed to tackle it as well as taking further action at home, to meet our commitments and demonstrate that climate change can be tackled without damaging the economy. The programme's aims are designed to make significant progress toward the 2050 reduction target of 60% which the government committed to in the 2003 Energy White Paper. | × |

| Plans, Projects & Programmes | Description | Potential for In-Combination Effects? |
|---|---|---|
| DfT Walking and Cycling: An Action Plan (2004) | ▪ Creating places that people want to walk and cycle in;<br>▪ providing high quality facilities for safe walking and cycling;<br>▪ influencing travel behaviour, through education, training, marketing and promotion;<br>▪ building skills and capacity; and<br>▪ monitoring success through better targets and indicators. | ✓ |
| Rural Strategy (2004) | ▪ Building on the economic success of the majority of rural areas<br>▪ Tackling the structural economic weaknesses and accompanying poor social conditions that exist in a minority of rural areas.<br>▪ Fair access to public services and affordable housing.<br>▪ Tackle social exclusion wherever it occurs.<br>▪ Protect and enhance the rural and urban environments.<br>▪ Enhance the value and natural beauty of the countryside for rural communities and for the benefit of society in general | ✓ |
| Securing the Future – UK Government sustainable Development Strategy (2005) | Overarching aim is to promote sustainable development. The Five Principles are:<br>▪ Living within environmental limits<br>▪ Ensuring a strong, healthy and just society<br>▪ Achieving a sustainable economy<br>▪ Promoting good government, and<br>▪ Using sound science responsibly | ✓ |
| The UK Government's 10 Year Transport Plan (2000) | ▪ Easier access to jobs through regeneration and land use planning.<br>▪ Safer and more secure transport<br>▪ A transport system that makes less impact on the environment. | ✓ |
| **Regional** | | |
| Catchment Flood Management Plans - North East Northumberland, River Tyne, River Wear and River Tees | Catchment Flood Management Plans (CFMPs) 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 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. | × |

| Plans, Projects & Programmes | Description | Potential for In-Combination Effects? |
|---|---|---|
| Leading the Way – The Regional Economic Strategy for the North East 2006-11 | The Regional Economic Strategy (RES) sets out how the region is going to deliver greater and sustainable prosperity to all of the people of the North East over the period to 2016. It seeks to provide the underpinning economic conditions necessary to achieve the region's vision: The North East will be a region where present and future generations have a high quality of life. It will be a vibrant, self reliant, ambitious and outward looking region featuring a dynamic economy, a healthy environment and a distinctive culture. Everyone will have the opportunity to realise their full potential. | × |
| North East of England Tourism Strategy 2005-2010 | The strategy presents a clear commitment to promoting the expansion of tourism whilst safeguarding and enhancing our natural environment and built heritage It wants to show investment in tourism enhances the quality of life in the North East through creating more jobs and improving facilities | ✓ |
| A Strategic Action Plan for a Low Carbon National Park in the North East of England 2010-2015 | The development of A Strategic Action Plan for a Low Carbon National Park in the North East of England will primarily help deliver the five national themes of the Rural Development Programme:<br>1. Micro Businesses<br>2. Tourism Businesses<br>3. Sustainable Farming and Forestry including Diversification<br>4. Biofuels / Climate Change<br>5. Access and Recreation | × |
| ONE North East Corporate Plan 2007-12 | One North East's Corporate Plan 2007-2012 sets out how we will contribute to this blueprint for economic growth by setting strategic priorities to help drive new prosperity. | × |
| The North East Rural Action Plan (2002) | ▪ Building a diversified rural economy<br>▪ An enabling planning system<br>▪ Investing in market towns and local service centres<br>▪ The empowerment of rural communities | ✓ |
| **Local** | | |
| A Geodiversity Audit and Action Plan 2004-09 for the North Pennines AONB | The Geodiversity Action Plan guides the conservation and interpretation of geological features in the North Pennines. It will also support the development of sustainable geotourism in the area. | × |

| Plans, Projects & Programmes | Description | Potential for In-Combination Effects? |
|---|---|---|
| Northumberland Rights of Way Improvement Plan (2007) | The Countryside and Rights of Way Act 2000 (Section 60) introduced a new duty for highway authorities to prepare and publish a Rights of Way Improvement Plan (RoWIP). Northumberland's Rights of Way Improvement Plan considers:<br>▪ The extent to which local rights of way meet the present and future needs of the public.<br>▪ The opportunities provided by local rights of way for exercise and other forms of open-air recreation and the enjoyment of the council's area together with the use of the network by local people as a means to access workplaces, schools and other local facilities.<br>The accessibility of local rights of way to blind or partially sighted persons and others with mobility problems. | ✓ |
| Northumberland 2010: A Community Strategy for Northumberland | The Northumberland Community Strategy is a long term vision for the future of the County and has been produced in partnership with a range of key stakeholders all of which have a direct role in shaping Northumberland's development over the next 10 years. | ✓ |
| Northumberland Area Tourism Management Plan 2010-2015 | Sets out the vision for growth in tourism in Northumberland over the next five year period. Within this plan is the aspiration for a sustainable visitor economy which supports – not damages – the core values of Northumberland. Central to this aspiration will be the role of transport within Northumberland, both in terms of accessing Northumberland as a tourist destination as well as public transport options available to a person throughout their stay. | ✓ |
| Northumberland Coast AONB and Berwickshire and North Northumberland Coast EMS Management Plan 2009-2014 | The Plan integrates the management of two of the region's designated areas: the Northumberland Coast Area of Outstanding Natural Beauty (AONB) and the Berwickshire and North Northumberland Coast European Marine Site (EMS). The plan takes an ecosystem approach to ensure that sites are enhanced and conserved in a holistic way. | ✗ |
| Northumberland Housing Strategy, 2007-2010;<br>2010-2011 | The strategy considers the actions necessary in Northumberland to deliver the objectives of the Regional Housing Strategy. | ✓ |
| Northumberland Local Development Scheme (2009) | The Local Development Framework is essentially the overarching term given to the portfolio of Local Development Documents comprising; a Statement of Community Involvement, Development Plan Documents (DPD's), Supplementary Planning Documents, a Local Development Scheme and an Annual Monitoring Report. | ✓ |

| Plans, Projects & Programmes | Description | Potential for In-Combination Effects? |
|---|---|---|
| Northumberland National Park Local Development Framework | The LDF essentially is a set of documents which will guide new development in the National Park. It forms a part of a hierarchy of planning policy documents, taking into account national planning policy and guidance and being in general conformity with regional planning policy. Policies within the LDF will also need to have clear links with the National Park Management Plan. | ✓ |
| Northumberland Tourism Business and Workforce Development Plan 2005 - 2010. | Northumberland Tourism Business and Workforce Development Plan details how the new Area Tourism Partnership and other key partner organisations can play a part in ensuring vigorous local delivery and co-ordination of its support activities for the benefit of tourism businesses, employees, students, jobseekers and ultimately visitors in the county from April 2006 onwards. It makes 33 specific recommendations aimed at bringing about demonstrable improvements in: Visitors' experiences in the region through improved customer Service; The quality of tourism businesses, their working practices and training culture; The skills, knowledge, competence and motivation of people working in the industry; The expectations and attitude of people thinking of working in our industry. | ✓ |
| Northumbria River Basin District – River Basin Management Plan (2009) | This plan sets out objectives for the water environment for the next six years and beyond. | × |
| North Yorkshire and Cleveland Heritage Coast Management Plan, 3RD Review, 2008-2013 and North Yorkshire and Cleveland Heritage Coast Action Plan 2008 -2013/1 | The purpose of this strategy is to provide a framework for the North Yorkshire and Cleveland Heritage Coast over the next 5 years. It forms part of the Management Plan review and informs the Action Plan for the Heritage Coast. It forms part of the Management Plan review and informs the Action Plan for the Heritage Coast. These two elements of Strategy and Action Plan constitute the Heritage Coast Management Plan | ✓ |
| South East Northumberland New Growth Point Programme of Development (2008) | The South East Northumberland New Growth Point initiative is about increasing the level of housing in the sub-region and accelerating its delivery. It also about improving the quality of the housing and the design of new developments; widening housing choice; providing greener housing; and improving the quality of life for local people. The initiative envisages an uplift in new house construction of 20% over the period 2008 – 2017 when compared to housing figures for Blyth Valley, Wansbeck and Castle Morpeth in the Regional Spatial Strategy. The proposal is based around six strategically located growth areas. | ✓ |

Plans that were highlighted as having the potential to have in-combination effects with the LTP3 were reviewed and table 8 below details the in-combination effects on the European Sites within the Northumberland region. Some of the plans were not considered relevant in-combination with the LTP3 and were not assessed any further.

**Table 8.1 Plans, Projects and Programmes which may have in-combination effects with the LTP3**

| Plans, Projects & Programmes | In-Combination Effects |
|---|---|
| **National** | |
| A Future for Transport: A network for 2030 | This is a high level national plan, which will be delivered through regional and local strategies. Therefore there will be no in combination effects with this strategy itself. |
| DfT Walking and Cycling: An Action Plan (2004) | This is a high level national plan, which will be delivered through regional and local plans. Therefore there will be no in combination effects with this plan itself. |
| Rural Strategy (2004) | This is a high level national strategy, which will be delivered through regional and local strategies. Therefore there will be no in combination effects with this strategy itself. |
| Securing the Future – UK Government sustainable Development Strategy (2005) | This is a high level national strategy, which will be delivered through regional and local strategies. Therefore there will be no in combination effects with this strategy itself. |
| The UK Government's 10 Year Transport Plan (2000) | This is a high level national plan, which will be delivered through regional and local plans. Therefore there will be no in combination effects with this plan itself. |
| **Regional** | |
| North East of England Tourism Strategy 2005-2010 | This strategy covers the North East and contains general proposals. Detailed proposals will be delivered through regional and local strategies, so it is impractical to assess effects in combination with this plan. |
| The North East Rural Action Plan (2002) | This strategy covers the North East region and proposals will be delivered through local action plans for Northumberland. Therefore there will be no in-combination effects with this plan itself. |
| A Strategic Action Plan for a Low Carbon National Park in the North East of England 2010-2015 | This strategy covers the North East and contains general proposals. Detailed proposals will be delivered through regional and local strategies so it is impractical to assess effects in combination with this plan. |
| **Local** | |
| Northumberland Rights of Way Improvement Plan (2007) | This plan covers improvements to footpaths, cycleways, bridlepaths and dis-used railway lines. The proposals detailed in this plan have the potential to have in-combination effects with rail and road infrastructure improvements around Morpeth, Ashington and Alnwick. |
| Northumberland 2010: A Community Strategy for Northumberland | This strategy covers the Northumberland region and contains general proposals with no spatial information. Therefore there will be no in-combination effects with this plan itself. |

| Plans, Projects & Programmes | In-Combination Effects |
|---|---|
| Northumberland Area Tourism Management Plan 2010-2015 | This plan promotes increasing tourism within the Northumberland region. Proposals include improving transport and tourist provisions, providing access into the countryside and increasing walking and cycling schemes within the local area. These proposals have the potential to have in-combination effects with rail and road proposals detailed in the LTP3 which could result in significant impacts on European Sites through increased recreational pressures. |
| Northumberland Housing Strategy, 2007-2010 | This strategy covers regeneration schemes and housing in the Northumberland region. Regeneration schemes detailed in this strategy focus on the towns of Berwick, Blyth and Ashington. The strategy also details plans to accelerate the growth of housing in the south east of Northumberland. This has the potential to have in-combination effects with proposals involving improvements to the existing bus and railway facilities and infrastructure in the LTP3, by increasing recreational pressures to European Sites. |
| Northumberland Local Development Scheme (2009) | This development scheme document details how the framework should support regeneration, allocate employments sites, education facilities and recreational sites within the Northumberland region. All of which has the potential to have in-combination effects with LTP3 dependant on its location. |
| Northumberland National Park Local Development Framework | This over-arching development framework details how development within the Northumberland National Park region should be taken forward. The frameworks lists that sustainable development should meet the growth of local needs and services in towns and villages within the park and not be sited in rural areas. The creation of new access routes linking local services, developments to improve rights of way, expansion of existing employment sites and proposals to extend the boundary of Otterburn Military training camp have the potential to have in-combination effects with the LTP3 by increasing recreational pressures and pollution to European Sites.. |
| North Yorkshire and Cleveland Heritage Coast Management Plan, 3RD Review, 2008-2013 and North Yorkshire and Cleveland Heritage Coast Action Plan 2008 -2013/1 | This plan includes proposals to improve and extend recreational, educational, sporting and tourist activities along the coastline in North Yorkshire which is south of the study area. This has the potential to have in-combination effects with the Northumberland LTP3. Proposals which include improvements to bus and rail facilities and in-combination with this plan has the potential to increase recreational pressures on European Sites along the coast line by increasing human presence resulting in disturbance to bird species and habitat degradation or fragmentation. |
| South East Northumberland New Growth Point Programme of Development (2008) | This programme includes proposals for housing, mixed use developments, commercial developments and improvements to highways. Any new housing developments within the Morpeth, Blyth and Cramlington region could have in-combination effects with rail and road infrastructure improvements detailed in the LTP3 on Coastal European Sites. |
| Major Projects- Northumberland Park Expansion | This project involves expanding the existing Northumberland Park for commercial purposes. This project is just south of the Northumberland boundary, however it has the potential to have in-combination effects with rail and road improvements within the Ashington, Morpeth and Blyth area that may result in significant impacts to European Sites on the coast. Potential impacts include air and water pollution and disturbance during construction and operation. |

| Plans, Projects & Programmes | In-Combination Effects |
|---|---|
| Major Projects – Academy Development on three locations within Northumberland | This project involves developing three new academies within the Northumberland study area. These large scale developments will be situated within the Ashington, Newbiggin-by-the-Sea and Lynemouth and have the potential to have in-combination effects with rail and road improvements in Morpeth, Cramlington and Ashington. Significant impacts on coastal European Sites may arise from pollution and disturbance during construction and operation. |

# 8 Appropriate Assessment

## 8.1 Introduction

An Appropriate Assessment is the consideration of the impact of the integrity of a Natura 2000 and/or Ramsar site either alone, or in combination with other plans and projects. Where significant impacts are identified avoidance, cancellation and reduction measures are proposed.

## 8.2 Potential impacts

The Appropriate Assessment has identified that fifteen European Sites could potentially be affected by the implementation of the preferred proposals within the LTP3.

The process has identified areas of the LTP3 where there is a need for subsequent and more detailed HRAs when the proposals are developed with more spatial and design information. Any proposal which fails to demonstrate no adverse effect on the integrity of a European Site will not be permitted as it will not be in accordance with the LTP3.The screening process identified that the majority of likely significant effects on Natura sites or Ramsar sites as a result of the proposals could be avoided by avoidance measures.

Screening identified that the following sites could be subject to likely significant effects from the proposals set out in the LTP3.

- Northumbria Coast SPA & Ramsar
- Berwickshire & North Northumberland Coast SAC;
- North Northumberland Dunes SAC;
- Tweed Estuary SAC;
- River Tweed SAC;
- Newhen Fen SAC;
- Lindisfarne SPA & Ramsar;
- North Peninne Moors SAC & SPA;
- Border Mires, Kielder – Butterburn SAC
- Holburn Lake & Moss SPA & Ramsar;
- North Pennine Dale Meadows SAC;
- Roman Wall Loughs SAC;
- Irthinghead Mires Ramsar;
- St Abb's Head to Fast Castle SAC;
- Simonside Hills SAC;

### 8.2.1 Northumbria Coast SPA & Ramsar

This designation stretches along the Northumberland coastline. Major proposals such as improvements to the A1, Morpeth bypass, and improvements to road capacity in Blyth have the potential to significantly impact this site during operation through water and air pollution. Improvements to railway and bus infrastructure have the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species on site. These proposals are still at feasibility stage, and its scale and location should be a key consideration in the progression of its design. A full Environmental Impact Assessment addressing all key issues will also be undertaken to ensure that air and water pollution generated during construction and operation is assessed and appropriately mitigated against. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

### 8.2.2 Berwickshire & North Northumberland Coast SAC

The potential impacts that have been identified as having potential to have a significant effect on this European site arise from water and air pollution and disturbance as a result of improvements to local railway stations.
Improvements to the East Coast Main railway line services and its associated infrastructure as well as improvements to bus services and stations could also increase tourism to the local area. The coastline is designated as an AONB and is a regularly

used bird watching sanctuary. Increasing tourism to the local area has the potential to increase recreational pressures to this designation, resulting in potential habitat degradation. It has been assumed that project avoidance measures detailed in Chapter 6 have been applied and will be included in the LTP3. These proposals are still at a feasibility stage and the scale of the improvements should be a key consideration in the design stage to ensure that a likely significant effect is avoided. A further (detailed project) HRA would be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

#### 8.2.3 Simonside SAC

Major proposals such as improvements to the A1 and Morpeth bypass, have the potential to significantly impact this site during construction and operation through air pollution. These proposals are still at feasibility stage, and its scale and location should be a key consideration in the progression of its design. A full Environmental Impact Assessment addressing all key issues will also be undertaken to ensure that air pollution generated during construction and operation is assessed and appropriately mitigated against. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

#### 8.2.4 North Northumberland Dunes

The potential impacts that have been identified as having potential to have an effect on this European site arise from water and air pollution and disturbance. It has been assumed that project avoidance measures detailed in Chapter 6 have been applied and will be included in the LTP3. If avoidance/cancellation measures are implemented then a likely significant effect on this European site can be avoided. However, major proposals such as improvements to the A1 have the potential to significantly impact this site. A full Environmental Impact Assessment addressing all key issues will also be undertaken to ensure that air and water pollution generated during construction and operation is assessed and appropriately mitigated against. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated against through best practice measures.

One major scheme that has the potential in having a significant effect on this site is improvements to coach and local train station facilities, which could increase tourism to the local area. The coastline is designated as an AONB and attracts tourists to the local area. An increase in tourism has the potential to increase recreational pressures to the site resulting in habitat degradation of the qualifying Dune features. This proposal is still at a feasibility stage and the scale of the improvements should be a key consideration in the design stage to ensure that a likely significant effect is avoided. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

#### 8.2.5 Tweed Estuary SAC

The potential impacts that have been identified as having potential to have an effect on this European site arise from water and air pollution, habitat loss and/or fragmentation and disturbance. It has been assumed that project avoidance measures detailed in Chapter 6 have been applied and will be included in the LTP3. If avoidance/cancellation measures are implemented then a likely significant effect on this European site may be avoided. The East Coast Main Line is situated over the Tweed Estuary SAC, improvements to the existing infrastructure has the potential to result in habitat land take/fragmentation, physical disturbance, water and air pollution during construction and operation which could have significant impacts on this European Site. The scale and phasing of these proposals should be a key consideration in the design process to ensure that a likely significant effect is avoided. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

#### 8.2.6 River Tweed SAC

The potential impacts that have been identified as having potential to have an effect on this European site arise from water and air pollution, and disturbance. It has been assumed that project avoidance measures detailed in Chapter 6 have been applied and will be included in the LTP3. If avoidance/cancellation measures are implemented then a likely significant effect on this European site can be avoided. However major proposals such as improvements to the A1 have the potential to significantly impact this site. A full Environmental Impact Assessment addressing all key issues will also be undertaken to ensure that air

pollution generated during construction and operation is assessed and appropriately mitigated against. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

Dependent on its location, the implementation of cycle hubs in Wooler has the potential to result in habitat loss/ fragmentation and/or physical disturbance. Encouraging cycling within the wider community would be of benefit to the local environment but Wooler is situated within Northumberland National Park; improvements to cycling facilities therefore have the potential to increase human presence to this European Site which may lead to habitat degradation. Therefore the location and scale of these proposals should be a key consideration in the design process to ensure that a likely significant effect is avoided. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through avoidance, cancellation and reduction measures.

#### 8.2.7 Newhen Fen SAC

The impacts that have been identified as having the potential to having an effect on this European Site arise from water and air pollution and changes to the hydrology of the site. It has been assumed that project avoidance measures detailed in Chapter 6 have been applied and will be included in the LTP3. However major proposals such as improvements to the A1 have the potential to significantly impact this site. A full Environmental Impact Assessment addressing all key issues will also be undertaken to ensure that air and water pollution generated during construction and operation is assessed and appropriately mitigated against. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

The site is situated adjacent to the East Coast Main railway line and any improvements to the existing line have the potential to result in significant impacts to the hydrology of the site. The location of the improvement works should be a key consideration in the design process to ensure a likely significant effect is avoided. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

#### 8.2.8 Lindisfarne SPA & Ramsar

Likely significant effects on this European Site arise from water and air pollution during construction and physical disturbance from an increase in tourism to the local area. It has been assumed that project avoidance measures detailed in Chapter 6 have been applied and will be included in the LTP3. However major proposals such as improvements to the A1 have the potential to significantly impact this site. A full Environmental Impact Assessment addressing all key issues will also be undertaken to ensure that air and water pollution generated during construction and operation is assessed and appropriately mitigated against to ensure likely significant impacts are avoided. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

The site is situated on the coast within an area of high tourism value and may be affected by an increase in human presence along the coastline. Proposals in-combination with other plans include improvements to recreational, educational and travel facilities, and sporting and tourist activities along the coastline which have the potential to result in habitat degradation and disturbance to sensitive species on site. The scale and timing of such proposals should be a key consideration in the design process. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

#### 8.2.9 North Peninne Moors SAC & SPA

Likely significant effects on this European Site arise from water pollution, air pollution, lighting and physical disturbance. It has been assumed that project avoidance measures detailed in Chapter 6 have been applied and will be included within the LTP3. The site is situated adjacent to various tourist attractions and may be affected by an increase in human presence within the local area. Proposals in-combination with other plans include improvements to travel and tourist facilities which have the potential to

result in habitat degradation and disturbance to sensitive species on site. The scale and timing of such proposals should be a key consideration in the design process. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

8.2.10 Border Mires, Kielder – Butterburn SAC

This site is situated within Northumberland National Park and effects may arise from water and air pollution during construction and operation of improvements to the Tyne Valley railway line, cycling facilities and local bus services. It has been assumed that project avoidance measures detailed in Chapter 6 have been applied and will be included within the LTP3. As the site is situated within a major tourist attraction, the site may be susceptible to recreational pressures from an increase in tourism as a result of improvements to railway line and bus infrastructure and the implementation of cycling hubs within rural towns. The scale and timing of such proposals should be a key consideration in the design process. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

8.2.11 Holburn Lake & Moss SPA & Ramsar

This site is situated adjacent to Northumberland National Park and impacts to the site may arise from water and air pollution and recreational pressures as a result of improvements to local rail and bus infrastructure. It has been assumed that project avoidance measures detailed in Chapter 6 have been applied and will be included within the LTP3. However major proposals such as improvements to the A1 have the potential to significantly impact this site. A full Environmental Impact Assessment addressing all key issues will also be undertaken to ensure that air pollution generated during construction and operation is assessed and appropriately mitigated against. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

An increase in tourism to the local area could have significant impacts on the integrity of the site. The scale and timing of such proposals should be a key consideration in the design process. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

8.2.12 North Pennine Dale Meadows SAC

This site is situated within an area that attracts numerous tourists to the local area. This site may experience significant effects from water and air pollution as a result of improvements to local rail and bus infrastructure. An increase in tourism to the local area as a result of improvements to local rail and bus services, tourist facilities and the introduction of cycling hubs within rural towns have the potential to result in habitat degradation from an increase in human presence. It has been assumed that project avoidance measures detailed in Chapter 6 have been applied and will be included within the LTP3. The scale and timing of such proposals should be a key consideration in the design process. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

8.2.13 Roman Wall Loughs SAC

This site is situated adjacent to Hadrian's Wall which attracts numerous tourists throughout the year. Likely significant effects that have been identified arise from water and air pollution during construction and recreational pressures during operation from improvements to local rail and bus infrastructure and the implementation of cycling hubs in rural towns. An increase in recreational pressures could lead to habitat degradation of the site. It has been assumed that project avoidance measures detailed in Chapter 6 have been applied and will be included within the LTP3. The scale and timing of such proposals should be a key consideration in the design process. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

### 8.2.14 Irthinghead Mires Ramsar

This site is situated within Northumberland National Park and may be subjected to recreational pressures. In-combination with the LTP3 proposals and other plans, improving rail, cycling and recreational facilities within the Northumberland Park region, there is the potential for air pollution and physical disturbance which could have significant effects on the European Site. It has been assumed that project avoidance measures detailed in Chapter 6 have been applied and will be included within the LTP3. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures

### 8.2.15 St Abb's Head to Fast Castle SAC

This site is situated north of the Northumberland boundary, but it may experience wider ranging impacts from the implementation of the LTP3 proposals. Air pollution from construction activities during improvements to railway line facilities and infrastructure has the potential to significantly affect sensitive habitats on site. The site may be susceptible to increased recreational pressures as improvements to travel facilities are made and tourism increases within the region. It has been assumed that project avoidance measures detailed in Chapter 6 have been applied and will be included within the LTP3. The scale and timing of such proposals should be a key consideration in the design process. A further (detailed project) HRA may be required when further spatial and design information becomes available to confirm whether a likely significant effect can be avoided and appropriately mitigated through best practice measures.

# 9 Conclusion

## 9.1 Conclusion

This Habitat Regulation Assessment has identified the potential for likely significant effects on European Sites within and adjacent to Northumberland against the screening criteria provided, and identified proposals where appropriate best practice mitigation measures may be implemented to avoid / reduce significant effects. However, a high level plan such as the LTP3 will need to be subjected to further assessment to ensure likely significance effects are avoided as the proposals are progressed. It was considered impractical to assess high level proposals with very little spatial design information until more information has become available.

The Appropriate Assessment stage identified fifteen European Sites which may experience likely significant effects as a result of the implementation of the LTP3 proposals which cannot be avoided through best practice measures. Detailed descriptions of those impacts are provided and how this should inform detailed design. The majority of the likely significant effects that have been identified are those caused by recreational pressures, disturbance, air, and water pollution during construction and operation. However, considering that the Northumberland region is a prime tourist destination, the scale and location of improvements to travel infrastructure and facilities should be in context to the local area to ensure likely significant effects are avoided.

In addition, construction of proposals should be phased with other LTP3 proposals and other proposed developments to avoid an 'in combination' effect on any of the sites during construction. A review of other planning applications and developments should be undertaken prior to construction of any proposals to determine the potential for any cumulative effects and develop appropriate mitigation strategies, or identify avoidance measures, at the project level. Any development proposal that could have an adverse effect on the integrity of a European Site will not be in accordance with the delivery of the LTP3; therefore the LTP3 will need to consider alternative options.

## 9.2 Recommendations

For high level proposals that contain very little spatial design information, the following statement should be included in the LTP3.

"*Where proposals are yet to be developed and locations are undetermined, it has been considered not possible to determine whether the proposals would have a likely significant effect either alone or in combination on a Natura 2000 or Ramsar site. The proposal will be screened when further spatial and design information becomes available to establish whether potential significant effects are considered likely and a full HRA is required. Any proposal which fails to demonstrate no adverse effect on the integrity of a European Site will not be permitted as it will be not in accordance with the LTP3".*

With respect to policies that were assessed, it is proposed that the mitigation measures detailed in Table 6 be included within the LTP3, and used to assist with the preparation of mitigation measures formulated at project level. The scale and location of the proposals is an important consideration prior to project level assessment.

The following statement will be included within the LTP3 to ensure that the necessary mitigation measures / safeguards are put in place to ensure that the LTP3 does not have any significant effects on European Sites.

*"All proposals identified in the HRA Report as having potential to have a likely significant effect will be subject to further screening at the project design / planning consent stage to determine whether, based on the provision of additional information, the proposal could have a likely significant effect and requires a full Appropriate Assessment. Any proposal which fails to demonstrate no adverse effect on the integrity of a European Site will not be permitted as it will be not in accordance with the LTP3."*

# Appendix A – List of LTP3 Proposals

All proposals in yellow have been taken forward to screening as they contain relevant design and spatial information.
All proposals in blue are high level which do not contain enough design and spatial information at this stage in the LTP3

| Intervention | Description |
|---|---|
| ***Supporting Economic Growth*** | |
| A1 Improvements | Identifies the unreliability of road journeys to Scotland and the importance of upgrading the A1 to dual carriageway standard throughout Northumberland. The current arrangement of mainly single carriageway road is impacting on the ability of Northumberland to reach its economic potential. A fully dualled A1 throughout Northumberland would improve journey time reliability for all road users whilst improving efficiency for freight transport. The LTP3 Plan will support the immediate upgrading of short sections of the A1 from Morpeth–Felton and Adderstone–Belford to dual carriageway standard. |
| Morpeth Northern Bypass | The construction of a bypass north of Morpeth between the A1 and the Pegswood Bypass. The Bypass will provide a much needed all movement junction with the A1 and help alleviate congestion in the centre of Morpeth, particularly around Telford Bridge thus facilitating economic activity in this area. The scheme would also improve access to development sites to the north of Morpeth and in South East Northumberland. |
| Increasing Network Capacity – *A19(T) Junction Improvements* | A number of junction improvements have been recommended to reduce problems of traffic congestion at key junctions. Those junctions which would significantly benefit Northumberland are the A19(T) Moor Farm and the A19(T) Seaton Burn. Whilst improvement works have been undertaken in recent years at these junctions, longer term measures are needed to accommodate the increase in traffic which is expected with the completion of the New Tyne Tunnel in 2011. |
| Increasing Network Capacity – *Telford Bridge, Morpeth* | Whilst it is the Council's aspiration to see a bypass created north of Morpeth which would significantly improve congestion at the Telford Bridge, it is also recognised that there is no committed funding for this scheme at present. The Council is therefore working closely with developers to ensure that measures to mitigate against the impact of development traffic are included as part of any development proposal. Where developments are likely to be significant generators of traffic, travel plans will be required as a component of any planning permission. |
| Blyth Central Link Road | A new link would be created between Rotary Way and a new junction on the A189 Spine Road. This would help ease congestion in the Blyth area particularly on the A1061 and Cowpen Road. It is anticipated that a new road link in this location will support proposals for the development of Blyth and the Growth Point sites. |
| Increasing Network Capacity A193 - *Cowpen Road Corridor, Blyth* | The A193 Cowpen Road corridor already experiences significant traffic congestion and unreliability during peak periods. The main bottleneck is the Coniston Road/Tynedale Drive signalised junction and the section between this and the junction with the A189 Spine Road. These problems are set to significantly worse with the construction of new homes and commercial developments in Blyth. This could affect the continued economic growth and prosperity of Blyth and South East Northumberland as a whole. Considerable network interventions are required to accommodate this traffic and to allow the continued growth and regeneration of the town. In the short term, capacity improvements to the A193 Cowpen Road are required to allow the town to grow and develop. In the longer term, more radical measures would be required such as the construction of a new link road to the A189 Spine Road. |
| Increasing Network Capacity - *A189 to Battleship Wharf* | The development of wind turbine technology at Battleship Wharf is currently constrained by restrictions on the existing highway network from the A189 to the site. Improvements are currently being designed and external funding sought to facilitate the development. |
| Managing and Maintaining the Network<br>*Network Management* | Northumberland's Network Management Plan delivers a co-ordinated, planned and effective response to avoid, reduce and minimise congestion or disruption on the road network across the County. The plan identifies causes of congestion and disruption including traffic growth, road works and events. The following interventions will be delivered to manage the network over the period of the third LTP:<br>• Analyse and rank existing and emerging congestion 'hot-spots';<br>• Co-ordination of road works by utilities, the council and other neighbouring authorities;<br>• Organise planned works and events to minimise their impact on the highway;<br>• Establish civil enforcement of traffic regulation orders to maintain free flowing traffic;<br>• Enforce the standard required when re-instating footways and carriageways, particularly in historic towns and sensitive areas;<br>• Carry out effective abnormal loads management;<br>• Explore opportunities for enforcement of moving traffic offences in conjunction with the police; and<br>• Work in partnership with neighbouring authorities, the highways agency and others to co-ordinate planned works.<br>The Council manages numerous events which take place on the highway. This includes the regular County Show at Corbridge as well as occasional military parades and cycle race events. This requires careful planning to avoid unnecessary congestion, compliance with health & safety and that all legal and traffic management procedures are adhered to. The movement of abnormal loads can also cause delay to other road users without careful planning. Large or heavy loads are moved outside of peak hours wherever possible to minimise disruption. All routes are checked to ensure that they are wide enough to accommodate the load, bridges are capable of supporting the weight, there are no overhead obstructions and that no road works are taking place.<br>Good, clear direction signage is also important in helping people reach their destination by the most direct route. This is particularly important for freight traffic as well as tourists visiting the County. The lack of appropriate signage is a particular concern that has been identified through consultation in the development of the third LTP. A strategy will be developed to prioritise improvements over the period of the next three years. The Council is considering implementing Civil Parking Enforcement (CPE) early in 2011/12. This change would enable the Council to improve control of all parking provision with the benefits of enhanced road safety, reduced obstructive parking, improved accessibility by public transport, businesses and other road users and improved traffic movement. Traffic Regulation Orders are currently being carried out prior to a business case being prepared and submitted to the Government for approval. The new Northumberland Parking Strategy, also currently being prepared, will support the application process. |
| Managing and Maintaining the Network<br>*Transport Asset Management* | Transport asset management includes the maintenance of carriageways, structures, footways and cycleways, public rights of way, street lighting and traffic signals. Central to the asset management approach is the delivery of a Transport Asset Management Plan (TAMP) for the County. Lifecycle plans have been developed to have overriding route management strategies for key routes which incorporate all assets routes with specific issues. The lifecycle plans are based around the processes described in the TAMP and as such each of the lifecycle plans is in effect a mini asset management plan for the asset group. Individual Lifecycle Plans have been developed for carriageways, structures, lighting, footways, drainage, landscaping, traffic management and safety fences. Levels have been set for safety, serviceability, sustainability and customer services. A Highway Maintenance Plan will demonstrate how the TAMP will be delivered. This will be supported by a Highway Improvement Plan which will set out a 5 year annual rolling programme of capital and revenue schemes. |

| Intervention | Description |
|---|---|
| South East Northumberland Public Transport Corridor | This scheme will improve public transport services and infrastructure along the inter-urban corridor between South East Northumberland and the Tyne and Wear City-Region. The key urban areas of development will be linked by direct passenger rail services on the existing Ashington, Blyth & Tyne rail freight line. These services will be integrated with the local bus networks, Tyne & Wear Metro network at Northumberland Park and pedestrian and cycle routes at new or refurbished station interchanges. Facilities will be provided for bus interchange, park and ride, passenger waiting, passenger information and appropriate access for all. The line will also be integrated with the Stephenson Link to access jobs in North Tyneside. It would reduce congestion on the key approaches into Tyne & Wear, particularly the A189 Spine Road, the A19(T) and the Tyne Tunnel, as people become less reliant on their cars. It is also likely to encourage sustainable economic development. Housing and regeneration of South East Northumberland with more people and businesses moving into the area knowing that there is a good connection with Newcastle City Centre. The scheme has advantages over other re-opening schemes nationally as the line is already used and fully operational and some of the stations such as Ashington and Bedlington are virtually untouched. Improvements would have to be made to overcome capacity and signalling issues on the line and provide additional stations where adequate facilities are currently not available. |
| Improving Rail Travel | The County Council is committed to addressing rail issues in Northumberland through improved partnership working with a wide range of stakeholders. These include rail passengers and representative organisations, the Department for Transport, local authorities and regional partners, Network Rail, and regulatory bodies. The County Council is a member of the Tyne Valley Community Rail Partnership covering the Newcastle to Carlisle line, and has provided financial and technical support to the Partnership. This includes a number of small capital projects aimed at improving passenger information along the Tyne Valley Line. Community Rail Partnerships have been very successful in promoting the development of local and rural lines in all parts of the country. The Department for Transport encourages Community Rail Partnership as a cost effective way of increasing patronage on rural lines. Whilst Northumberland has good rail network, the limited stopping services on the ECML prevents many journeys being made. The council will continue to work with rail operators, rail user groups and government to secure additional local stopping services and additional carriages. This will facilitate easier travel between local stations within Northumberland as well as reduce overcrowding on trains between Newcastle and Northumberland in peak hours. Whilst the Council has delivered schemes to improve the interchange between rail and bus services at Berwick, Hexham and Prudhoe railway stations, facilities at these and other stations need to be improved. The lack of available car parking at stations is severely restricting passenger growth. This is a particular problem at stations on the ECML at Berwick, Alnmouth, Morpeth and Cramlington. The rail operators will be encouraged to provide more passenger assistance personnel, fast ticketing machines, interactive journey planners and improved vehicle quality. The principle elements of the new rail strategy to be implemented in partnership with Network Rail and local rail operators over the period of the third LTP include:<br>• Improved inter-city and local stopping services on the ECML, including evenly spaced services during the day as well as early morning, evening and weekend services<br>• Improved station facilities including passenger information, fast ticket machines, bus interchange, level access and improved pedestrian access<br>• Increased capacity of trains to reduce overcrowding during peak periods<br>• Improved accessibility of stations including level access between platforms<br>• Marketing of rail services to residents, business and visitors<br>• Improved interchange between rail, bus and taxi services<br>• Improved capacity and quality of station car parks<br>• Proposed re-opening of the rail station at Belford to serve local communities and improve access for tourists |
| Improving Local Bus Travel/Improving Rail Travel | Deliver real time passenger information in main settlements along the Tyne Valley, Berwick and South East Northumberland where funding allows. Review the provision of timetable displays at bus stops with priority given to bus stations, key town and village centre stops and core bus routes. |
| Improving Local Bus Travel | Buses provide a cost-effective solution to meet the goals for transport; hence, a bus strategy framework has been developed as an integral part of the third LTP. This will develop and maintain an integrated local bus network, ensuring that residents can access the services and facilities that they need from convenient, safe and attractive bus services, infrastructure and facilities:<br>• Develop a strong relationship with bus operators to address issues relating to the operation of bus services in Northumberland;<br>• Development of a core network of frequent bus services on major corridors between settlements;<br>• Support for a supplementary network of non-commercial but socially necessary services to improve transport links to the core network and for rural areas;<br>• Support for local community door-to-door bus services where people do not have access to, or are unable to use, local bus services;<br>• Improve the quality and coverage of printed travel information in a range of formats;<br>• Marketing of bus travel to residents, businesses and visitors with a focus on inter-urban corridors and tourist journey needs;<br>• Provision of a broad range of appropriately priced and flexible tickets including Smart Cards;<br>• Improved customer care through helpful drivers and staff;<br>• Upgrade bus stop infrastructure including bus stop poles and flags, timetable information displays and raised kerbs to project an image of high quality standards;<br>• Develop new/improved bus station facilities in Hexham, Ashington and Blyth<br>• Improved vehicle standards with increased number of accessible and low emission vehicles;<br>• Improved interchange between bus and rail services; and<br>• Improved reliability of bus services by tackling parts of the road network that suffer congestion and delay.<br>. |
| Improving Facilities for Coach Travel | The Council will work with coach operators, the Confederation of Passenger Transport and representatives of the tourism industries to increase and improve coach facilities in Northumberland in the locations where they are desired. Priority will be given to town centre locations including Berwick, Morpeth, Hexham and Alnwick. |
| Freight | The Council is already a member of the Tyne & Wear Freight Quality Partnership and will look to widen the scheme to cover Northumberland. This will involve a partnership between the Council and transport operators to try and tackle the issues around freight. It will be a voice through which sustainable modes of freight can be promoted in an attempt to encourage a modal shift from road freight transport. It is a means by which other freight schemes can be advertised and endorsed including resource sharing and freight consolidation. |
| Freight<br>Inter-modal Freight Transport | The rail freight network in Northumberland is centred on the East Coast Mainline (ECML), the Tyne Valley Line and the Ashington, Blyth & Tyne line which is currently freight only and links the south east of the county to Newcastle via Benton junction. The potential for rail freight growth in Northumberland is limited by the available facilities and operational issues. The Rail Utilisation Strategy (RUS) for the North East outlines the two track section of the ECML through Northumberland as a capacity constraint on the network. Rail freight growth on the Tyne Valley Line is constrained by the number of passenger services and the existence of manual signalling which leads to operational constraints. The Ashington, Blyth and Tyne line is a freight only line which serves the Port of Blyth and Rio Tinto Alcan. The Blyth Central Link Road will be an influential factor in encouraging a modal shift to shipping by easing congestion on the approach into the Port of Blyth. Capacity and signalling issues have been identified, in part due to the presence of single track sections. As LTP3 progresses towards 2026, the Council wants to ensure that active measures are being taken to encourage a modal shift from road freight transport to rail or sea. |
| Improving walking and cycling for tourists | Cycling can offer a real alternative to both the car and public transport for tourists in Northumberland and encouragement of this mode will be pursued during LTP3. A partnership led by the Glendale Gateway Trust to establish cycle hubs in the market towns of Wooler and Haltwhistle has already commenced and the Council will work with the Trust to assess the opportunity for developing similar schemes in known tourism destinations across the County. |
| ***Improving Access to Services*** | |
| Increasing Personal Safety and Security | The Council will work with public transport operators to improve the safety of our residents on board public transport services. Measures to improve station and stop security will also be implemented with well lit areas, seating and waiting facilities and CCTV where possible. Whilst a lack of evidence means that issues relating to perceptions of safety are not covered in the evidence base, the Council recognises that this can also be a substantial barrier to accessing public transport and is therefore committed to tackling the problem during LTP3 |

| Intervention | Description |
|---|---|
| Widening Travel Choice | For shorter journeys this means providing for and encouraging walking and cycling. For longer journeys, it is necessary to improve the availability of bus services by offering a wider choice of more attractive and reliable services linking where people live to where they need to travel. For journeys outside of Northumberland, it is necessary to integrate local rail and express bus services with other local transport modes and services. Many of the schemes which can widen travel choice using public transport have already been mentioned when discussing access to employment in the economic competitiveness section. Rather than repeat these strategies in this section, it should be accepted that the same strategies will also be adopted for Access to Services and mutual benefits obtained. Those schemes which were considered in the economic competitiveness section include:<br><br>• Reopening of the Ashington, Blyth and Tyne Line to passenger services;<br>• More local services on the Tyne Valley and East Coast Main Line rail networks;<br>• Greater car parking facilities at train stations.<br>Whilst the schemes mentioned previously will be influential in improving access to key services and facilities, it is not just about those schemes which will benefit the local economy. Access to services which can significantly impact on quality of life also needs to be considered. Access to leisure facilities which is a key component of quality of life is generally required on an evening or a weekend. For this reason, in addition to the schemes mentioned above, the Council will also seek to improve accessibility outside of the peak hours through improved demand responsive services operated by the community transport sector. One of the biggest issues facing Northumberland is the rural nature of the County. Low population densities in these areas are meaning key services and facilities, including public transport, are not commercially viable. As a result, those people who do not have access to a private car are being excluded from mainstream society. Community transport will play a key role in improving access to rural areas during the period of LTP3. It offers a service to work, learning, health and jobs which is otherwise unavailable. Whilst community transport is generally run by the voluntary sector on a 'not for profit' basis, the Council strongly supports these schemes and is on hand to offer assistance and advice where possible. A number of schemes are already in place in the Northumberland area.<br><br>Community transport will play a key role in improving access to rural areas during the period of LTP3. A number of schemes are already in place in the Northumberland area: Green Light to Work is a scheme ran by Adapt, a community services provider in the North East, which is designed to help unemployed people in rural Northumberland access employment or training opportunities. If a person is unable to access a secured employment or training opportunity because they do not have their own private means of transport and public transport is not available, they are loaned a scooter or car at an affordable price. This scheme has been rolled out across the County following the success of the 'Wheels to Work' scheme which was piloted in South East Northumberland and Tynedale. A number of demand responsive schemes are available throughout Northumberland which are open to any person who is classified as rurally isolated. The scheme, also ran by Adapt, is available for all journey purposes and can be booked as late as noon prior to the day of travel. Access to public transport is not just a problem in rural areas. People living in socially deprived areas that do not have access to a private car are becoming increasingly isolated from society because of high transport costs and lengthy journey times. People with mobility issues, particularly elderly residents, are also becoming increasingly isolated because they often struggle to access the services that are available. |
| Reducing the Cost of Travel | To make travel more affordable to young people, the elderly and low income households who do not have access to a car, development of and promotion awareness of integrated ticketing and travel concession schemes, travel vouchers and subsidised door-to-door transport will be undertaken.<br><br>The Council will continue to work with public transport operators to address the availabilityof tickets which are on offer. The availability of weekly passes, season tickets and multi-modal passes can substantially reduce the cost of daily travel on public transport. The integration of fares with neighbouring authorities will also be sought so that travel between Northumberland and Tyne & Wear is made easier. The implementation of smart card ticketing, due to be implemented across the North East during the period of the plan, means that fare integration is a realistic goal.<br><br>The Council already offers concessionary bus passes to elderly and disabled residents which are above the statutory minimum requirement. People over the age of 60 can use their concessionary pass on services from 9.00am onwards whilst disabled passes can be used at any time of day. Whilst the Council has no control over fare setting on public transport, discussions will continue with public transport operators to identify any opportunities for fare reduction, particularly where public transport costs to key destinations are considered to be extremely high. |
| Increasing Accessibility for the Mobility Impaired | We need to make it easier for people who are mobility impaired to use public transport and go out on foot. This includes improving the design of the pedestrian environment and improving public transport services and infrastructure. The implementation of raised bus access kerbs enables people with mobility problems to be able to use public transport. The introduction of Civil Parking Enforcement in 2011/12 will enable bus stop-clearways to be more effectively enforced and buses to stop flush with the kerb. Across a wider area, capital funding through the first and second LTP has been used to improve the accessibility of pedestrian crossing points by providing tactile crossings and formal crossing points such as toucans and zebras. For those people unable to travel independently, community transport providers provide a range of door to door demand responsive services. The need for audible announcements on local bus services has also been identified by the Northumberland Visually Impaired Group. Plans are also in place to improve accessibility to rail services. As part of the Government's 'Access for All' programme, Alnmouth and Morpeth railway stations have been identified as priority stations for the provision of an obstacle free accessible route. Access arrangements at Morpeth and Alnmouth rail stations will be improved with the installation of lifts and increased numbers of car parking spaces will be provided at Cramlington, Morpeth and Alnmouth railway stations. |
| Improving Travel Information | As well as providing transport opportunities to access services and facilities, people also need to be aware and understand the travel options available to them. Improving the quality, content, provision and accessibility of public transport, walking and cycling information is an essential part that contributes towards widening travel horizons as well as making the best use of our existing assets. Travel information will be improved by creating a better partnership with the local bus operators and the Council. The Council is already working with Go North East to develop a real time passenger information system for the Tyne Valley. Funding has recently been secured as part of a planning agreement to develop real time displays in Berwick. |
| Reduce the Need and Distance for People to Travel to Access Services | We need to influence the physical location of services to make them closer to where people live and work and make improvements to time and way that services are delivered. Northumberland is committed to policies of sustainable development that reduce the need to travel, reduce reliance on the private car and encourage alternative forms of transport. Planning policies support the location of major traffic generating development within the existing urban centres where access by public transport is best. With regard to new residential developments, such as the 1,000 homes planned for Cramlington South West Sector, the council is working with developers to ensure that the site is accessible by public transport. The continued development of travel plans at schools, workplaces and council offices will also reduce the need to travel. The Council is also working in partnership to ensure that accessibility planning is considered at all stages of the South East Northumberland Growth Point developments. This provides an opportunity to create sustainable communities that are closely integrated to existing town centres. The provision of high quality walking, cycling and bus service links incorporated as an integral part of the developments will ensure that the need to travel by car is reduced.<br>In the longer-term, the Council's emerging Local Development Framework will assist in reducing the need to travel by supporting new development in accessible locations. Sites identified as having the potential for development will be identified to assess whether they are accessible before being promoted as suitable for development. Where sites are not in accessible locations, the provision of adequate bus, walking and cycling links will be secured through planning agreements. Influencing the way that services are provided, such as health care, can also minimise the need for people to travel. The provision of local facilities could reduce the need and distance for people to travel and remove a potential barrier, especially for people who have limited mobility. |
| ***Reducing Carbon Emissions*** | |
| Sustainable Car Use - *Car Sharing Schemes*<br><br>*Car Club Schemes* | Car sharing has the potential to significantly reduce the level of single person trips. Northumberland's internet based car sharing scheme (www.northumberlandcarshare.com) was launched during 2007 and currently has 550 members. Initiatives to be delivered over the next LTP period include:<br>• Promoting the scheme to major employers, schools and organisations as well as rural villages and community groups; and<br>• Encouraging people to join the scheme through innovative measures.<br><br>Car clubs offer financial savings for low mileage users and families considering buying a second car. Members pay for how much they use the car and this reduces the temptation to use the car for unnecessary short journeys. There are currently two car club vehicles in Northumberland, one in Wylam and one recently launched in Prudhoe. It is hoped that by extending this scheme it could help improve accessibility issues for families without a car and reduce dependency on the car for shorter journeys. Initiatives to be developed over the period of the next LTP include:<br>• Car clubs to be expanded over the County to meet demand, using Section 106 funding where possible. The authorities will continue to develop partnership working with the car club operators, local employers and developers to maximise the benefits of the scheme; and<br>• The Council will look to source a pool of car club vehicles to use for business purposes and to be offered for use to local communities when not required by the Council. |

| Intervention | Description |
|---|---|
| Sustainable car use – *Low Carbon Vehicles* | Electric vehicles offer significant environmental benefits compared to existing internal combustion engine vehicles. They produce no tailpipe emissions and research suggests using the current UK power mix, electric vehicles could realise up to a 40% benefit in carbon dioxide savings compared to a typical petrol family car. Larger emission reduction's can be realised over time if the UK moves to lower carbon sources of power generation.<br><br>The Council is currently supporting a region wide project called 'Plugged in Places' to install over 1,000 electric charging points in the North East over the next two years. These points will be installed on streets, in car parks, at residential and commercial locations and at retail and leisure facilities. Over the next LTP period the Council will deliver the following actions continue to support the use of low carbon vehicles:<br>• Ensure that a network of electric vehicle charging points is set up to encourage the take-up of electric vehicles;<br>• Increase the number of low carbon vehicles in the Council's own fleet;<br>• Where appropriate, ensure electric vehicle charging points are provided at new residential and commercial developments within the County; and<br>• Where possible, support further advances in new car technology such as bio-fuels and hydrogen powered vehicles. |
| Travel Planning *Workplace Travel Plan* | A workplace travel plan is a written document setting out a series of measures to reduce car use and promote sustainable travel by employees on the journey to work. Over the period of the next LTP, the council's travel planning officers will continue to work closely with developers and major employers to increase the uptake of travel plans. Opportunities include:<br>• Continue to secure travel plans for all new developments meeting thresholds set out in the Transport Assessment Guidance.<br>• Improve the quality of travel plans through the development of a Supplementary Planning Document.<br>• Consider charging developers for travel plan evaluation services and where appropriate seek to secure financial support for sustainable travel measures through section 106 agreements.<br>• Improve monitoring systems of these travel plans and consider investing in travel planning software.<br>• Continue to implement the council's own travel plan, focusing on a package of measures developed inline with the Carbon Management Plan.<br>• Provide advice and support for the development of voluntary travel plans, particular emphasis will be placed around developing travel plans for employers involved in the Blyth Active Travel Town project. |
| Travel Planning *School Travel Plan* | School travel plans provide an opportunity to implement a wide range of measures to reduce car use and promote walking, cycling and the use of public transport on the school journey. School travel plans are one way of redressing the balance to encourage children to want to travel to school more sustainably and persuade parents that it is the best option. The Council must continue to promote the use of sustainable travel and transport for the school journey in line with the statutory duty set out in the Sustainable Modes of Travel Strategy.<br>• Continue to monitor and review existing school travel plans.<br>• Ensure school travel plans are developed for any new school builds and sustainable transport options are considered throughout the planning and development stages.<br>• Provide schools with a range of sustainable travel initiatives throughout the school year. |
| Travel Planning *Residential Travel Plan* | A residential travel plan is a package of measures designed to reduce car use originating from new housing by supporting alternative and sustainable forms of transport alongside reducing the need to travel in the first place. Evidence suggests that as people change their lifestyle, such as moving home, they are more likely to be amenable to suggestions of alternatives to using the car.<br>• The Council will continue to request residential travel plans for new developments, alongside physical measures such as improved access to public transport and improved cycle and pedestrian links.<br>• Ensure that a high quality travel plan is developed and ensure residential travel plans are monitored and reviewed.<br>• As a minimum, travel information (ideally through Personalised Travel Planning) should be offered to all residents within new developments. Car club vehicles should also be available from the outset where it is feasible to introduce the scheme.<br>• Request that developers consider including facilities for the charging of electric vehicles as part of the development.<br>• Secure funding to provide travel centres in major development sites points in Northumberland, including Blyth & Cramlington. |
| Marketing and Branding – Travel awareness campaigns | Over the next LTP period the Council will develop a smarter choices brand as well as delivering a wide range of smarter travel awareness measures using a wide range of media. Planned initiatives include:<br>• Develop a brand and use the brand for a range of sustainable travel activities, events and promotional campaigns<br>• Maximising the benefits to be gained by linking the campaign to specific infrastructural improvements, such as new cycle routes or improved walking routes, and national travel awareness campaigns<br>• Continue to promote cycling and walking through working with partners such as the charity sector, interest groups, Police and employers<br>• Working in partnership with the health sector to communicate campaign measures about the health impacts of increasing car use and the health benefits of walking and cycling<br>• Ensure advances in technology are utilised to promote alternatives to driving and provide practical travel information<br>• Promote public transport as an alternative to the car as active travel can form a key part of the journey<br>• Promote sustainable forms of transportation, such as walking and cycling, as an attractive mode of transport for tourist activities |
| Influencing Demand | Evidence has also demonstrated that tele-working and tele-conferencing can reduce the need to travel. We will promote tele-working and tele-conferencing to council staff and other employers as part of workplace travel planning and provide advice on how to use Communication Technology. |
| Active Travel Choices | Walking and cycling are viable alternatives to the private motorcar for short journeys less than 5km in length. The evidence base for Northumberland identified a large proportion of commuter journeys which were within this distance and currently undertaken using the car. The journey to school is also likely to be a journey which can be undertaken on foot or by cycling. Increased levels of walking and cycling will be encouraged by making improvements to existing local footways and cycle paths and identifying locations where cycle paths are desired in order to achieve a more connected network. Issues of security on cycle paths and footways will also be considered with additional lighting installed where necessary. Where road safety is a concern, the council will also consider the installation of pedestrian and toucan crossings. |
| Highway Infrastructure *Hard Surfacing and Improved Drainage on Footpath and Cycleways* | To ensure that the residents of Northumberland can still walk or cycle during heavy rainfall events, the Council will look to install hard surfacing on key footpaths and cycleways which are known to be vulnerable in bad weather. Drainage systems in these locations will also be improved to limit the amount of surface water on key routes. |
| Highway Infrastructure *Capital programme to strengthen infrastructure* | The Council will work to identify those locations where previous bad weather events have damaged and weakened bridges and key infrastructure and implement works to alleviate the problems. Drainage systems will be examined and improved so that infrastructure can better withstand long periods of rainfall in the future. |
| Highway Infrastructure *Maintenance and Resurfacing of Roads* | Regular inspections and maintenance of roads will be undertaken to ensure that problems are identified and rectified when they occur. The Council will continue to grit the roads in winter time and will try to ensure that sufficient levels of grit are available to cope with extreme events. Whilst it would not be possible for the Council to grit every road in the County, the 'Highways in Winter' leaflet which details the roads which are routinely gritted will be kept up to date and be readily available. The Council will also identify those locations where road surfaces are vulnerable to surface melting in times of high temperatures and resurface these roads with bitumen macadam. |
| ***Safer and Healthier Travel*** | |
| Promote Walking | Walking has an important role to play in tackling congestion, especially in urban areas. Encouraging more people to walk for some of these shorter journeys more often is essential to tackling congestion. Walking also has the potential to contribute towards all of the local goals for transport and all quality of life issues. It can enhance accessibility by providing for an alternative and affordable mode of transport for those who do not have access to a car as well as improving local air quality by encouraging a non-polluting mode of transport. Walking also provides an opportunity to undertake regular exercise and can have significant benefits to health as well as creating sustainable and prosperous communities. We need to provide good quality and safer facilities for pedestrians to encourage walking as a mode of transport and reduce dependency on the car. Throughout the period of the first and second LTP, significant efforts have been made to improve walking facilities. This includes dropped kerbs and tactile paving, new or improved crossing facilities, footway maintenance and promotion of walking through the workplace and school travel plan programmes. Issues identified through consultation have demonstrated that further improvements are still required. In particular, the need to address poor pedestrian linkages in our town centres caused by separation of key areas by roads with high traffic volumes. Issues were also highlighted for the mobility impaired including narrow footways, lack of dropped kerbs and obstacles that prevent physical access.<br><br>The opportunity through the second LTP is to deliver improvements on a 'whole route' basis to create a network of accessible and safe walking routes that connect into facilities and link communities. The walking improvements to be delivered through the period of the third LTP include: |

| Intervention | Description |
|---|---|
| | • Identifying a core network of convenient, accessible and safe walking routes that connect into facilities and link communities;<br>• Ensuring footways are accessible to people with disabilities through the provision of dropped kerbs, tactile paving and safe crossings;<br>• Improving and maintaining effective directional signing along pedestrian routes;<br>• Providing improved street lighting and crossing points;<br>• Ensuring that safe and convenient pedestrian footways are included as part of new developments, including links to existing networks;<br>• Ensuring that adopted footways and footpaths are adequately maintained;<br>• Improving access to the countryside through the Rights of Way Improvement Plan (ROWIP); and<br>• Promoting walking as a healthy and sustainable alternative to the private car through the development of workplace and school travel plans. |
| Deliver the Sustrans Connect2 Project | The Sustrans' initiative aim is to connect people and places that have previously suffered because of their separation or would benefit from a new connection. It is also hoped that the schemes will change the way people think about their local area so that walking and cycling become more accepted options for everyday journeys. Funding was originally allocated for two individual schemes in Northumberland; The Bedlington to Cramlington Walking/Cycling Routes Connection and the Blyth River Estuary Crossing which included proposals to re-introduce a ferry service in Blyth. However, following an extensive feasibility study, it was determined that the ferry proposal could not be supported. Sustrans negotiated with the BIG Lottery and put forward a revised proposal combing the major elements of each of the two schemes to create one more comprehensive scheme incorporating Blyth, Bedlington and Cramlington.<br><br>The full extent of the project will see new and improved walking/cycling routes connecting three towns and introducing attractive links within each of the towns making it quicker and easier to get to work, schools and local amenities, on foot or by bike. A core component of the cycle route will also form part of the North Sea Cycle Route (Coast & Castles Route). |
| Deliver the Blyth Active Travel Scheme | Encouraging sustainable low carbon travel are key aspects of both the Connect2 and Links to School projects. This is a particular focus in Blyth which is part of a major initiative to create the UK's first Active Travel Town. This scheme is being led by Sustrans and aims to help residents lead more healthy and active lifestyles. The scheme promotes a range of activities including health walks, cycle rides, bike maintenance sessions and special events. The Council will investigate the opportunities of securing additional funding to deliver similar schemes throughout Northumberland during the period of LTP3. |
| Improve Safety of the Transport Network *Safer Children* | Programmes aimed at reducing child casualties include school travel plans, safer routes to school, traffic calming measures and providing road safety education and training from an early age. All of these programmes are integrated to maximise the benefits to be gained. The Safer Routes to School (SR2S) initiative is an important part of our approach which aims to create a safer environment to enable children to travel safely to and from school by walking and cycling. The SR2S programme is linked to the School Travel Plan programme. In order to achieve this, the council is working to improve conditions on the main walking and cycling routes into schools. Highway infrastructure improvements are delivered to support the programme. This includes the introduction or school safety zones, pedestrian crossings, traffic calming, parking restrictions and cycle routes. To reduce the speed of traffic, mobile speed activated signs and used as well as the introduction of 20mph speed limits. Primary Year 3 children in South East Northumberland will continue to benefit from a practical pedestrian training scheme. Year 5 and 6 children will continue to receive the Bikeability cycle training. Other age groups will benefit from road safety awareness courses focusing on in-car, bus and pedestrian safety. Secondary school children will be targeted with general road safety campaigns. Sixth Form and Colleges of Further Education will be the focus of pre-driver education to instil responsible driving attitudes. |
| Promote Cycling | Significant development of the on-road and off-road cycle route network has taken place in Northumberland over the past 10 years. This has focused on the development of strategic cycle routes in partnership with Sustrans and neighbouring authorities as part of the National Cycle Route Network, on and off-road road routes, advanced stop lines at junctions, cycle parking, toucan crossings and promotional campaigns. Monitoring of cycle flows across counter sites has indicated a steady increase in the levels of cycling in the County. Consultation has identified a number of priorities to improve facilities for cyclists and encourage greater use. These include improving the maintenance of existing cycle routes, providing higher quality facilities, making greater use of the existing highway network, reducing road danger and improved publicity and marketing. A new Northumberland Cycling Strategy is currently being developed as an integral part of the third LTP. The principal elements of the new cycling strategy to be implemented include:<br>• Identifying a core cycle route network that meets the needs of all cyclists, provides an advantage over car traffic, takes full account of road safety and security and is visible and high quality;<br>• Providing high quality cycle parking at key destinations, rail stations and as part of new developments that is well-sited and signed;<br>• Providing consistent and high quality cycle route signage to create a clear 'mental map" of the cycle route network;<br>• Marketing and promotion of cycling in partnership with cycle retailers and the health sector;<br>• Development of cycle hubs to support cycle tourism and leisure use;<br>• Road safety measures including driver education, reducing vehicle speeds and improving cyclist conspicuity at junctions;<br>• Providing practical on-road cycle training for children to the national BikeAbility standard;<br>• Linking with public transport including cycle routes to and from railway stations and secure parking facilities;<br>• Ensuring high quality cycle accessibility as part of new development including connections to the proposed cycle network, cycle parking and workplace travel plans;<br>• School travel planning to actively encourage cycling to school through delivery of school travel plan strategy. Includes working with schools to identify safe routes and secure cycle parking;<br>• Workplace travel planning to identify barriers to cycling and deliver physical improvements. Cycling to be fully considered in all submitted workplace travel plans;<br>• Cycle route maintenance of off-road and on-road routes;<br>• Cycle route audit and review to ensure that cycling and highway schemes meet the needs of cyclists;<br>• Providing cycle route maps on online information. |
| Improved Safety of the Public Transport Network | The road safety strategy included in the previous LTPs delivered improvements based around the traditional three E's – Engineering, Education and Enforcement. The evidence demonstrates that this approach has successfully reduced the number of casualties across the County. However, analysis indicates that accidents are becoming less concentrated and increasing dispersed across the County's road network. Accident sites are becoming harder to identify and treat in a cost effective way. There is therefore an increasing need to target road user behaviour so that that people use the network in a safer way. This requires a new approach that focuses on influencing and improving road user behaviour through education, encouragement and enforcement initiatives with a focus on groups and behaviours disproportionately involved in accidents. Whilst highway engineering measures will still be used to treat accident clusters and support the safer routes to school programme, directing resources to influence road user behaviour will ensure the best value for money.<br><br>Safer Drivers<br>The Council will continue to support and promote measures to reduce road casualties arising from driver behaviour. Initiatives will include presentations aimed at younger and inexperienced drivers, driver improvement courses to minor offenders and 'Older Driving Days' to improve the confidence and safety of elderly drivers. The Council will also support local, regional and national campaigns to reduce the number of casualties caused by drink, drugs and fatigue in partnership with other agencies.<br><br>Safer Infrastructure<br>The Council will continue to make the existing transport network as safe as possible by maintaining the highway to safe standard as well as identifying and treating accident problem sites. An annual Road Casualty Review will provide a focus for analysing and targeting particular areas of concern on a geographical basis and by road user group.<br>Initiatives to be delivered over the period of the third LTP include targeting the remaining accident 'hot spots' with engineering treatments, particularly on the primary network and in rural villages and urban towns, as well as providing speed humps, pedestrian crossings, 20mph speed limits and shared spaces as appropriate.<br>Safer Speeds<br>It is recognised that excessive and/or inappropriate speed can be a significant contributory factor in the number and severity of road traffic casualties. Speed will be managed by engineering measures to physically reduce vehicle speed, education to raise drivers' awareness of the dangers of inappropriate speed and enforcement of speed limits. The County Council is a partner in the Northumbria Safer Roads Initiative. This operates speed enforcement cameras at locations with a history of personal injury accidents. |

| Intervention | Description |
|---|---|
| | Safer Vehicles<br>The Council will promote the importance of vehicle maintenance and continue to set a good example to other road users. We will also continue to advise parents on the correct fitting of child seats and support campaigns concerning the wearing of seatbelts.<br><br>Safer Motorcycling<br>Although motorcyclists account for only 1% of the road user population in Northumberland, the represented 22% of the County's killed and seriously injured casualties in 2009. Over half of these casualties live outside of Northumberland. The Council recognises the benefits of increasing motorcycle use in terms of improving accessibility and reducing carbon emissions, but is mindful of the increased risk of motorcycling compared to other modes. To ensure that an increase in motorcycle use would not give rise to a disproportionate rise in casualties, the Council will continue to work in partnership with Northumbria Police, the Highways Agency, local motorcycling groups and health services to deliver schemes to reduce the vulnerability of motorcyclists and the risk they pose to other road users. The focus of these initiatives is to improve the skills and behaviour of riders, raise awareness of motorcyclists by other road users and highway maintenance targeted at popular routes. The Council will continue to deliver post-test training for newly qualified as well as more experienced riders. ExpertRider is a pilot scheme which has offered experienced riders the chance to undertake practical on-road training with police trained motorcycle instructors. The Council will assess the success of the scheme and secure funding for future years.<br><br>Safer Pedestrians, Cyclists and Horse Riders<br>The Council is committed to reducing the number of vulnerable road users involved in accidents and is a key part of our strategy for promoting the use of walking and cycling for short journeys to improve accessibility to services and the health of the population. We need to make the highway a safer place for people to walk and ride. Initiatives to be delivered over the period of the third LTP will focus on the targeting of traffic calming with a focus on protecting vulnerable road users and improving crossing conditions for pedestrians and cyclists. School Safety Zones and 20mph limits will make it easier to cross roads.<br><br>Better Enforcement<br>The Council will continue to support the enforcement of the road traffic law by Northumbria Police, especially in the key areas of excessive vehicle speed, driving whilst impaired through drink, drugs or fatigue and seat belts. Seat belt usage will be promoted through enforcement, education and publicity campaigns. Awareness of the dangers of driving whilst impaired through drink, drugs or fatigue will also be raised through publicity campaigns and training courses. Targeted enforcement of drink drive offences and using mobile telephones will also be carried out. The Council will enforce traffic regulation orders to free up congestion and to ensure that dangerous parking practices are eliminated.<br><br>Promoting Safer Road Use<br>The Council will strive to alter attitudes and behaviour, and create a climate where people understand and accept road safety messages, by carrying out publicity campaigns. National and regional campaigns will be supported through press releases, local events and activities. Particular emphasis will be given to the priority areas of speed, child road safety, drink and drug driving and driver fatigue. Support will also be given to campaigns on motorcycling, mobile telephones, pedestrian, cyclist and novice driver safety and company car drivers. Road safety campaigns will be integrated with Police enforcement initiatives where appropriate. The Council will also continue to support the work of advanced driving groups such as the Institute of Advanced Motorists (IAM) and the Royal Society for the Prevention of Accidents (RoSPA). These organisations provide advice on driver training to all local organisations who wish to improve the driving standards of their employees. This not only reduces the risk of accident to the employee but also increases their awareness of other road users. Encouraging active travel is a means by which we can improve the health of our residents whilst meeting the transport objectives of reducing carbon emissions. Whilst active modes of travel will only be appropriate for shorter journeys, the Council is committed to ensuring the infrastructure is in place to facilitate these trips. |

# Appendix B – Potential Ecological Impacts against Non-Spatial Proposals

| Intervention | Description | Water Pollution | Air Pollution | Land Take | Disturbance | Changes to Hydrology | Lighting | Pests |
|---|---|---|---|---|---|---|---|---|
| Supporting Economic Growth | | | | | | | | |
| Managing and Maintaining the Network - Management | This change would enable the Council to improve control of all parking provision with the benefits of enhanced road safety, reduced obstructive parking, improved accessibility by public transport, businesses and other road users and improved traffic movement. | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| South East Northumberland Public Transport Corridor | Improvements to public transport services and infrastructure. The key urban areas of development will be linked by direct passenger rail services. | ✓ | ✓ | | ✓ | ✓ | | |
| | Facilities will be provided for bus interchange, park and ride, passenger waiting, passenger information and appropriate access for all. The line will also be integrated with the Stephenson Link to access jobs in North Tyneside. | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| Improving Rail Travel | The rail operators will be encouraged to provide more passenger assistance personnel, fast ticketing machines, interactive journey planners and improved vehicle quality. | ✓ | ✓ | | ✓ | ✓ | | |
| | Principle elements of the new rail strategy to be implemented include:<br>• Improved station facilities including passenger information, fast ticket machines, bus interchange, level access and improved pedestrian access | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | • Improved accessibility of stations including level access between platforms | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | • Improved interchange between rail, bus and taxi services | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | • Improved capacity and quality of station car parks | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| Improving Local Bus Travel/Improving Rail Travel | Deliver real time passenger information where funding allows. | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| Improving Local Bus Travel | • Development of a core network of frequent bus services on major corridors between settlements | ✓ | ✓ | | ✓ | | | |
| | • Support for a supplementary network of non-commercial but socially necessary services to improve transport links to the core network and for rural areas | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | • Upgrade bus stop infrastructure including | ✓ | ✓ | ✓ | ✓ | ✓ | | |

| Intervention | Description | Water Pollution | Air Pollution | Land Take | Disturbance | Changes to Hydrology | Lighting | Pests |
|---|---|---|---|---|---|---|---|---|
| | bus stop poles and flags, timetable information displays and raised kerbs to project an image of high quality standards | | | | | | | |
| | • Improved interchange between bus and rail services | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | • Improved reliability of bus services by tackling parts of the road network that suffer congestion and delay. | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| Improving Local Bus Travel - Increasing Accessibility for the Mobility Impaired | The implementation of raised bus access kerbs enables people with mobility problems to be able to use public transport. | ✓ | ✓ | | ✓ | ✓ | | |
| | Improvements have been made to the accessibility of pedestrian crossing points by providing tactile crossings and formal crossing points such as toucans and zebras. | ✓ | ✓ | | ✓ | ✓ | | |
| Improving walking and cycling for tourists | The Council will assess the opportunity for developing similar schemes in known tourism destinations across the County. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Improving Access to Services | | | | | | | | |
| Increasing Personal Safety and Security | Measures to improve station and stop security will be implemented with well lit areas, seating and waiting facilities and CCTV where possible. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Widening Travel Choice | Greater car parking facilities at train stations. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | Community transport will play a key role in improving access to rural areas during the period of LTP3. | ✓ | ✓ | × | | | | |
| | Green Light to Work is a scheme ran by Adapt, a community services provider in the North East, which is designed to help unemployed people in rural Northumberland access employment or training opportunities. | ✓ | ✓ | | | | | |
| Reducing the Cost of Travel | Making travel more affordable by subsidising door-to-door transport. | ✓ | ✓ | | | | | |
| Increasing Accessibility for the Mobility Impaired | This includes improving the design of the pedestrian environment and improving public transport services and infrastructure. The implementation of raised bus access kerbs enables people with mobility problems to be able to use public transport. | ✓ | ✓ | | ✓ | ✓ | | |
| | Plans are also in place to improve accessibility to rail services. | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| Reduce the Need and Distance for People to Travel to Access | The provision of high quality walking, cycling and bus service links incorporated as an integral part of the developments will ensure that the need to travel by car is reduced. In the longer-term, the | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |

| Intervention | Description | Water Pollution | Air Pollution | Land Take | Disturbance | Changes to Hydrology | Lighting | Pests |
|---|---|---|---|---|---|---|---|---|
| Services | Council's emerging Local Development Framework will assist in reducing the need to travel by supporting new development in accessible locations. | | | | | | | |
| Reducing Carbon Emissions | | | | | | | | |
| Sustainable car use – Low Carbon Vehicles | Electric charging points will be installed on streets, in car parks, at residential and commercial locations and at retail and leisure facilities. | ✓ | ✓ | | ✓ | ✓ | | |
| Active Travel Choices | Improvements to existing local footways and cycle paths and identifying locations where cycle paths are desired in order to achieve a more connected network. Issues of security on cycle paths and footways will also be considered with additional lighting installed where necessary. Where road safety is a concern, the council will also consider the installation of pedestrian and toucan crossings. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Highway Infrastructure Hard Surfacing and Improved Drainage on Footpath and Cycleways | The Council will look to install hard surfacing on key footpaths and cycleways which are known to be vulnerable in bad weather. Drainage systems in these locations will also be improved to limit the amount of surface water on key routes. | ✓ | ✓ | | ✓ | ✓ | | |
| Highway Infrastructure Maintenance and Resurfacing of Roads | Maintenance of roads will be undertaken to ensure that problems are identified and rectified. | ✓ | ✓ | | ✓ | ✓ | ✓ | |
| | The Council will also identify those locations where road surfaces are vulnerable to surface melting in times of high temperatures and resurface these roads with bitumen macadam. | ✓ | ✓ | | ✓ | ✓ | | |
| Safer and Healthier Travel | | | | | | | | |
| Promote Walking | • Identify and improve a core network of convenient, accessible and safe walking routes that connect into facilities and link communities. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | • Ensuring footways are accessible to people with disabilities through the provision of dropped kerbs, tactile paving and safe crossings. | ✓ | ✓ | | ✓ | | | |
| | • Improving and maintaining effective directional signing along pedestrian routes. | ✓ | ✓ | | ✓ | | | |
| | • Providing improved street lighting and crossing points. | ✓ | ✓ | | | | | |
| | • Ensuring that safe and convenient pedestrian footways are included as part of new developments, including links to existing networks. | ✓ | ✓ | ✓ | ✓ | | | |

| Intervention | Description | Water Pollution | Air Pollution | Land Take | Disturbance | Changes to Hydrology | Lighting | Pests |
|---|---|---|---|---|---|---|---|---|
| | • Ensuring that adopted footways and footpaths are adequately maintained. | ✓ | ✓ | | ✓ | ✓ | | |
| | • Improving access to the countryside through the Rights of Way Improvement Plan (ROWIP). | | | | | | | |
| Improve Safety of the Transport Network Safer Children | The council is working to improve conditions on the main walking and cycling routes into schools. Highway infrastructure improvements are delivered to support the programme. This includes the introduction or school safety zones, pedestrian crossings, traffic calming, parking restrictions and cycle routes. To reduce the speed of traffic, mobile speed activated signs and used as well as the introduction of 20mph speed limits. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Promote Cycling | The Council aims to Improve facilities for cyclists and encourage greater use through improving the maintenance of existing cycle routes, providing higher quality facilities, making greater use of the existing highway network and reducing road danger. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | • Identify a core cycle route network that meets the needs of all cyclists, provides an advantage over car traffic, takes full account of road safety and security and is visible and high quality. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | • Providing high quality cycle parking at key destinations, rail stations and as part of new developments that is well-sited and signed. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | • Development of cycle hubs to support cycle tourism and leisure use. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | • Road safety measures including driver education, reducing vehicle speeds and improving cyclist conspicuity at junctions. | ✓ | ✓ | | | | | |
| | • Linking with public transport including cycle routes to and from railway stations and secure parking facilities. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | • Ensuring high quality cycle accessibility as part of new development including connections to the proposed cycle network, cycle parking and workplace travel plans. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | • Workplace travel planning to identify barriers to cycling and deliver physical improvements. Cycling to be fully considered in all submitted workplace travel plans. | ✓ | ✓ | | ✓ | ✓ | ✓ | |
| | • Cycle route maintenance of off-road and | | | | | | | |

| Intervention | Description | Water Pollution | Air Pollution | Land Take | Disturbance | Changes to Hydrology | Lighting | Pests |
|---|---|---|---|---|---|---|---|---|
| | on-road routes. | | | | | | | |
| Improved Safety of the Public Transport Network | The existing transport network as safe as possible by maintaining the highway to safe standard. | | | | | | | |
| | Initiatives to target the remaining accident 'hot spots' with engineering treatments, particularly on the primary network and in rural villages and urban towns, as well as providing speed humps, pedestrian crossings, 20mph speed limits and shared spaces as appropriate. | ✓ | ✓ | | ✓ | ✓ | | |
| | Speed will be managed by engineering measures to physically reduce vehicle speed. | ✓ | ✓ | | ✓ | ✓ | | |
| | The Council will undertake highway maintenance targeted at popular routes. | | | | | | | |
| | Safer Pedestrians, Cyclists and Horse Riders The Council will target traffic calming and improve crossing conditions for pedestrians and cyclists. School Safety Zones and 20mph limits will make it easier to cross roads. | ✓ | ✓ | | ✓ | ✓ | | |

# Appendix C – Screening Assessment

| Intervention | Description | Location | Natura (2000) & Ramsar Sites potential affected by Interventions | Screening Criteria | Reason for a Potential Likely Significant Effect | Can Likely Significant Effects be avoided through best practice measures |
|---|---|---|---|---|---|---|
| Supporting Economic Growth | | | | | | |
| A1 Improvements | Upgrading the A1 to Dual carriageway standard | Morpeth- Felton | Northumbria Coast SPA and Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses.<br><br>The qualifying features on site are vulnerable to atmospheric pollution. Air pollution during construction and operation could have significant adverse impacts on bird species on site. | No |
| | | | Durham Coast SAC | Potential exists for hydrological connection between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. However as the site is 29km from the proposal significant impacts are considered unlikely. | Not applicable as significant effects are considered unlikely |
| | | | Simonside Hills SAC | Potential exists for wider ranging impacts | Qualifying features on site are sensitive to changes in atmospheric conditions. Air pollution during construction from construction vehicles/activities and during operation could have significant impacts on the habitats present on site. | No |
| | | Adderstone–Belford | Lindisfarne SPA and Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive species if allowed to discharge uncontrolled into watercourses.<br>There is potential that air pollution during construction from construction vehicles/activities and during operation could have significant impacts on habitats present on site. | No |
| | | | Northumbria Coast SPA and Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses.<br><br>The qualifying features on site are vulnerable to atmospheric pollution. Air pollution during construction and operation could have significant adverse impacts on bird species on site. | No |
| | | | Northumberland Dunes SAC | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitat if allowed to discharge uncontrolled into watercourses.<br>There is potential that air pollution during construction and operation from construction vehicles/activities and an increase in traffic levels could have significant impacts on the habitats present on site. | No |
| | | | Farne Island SPA | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitat if allowed to discharge uncontrolled into watercourses, however due to the distance and location of the site significant impacts are considered unlikely.<br><br>There is potential that air pollution during construction and operation from construction vehicles/activities and an increase in traffic levels could have significant impacts on the habitats present on site however due to the distance and the marine environment acting as a suitable barrier significant impacts are considered unlikely. | Not applicable as significant effects are considered unlikely |
| | | | Newham Fen SAC | Potential exists for hydrological | During the construction and operation of the scheme there is potential to alter the | No |

| Intervention | Description | Location | Natura (2000) & Ramsar Sites potential affected by Interventions | Screening Criteria | Reason for a Potential Likely Significant Effect | Can Likely Significant Effects be avoided through best practice measures |
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| | | | | connection and wider ranging impacts between the proposal and the site | hydrology of the site from an increase in surface water runoff. Water pollution could also have adverse impacts on the sensitive habitats if allowed to discharge uncontrolled into adjacent watercourses. However due to the distance and the existing railway line acting as a barrier significant impacts are considered unlikely.<br><br>There is potential that air pollution during construction and operation could have significant adverse impacts on habitats present on site. | |
| | | | River Tweed SAC | Potential exists for wider ranging impacts | There is potential that air pollution during construction from construction vehicles/activities and during operation could have significant impacts on qualifying species and habitats present on site. No other impacts are envisaged due to the distance the proposals are from the site and lack of hydrological connections. | No |
| | | | Holburn Lake and Moss SPA & Ramsar | Potential exists for wider ranging impacts | The proposals are situated downstream from the site and therefore it is considered unlikely that water pollution would affect the site. Air pollution during construction from construction vehicles/activities and during operation has the potential to have significant impacts on the habitats present on site. | No |
| Morpeth Northern Bypass | Constructing a bypass | North of Morpeth between the A1 and the Pegswood Bypass. | Northumbria Coast SPA & Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses.<br><br>The qualifying features on site are vulnerable to atmospheric pollution and air pollution during construction and operation could have significant adverse impacts on bird species on site. | No |
| | | | Simonside Hills SAC | Potential exists for wider ranging impacts | The qualifying features on site are vulnerable to atmospheric pollution. Air pollution during construction and operation could have significant adverse impacts on sensitive habitats on site. | No |
| | | | Durham Coast SAC | Potential exists for hydrological connection between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could adversely affect sensitive habitats and species if allowed to discharge uncontrolled into watercourses. However as the site is 29km from the proposal significant impacts are considered unlikely. | Not applicable as significant effects are considered unlikely |
| Increasing Network Capacity – *A19(T) Junction Improvements* | Making junction improvements to reduce problems of traffic congestion at key junctions | A19(T) Moor Farm | Northumbria Coast SPA & Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses.<br><br>The qualifying features on site are vulnerable to atmospheric pollution and there is potential that air pollution during construction and operation could have significant adverse impacts on bird species on site, however as the site is approximately 7km away and the minor scale of works proposed, impacts are not considered to be significant. | Yes |
| | | | Durham Coast SAC | Potential exists for wider ranging impacts | There is potential that air pollution during construction and operation could have significant adverse impacts on habitats present on site however due to the scale of works and urban location of the proposal significant effects are considered to be unlikely. | Not applicable as significant effects are considered unlikely |
| | | A19(T) Seaton Burn | Northumbria Coast SPA & Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. | Yes |

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| | | | | | The qualifying features on site are vulnerable to atmospheric pollution and there is potential that air pollution during construction and operation could have significant adverse impacts on bird species on site, however as the site is approximately 10km away and the minor scale of works proposed, impacts are not considered to be significant. | |
| Blyth Central Link Road | Creating a new link road | Between Rotary Way and a new junction on the A189 Spine Road. | Northumbria Coast SPA & Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses<br><br>The qualifying features on site are vulnerable to atmospheric pollution. Air pollution during construction and operation could have significant adverse impacts on bird species on site. | No |
| | | | Durham Coast SAC | Potential exists for wider ranging impacts | There is potential that air pollution during construction and operation could have significant adverse impacts on habitats present on site, however as the proposal is approximately 14km north of the site with the city of Newcastle-Tyne functioning as an urban barrier, significant impacts are considered to be unlikely. No other impacts are envisaged. | Not applicable as significant effects are considered unlikely |
| Increasing Network Capacity A193 - Cowpen Road Corridor, Blyth | Improving capacity to allow the town to grow and develop. In the longer term, more radical measures would be required such as the construction of a new link road. | A193 Cowpen Road | Northumbria Coast SPA & Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses<br><br>The qualifying features on site are vulnerable to atmospheric pollution. Air pollution during construction and operation could have significant adverse impacts on bird species on site. | No |
| | | | Durham Coast SAC | Potential exists for wider ranging impacts | There is potential that air pollution during construction and operation could have significant adverse impacts on habitats present on site, however as the proposal is approximately 14km north of the site with the city of Newcastle-Tyne functioning as an urban barrier, significant impacts are considered to be unlikely. No other impacts are envisaged. | Not applicable as significant effects are considered unlikely |
| | | A189 Spine Road | Northumbria Coast SPA & Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses<br><br>The qualifying features on site are vulnerable to atmospheric pollution. Air pollution during construction and operation could have significant adverse impacts on bird species on site. | No |
| | | | Durham Coast SAC | Potential exists for wider ranging impacts | There is potential that air pollution during construction and operation could have significant adverse impacts on habitats present on site, however as the proposal is approximately 14km north of the site with the city of Newcastle-Tyne functioning as an urban barrier, significant impacts are considered to be unlikely. No other impacts are envisaged. | Not applicable as significant effects are considered unlikely |
| South East Northumberland Public | Improvements would have to be made to | Ashington- Blyth - Tyne rail freight line line. | Berwickshire & North Northumberland Coast SAC | Potential exists for hydrological connection and wider ranging impacts between the proposal | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses | Yes |

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| Transport Corridor | overcome capacity and signalling issues on the rail freight line | | | and the site | Air pollution during construction from construction vehicles/activities and during operation have the potential to have significant impacts on the habitats present on site. | |
| | | | Northumbria Coast SPA & Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses<br><br>The qualifying features on site are vulnerable to atmospheric pollution. Air pollution during construction and operation could have significant adverse impacts on bird species on site. | Yes |
| | | | Durham Coast SAC | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | This site is approximately 10km from the proposed improvements to the existing freight line. Due to the scale of the works proposed and distance from the site, significant adverse impacts are considered unlikely. | Not applicable as significant effects are considered unlikely |
| Improving Rail Travel | Improve passenger information | Tyne Valley Line | Northumbria Coast SPA & Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses<br><br>The qualifying features on site are vulnerable to atmospheric pollution. Air pollution during construction and operation could have significant adverse impacts on bird species on site. | Yes |
| | | | Durham Coast SAC | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on habitats present on site. | Yes |
| | | | Tyne & Allen River Gravels SAC | Proposals situated within 2km of Site | There is potential that water pollution from surface runoff either during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. | Yes |
| | | | North Pennine Moors SAC & SPA | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential for water pollution from surface runoff either during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | North Pennine Dale SAC | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential for water pollution from surface runoff either during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | Border Mires Kielder Butterburn SAC | Proposals situated within 2km of Site and potential exists for wider ranging impacts | During the construction and operation of the scheme there is potential to alter the hydrology of the site from an increase in surface water runoff. Water pollution could also have adverse impacts on the sensitive habitats if allowed to discharge uncontrolled into adjacent watercourses.<br><br>There is potential that air pollution during construction and operation could have significant adverse impacts on habitats present on site. | Yes |

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| | | | Roman Wall Loughs SAC | Potential exists for wider ranging impacts | There is potential that air pollution during construction could have significant adverse impacts on sensitive habitats present on site. | Yes |
| | | | Bolton Fell cSAC | Potential exists for wider ranging impacts | There is potential that air pollution during construction could have significant adverse impacts on sensitive habitats present on site | Yes |
| | | | Walton Moss SAC | Potential exists for wider ranging impacts | There is potential that air pollution during construction could have significant adverse impacts on sensitive habitats present on site | Yes |
| | | | River Eden SAC | Proposals situated within 2km of Site and potential exists for hydrological connection and wider ranging impacts | There is potential for habitat loss or fragmentation as a result of improving new rail passenger information. There is potential for water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site. Dependant on the scale of works and location of the proposal, there is potential that disturbance (noise and physical) during the construction phase could have significant adverse impacts on sensitive habitats and species on site. | Yes |
| | | | Irthinghead Mires Ramsar | Potential exists for wider ranging impacts | There is potential that air pollution during construction could have significant adverse impacts on sensitive habitats present on site | Yes |
| | Improving station facilities. | Berwick | Berwickshire & North Northumberland Coast SAC | Proposals situated within 2km of Site and potential exists for hydrological connection and wider ranging impacts | This site is vulnerable to changes in water quality and there is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses which flow into the sea.<br>There is potential that air pollution during construction could have significant adverse impacts on sensitive habitats present on site.<br>Disturbance during construction activities could have significant impacts to sensitive species on site such as seals. The coastline attracts many tourists to the local area, improving station facilities has the potential to increase tourism resulting in increased recreational pressures to the site leading to habitat degradation. | No |
| | | | Tweed Estuary SAC | Proposals situated within 2km of Site and potential exists for hydrological connection and wider ranging impacts | There is potential for water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction has the potential to have significant impacts on sensitive habitats and species present on site. | No |
| | | | Lindisfarne SPA and Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential for water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction has the potential to have significant impacts on sensitive habitats and species present on site.<br>The site is situated within a local tourist attraction, improving travel facilities has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species on site. | No |

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| | | Hexham | Northumbria Coast SPA & Ramsar | Potential exists for hydrological connection | There is potential for water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species on site if allowed to discharge uncontrolled into the River Tyne. However due to the distance the site is from the proposals no further impacts are envisaged. | Yes |
| | | | Durham Coast SAC | Potential exists for hydrological connection | There is potential for water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species on site if allowed to discharge uncontrolled into the River Tyne. However due to the distance the site is from the proposals no further impacts are envisaged. | Yes |
| | | | North Pennine Moors SAC &SPA | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. The site is adjacent to numerous tourist attractions such as Hadrian's Wall and Northumberland National Park.<br>Improving travel facilities has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species on site. | No |
| | | | Tyne & Allen River Gravels SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | Border Mires, Kielder – Butterburn SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>This site is situated within Northumberland National Park, improvements to local travel facilities have the potential to increase human presence to the site resulting in habitat degradation and disturbance to sensitive species on site. | No |
| | | Prudhoe | Northumbria Coast SPA & Ramsar | Potential exists for hydrological connection | The railway station is situated adjacent to the River Tyne. There is potential for water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species on site if allowed to discharge uncontrolled into the River Tyne. However due to the distance the site is from the proposals no further impacts are envisaged. | Yes |
| | | | Durham Coast SAC | Potential exists for hydrological connection | The railway station is situated adjacent to the River Tyne. There is potential for water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species on site if allowed to discharge uncontrolled into the River Tyne. However due to the distance the site is from the proposals no further impacts are envisaged. | Yes |
| | Increasing available car parking at stations | Berwick | Berwickshire & North Northumberland Coast SAC | Proposals situated within 2km of Site and potential exists for hydrological connection and wider ranging impacts | This site is vulnerable to changes in water quality and there is potential for water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses which flow into the sea.<br>There is potential for air pollution during construction could have significant adverse impacts on sensitive habitats present on site.<br>Disturbance during construction activities could have significant impacts to sensitive species on site such as seals. Improving station facilities has the potential to increase tourism to the local area which could result in increased recreational pressures to the site leading to habitat degradation. | No |
| | | | Tweed Estuary SAC | Proposals situated within 2km of Site and potential exists for hydrological connection and | There is potential for water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction | No |

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| | | | | wider ranging impacts | could have significant impacts on sensitive habitats and species present on site. | |
| | | | Lindisfarne SPA and Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential for water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>The site is situated within a highly touristy area and improving station facilities has the potential to increase tourism to the local area resulting in disturbance to sensitive habitats and species on site. | No |
| | | Alnmouth | Berwickshire & North Northumberland Coast SAC | Proposals situated within 2km of Site and potential exists for hydrological connection and wider ranging impacts | This site is vulnerable to changes in water quality and there is potential for water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses which would flow into the sea.<br>There is potential that air pollution during construction could have significant adverse impacts on sensitive habitats present on site.<br>Disturbance during construction activities could have significant impacts to sensitive species on site such as seals. Improving station facilities has the potential to increase tourism to the local area which could result in increased recreational pressures to the site leading to habitat degradation. | No |
| | | | North Northumberland Dunes SAC | Proposals situated within 2km of Site and potential exists for hydrological connection and wider ranging impacts | There is potential for water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site. Due to the close proximity to the site there is potential that disturbance by trampling from an increase in tourism could have significant impacts to the sensitive dune habitats present on site. | No |
| | | | Coquet Island SPA | Potential exists for wider ranging impacts | There is potential that air pollution during construction could have significant adverse impacts on sensitive species present on site. However due to the distance the site is from Alnmouth, significant impacts are considered unlikely. | Yes |
| | | Morpeth | Northumbria Coast SPA and Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | Water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction has the potential to have significant impacts on sensitive habitats and species present on site.<br>Improving station facilities has the potential to increase tourism to the local area which could result in increased recreational pressures to the site leading to habitat degradation. | No |
| | | | Durham Coast SAC | Potential exists for hydrological connection between the proposal and the site | Water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. | Yes |
| | | | Simonside Hills SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | Cramlington. | Northumbria Coast Ramsar & SPA | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | Improving | East Coast Main | Northumbria Coast | Potential exists for wider ranging | Water pollution from surface runoff either during construction and operation could have | No |

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| | inter-city and local stopping services. | Line | Ramsar & SPA | impacts and hydrological connection | significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving local stopping services have the potential to increase tourism to the local area which could result in increased recreational pressures to the site leading to habitat degradation. | |
| | | | Durham Coast SAC | Potential exists for wider ranging impacts and hydrological connection | Water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | Berwickshire & North Northumberland Coast SAC | Potential exists for wider ranging impacts and hydrological connection | This site is vulnerable to changes in water quality and there is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses which have the potential to flow into the sea.<br>There is potential that air pollution during construction could have significant adverse impacts on sensitive habitats present on site.<br>Improving local stations have the potential to increase tourism to the local area which could result in increased recreational pressures to the site leading to habitat degradation. | No |
| | | | Coquet Island SPA | Potential exists for wider ranging impacts and hydrological connection | Water pollution from surface runoff either during construction and operation could adversely affect sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | Newhen Fen SAC | Proposals situated within 2km of Site and potential exists for hydrological connection and wider ranging impacts | During the construction of the proposal there is potential to alter the hydrology of the site from an increase in surface water runoff. Water pollution could also have significant adverse impacts on sensitive habitats if allowed to discharge uncontrolled into neighbouring watercourses.<br><br>There is potential that air pollution during construction and operation could have significant adverse impacts on habitats present on site. | No |
| | | | North Northumberland Dunes SAC | Potential exists for wider ranging impacts and hydrological connection | Water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | Holburn Lake and Moss SPA & Ramsar | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | Farne Islands SPA | Potential exists for wider ranging impacts and hydrological connection | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitat if allowed to discharge uncontrolled into watercourses, however due to the distance and scale of works significant impacts are considered unlikely.<br><br>There is potential for air pollution during construction from construction vehicles/activities and during operation could impact sensitive habitats present on site however due to the distance and scale of works significant impacts are considered unlikely. | Not applicable as significant effects are considered unlikely |

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| | | | Lindisfarne SPA & Ramsar | Potential exists for wider ranging impacts and hydrological connection | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site.<br>Improving local stopping services have the potential to increase tourism to the local area which could result in increased recreational pressures to the site leading to habitat degradation. | No |
| | | | Ford Moss SAC | Potential exists for wider ranging impacts | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. | Yes |
| | | | River Tweed SAC | Potential exists for hydrological connection and wider ranging impacts | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | Tweed Estuary SAC | Proposals situated within 2km of Site and potential exists for hydrological connection and wider ranging impacts | The ECML is situated over the Tweed Estuary, physical disturbance may occur as a result from the implementation of associated railway improvement infrastructure.<br><br>There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site. | No |
| | | | St Abb's Head to Fast Castle SAC & | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | Proposed re-opening of the rail station | Belford railway station | Lindisfarne SPA & Ramsar | Potential exists for wider ranging impacts and hydrological connection | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site. Disturbance (noise) from construction activities may significantly impact mobile bird species as a result of the scheme. The re-opening of Belford train station has the potential to increase tourism to the local area which could result in increased recreational pressures to the site such as disturbance to mobile bird species. | No |
| | | | North Northumberland Dunes SAC | Potential exists for wider ranging impacts and hydrological connection | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | Northumbria Coast SPA & Ramsar | Potential exists for wider ranging impacts and hydrological connection | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | Farne Island SPA | Potential exists for wider ranging impacts and hydrological connection | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitat if allowed to discharge uncontrolled into watercourses, however due to the distance and urban location of the proposal, significant impacts are considered unlikely. | Not applicable as significant effects are considered unlikely |

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| | | | | | There is potential that air pollution from construction vehicles/activities and during operation from an increase in train emissions could impact habitats present on site however due to the distance and urban location of the proposals, impacts are considered unlikely. | |
| | | | Newhen Fen SAC | Potential exists for wider ranging impacts and hydrological connection | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site | Yes |
| | | | Holburn Lake & Moss SPA & Ramsar | Potential exists for wider ranging impacts and hydrological connection | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | Ford Moss SAC | Potential exists for wider ranging impacts and hydrological connection | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | River Tweed SAC | Potential exists for wider ranging impacts and hydrological connection | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | | Potential exists for hydrological | There is potential that water pollution from surface runoff during construction and | Yes |
| Improving Local Bus Travel | Developing new/improved bus station facilities | Hexham | Northumbria Coast SPA & Ramsar | Potential exists for hydrological connection | There is potential that water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species on site if allowed to discharge uncontrolled into the River Tyne. However due to the distance the site is from the proposals no further impacts are envisaged. | Yes |
| | | | Durham Coast SAC | Potential exists for hydrological connection | There is potential that water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species on site if allowed to discharge uncontrolled into the River Tyne. However due to the distance the site is from the proposals no further impacts are envisaged. | Yes |
| | | | North Pennine Moors SAC &SPA | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving travel facilities has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species. | No |
| | | | Tyne & Allen River Gravels SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | Border Mires, Kielder – Butterburn SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>This site is within Northumberland National Park and improving travel facilities have the potential to increase tourism to the local area resulting in habitat degradation. | No |
| | | Ashington | Northumbria Coast SPA & Ramsar | Potential exists for wider ranging impacts | There are no hydrological links from the proposal to the site. Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | Blyth | Northumbria Coast SPA & Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could | No |

| Intervention | Description | Location | Natura (2000) & Ramsar Sites potential affected by Interventions | Screening Criteria | Reason for a Potential Likely Significant Effect | Can Likely Significant Effects be avoided through best practice measures |
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| | | | | and the site | have significant impacts on sensitive habitats and species present on site.<br>Improving travel facilities has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species. | |
| | | | Durham Coast SAC | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site. | Yes |
| Improving Facilities for Coach Travel | Increasing and improving coach facilities with priority being given to town centre locations. | Berwick | Berwickshire & North Northumberland Coast SAC | Proposals situated within 2km of Site and potential exists for hydrological connection and wider ranging impacts | This site is vulnerable to changes in water quality and there is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses which flow into the sea.<br>There is potential that air pollution during construction could have significant adverse impacts on sensitive habitats present on site.<br>Disturbance during construction activities could have significant impacts to sensitive species on site such as seals. Improving bus station facilities has the potential to increase tourism to the local area which could result in increased recreational pressures to the site leading to habitat degradation. | No |
| | | | Tweed Estuary SAC | Proposals situated within 2km of Site and potential exists for hydrological connection and wider ranging impacts | There is potential that water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Dependent on the location of the proposal, habitat loss and fragmentation may occur as a result of its implementation. | Yes |
| | | | River Tweed SAC | Proposals situated within 2km of Site and potential exists for wider ranging impacts | There is potential that water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Dependent on the location of the proposal there is potential that disturbance from construction activities and during operation could have significant impacts on mobile species on site.<br>Improving facilities has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species during operation. | No |
| | | | Lindisfarne SPA and Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site.<br>Improving facilities has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species during operation. | No |
| | | Morpeth | Northumbria Coast SPA and Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | Water pollution from surface runoff either during construction and operation could adversely affect sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving facilities has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species during operation. | No |

| Intervention | Description | Location | Natura (2000) & Ramsar Sites potential affected by Interventions | Screening Criteria | Reason for a Potential Likely Significant Effect | Can Likely Significant Effects be avoided through best practice measures |
|---|---|---|---|---|---|---|
| | | | Durham Coast SAC | Potential exists for hydrological connection between the proposal and the site | Water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. | Yes |
| | | | Simonside Hills SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species on site. | Yes |
| | | Hexham | Northumbria Coast SPA & Ramsar | Potential exists for hydrological connection | There is potential that water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species on site if allowed to discharge uncontrolled into the River Tyne. However due to the distance the site is from the proposals no further impacts are envisaged. | Yes |
| | | | Durham Coast SAC | Potential exists for hydrological connection | There is potential that water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species on site if allowed to discharge uncontrolled into the River Tyne. However due to the distance the site is from the proposals no further impacts are envisaged. | Yes |
| | | | North Pennine Moors SAC &SPA | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving facilities has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species during operation. | No |
| | | | Tyne & Allen River Gravels SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | Border Mires, Kielder – Butterburn SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving facilities has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species during operation. | No |
| | | Alnwick | North Northumberland Dunes SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving facilities has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species during operation. | No |
| | | | Berwickshire & North Northumberland Coast SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving facilities has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species during operation. | No |
| | | | Northumbria Coast SPA & Ramsar | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving facilities has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species during operation. | No |
| | | | Coquet Island SPA | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | River Tweed SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |

| Intervention | Description | Location | Natura (2000) & Ramsar Sites potential affected by Interventions | Screening Criteria | Reason for a Potential Likely Significant Effect | Can Likely Significant Effects be avoided through best practice measures |
|---|---|---|---|---|---|---|
| Improving walking and cycling for tourists | Establishing cycle hubs | Wooler | River Tweed SAC | Proposals situated within 2km of Site and potential exists for hydrological connection and wider ranging impacts | There is potential that water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site. There is potential that disturbance from construction activities could have significant impacts on sensitive habitats and species on site. Dependent on the location of the proposal, habitat loss and fragmentation may occur as a result of its implementation. | No |
| | | | Holburn Lake & Moss SPA & Ramsar | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving facilities has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species during operation. | No |
| | | | Ford Moss SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | Haltwhistle | Tyne & Allen River Gravels SAC | Proposals situated within 2km of Site and potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | North Pennine Moors SPA & SAC | Proposals situated within 2km of Site and potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. Improving cycling facilities within Haltwhistle has the potential to increase recreational pressures within the local area, resulting in disturbance to sensitive habitats and species on site. Dependant on its location, lighting from cycling hub infrastructure may have adverse impacts on sensitive species such as birds. The site is upstream from the proposals so should not be impacted by water pollution during construction. | No |
| | | | Northumbria Coast SPA & Ramsar | Potential exists for hydrological connection | Water pollution from surface runoff either during construction and operation could adversely affect sensitive habitats and species if allowed to discharge uncontrolled into watercourses. | Yes |
| | | | Durham Coast | Potential exists for hydrological connection | Water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses | Yes |
| | | | North Pennine Dale Meadows SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving cycling facilities has the potential to increase tourism to the local area resulting in habitat degradation during operation. | No |
| | | | Border Mires, Kielder – Butterburn SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving cycling facilities has the potential to increase tourism to the local area resulting in habitat degradation during operation. | No |
| | | | Roman Wall Loughs SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving cycling facilities has the potential to increase tourism to the local area resulting in habitat degradation during operation. | No |
| | | | Irthinghead Mires Ramsar | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | No |

| Intervention | Description | Location | Natura (2000) & Ramsar Sites potential affected by Interventions | Screening Criteria | Reason for a Potential Likely Significant Effect | Can Likely Significant Effects be avoided through best practice measures |
|---|---|---|---|---|---|---|
| | | | | | Improving cycling facilities has the potential to increase tourism to the local area resulting in habitat degradation during operation. | |
| | | | River Eden SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| Improving Access to Services | | | | | | |
| Widening Travel Choice | Reopening railway line to passenger services | Ashington, Blyth and Tyne Line | Berwickshire & North Northumberland Coast SAC | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses<br>Air pollution during construction from construction vehicles/activities and during operation could have significant impacts on habitats present on site.<br>Improving travel infrastructure has the potential to increase tourism to the local area resulting in habitat degradation during operation. | No |
| | | | Northumbria Coast SPA & Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses.<br><br>The qualifying features on site are vulnerable to atmospheric pollution and air pollution during construction and operation could have significant adverse impacts on bird species on site.<br><br>Improving travel infrastructure has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species during operation. | No |
| | | | Durham Coast SAC | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | This site is approximately 10km from the proposed improvements to the existing freight line. Due to the scale of the works proposed and distance from the site, significant adverse impacts are considered unlikely. | Not applicable as significant effects are considered unlikely |
| | Increasing local services | The Tyne Valley and East Coast Main Line rail networks | Northumbria Coast Ramsar & SPA | Potential exists for wider ranging impacts and hydrological connection | Water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving travel infrastructure has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species during operation. | No |
| | | | Durham Coast SAC | Potential exists for wider ranging impacts and hydrological connection | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on habitats present on site. | Yes |
| | | | Berwickshire & North Northumberland Coast SAC | Potential exists for wider ranging impacts and hydrological connection | This site is vulnerable to changes in water quality and there is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses which could flow into the sea.<br>There is potential that air pollution during construction could have significant adverse impacts on sensitive habitats present on site.<br>Improving local services have the potential to increase tourism to the local area which could result in increased recreational pressures to the site leading to habitat degradation. | No |

| Intervention | Description | Location | Natura (2000) & Ramsar Sites potential affected by Interventions | Screening Criteria | Reason for a Potential Likely Significant Effect | Can Likely Significant Effects be avoided through best practice measures |
|---|---|---|---|---|---|---|
| | | | Coquet Island SPA | Potential exists for wider ranging impacts and hydrological connection | Water pollution from surface runoff either during construction and operation could adversely affect sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | | Newhen Fen SAC | Proposals situated within 2km of Site and potential exists for hydrological connection and wider ranging impacts | During the construction of the proposal there is potential to alter the hydrology of the site from an increase in surface water runoff. Water pollution could also have adverse impacts on the sensitive habitats if allowed to discharge uncontrolled into adjacent watercourses.<br><br>There is potential that air pollution during construction and operation could have significant adverse impacts on habitats present on site. | No |
| | | | North Northumberland Dunes SAC | Potential exists for wider ranging impacts and hydrological connection | Water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving local services have the potential to increase tourism to the local area which could result in increased recreational pressures to the site leading to habitat degradation | No |
| | | | Holburn Lake and Moss SPA & Ramsar | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. Improving local services have the potential to increase tourism to the local area which could result in increased recreational pressures to the site leading to habitat degradation | No |
| | | | Farne Islands SPA | Potential exists for wider ranging impacts and hydrological connection | There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitat if allowed to discharge uncontrolled into watercourses, however due to the distance and scale of works significant impacts are considered unlikely.<br><br>There is potential that air pollution during construction from construction vehicles/activities and during operation could have impacts on habitats present on site however due to the distance and scale of works significant impacts are considered unlikely. | Yes |
| | | | Lindisfarne SPA & Ramsar | Potential exists for wider ranging impacts and hydrological connection | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site.<br>Improving travel infrastructure has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species during operation. | No |
| | | | Ford Moss SAC | Potential exists for wider ranging impacts | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. | Yes |
| | | | River Tweed SAC | Proposals situated within 2km of Site and potential exists for hydrological connection and wider ranging impacts | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site.<br>Improving travel infrastructure has the potential to increase tourism to the local area | No |

| Intervention | Description | Location | Natura (2000) & Ramsar Sites potential affected by Interventions | Screening Criteria | Reason for a Potential Likely Significant Effect | Can Likely Significant Effects be avoided through best practice measures |
|---|---|---|---|---|---|---|
| | | | | | resulting in habitat degradation and disturbance to sensitive species during operation. | |
| | | | Tweed Estuary SAC | Proposals situated within 2km of Site and potential exists for hydrological connection and wider ranging impacts | The ECML is situated over the Tweed Estuary, disturbance may occur as a result of improvements to local services.<br><br>There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site | No |
| | | | St Abb's Head to Fast Castle SAC & SPA | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving travel infrastructure has the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species during operation. | No |
| | | | Tyne & Allen River Gravels SAC | Proposals situated within 2km of Site | There is potential for habitat loss or fragmentation as a result of improving local services on the Tyne Valley Line. There is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. | Yes |
| | | | North Pennine Moors SAC | Potential exists for wider ranging impacts | Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site.<br>Improving travel services has the potential to increase tourism to the local area resulting in habitat degradation during operation. | No |
| | | | North Pennine Dale Meadows SAC | Potential exists for wider ranging impacts | Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site.<br>Improving travel services has the potential to increase tourism to the local area resulting in habitat degradation during operation. | No |
| | | | Border Mires Kielder Butterburn SAC | Proposals situated within 2km of Site and potential exists for wider ranging impacts | During the construction and operation of the scheme there is potential to alter the hydrology of the site from an increase in surface water runoff. Water pollution could also have adverse impacts on the sensitive habitats if allowed to discharge uncontrolled into adjacent watercourses.<br><br>There is potential that air pollution during construction and operation could have significant adverse impacts on habitats present on site.<br>Improving travel services has the potential to increase tourism to the local area resulting in habitat degradation during operation. | No |
| | | | Roman Wall Loughs SAC | Potential exists for wider ranging impacts | There is potential that air pollution during construction and operation could have significant adverse impacts on sensitive habitats present on site.<br>Improving travel services has the potential to increase tourism to the local area resulting in habitat degradation during operation. | No |
| | | | Bolton Fell cSAC | Potential exists for wider ranging impacts | There is potential that air pollution during construction and operation could have significant adverse impacts on sensitive habitats present on site. | Yes |
| | | | Walton Moss SAC | Potential exists for wider ranging impacts | There is potential that air pollution during construction and operation could have significant adverse impacts on sensitive habitats present on site. | Yes |
| | | | River Eden SAC | Proposals situated within 2km of | There is potential for habitat loss or fragmentation as a result of increasing local train | Yes |

| Intervention | Description | Location | Natura (2000) & Ramsar Sites potential affected by Interventions | Screening Criteria | Reason for a Potential Likely Significant Effect | Can Likely Significant Effects be avoided through best practice measures |
|---|---|---|---|---|---|---|
| | | | | Site and potential exists for hydrological connection and wider ranging impacts | services. There is potential that water pollution from surface runoff during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction and operation could have significant impacts on sensitive habitats and species present on site. Dependant on the scale of works and location of the proposal, there is potential that disturbance during the construction phase could have significant adverse impacts on sensitive habitats and species on site. | |
| | | | Irthinghead Mires Ramsar | Potential exists for wider ranging impacts | There is potential that air pollution during construction and operation could have significant adverse impacts on sensitive habitats present on site. | Yes |
| Increasing Accessibility for the Mobility Impaired | Providing an obstacle free accessible route. Improving access arrangements, installation of lifts and increasing the numbers of car parking spaces. | Alnmouth Railway stations | Berwickshire & North Northumberland Coast SAC | Proposals situated within 2km of Site and potential exists for hydrological connection and wider ranging impacts | This site is vulnerable to changes in water quality and there is potential that water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses which would flow into the sea.<br>There is potential that air pollution during construction could have significant adverse impacts on sensitive habitats present on site.<br>Disturbance during construction activities could have significant impacts to sensitive species on site such as seals. Improving station facilities has the potential to increase tourism to the local area which could result in increased recreational pressures to the site leading to habitat degradation. | No |
| | | | North Northumberland Dunes | Proposals situated within 2km of Site and potential exists for hydrological connection and wider ranging impacts | There is potential that water pollution from surface runoff during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site. Due to the close proximity of the site to the proposal there is potential that disturbance by trampling from an increase in human presence could have significant impacts to the sensitive dune habitats on site. | No |
| | | | Coquet Island SPA | Potential exists for wider ranging impacts | There is potential that air pollution during construction could have significant adverse impacts on sensitive species present on site. | Yes |
| | | Morpeth Railway Station | Northumbria Coast SPA and Ramsar | Potential exists for hydrological connection and wider ranging impacts between the proposal and the site | Water pollution from surface runoff either during construction could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving railway stations have the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species during operation. | No |
| | | | Durham Coast SAC | Potential exists for hydrological connection between the proposal and the site | Water pollution from surface runoff either during construction and operation could have significant adverse impacts on sensitive habitats and species if allowed to discharge uncontrolled into watercourses. | Yes |
| | | | Simonside Hills SAC | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site. | Yes |
| | | Cramlington Railway Stations. | Northumbria Coast Ramsar & SPA | Potential exists for wider ranging impacts | Air pollution during construction could have significant impacts on sensitive habitats and species present on site.<br>Improving railway stations have the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species during operation. | No |

# Appendix D – Assessment Matrices of European Sites

| **Matrix 1 – Northumbria Coast SPA and Ramsar** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Brief Description*** | The Northumbria Coast SPA includes much of the coastline between the Tweed and Tees Estuaries in north-east England. The site consists of mainly discrete sections of rocky shore with associated boulder and cobble beaches. The SPA also includes parts of three artificial pier structures and a small section of sandy beach. In summer, the site supports important numbers of breeding Little Tern *Sterna albifrons*, whilst in winter the mixture of rocky and sandy shore supports large number of Turnstone *Arenaria interpres* and Purple Sandpiper *Calidris maritima*. | | | | | | | | |
| ***Designation(s) and Interest features* SPA** | *Annex I bird species and regularly occurring migratory bird species not listed on Annex I:*<br>*Calidris maritime* Purple sandpiper<br>*Arenaria interpres* Ruddy turnstone<br>*Sterna albifrons* Little tern | | | | | | | | |
| ***Designation(s) and Interest features* Ramsar** | Internationally important breeding population of little tern<br>Internationally important wintering populations of purple sandpiper and turnstone | | | | | | | | |
| ***Vulnerability*** | Little terns are vulnerable to disturbance by tourists in the summer causing reduced breeding success. | | | | | | | | |
| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | | |
| **SPA Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
| | | | | | | | Road transport | Other transport | Other transport |
| *Calidris maritima* (Eastern Atlantic - wintering) | × | No critical loads for these features | | × | No critical loads for these features | | 11 | 4 | 9 |
| *Arenaria interpres* (Western Palearctic - wintering) | ✓ | N | N | × | No critical loads for these features | | 11 | 4 | 9 |
| *Sterna albifrons* (Eastern Atlantic - breeding) | ✓ | Y | N | ✓ | No critical loads for these features | | 11 | 4 | 9 |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key | From the review of the information gathered, overwintering and breeding birds are vulnerable to an increase in recreational pressures and air pollutants.<br><br>The site is situated adjacent to many of the proposals detailed in the LTP3.<br><br>The construction and operation of the A1 improvements, Morpeth Bypass, Blyth Central Link, A193 Cowpen Link Road, A189 Spine road, improvements to the freight line capacity, Blyth and Morpeth bus station improvements, East Coast Main Line improvements to local services, the re-opening of Belford train station, improvements to Morpeth and Cramlington station and increasing accessibility for the mobility impaired at Morpeth train station could result in localised air and water pollutants which could cause potential health problems in large animals such as the overwintering and breeding birds on site.<br><br>Air pollution during the construction of junction improvements to the A19, are not considered significant due to the minor scale of works proposed and the urban location of the proposals. | | | | | | | | |

| Matrix 1 – Northumbria Coast SPA and Ramsar | |
|---|---|
| features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | Hydrological connections exist between railway stations and the site. Water pollution from the construction of improvements to Hexham, Prudhoe, Adderstone and the implementation of cycle hubs within Haltwhistle has the potential to have significant impacts on overwintering and breeding birds on site.<br><br>Construction works during the improvements for the mobility impaired at Cramlington train station, Hexham and Alnwick bus station improvements have the potential to generate air pollutants which could significantly affect the sensitive birds on site. |
| *Likely Significant Effects* | Water and Air Pollution |
| *In-Combination Effect* | Additional housing in key urban locations along the coastline and and improvements to tourist facilities and rights of way have the potential to have in-combination effects with the LTP3 proposals. |

| Matrix 2 – Lindisfarne SPA and Ramsar | |
|---|---|
| ***Brief Description*** | Lindisfarne is situated in north-east England off the Northumberland coast near Berwick-upon-Tweed. As well as the island of Lindisfarne (Holy Island), the site includes extensive mud-flats south of Holy Island and at Budle Bay. The area comprises a range of coastal habitats, including rocky shore, sand dunes, saltmarsh and intertidal sand- and mud-flats with extensive beds of Eelgrass *Zostera* spp., an important food source for wintering birds. The site supports internationally important numbers of wintering waterbirds on the flats and saltmarsh. In particular, it is of major international importance in autumn and early winter in holding a high proportion of the Svalbard population of Light-bellied Brent Goose *Branta bernicla hrota*. In summer, the site supports important numbers of several breeding tern species that feed in the shallow waters around the site. |
| ***Designation(s) and Interest features*** **SPA** | <u>*Annex I bird species and regularly occurring migratory bird species not listed on Annex I:*</u><br>*Cygnus cygnus* Whooper swan<br>*Anser anser* Greylag goose<br>*Branta bernicla hrota* Light-bellied brent goose<br>*Tadorna tadorna* Common shelduck<br>*Anas Penelope* Eurasian wigeon<br>*Somateria mollissima* Common eider<br>*Clangula hyemalis* Long-tailed duck<br>*Melanitta nigra* Black (common) scoter<br>*Mergus serrator* Red-breasted merganser<br>*Charadrius hiaticula* Ringed plover<br>*Pluvialis apricaria* European golden plover<br>*Pluvialis squatarola* Grey plover<br>*Calidris alba* Sanderling<br>*Calidris alpina alpina* Dunlin<br>*Limosa lapponica* Bar-tailed godwit<br>*Tringa tetanus* Common redshank<br>*Sterna dougallii* Roseate tern<br>*Sterna albifrons* Little tern<br>Waterfowl assemblage |
| ***Designation(s) and Interest features*** **Ramsar** | Extensive intertidal flats, saltmarsh and major sand dune system with well developed dune slacks.<br>Wintering waterfowl assemblage of international importance.<br>Internationally important migratory/wintering populations of:<br>*Branta bernicla hrota* Light-bellied brent goose<br>*Anas Penelope* Wigeon<br>*Charadrius hiaticula* Ringed plover<br>*Tringa totanus tetanus* Redshank<br>*Anser anser anser* Greylag goose<br>*Limosa lapponica lapponica* Bar-tailed godwit<br>Rare plants:<br>*Petalophyllum ralfsii* Petalwort<br>*Epipactis sancta Dune helleborine* (endemic on Lindisfarne) |
| ***Vulnerability*** | The principal threats from human influences are water quality problems (from sewage discharges and agricultural run-off), wildfowling and recreational disturbance including bait-digging. Colonisation by *Spartina* poses a long-term threat to intertidal habitats. A metalled road to Holy Island across the intertidal area has had localised effects on the areas of saltmarsh, intertidal flats and sand dunes and may be resulting in longer-term changes to sediment patterns within the Fenham Flats area of the SPA.<br>Non-native species *Pirri pirri burr Acaena* invading dunes. |

***Sensitivity to nitrogen deposition and acidification***

| SPA Feature | **Sensitive to nutrient nitrogen** – nitrogen (2010) ? | critical load for nutrient | **Sensitive to acidification** – minimum critical load for acidity | critical load for | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
|---|---|---|---|---|---|---|

| Matrix 2 – Lindisfarne SPA and Ramsar | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Road transport | Other transport | Other transport |
| *Cygnus cygnus* (Iceland/UK/Ireland) | x | No critical loads for these features | | x | No critical loads for these features | | 11 | 4 | 4 |
| *Anser anser* (Iceland/UK/Ireland) | x | No critical loads for these features | | x | No critical loads for these features | | 11 | 4 | 4 |
| *Branta bernicla hrota* (Svalbard/Denmark/UK) | x | No critical loads for these features | | x | No critical loads for these features | | 11 | 4 | 4 |
| *Tadorna tadorna* (North-western Europe) | x | N | N | x | No critical loads for these features | | 11 | 4 | 4 |
| *Anas penelope* (Western Siberia/North-western/North-eastern Europe) | ✓ | N | N | x | No critical loads for these features | | 11 | 4 | 4 |
| *Somateria mollissima* (Britain/Ireland) | x | No critical loads for these features | | x | No critical loads for these features | | 11 | 4 | 4 |
| *Clangula hyemalis* (Iceland/Greenland) | x | No critical loads for these features | | x | No critical loads for these features | | 11 | 4 | 4 |
| *Melanitta nigra* (Western Siberia/Western & Northern Europe/North-western Africa) | x | No critical loads for these features | | x | No critical loads for these features | | 11 | 4 | 4 |
| *Mergus serrator* (North-western/Central Europe) | x | No critical loads for these features | | x | No critical loads for these features | | 11 | 4 | 4 |
| *Charadrius hiaticula* (Europe/Northern Africa - wintering) | ✓ | N | N | x | No critical loads for these features | | 11 | 4 | 4 |
| *Pluvialis apricaria* (North-western Europe - breeding) | x | No critical loads for these features | | x | No critical loads for these features | | 11 | 4 | 4 |
| *Pluvialis squatarola* (Eastern Atlantic - wintering) | ✓ | N | N | x | No critical loads for these features | | 11 | 4 | 4 |
| *Calidris alba* (Eastern Atlantic/Western & Southern Africa - wintering) | x | N | N | x | No critical loads for these features | | 11 | 4 | 4 |
| *Calidris alpina alpina* (Northern Siberia/Europe/Western Africa) | x | N | N | x | No critical loads for these features | | 11 | 4 | 4 |
| *Limosa lapponica* | ✓ | N | N | x | No critical loads for | | 11 | 4 | 4 |

| Matrix 2 – Lindisfarne SPA and Ramsar | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (Western Palearctic – wintering) | | | | | these features | | | |
| *Tringa totanus* (Eastern Atlantic - wintering) | ✓ | N | N | x | No critical loads for these features | 11 | 4 | 4 |
| *Sterna dougallii* (Europe - breeding) | ✓ | N | N | x | No critical loads for these features | 11 | 4 | 4 |
| *Sterna albifrons* (Eastern Atlantic - breeding) | ✓ | N | N | x | No critical loads for these features | 11 | 4 | 4 |
| Waterfowl assemblage/ broad habitat | Site Specific | No critical loads for these features | | Site Specific | No critical loads for these features | | | |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity | This site and its qualifying features are vulnerable to changes in water quality which could have adverse significant impacts on sensitive habitats and species on site. Schemes such as the A1 Improvements, Berwick train station improvements, the ECML local stopping services, re-opening of Belford train station and improvements to Berwick bus station are all hydrologically connected to the site and may be impacted by water pollution generated during construction and operation.<br><br>The qualifying features on site are sensitive to atmospheric pollutants however they are not exceeding their critical loads. Significant impacts may arise during the construction and operation of major schemes such as A1 improvements, Berwick train station improvements, East Coast Main Line local stopping services, re-opening of the Belford train station and Berwick bus station improvements.<br><br>Disturbance to over-wintering and breeding birds may arise during construction of the re-opening of Belford train station. It is considered that impacts during operation would not be significant as trains currently utilise the existing line.<br><br>The site is situated within a local tourist attraction, improving travel facilities have the potential to increase tourism to the local area resulting in habitat degradation and disturbance to sensitive species on site. | | | | | | | |

| Matrix 2 – Lindisfarne SPA and Ramsar | |
|---|---|
| - Other | |
| *Likely Significant Effects* | Air and Water pollution |
| *In-Combination Effects* | Improvements to recreational facilities along the Coastline and additional housing allocated in key urban locations have the potential to have in-combination effects with the LTP3 proposals. |

| Matrix 3 – Farne Islands SPA | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Brief Description*** | The Farne Islands are a group of low-lying islands between 2-6 km off the coast of Northumberland in north-east England. They form the easternmost outcroppings of the Great Whin Sill of quartz dolerite, and although some islands retain cappings of boulder clay or peaty deposits, vegetation is limited to pioneer communities. Vegetation is further affected by the maritime conditions and large numbers of seabirds. The islands are important as nesting areas for these birds, especially terns, gulls and auks. The seabirds feed outside the SPA in the nearby waters, as well as more distantly in the North Sea. | | | | | | | | |
| ***Designation(s) and Interest features*** **SPA** | *Annex I bird species and regularly occurring migratory bird species not listed on Annex I:*<br>*Sterna paradisaea* Arctic tern<br>*Sterna sandvicensis* Sandwich tern<br>*Sterna hirundo* Common tern | | | | | | | | |
| ***Vulnerability*** | Two islands are open to visitors, though access is controlled and managed.<br>The thin soil cap found on the islands is easily disturbed by burrowing rabbits and puffins and by seals during their breeding season. Management of the vegetation/ soil cap and the pupping areas for seals is undertaken by the National Trust.<br>Marine activities including inshore fishing, recreation and pleasure craft are currently being monitored to assess any potential impact within the SPA. | | | | | | | | |
| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | | |
| **SPA Feature** | **Sensitive to nutrient nitrogen ?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1<br>Road transport | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1<br>Other transport | Predicted sulphur deposition in 2010 kg/N/ha/yr-1<br>Other transport |
| | Information is unavailable. | | | | | | | | |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air); | From the review of the information above it is considered that the qualifying features of Farne Island are vulnerable to recreational pressures and habitat degradation. All proposals are inland within urban settlements and this site is Coastal, so direct impacts are considered unlikely. Water and air pollution from construction and operation activities could significantly impact sensitive birds on site, however due to the marine environment acting as a barrier and the distance from the proposals, significant impacts are considered unlikely. | | | | | | | | |

| Matrix 3 – Farne Islands SPA | |
|---|---|
| - Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | |
| *Likely Significant Effects* | None |
| *In-Combination Effects* | Increase recreational facilities along the coastline may have in-combination effects with the LTP3 proposals |

| Matrix 4 – North Northumberland Dunes SAC | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Brief Description* | North Northumberland Dunes SAC extends discontinuously between the River Tweed and River Coquet estuaries. The site comprises a number of water features (tidal rivers, mud flats, lagoons, bogs) and coastal dunes which are of international importance. | | | | | | | | |
| *Designation(s) and Interest features* SAC | *Annex I habitats that are a primary reason for selection of this site*<br>Embryonic shifting dunes<br>Shifting dunes along the shoreline with marram, *Ammophila arenaria* (`white dunes`)<br>Fixed dunes with herbaceous vegetation (`grey dunes`) *<br>Dunes with creeping willow *Salix repens* ssp. argentea (*Salicion arenariae*)<br>Humid dune slacks<br>*Annex II species that are a primary reason for selection of this site*<br>Petalwort *Petalophyllum ralfsii* | | | | | | | | |
| ***Vulnerability*** | Insufficient grazing management and damage by overintensive overwintering of cattle and sheep.<br>Invasion by the non-native plant *Acaena novae-zealandiae.*<br>Impact of recreational activities on the dunes. | | | | | | | | |
| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | | |
| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
| | | | | | | | Road transport | Other transport | Other transport |
| Embryonic shifting dunes | ✓ | N | N | × | No critical loads for these features | | 10 | 3 | 4 |
| Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) (Shifting dunes with Marram) | ✓ | N | N | × | No critical loads for these features | | 10 | 3 | 4 |
| Fixed dunes with herbaceous vegetation (`grey dunes`) | ✓ | N | N | ✓ | No critical loads for these features | | 10 | 3 | 4 |
| Dunes with *Salix repens* ssp. *argentea (Salicion arenariae)* | ✓ | N | N | × | No critical loads for these features | | 10 | 3 | 4 |
| Humid dune slacks | ✓ | N | N | ✓ | No critical loads for these features | | 10 | 3 | 4 |
| Petalwort *Petalophyllum ralfsii* | ✓ | N | N | × | No critical loads for these features | | 10 | 3 | 4 |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the* | Water and air pollution during construction and operation of major proposals such as A1 improvements (Adderstone – Belford), re-opening of Belford train station, East Coast Main Line local stopping services, general improvements and increasing accessibility for the mobility impaired at Alnmouth train station could significantly affect sensitive habitats and species on site.<br><br>Improvements to local train and coach stations could result in an increase in human presence during | | | | | | | | |

| Matrix 4 – North Northumberland Dunes SAC | |
|---|---|
| *European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | construction and increase recreational pressures on the site during operation which could result in physical disturbance.<br><br>Improvements to the bus station in Alnwick could be impacted by wider ranging impacts as the site is not hydrologically connected nor is it situated within 2km of the site. Air pollution as a result of the construction of the improvements works could significantly impact the dunes and petalwort on site. |
| *Likely Significant Effects* | Water and Air pollution, Physical and Recreational Disturbance |
| *In-Combination Effect* | Increase recreational and tourist facilities along the coastline may have in-combination effects with the LTP3 proposals |

## Matrix 5 – Simonside Hills SAC

| | |
|---|---|
| ***Brief Description*** | Close to the town of Rothbury, the Simonside Hills SAC forms a dramatic southern backdrop to the middle reaches of the River Coquet.<br>Simonside Hills is considered to be one of the best areas in the UK for European dry heath and considered to support a significant presence of blanket bog (the UK and Ireland hold the largest areas of blanket bog in Europe). In addition to the heather moorland and blanket bog, there are important woodlands, grassland, rock outcrops and loughs, which all contribute to an interesting mosaic of habitats. Additionally, the site supports patches of juniper and the crags are nesting sites for peregrine and raven. |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>European dry heaths - Habitat occurrence description not yet available.<br>*Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site*<br>Blanket bogs *<br><br>(*) listed as a priority habitat on Annex I of the Habitats Directive. |
| ***Vulnerability*** | Blanket bog is particularly vulnerable to burning as this can affect the hydrology of the mire.<br>Active drains on the blanket bog are currently affecting the hydrology of the mire and the species composition.<br>There are several permissive footpaths and these have resulted in significant erosion, in particular on the areas of peat around Millers Moss and Simonside Ridge.<br>Bracken and rhododendron are a particular problem on the lower dry heath slopes and within the open gully woodlands. This is spreading across the dry heath and outshading the dwarf shrubs and also preventing natural regeneration within the woodlands. |

***Sensitivity to nitrogen deposition and acidification***

| **SPA Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Road transport | Other transport | Other transport |
| European dry heaths | ✓ | Y | N | ✓ | Y | N | 10 | 4 | 3 |
| Blanket Bogs | ✓ | Y | Y | ✓ | Y | Y | 10 | 4 | 3 |

| | |
|---|---|
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements; | As a summary of the information above, the site and its qualifying features are vulnerable from invasive species, recreational pressures and atmospheric pollutants.<br><br>The construction of Morpeth train station improvements and increasing accessibility for the mobility impaired at Morpeth train station could result in localised air pollutants which could cause localised smothering of vegetation significantly affecting qualifying features on site.<br><br>Major schemes such as improvements to the A1 has the potential to generate air pollution which may have adverse significant impacts on this site. |

| Matrix 5 – Simonside Hills SAC | |
|---|---|
| - Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | |
| *Likely Significant Effects* | Air pollution |
| *In-Combination Effect* | None |

| Matrix 6 –Border Mires, Kielder - Butterburn SAC | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Brief Description*** | Border Mires, Kielder-Butternburn SAC comprises 57 active peaty bogs, stretching from Kielder to Butterburn in northern England. | | | | | | | | |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>Blanket bogs *<br>Transition mires and quaking bogs<br>*Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:*<br>Northern Atlantic wet heaths with *Erica tetralix*<br>Petrifying springs with tufa formation (*Cratoneurion)* *<br>European dry heaths<br><br>(*) listed as a priority habitat on Annex I of the Habitats Directive. | | | | | | | | |
| ***Vulnerability*** | Forestry drainage and conifer planting (including natural seeding) has encroached onto the bogs and has resulted in drying-out and degradation of the habitat in places.<br><br>A small area on the forest margins and on the highest elevation parts of the site are overgrazed by livestock and suffer some damage from burning.<br><br>Drains created in the bog in the past to form a dummy runway have caused some damage. | | | | | | | | |
| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | | |
| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
| | | | | | | | Road transport | Other transport | Other transport |
| Northern Atlantic wet heaths with Erica tetralix | ✓ | Y | N | ✓ | Yes | N | 9 | 5 | 4 |
| European dry heaths | ✓ | Y | N | ✓ | Y | N | 9 | 5 | 4 |
| Blanket bogs | ✓ | Y | Y | ✓ | Y | Y | 9 | 5 | 4 |
| Transition mires and quaking bogs | ✓ | Y | N | ✓ | Y | Y | 9 | 5 | 4 |
| Petrifying springs with tufa formation (Cratoneurion) | ✓ | N | N | ✓ | Y | N | 9 | 5 | 4 |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take | From the review of the information above, the site and its qualifying features are vulnerable to changes in hydrology, air and water pollutants. This site is situated within Northumberland National Park and has the potential to be subjected to increased recreational pressures as a result of an increase in tourism to the surrounding areas.<br><br>As the site is hydrologically connected to watercourses adjacent to the Tyne Valley railway line, there is potential that during construction of passenger information infrastructure along the line could significantly affect the hydrology of site. Air pollution from construction activities could result in localised smothering of vegetation on site and water pollution could significantly affect sensitive habitats on site.<br><br>Air pollution from construction of the major schemes such as improvements to Hexham train and bus | | | | | | | | |

| Matrix 6 –Border Mires, Kielder - Butterburn SAC | |
|---|---|
| - Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | station and the implementation of cycle hubs in Haltwhistle could result in localised smothering of vegetation on site.<br><br>Improvements to the Tyne Valley railway facilities and infrastructure, bus services and implementation to cycle hubs in Haltwhistle have the potential to increase tourism to the national park, Hadrian's Wall and other local attractions. This has the potential to lead to habitat degradation and physical disturbance of this European Site. |
| *Likely Significant Effects* | Air and Water Pollution |
| *In-Combination Effect* | The dualling of the A69 and improvements to recreational facilities at local tourist attractions have the potential to have in-combination effects with improvements to the existing railway line and bus stations. |

| Matrix 7 – River Eden SAC | |
|---|---|
| ***Brief Description*** | The river Eden and its tributaries forms River Eden SAC, which support a number of plant species, a large population of white-clawed crayfish. |
| ***Designation(s) and Interest features* SAC** | <u>*Annex I habitats that are a primary reason for selection of this site*</u><br>Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*<br>Water courses of plain to montane levels with the *Ranunculion fluitantis* and Callitricho-Batrachion vegetation<br>Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, *Alnion incanae, Salicion albae*) *<br><br><u>*Annex II species that are a primary reason for selection of this site*</u><br>White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes*<br>Sea lamprey *Petromyzon marinus*<br>Brook lamprey *Lampetra planeri*<br>River lamprey *Lampetra fluviatilis*<br>Atlantic salmon *Salmo salar*<br>Bullhead *Cottus gobio*<br>Otter *Lutra lutra*<br><br>(*) listed as a priority habitat on Annex I of the Habitats Directive. |
| ***Vulnerability*** | The maintenance of breeding and nursery areas for the species on this site depends on the habitat quality of streams and their margins. The water-crowfoot communities as well as the species are sensitive to water quality, particularly eutrophication. Many of the streams within the site suffer from overgrazing of riverbanks and nutrient run-off.<br><br>Practices associated with sheep-dipping pose a potential threat.<br><br>Much of the alluvial forest cover is fragmented and/or in poor condition. |

***Sensitivity to nitrogen deposition and acidification***

| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Road transport | Other transport | Other transport |
| Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea* | ✓ | Y | Y | ✓ | No critical load for this feature | | 8 | 3 | 3 |
| Water courses of plain to montane levels with the *Ranunculion fluitantis* and Callitricho-Batrachion vegetation | ✓ | No critical load for this feature | | ✓ | No critical load for this feature | | 8 | 3 | 3 |
| Alluvial forests with *Alnus* | × | No critical load for | | × | No critical load for | | 10 | 4 | 3 |

| Matrix 7 – River Eden SAC | | | | | | | |
|---|---|---|---|---|---|---|---|
| *glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae*, *Salicion albae*) | | this feature | | this feature | | | |
| *Austropotamobius pallipes* | ✓ | No critical load for this feature | ✓ | No critical load for this feature | 8 | 3 | 3 |
| *Petromyzon marinus* | ✓ | No critical load for this feature | ✓ | No critical load for this feature | 8 | 3 | 3 |
| *Lampetra planeri* | ✓ | No critical load for this feature | ✓ | No critical load for this feature | 8 | 3 | 3 |
| *Lampetra fluviatilis* | ✓ | No critical load for this feature | ✓ | No critical load for this feature | 8 | 3 | 3 |
| *Salmo salar* | ✓ | No critical load for this feature | ✓ | No critical load for this feature | 8 | 3 | 3 |
| *Cottus gobio* | ✓ | No critical load for this feature | ✓ | No critical load for this feature | 8 | 3 | 3 |
| *Lutra lutra* | ✓ | No critical load for this feature | ✓ | No critical load for this feature | 8 | 3 | 3 |

| | |
|---|---|
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | From the review of the information above, the site and its qualifying features are vulnerable to atmospheric pollutants and changes to water quality.<br><br>The site runs along the western edge of the study area and flows adjacent to the existing Tyne Valley railway line. Improvements along the Tyne Valley line have the potential to result in habitat fragmentation or loss, water and air pollution. All of which could have significant impacts on sensitive habitats and species on site. |

| Matrix 7 – River Eden SAC | |
|---|---|
| *Likely Significant Effects* | Habitat Loss/Fragmentation, Water and Air Pollution |
| *In-Combination Effect* | None |

| Matrix 8 –Tyne and Allen River Gravels SAC | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Brief Description*** | Tyne and Allen River Gravels SAC is an important site for Calaminarian grasslands of the *Violetalia calaminariae*. This site is located west of Corbridge. | | | | | | | | |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>Calaminarian grasslands of the *Violetalia calaminariae* | | | | | | | | |
| ***Vulnerability*** | These special habitats have been created by deposition of minerals out of the rivers Tyne and Allen onto gravel banks. Mining activities upstream have virtually stopped, thus reducing the amount of metals carried by the rivers. In places the rivers have changed course, isolating the shingle banks. | | | | | | | | |
| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | | |
| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
| | | | | | | | Road transport | Other transport | Other transport |
| Calaminarian grasslands of the *Violetalia calaminariae* | ✓ | Y | N | ✓ | N | N | 9 | 6 | 5 |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.; | From the review of the information available, it is considered that the site and its qualifying features are vulnerable to habitat loss and fragmentation, water and air pollutants.<br><br>The Tyne Valley railway line is situated adjacent to the site, and there is potential for water and air pollution as a result of the construction of improvement works to passenger railway information.<br><br>Air pollution from the construction of improvement works to Hexham bus and railway station could significantly impact sensitive habitats on site.<br><br>The cycle hubs proposed in Haltwhistle is downstream from the site and therefore the site will be unaffected by water pollution. No other impacts are envisaged due to type of qualifying features present on site.<br><br>. | | | | | | | | |

| Matrix 8 –Tyne and Allen River Gravels SAC | |
|---|---|
| - Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | |
| *Likely Significant Effects* | Water and Air Pollution, Habitat loss or fragmentation |
| *In-Combination Effect* | Improvements to recreational facilities at local tourist attractions have the potential to have in-combination effects with the LTP3 proposals. |

| Matrix 9 – Roman Wall Loughs SAC | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Brief Description*** | The Roman Wall Loughs SAC contains three natural eutrophic lakes, Crag, Broomlee and Greenlee Loughs. Together the loughs contain a number of species of pondweed Potamogeton. The nationally-rare autumnal water-starwort Callitriche hermaphroditica occurs in Crag Lough. Shoreweed *Littorella uniflora* grows in Broomlee and Greenlee Loughs, and greater bladderwort *Utricularia vulgaris* in the latter. | | | | | | | | |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>Natural eutrophic lakes with pondweed vegetation *Magnopotamion* or *Hydrocharition*-type vegetation | | | | | | | | |
| ***Vulnerability*** | The lakes are vulnerable to excess nutrient enrichment resulting from certain farming activities | | | | | | | | |
| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | | |
| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
| | | | | | | | Road transport | Other transport | Other transport |
| Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation | ✓ | No critical load for this feature | | × | No critical load for this feature | | 12 | 3 | 3 |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, | From the review of the information available, it is considered that the site and its qualifying features are vulnerable to changes in water quality and habitat loss and fragmentation.<br><br>Improvements to Tyne Valley passenger information systems and the implementation of cycle hubs at Haltwhistle have the potential to result in localised air pollution during construction which could significantly affect sensitive habitats on site.<br><br>There are no hydrological connections to the site so it is unlikely to be affected by water pollution from the proposals. | | | | | | | | |

| Matrix 9 – Roman Wall Loughs SAC | |
|---|---|
| operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | |
| *Likely Significant Effects* | Air pollution |
| *In-Combination Effect* | Improvements to recreational facilities at local tourist attractions and improvements to the A69 have the potential to have in-combination effects with the LTP3 proposals. |

| Matrix 10 – North Pennine Moors SAC & SPA | |
|---|---|
| ***Brief Description*** | North Pennine Moors SAC & SPA comprise a number of sites in northeast England which are of international importance due to several habitats of great significance (e.g. dry heaths, blanket bogs, siliceous rocky slopes) which support populations of regularly occurring migratory species (e.g. golden plover, hen harrier). |
| ***Designation(s) and Interest features* SAC** | <u>*Annex I habitats that are a primary reason for selection of this site*</u><br>European dry heaths<br>*Juniperus communis* formations on heaths or calcareous grasslands<br>Blanket bogs *<br>Petrifying springs with tufa formation (*Cratoneurion*) *<br>Siliceous rocky slopes with chasmophytic vegetation<br>Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles<br><u>*Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site*</u><br>Northern Atlantic wet heaths with *Erica tetralix*<br>Calaminarian grasslands of the *Violetalia calaminariae*<br>Siliceous alpine and boreal grasslands<br>Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)<br>Alkaline fens<br>Siliceous scree of the montane to snow levels (*Androsacetalia* alpinae and *Galeopsietalia ladani*)<br>Calcareous rocky slopes with chasmophytic vegetation<br><u>*Annex II species present as a qualifying feature, but not a primary reason for site selection*</u><br>Marsh saxifrage *Saxifraga hirculus*<br><br>(*) listed as a priority habitat on Annex I of the Habitats Directive. |
| ***Designation(s) and Interest features* SPA** | <u>*Annex I bird species and regularly occurring migratory bird species not listed on Annex I:*</u><br>*Circus cyaneus* Hen harrier<br>*Falco columbarius* Merlin<br>*Falco peregrinus* Peregrine falcon<br>*Pluvialis apricaria* Golden plover |
| ***Vulnerability*** | All interest features have been affected by excessive livestock grazing levels across parts of the site.<br><br>Drainage of wet areas can also be a problem; drains have been cut across many areas of blanket bog, disrupting the hydrology and causing erosion, but in most parts these are being blocked and the habitat restored under agreements.<br><br>Burning is a traditional management tool on these moorlands, which contributes to maintaining high populations of SPA breeding birds. However, over-intensive and inappropriate burning is damaging to heath and blanket bog and further agreements are needed with the landowners to achieve sympathetic burning regimes.<br><br>Acid and nitrogen deposition continue to have damaging effects on the vegetation and hence on the bird populations. |

| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |

| Matrix 10 – North Pennine Moors SAC & SPA | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Road transport | Other transport | Other transport |
| Northern Atlantic wet heaths with *Erica tetralix* | ✓ | Y | N | ✓ | Y | N | 9 | 4 | 3 |
| European dry heaths | ✓ | Y | Y | ✓ | Y | N | 9 | 4 | 3 |
| *Juniperus communis* formations on heaths or calcareous grasslands | ✓ | Y | N | ✓ | N | N | 9 | 4 | 3 |
| Calaminarian grasslands of the *Violetalia calaminariae* | ✓ | Y | N | ✓ | N | N | 9 | 4 | 3 |
| Siliceous alpine and boreal grasslands | ✓ | Y | Y | ✓ | Y | N | 9 | 4 | 3 |
| Semi-natural dry grasslands and scrubland facies: on calcareous substrates *(Festuco-Brometalia)* | ✓ | Y | N | ✓ | N | N | 9 | 4 | 3 |
| Blanket bogs | ✓ | Y | Y | ✓ | Y | Y | 9 | 4 | 3 |
| *Petrifying springs with tufa formation (Cratoneurion)* | ✓ | Y | N | × | Y | N | 9 | 4 | 3 |
| Alkaline fens | ✓ | Y | N | × | Y | N | 9 | 4 | 3 |
| Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) | ✓ | Y | Y | ✓ | Y | N | 9 | 4 | 3 |
| Calcareous rocky slopes with chasmophytic vegetation | ✓ | Y | Y | ✓ | Y | N | 9 | 4 | 3 |
| Siliceous rocky slopes with chasmophytic vegetation | ✓ | Y | Y | ✓ | Y | N | 9 | 4 | 3 |
| Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles | ✓ | Y | Y | ✓ | Y | N | 12 | 5 | 2 |
| *Saxifraga hirculus* | ✓ | Y | Y | ✓ | Y | N | 9 | 4 | 3 |
| **SPA Feature** | | | | | | | | | |
| *Circus cyaneus* | ✓ | Y | N | ✓ | Y | N | 9 | 4 | 3 |
| *Falco columbarius* | ✓ | Y | N | ✓ | Y | N | 9 | 4 | 3 |
| *Falco peregrinus* | ✓ | Y | N | ✓ | Y | N | 9 | 4 | 3 |
| *Pluvialis apricaria* (North-western Europe - breeding) | ✓ | Y | Y | ✓ | Y | Y | 9 | 4 | 3 |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone* | From the review of the information available, it is considered that the site and its qualifying features are vulnerable to changes in hydrology, water and air pollution.<br><br>Improvements to Tyne Valley passenger information systems and the implementation of cycle hubs at | | | | | | | | |

| Matrix 10 – North Pennine Moors SAC & SPA | |
|---|---|
| *or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | Haltwhistle have the potential to result in localised air and water pollution during construction which could significantly affect sensitive species and habitats on site.<br>In addition the construction of cycle hubs in Haltwhistle has the potential to have adverse impacts on the site from increased lighting and result in an increase in tourism during operation. Increased recreational pressures may have adverse physical impacts on the site. Lighting has the potential to affect birds during breeding and foraging periods.<br><br>Improvements to Hexham bus and train station may generate localised air pollution during construction and operation which could significantly affect sensitive habitats and species on site. |
| *Likely Significant Effects* | Water and Air pollution, Physical and Light Disturbance |
| *In-Combination Effect* | Improvements to recreational facilities at local tourist attractions and improvements to the A69 have the potential to have in-combination effects with the LTP3 proposals. |

| Matrix 11 – North Pennine Dale Meadows SAC | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Brief Description*** | The site, located in northeast England, comprises mountain hay meadows, heather moors and peatlands, woods, distinctive birds, animals and plants. | | | | | | | | |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>Mountain hay meadows<br>*Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site*<br>Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae)* | | | | | | | | |
| ***Vulnerability*** | These grasslands are dependent upon traditional agricultural management, with hay-cutting and no or minimal use of agrochemicals. Such management is no longer economic. | | | | | | | | |
| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | | |
| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1<br>Road transport | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1<br>Other transport | Predicted sulphur deposition in 2010 kg/N/ha/yr-1<br>Other transport |
| Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) | ✓ | Y | N | ✓ | Y | N | 9 | 4 | 2 |
| Mountain hay meadows | ✓ | Y | Y | ✓ | N | N | 9 | 4 | 2 |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of | From the review of the information available, it is considered that the site and its qualifying features are vulnerable to water and air pollution.<br><br>Improvements to Tyne Valley passenger information systems have the potential to result in localised air and water pollution during construction which could significantly affect sensitive species and habitats on site.<br><br>The construction of cycle hubs in Haltwhistle has the potential to result in localised air pollution during construction which could significantly affect sensitive species and habitats on site. | | | | | | | | |

| Matrix 11 – North Pennine Dale Meadows SAC | |
|---|---|
| - construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | |
| *Likely Significant Effects* | Air and water pollution |
| *In-Combination Effect* | Improvements to recreational facilities at local tourist attractions have the potential to have in-combination effects with the LTP3 proposals. |

| Matrix 12 – Tyne and Nent SAC | |
|---|---|
| ***Brief Description*** | Tyne and Nent SAC is an important site for grasslands occurring in spoil heaps associated with past lead-mining and river gravels that have been affected by metal-rich spoil heaps upstream. metalliferous grassland, Calaminarian grasslands of the Violetalia calaminariae |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>Calaminarian grasslands of the *Violetalia calaminariae* |
| ***Vulnerability*** | These grasslands occur in two distinct heavy metal-rich habitats: spoil heaps associated with past lead-mining, and river gravels that have been partially derived from the erosion of metal-rich spoil heaps upstream. They are dependent on the maintenance of a high metal content in the substrate. Loss of metallophytes through successional processes is beginning to occur on one site.<br><br>Motorcycle scrambling on part of another site could also represent a threat to the adjacent calaminarian grassland.<br><br>On river gravel sites concerns exist that depletion of the upstream supply of metal-rich waste following the decline of mining will result in a loss of metallophytes. |

***Sensitivity to nitrogen deposition and acidification***

| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Road transport | Other transport | Other transport |
| Calaminarian grasslands of the *Violetalia calaminariae* | ✓ | Y | N | ✓ | N | N | 11 | 4 | 3 |

| | |
|---|---|
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation | From the information provided above, it is considered that the site is vulnerable to air pollution and habitat loss/and or fragmentation. However there are no hydrological connections to the site, and the site lies beyond 15km from the proposals so significant impacts are considered unlikely. |

| Matrix 12 – Tyne and Nent SAC | |
|---|---|
| requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | |
| *Likely Significant Effects* | None |
| *In-Combination Effect* | None |

| Matrix 13 – Moor House-Upper Teesdale SAC | |
|---|---|
| ***Brief Description*** | Moor House - Upper Teesdale SAC encompasses an almost complete range of upland habitats typical of the North Pennines, from lower lying hay meadows, rough grazing and juniper wood to limestone grassland, blanket bogs and summit heaths of the high fells. |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.<br>*Juniperus communis* formations on heaths or calcareous grasslands<br>Siliceous alpine and boreal grasslands<br>Semi-natural dry grasslands and scrubland facies: on Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)<br>Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels<br>Mountain hay meadows<br>Blanket bogs *<br>Petrifying springs with tufa formation (*Cratoneurion*) *<br>Alkaline fens<br>Alpine pioneer formations of the *Caricion bicoloris-atrofuscae* *<br>Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*)<br>Calcareous and calcshist screes of the montane to alpine levels (*Thlaspietea rotundifolii*)<br>Calcareous rocky slopes with chasmophytic vegetation<br>Siliceous rocky slopes with chasmophytic vegetation<br>*Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site*<br>European dry heaths<br>Limestone pavements *<br>*Annex II species that are a primary reason for selection of this site*<br>Round-mouthed whorl snail *Vertigo genesii*<br>Marsh saxifrage *Saxifraga hirculus*<br><br>(*) listed as a priority habitat on Annex I of the Habitats Directive. |
| ***Vulnerability*** | Ecologically unsustainable grazing, driven by agricultural support mechanisms, has had a deleterious effect on virtually all the Annex I habitats listed. Some successes have been achieved however through Wildlife Enhancement Schemes geared at moorland and pasture, and through the ESA and Countryside Stewardship schemes, while issues impacting on meadows have been largely addressed through meadow schemes.<br><br>Inappropriate burning and drainage of bogs also need tackling; much progress has been made on the latter through partnerships.<br><br>Acid deposition and the microclimatic shifts stemming from reservoir construction may also have implications for the vegetation, as may increase access. |

***Sensitivity to nitrogen deposition and acidification***

| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Road transport | Other transport | Other transport |
| Petrifying springs with | ✓ | Y | N | × | Y | N | 10 | 5 | 3 |

| Matrix 13 – Moor House-Upper Teesdale SAC | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| tufa formation (*Cratoneurion*) | | | | | | | | | |
| European dry heaths | ✓ | Y | N | ✓ | Y | N | 10 | 5 | 3 |
| Alpine and Boreal heaths | ✓ | Y | Y | ✓ | Y | N | 10 | 5 | 3 |
| *Juniperus communis* formations on heaths or calcareous grasslands | ✓ | Y | N | ✓ | N | N | 10 | 5 | 3 |
| Calaminarian grasslands of the *Violetalia calaminariae* | ✓ | Y | N | ✓ | N | N | 10 | 5 | 3 |
| Siliceous alpine and boreal grasslands | ✓ | Y | Y | ✓ | Y | N | 10 | 5 | 3 |
| Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) | ✓ | Y | N | ✓ | N | N | 10 | 5 | 3 |
| Molinia meadows on calcareous, peaty or clayey-silt-laden soils *(Molinion caeruleae)* | ✓ | Y | N | ✓ | Y | N | 10 | 5 | 3 |
| Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels | ✓ | Y | Y | ✓ | Y | N | 10 | 5 | 3 |
| Mountain hay meadows | ✓ | Y | N | ✓ | N | N | 10 | 5 | 3 |
| Blanket bogs | ✓ | Y | Y | ✓ | Y | Yes | 10 | 5 | 3 |
| Petrifying springs with tufa formation (*Cratoneurion*) | ✓ | Y | N | × | Y | N | 10 | 5 | 3 |
| Alkaline fens | ✓ | Y | N | × | Y | N | 10 | 5 | 3 |
| Alpine pioneer formations of the *Caricion bicoloris-atrofuscae* | ✓ | Y | N | × | No critical load for this feature | | 10 | 5 | 3 |
| Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) | ✓ | Y | Y | ✓ | Y | N | 10 | 5 | 3 |
| Calcareous and calcshist screes of the montane to alpine levels *(Thlaspietea rotundifolii)* | ✓ | Y | Y | × | No critical load for this feature | | 10 | 5 | 3 |
| Calcareous rocky slopes with chasmophytic vegetation | ✓ | Y | Y | ✓ | Y | N | 10 | 5 | 3 |
| Siliceous rocky slopes with chasmophytic vegetation | ✓ | Y | Y | ✓ | Y | N | 10 | 5 | 3 |
| Limestone pavements | ✓ | Y | Y | × | No critical load for this feature | | 10 | 5 | 3 |

| Matrix 13 – Moor House-Upper Teesdale SAC | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Vertigo genesii* | ✓ | Y | N | × | Y | N | 10 | 5 | 3 |
| *Saxifraga hirculus* | ✓ | Y | Y | ✓ | Y | N | 10 | 5 | 3 |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | From the information provided above, it is considered that the site is vulnerable to air pollution and habitat loss/and or fragmentation. However there are no hydrological connections to the site, and the site lies beyond 15km from the proposals so significant impacts are considered unlikely. | | | | | | | | |
| *Likely Significant Effects* | None | | | | | | | | |
| *In-Combination Effect* | None | | | | | | | | |

| Matrix 14 – Walton Moss SAC | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Brief Description*** | Walton Moss SAC, located northwest of Brampton, comprises and internationally important raised mire (peat bog) habitat. | | | | | | | | |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>Active raised bogs *<br>Degraded raised bogs still capable of natural regeneration<br><br>(*) listed as a priority habitat on Annex I of the Habitats Directive. | | | | | | | | |
| ***Vulnerability*** | Significant portions of this site support mire vegetation in near-favourable condition, and includes land managed as a National Nature Reserve. Remedial measures will be necessary to enable its recovery to favourable conservation status from damage caused by previous land-drainage operations and inappropriate grazing regimes. A hydrological monitoring regime is in preparation to inform remedial measures and grazing on the site has been tackled by exclosure and by Countryside Stewardship agreements. | | | | | | | | |
| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | | |
| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
| | | | | | | | Road transport | Other transport | Other transport |
| Active raised bogs | ✓ | Y | Y | ✓ | Y | Y | 8 | 3 | 4 |
| Degraded raised bogs still capable of natural regeneration | ✓ | Y | Y | ✓ | Y | Y | 8 | 3 | 4 |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation | From the information provided above, it is considered that the site and its qualifying features are vulnerable to changes in hydrology and physical disturbance. The site in its current status is exceeding its critical loads and therefore air pollution generated from the implementation of the proposals could have significant effects on the habitats on site. Improvements to Tyne Valley passenger information systems have the potential to result in localised air pollution during construction. | | | | | | | | |

| Matrix 14 – Walton Moss SAC | |
|---|---|
| requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | |
| *Likely Significant Effects* | Air pollution |
| *In-Combination Effect* | None |

| Matrix 15 – Bolton Fell cSAC | |
|---|---|
| ***Brief Description*** | Bolton Fell cSAC is important for its degraded raised bog habitat. |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>Degraded raised bogs still capable of natural regeneration |
| ***Vulnerability*** | A small but significant part of this site supports mire vegetation in near-favourable condition, but to date the majority of the site has been subject to commercial peat-extraction under an existing planning permission. |
| ***Sensitivity to nitrogen deposition and acidification*** | |
| Information is unavailable. | |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | From the information provided above, it is considered that the site and its qualifying features are vulnerable to habitat degradation. No information is available to assess the sites sensitivity to nitrogen deposition and acidification as the site is currently a candidate SAC. Improvements to Tyne Valley passenger information systems have the potential to result in localised air pollution during construction which could have significant effects on the habitats present on site. |
| *Likely Significant Effects* | Air pollution |
| *In-Combination Effect* | None |

| Matrix 16 – Irthinghead Mires Ramsar | |
|---|---|
| ***Brief Description*** | Comprises a series of five high quality blanket mires, Butterburn Flow, Haining Head Moss, Hummel Knowe Moss, Coom Rigg Moss and Felicia Moss. They occupy various topographical situations including extensive valley-side flows, saddle mires and convex watershed mires. The undamaged state of these mires together with the range of vegetation and morphological mire type makes this an outstanding complex. |
| ***Designation(s) and Interest features* SAC** | Active blanket bog<br>Notable variety of *Sphagnum* mosses<br>Rare species:<br>- *Carex magellanica*<br>- *Sphagnum imbricatum*<br>- *S. pulchrum*<br>- *S. magellanicum*<br>- *Eboria caliginosa* |
| ***Vulnerability*** | No factors adversely affecting the site's ecological character have been reported |
| ***Sensitivity to nitrogen deposition and acidification*** | |
| Information is unavailable. | |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other | Improvements to Tyne Valley passenger information systems and the implementation of cycle hubs in Haltwhistle have the potential to result in localised air pollution during construction which could have significant effects on the habitats present on site.<br>As the site is situated within a National Park it may be subjected to recreational pressures should the LTP3 proposals result in an increase in tourism to the local area. |

| Matrix 16 – Irthinghead Mires Ramsar | |
|---|---|
| human activity<br>- Other | |
| *Likely Significant Effects* | Air pollution and Recreational Pressures |
| *In-Combination Effect* | Improvements to recreational facilities at local tourist attractions have the potential to have in-combination effects with the LTP3 proposals. |

| Matrix 17 – Durham Coast SAC | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Brief Description*** | The Durham Coast SAC comprises vegetated sea cliffs on magnesian limestone. These cliffs extend along the North Sea coast for over 20 km from South Shields southwards to Blackhall Rocks. Their vegetation is unique in the British Isles and consists of a complex mosaic of paramaritime, mesotrophic and calcicolous grasslands, tall-herb fen, seepage flushes and wind-pruned scrub. Within these habitats rare species of contrasting phytogeographic distributions often grow together forming unusual and species-rich communities of high scientific interest. The communities present on the sea cliffs are largely maintained by natural processes including exposure to sea spray, erosion and slippage of the soft magnesian limestone bedrock and overlying glacial drifts, as well as localised flushing by calcareous water | | | | | | | | |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>Vegetated sea cliffs of the Atlantic and Baltic coasts | | | | | | | | |
| ***Vulnerability*** | Vegetated sea cliffs range from vertical cliffs in the north with scattered vegetated ledges, to the Magnesian limestone grassland slopes of the south. Parts of the site are managed as National Nature Reserve, and plans provide for the non-interventionist management of the vegetated cliffs. The majority of the site is in public ownership and an agreed management plan is being developed to protect nature conservation interests. | | | | | | | | |
| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | | |
| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
| | | | | | | | Road transport | Other transport | Other transport |
| Vegetated sea cliffs of the Atlantic and Baltic coasts | ✓ | No critical load for this feature | | × | No critical load for this feature | | 12 | 5 | 11 |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation | From the information provided above, it is considered that the site and its qualifying features are vulnerable to recreational pressures.<br><br>The construction and operation of improvements to rail travel on the Tyne Valley line, Blyth and Morpeth bus station improvements, could result in localised air and water pollutants which could cause potential health problems in large animals such as the overwintering and breeding birds on site.<br><br>The construction and operation of A1 improvements, Morpeth Bypass, Improvements to Hexham, Prudhoe and Morpeth bus station, cycle hubs in Haltwhistle, East Coast Main line improvements, increasing accessibility for the mobility impaired at Morpeth train station could result in localised water pollutants which could cause potential health problems in large animals such as overwintering and breeding birds on site.<br><br>No significant effects were envisaged for improvements to junctions at Moor Farm, Blyth Central Link Road, A193 Cowpen and A189 Spine road due to the scale of works and urban location of the proposals. | | | | | | | | |

| Matrix 17 – Durham Coast SAC | |
|---|---|
| requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | |
| *Likely Significant Effects* | Water and Air pollution |
| *In-Combination Effect* | None |

| Matrix 18 – Coquet Island SPA | |
|---|---|
| ***Brief Description*** | Coquet Island SPA is a small, flat-topped island, located 1 km off the Northumberland coast. The island is surrounded by low sandstone cliffs and a broad rock platform at low tide, partly the result of former stone quarrying. The peaty soil of the plateau supports short turf grassland although where nutrient input from seabird colonies is greatest; there are dense stands of taller species which provide cover for some of the nesting terns. The island is of importance for a range of breeding seabirds including four species of tern. The seabirds feed outside the SPA in the nearby waters, as well as more distantly in the North Sea. |
| ***Designation(s) and Interest features* SPA** | *Annex I bird species and regularly occurring migratory bird species not listed on Annex I:*<br>*Sterna paradisaea* Arctic tern<br>*Sterna sandvicensis* Sandwich tern<br>*Sterna hirundo* Common tern<br>*Sterna dougallii* Roseate tern |
| ***Vulnerability*** | The site is not currently open to visitors.<br>The thin soils on the island are easily disturbed by burrowing rabbits and puffins which has lead to concern over loss of vegetation and subsequent erosion. The RSPB are currently undertaking vegetation management trials to limit erosion problems. |
| ***Sensitivity to nitrogen deposition and acidification*** | |
| Information is unavailable. | |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity | From the information provided above, it is considered that the site and its qualifying features are vulnerable to recreational pressures.<br><br>The construction and operation of increasing Alnmouth car parking facilities, improving Alnwick bus station and increasing accessibility for the mobility impaired at Alnmouth train station could result in localised air pollution which could cause potential health problems in large animals such as the overwintering and breeding birds on site.<br><br>Improvements to the Tyne Valley and East Coast Main line could result in localised air and water pollutants which could cause potential health problems in large animals such as overwintering and breeding birds on site. |

| Matrix 18 – Coquet Island SPA | |
|---|---|
| - Other | |
| *Likely Significant Effects* | .Water and Air pollution |
| *In-Combination Effect* | None |

| Matrix 19 – Newham Fen SAC | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Brief Description*** | Newham Fen SAC is a small eutrophic basin-mire occupying a peat-filled hollow adjacent to a glacial esker. The site carries the last remnants of vegetation once more widespread over the area known as Embleton's Bog. The hydrology is not completely understood but it is believed that the fen is fed by base-rich springs seeping from Lough Bank to the east. The site supports species characteristic of fen conditions which are rare elsewhere in the county | | | | | | | | |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>Alkaline fens | | | | | | | | |
| ***Vulnerability*** | Scrub and woodland have spread at the expense of fen vegetation due to changes in spring flow and drainage.<br>Woodland has been removed and a borehole installed and this has led to re-wetting of the fen. The site is also cut and grazed to maintain species richness. | | | | | | | | |
| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | | |
| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
| | | | | | | | Road transport | Other transport | Other transport |
| Alkaline Fens | ✓ | N | N | × | N | N | 9 | 4 | 4 |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of | From the information provided above, it is considered that the site and its qualifying features are vulnerable to changes in hydrology. The site is not currently meeting its defined critical loads for sensitivity to Nitrogen and Acidification however large scale proposals could have significant impacts on sensitive habitats and species from atmospheric pollutants during construction and operation.<br><br>The construction and operation of improvements to the East Coast Main Line local stopping services and re-opening of Belford railway station could result in localised water and air pollution which could cause potential health problems in large animals such as the overwintering and breeding birds on site. Improvements to the East Coast Main line also have the potential to change the hydrology of the site as its hydrological connected with the proposal. | | | | | | | | |

| Matrix 19 – Newham Fen SAC | |
|---|---|
| - construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | |
| *Likely Significant Effects* | Changes in hydrology, water and air pollution |
| *In-Combination Effect* | Improvements to walking and cycling routes have the potential to have in-combination effects with the LTP3 proposals. |

| Matrix 20 – Holburn Lake & Moss SPA & Ramsar | |
|---|---|
| ***Brief Description*** | The Holburn Lake and Moss SAP and Ramsar site is a peat bog with an artificial lake and associated bird interest.<br>The core of the site is comprised of some 10 ha of largely heather-dominated vegetation, punctuated by wetter hollows which retain a Sphagnum-rich flora. There is a small area of poor-fen at the eastern end of the lake. At the north of the site there is an area of conifer plantation. Much of the plantation is dense with little ground flora, but in an area where the canopy was opened up by fire, there are some typical bog plant species. |
| ***Designation(s) and Interest features* SPA** | *Annex I bird species and regularly occurring migratory bird species not listed on Annex I:*<br>*Anser anser* Wintering greylag goose |
| ***Designation(s) and Interest features* Ramsar** | Lowland raised bog<br>Winter roost for internationally important numbers of greylag goose<br>Inland roost for mallard (*Anas platyrhynchos*), wigeon (*Anas Penelope*) and teal (*Anas creccaduring*) unfavourable weather.<br>Shelduck (*Tadorna tadorna*), shoveler (*Anas clypeata*) and tufted duck (*Aythya fuligula*) |
| ***Vulnerability*** | The majority of the site is managed as a nature reserve by the Northumberland Wildlife Trust in accordance with a management plan agreed with English Nature. The management plan includes the removal of plantation woodland and ditch damming, to restore the hydrological integrity of the site. Limited wildfowling occurs on the site but is compatible with the SPA objectives.<br>An adjacent peat extraction site is not currently considered to be affecting the SPA though monitoring of this activity will continue to be undertaken by Northumberland County Council and the Northumberland Wildlife Trust. |

***Sensitivity to nitrogen deposition and acidification***

| **SPA Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Road transport | Other transport | Other transport |
| *Anser anser* (Iceland/UK/Ireland) | × | No critical load for this feature | | × | No critical load for this feature | | 10 | 3 | 3 |

| | |
|---|---|
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource | From the information provided above, it is considered that the site and its qualifying features are vulnerable to changes in hydrology. Even though *Anser anser* are not meeting their critical loads for sensitivity to nitrogen and acidification, atmospheric pollutants could result in localised smothering of vegetation from an increase in air pollution during construction and operation.<br><br>Improvements to the East Coast Main Line and the re-opening of Belford train station could result in localised water and air pollution which could cause significant impacts to sensitive species and habitats on site.<br><br>There is potential that air pollution from the construction of cycle hubs at Wooler could have significant impacts to sensitive impacts to species and habitats present on site. |

| Matrix 20 – Holburn Lake & Moss SPA & Ramsar | |
|---|---|
| requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | |
| *Likely Significant Effects* | Air and Water pollution |
| *In-Combination Effect* | Improvements to recreational facilities at local tourist attractions and an increase in the provision of housing within the rural community have the potential to have in-combination effects with the LTP3 proposals. |

| Matrix 21 – Ford Moss SAC | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Brief Description*** | Ford Moss SAC is a lowland raised peat bog with woodland to the south and colliery remains to the west. The site comprises 61.4 ha and is located 2.5 km east of Ford village. The peat is dominated by heather, cotton grass, hare's tail and cross-leaved heath. There are locally occurring sphagnum carpets with sundew, cranberry and bog myrtle. Local mammals include red squirrels, roe deer, and foxes with bird interest in the form of curlew, red grouse, woodcock, and snipe and reptiles including adders and common lizards. | | | | | | | | |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>*Active raised bogs **<br><br>(*) listed as a priority habitat on Annex I of the Habitats Directive. | | | | | | | | |
| ***Vulnerability*** | Typical bog communities are present though they have been degraded to some extent from past attempts at drainage, owing to previous coal mining operations, together with afforestation, burning and grazing. The site is rainfall-fed and its sheer size has contributed to its continued survival. The restriction of trees and the subsequent damming should re-wet the site to a degree. | | | | | | | | |
| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | | |
| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
| | | | | | | | Road transport | Other transport | Other transport |
| *Active raised bogs* | ✓ | Y | Y | ✓ | No critical load for this feature | Y | 8 | 3 | 3 |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation | With regards to the information above, the site is vulnerable to changes in hydrology however the majority of the schemes are not connected and are situated at a substantial distance away from the site.<br><br>Improvements to the A1at Adderstone, East Coast Main Line and cycle hubs in Wooler could result in localised smothering of vegetation during construction and operation causing significant impacts on sensitive habitats and species on site.<br><br>The re-opening of Belford train station has the potential to generate water and air pollution which could have significant impacts on sensitive habitats and species on site. | | | | | | | | |

| Matrix 21 – Ford Moss SAC | |
|---|---|
| requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | |
| *Likely Significant Effects* | Water and Air Pollution |
| *In-Combination Effect* | None |

| Matrix 22 – River Tweed SAC | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Brief Description | River Tweed SAC is of international importance for its riverine floating vegetation communities often dominated by water-crowfoot Ranunculus species. It also supports internationally important populations of river lamprey, sea lamprey, brook lamprey, Atlantic salmon and common otter | | | | | | | | |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation<br>*Annex II species that are a primary reason for selection of this site*<br>Atlantic salmon *Salmo salar*<br>Otter *Lutra lutra*<br>*Annex II species present as a qualifying feature, but not a primary reason for site selection*<br>Sea lamprey *Petromyzon marinus*<br>Brook lamprey *Lampetra planeri*<br>River lamprey *Lampetra fluviatilis* | | | | | | | | |
| ***Vulnerability*** | The main impacts on the river are from pollution, acidification and eutrophication, river-works and bankside management, genetic pollution and disease, abstraction and impoundment management. | | | | | | | | |
| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | | |
| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
| | | | | | | | Road transport | Other transport | Other transport |
| Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation | ✓ | No critical load for this feature | | ✓ | No critical load for this feature | | 9 | 4 | 3 |
| *Petromyzon marinus* | ✓ | No critical load for this feature | | ✓ | No critical load for this feature | | 9 | 4 | 3 |
| *Lampetra planeri* | ✓ | No critical load for this feature | | ✓ | No critical load for this feature | | 9 | 4 | 3 |
| *Lampetra fluviatilis* | ✓ | No critical load for this feature | | ✓ | No critical load for this feature | | 9 | 4 | 3 |
| *Salmo salar* | ✓ | No critical load for this feature | | ✓ | No critical load for this feature | | 9 | 4 | 3 |
| *Lutra lutra* | ✓ | No critical load for this feature | | ✓ | No critical load for this feature | | 9 | 4 | 3 |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by* | From review of the information above, the site is vulnerable to disturbance and air and water pollution.<br><br>The construction and operation of the improvements along the A1 and to Alnwick bus station could generate localised air pollution which could significantly impact habitats and species.<br><br>The construction and operation of the East Coast Main Line improvements, the re-opening of Belford railway station, cycle hubs in Wooler and improvements to Berwick bus station could generate localised air | | | | | | | | |

| Matrix 22 – River Tweed SAC | |
|---|---|
| *virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | and water pollution which could significantly impact habitats and species. Improvements to Berwick bus station could also result in disturbance to mobile species such as otters and fish. |
| *Likely Significant Effects* | Disturbance, Air and Water Pollution |
| *In-Combination Effect* | Improvements to recreational facilities at local tourist attractions and an increase in housing within rural communities have the potential to have in-combination effects with the LTP3 proposals. |

| Matrix 23 – Tweed Estuary SAC | |
|---|---|
| ***Brief Description*** | The Tweed Estuary is a long and narrow estuary discharging into the North Sea that covers an area of over 155 hectares. The site is of international importance for its estuary, intertidal mud and sandflats and for supporting populations of river and sea lamprey. |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>Estuaries<br>Sea lamprey *Petromyzon marinus.*<br>Mudflats and sandflats not covered by seawater at low tide<br>*Annex II species present as a qualifying feature, but not a primary reason for site selection*<br>Sea lamprey *Petromyzon marinus*<br>River lamprey *Lampetra fluviatilis* |
| ***Vulnerability*** | The Tweed catchment is large and dominated by arable, leading to increased nutrient inputs. There are small scale coast protection works proposed, and small-scale and infrequent dredging operations are undertaken in the Tweed dock. |

***Sensitivity to nitrogen deposition and acidification***

| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Road transport | Other transport | Other transport |
| Estuaries | ✓ | N | N | × | No critical load for this feature | | 10 | 3 | 6 |
| Mudflats and sandflats not covered by seawater at low tide | ✓ | N | N | × | No critical load for this feature | | 10 | 3 | 6 |
| *Petromyzon marinus* | ✓ | No critical load for this feature | | ✓ | No critical load for this feature | | 10 | 3 | 6 |
| *Lampetra fluviatilis* | ✓ | No critical load for this feature | | ✓ | No critical load for this feature | | 10 | 3 | 6 |

| | |
|---|---|
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site; | From review of the information above, the site is vulnerable to changes in water quality.<br><br>Improvements to rail and bus station facilities at Berwick and to the East Coast Main line, has the potential to generate localised air and water pollution which could significantly impact sensitive habitats and species on site. There is also potential that disturbance and land take from construction activities and during operation could significantly impact sensitive habitats and species on site. |

| Matrix 23 – Tweed Estuary SAC | |
|---|---|
| - Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | |
| *Likely Significant Effects* | Disturbance, Air and Water Pollution |
| *In-Combination Effect* | Improvements to recreational facilities and additional housing in key urban locations have the potential to have in-combination effects with the LTP3 proposals. |

| Matrix 24 – Berwickshire & North Northumberland Coast SAC | |
|---|---|
| ***Brief Description*** | Berwickshire & North Northumberland Coast SAC encompasses 115km of coastline stretching from Alnmouth in North East England to Fast Castle Head in south east Scotland, including the Farne Islands, covering nearly 650 $km^2$ of shore and sea.<br>The site supports a great diversity of habitats (e.g. mudflats, sandflats, bays), plants and animals on shore, including grey seals. Below the sea surface, sea caves and rocky reefs which support marine life are found. |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>Mudflats and sandflats not covered by seawater at low tide<br>Large shallow inlets and bays<br>Reefs<br>Submerged or partially submerged sea caves<br>*Annex II species that are a primary reason for selection of this site*<br>Grey seal *Halichoerus grypus* |
| ***Vulnerability*** | Habitat degradation though physical disturbance (recreational uses such as fishing, diving and water sports etc).<br>In the case of diving, the most popular areas are subject to a voluntary code of practice. Any difficulties arising from recreational activities would be addressed by the site management scheme.<br>Wastewater discharges could have a localised effect on the site (the estuarine reef communities support an important crustacean fishery whilst offshore fisheries exist for Nephrops and some pelagic and demersal fish species but will be subject to EC water quality legislation |

***Sensitivity to nitrogen deposition and acidification***

| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Road transport | Other transport | Other transport |
| Mudflats and sandflats not covered by seawater at low tide | ✓ | N | N | × | No critical load for this feature | | 10 | 4 | 3 |
| Large shallow inlets and bays | × | No critical load for this feature | | × | No critical load for this feature | | 10 | 4 | 3 |
| Reefs | × | No critical load for this feature | | × | No critical load for this feature | | 10 | 4 | 3 |
| Submerged or partially submerged sea caves | × | No critical load for this feature | | × | No critical load for this feature | | 10 | 4 | 3 |
| *Halichoerus grypus* | × | No critical load for this feature | | × | No critical load for this feature | | 10 | 4 | 3 |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with* | From review of the information above, it is considered that this site is vulnerable to increased levels of recreational pressures, habitat degradation and changes to water quality.<br><br>Improvements to the existing freight line have the potential to result in water pollution from construction activities which could significantly impact sensitive habitats and species on site. | | | | | | | | |

| Matrix 24 – Berwickshire & North Northumberland Coast SAC | |
|---|---|
| *other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | There is potential that air pollution from the construction of Alnwick bus station could significantly impact sensitive habitats and species on site.<br><br>There is potential that improvements to the train and bus station at Berwick and improving accessibility for the mobility impaired in Alnmouth could result in water and air pollution during construction and operation which could significantly impact sensitive habitats or seals on site. In addition as the proposals are in close proximity to the site, there is potential that seals could be subjected to disturbance during construction. Improvements to railway and bus services could increase tourism to the local area, resulting in increased recreational pressures on site. |
| *Likely Significant Effects* | Water and Air Pollution, Recreational disturbance |
| *In-Combination Effect* | Improvements to recreational/tourist facilities and additional housing at key urban locations have the potential to have in-combination effects with the LTP3 proposals. |

| Matrix 25 – St Abb's Head to Fast Castle SAC & SPA | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Brief Description*** | St Abb's Head to Fast Castle SAC and SPA comprises an area of sea cliffs and coastal strip stretching over 10 km along the Berwickshire Coast north of St Abbs. The St Abb's Head to Fast Castle SPA has been classified for its seabird interests. | | | | | | | | |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>Vegetated sea cliffs of the Atlantic and Baltic coasts | | | | | | | | |
| ***Designation(s) and Interest features* SPA** | *Annex I bird species and regularly occurring migratory bird species not listed on Annex I:*<br>*Uria aalge* Common Guillemot<br>*Phalacrocorax aristotelis* Shag<br>*Larus argentatus* Herring Gull<br>*Alca torda* Razorbill<br>*Rissa tridactyla* Black-legged kittiwake<br>Seabird assemblage | | | | | | | | |
| ***Vulnerability*** | Visitor numbers are high but they are not thought to cause significant disturbance to the interest at present. | | | | | | | | |
| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | | |
| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
| | | | | | | | Road transport | Other transport | Other transport |
| Vegetated sea cliffs of the Atlantic and Baltic coasts | ✓ | No critical load for this feature | | × | No critical load for this feature | | 10 | 3 | 4 |
| **SPA Feature** | | | | | | | | | |
| *Fulmarus glacialis* (North Atlantic) | × | No critical load for this feature | | × | No critical load for this feature | | 10 | 3 | 5 |
| *Phalacrocorax carbo* (North-western Europe) | ✓ | No critical load for this feature | | ✓ | No critical load for this feature | | 10 | 3 | 5 |
| *Phalacrocorax aristotelis* (Northern Europe) | × | No critical load for this feature | | × | No critical load for this feature | | 10 | 3 | 5 |
| *Larus argentatus* (North-western Europe (breeding) and Iceland/Western Europe - breeding) | × | No critical load for this feature | | × | No critical load for this feature | | 10 | 3 | 5 |
| *Rissa tridactyla* (Eastern Atlantic - Breeding) | × | No critical load for this feature | | × | No critical load for this feature | | 10 | 3 | 5 |
| *Uria aalge* (East Atlantic) | × | No critical load for this feature | | × | No critical load for this feature | | 10 | 3 | 5 |
| *Alca torda* | × | No critical load for this feature | | × | No critical load for this feature | | 10 | 3 | 5 |
| *Fratercula arctica* | × | No critical load for | | × | No critical load for | | 10 | 3 | 5 |

| Matrix 25 – St Abb's Head to Fast Castle SAC & SPA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | this feature | | this feature | | | | |
| Seabird assemblage | × | No critical load for this feature | × | No critical load for this feature | No data | No data | No data | No data |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | This site is located to the north of the study area and there is potential to be affected by wider ranging impacts such as air pollution. Improvements to the East Coast Main Line have the potential to generate localised air pollution which could significantly affect sensitive habitat and species on site. | | | | | | | |
| *Likely Significant Effects* | Air pollution | | | | | | | |
| *In-Combination Effect* | Improvements to recreational facilities at local tourist attractions have the potential to have in-combination effects with the LTP3 proposals. | | | | | | | |

| Matrix 26 – Din Moss Hoselaw Loch SPA | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Brief Description*** | Din Moss Hoselaw Loch SPA is an important wildfowl site primarily because of the number of geese overwintering there, especially the Icelandic/Greenland Pink-footed Goose (*Anser brachyrhynchus*) and the Icelandic Greylag Goose (*Anser Anser*). The site comprises loch and raised peat bog, as well as a wooded are providing cover for roe deer and woodland birds. | | | | | | | | |
| ***Designation(s) and Interest features* SPA** | *Annex I bird species and regularly occurring migratory bird species not listed on Annex I*<br>*Anser brachyrhynchus* Pink-footed goose<br>*Anser anser* Greylag goose | | | | | | | | |
| ***Vulnerability*** | The site is managed for its nature conservation interest by Scottish Wildlife Trust on a leasehold agreement. There is some disturbance of the site through shooting and recreation but it is not thought to be significant | | | | | | | | |
| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | | |
| **SPA Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
| | | | | | | | Road transport | Other transport | Other transport |
| *Anser brachyrhynchus* | **No information is available for this site** | | | | | | | | |
| *Anser anser* | | | | | | | | | |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation | The site is situated directly to the east of the Northumberland region and north of Northumberland National Park. The majority of the proposals proposed in the LTP3 are situated within urban towns which are situated a considerable distance from this European Site. There are no hydrological connections to this European Site from the LTP proposals. Significant impacts are considered unlikely. | | | | | | | | |

| Matrix 26 – Din Moss Hoselaw Loch SPA | |
|---|---|
| requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | |
| *Likely Significant Effects* | None |
| *In-Combination Effect* | None |

| Matrix 27 – Borders Wood SAC | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Brief Description*** | Borders Wood SAC includes some of the best ash-elm Tilio-Acerion ravine woodland in the UK. The base-rich soils associated with rocky slopes allows the growth of this type of mixed woodland | | | | | | | | |
| ***Designation(s) and Interest features* SAC** | *Annex I habitats that are a primary reason for selection of this site*<br>*Tilio-Acerion* forests of slopes, screes and ravines *<br><br>(*) listed as a priority habitat on Annex I of the Habitats Directive. | | | | | | | | |
| ***Vulnerability*** | Site management is carried out by Scottish Wildlife Trust and Scottish Natural Heritage and by various management agreements with landowners for about 65% of the site. The integrity of the remaining 35% is supported by connection with similar undesignated woodlands, which are sympathetically managed via long-term forest plans. An application has been made to carry out further woodland management under a EU LIFE-Nature project. | | | | | | | | |
| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | | |
| **SAC Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
| | | | | | | | Road transport | Other transport | Other transport |
| *Tilio-Acerion* | **No information is available at this stage** | | | | | | | | |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation requirements; | The site is situated directly to the east of the Northumberland region . The majority of the proposals proposed in the LTP3 are situated within urban towns which are situated a considerable distance from this European Site. There are no hydrological connections to this European Site from the LTP proposals. Significant impacts are considered unlikely. | | | | | | | | |

| Matrix 27 – Borders Wood SAC | |
|---|---|
| - Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | |
| *Likely Significant Effects* | None |
| *In-Combination Effect* | None |

| Matrix 28 – Langholm – Newcastleton Hills SPA | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Brief Description*** | The Langholm-Newcastleton Hills SPA comprises approximately 7,600 hectares of upland moor. The vegetation is dominated by blanket mire, heather, and grassland. There are small areas of broad-leaved wood associated with some streams. The presence of hen harrier (*Circus cyaneus)* is the qualifying feature. | | | | | | | | |
| ***Designation(s) and Interest features* SPA** | *Annex I bird species and regularly occurring migratory bird species not listed on Annex I*<br>*Circus cyaneus* Hen harrier | | | | | | | | |
| ***Vulnerability*** | Threats to the moorland which supports hen harrier populations include degradation and loss of heather and peat erosion through inappropriate muirburn, overgrazing, public/vehicular access and the spread of bracken. These are being addressed through bracken control, and management agreements for heather restoration, stocking levels and sensitive muirburn. Breeding hen harriers are potentially vulnerable to disturbance from agricultural practices, game management and recreational activities (i.e. walking and birdwatching) on the site. | | | | | | | | |
| ***Sensitivity to nitrogen deposition and acidification*** | | | | | | | | | |
| **SPA Feature** | **Sensitive to nutrient nitrogen?** | Exceeds minimum critical load for nutrient nitrogen (2010)? | Exceeds maximum critical load for nutrient nitrogen (2010)? | **Sensitive to acidification?** | Exceeds minimum critical load for acidity (2010)? | Exceeds maximum critical load for acidity (2010)? | Predicted nitrogen deposition in 2010 kg/N/ha/yr-1 | | Predicted sulphur deposition in 2010 kg/N/ha/yr-1 |
| | | | | | | | Road transport | Other transport | Other transport |
| *Circus cyaneus* | No information is available for this Site | | | | | | | | |
| *Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the European Site by virtue of:*<br>- Size and scale;<br>- Land-take<br>- Distance from the European Site or key features of the site;<br>- Resource requirements;<br>- Emissions (disposal to land, water or air);<br>- Excavation requirements;<br>- Transportation | The site is situated directly to the east of the Northumberland region. The majority of the proposals proposed in the LTP3 are situated within urban towns which are situated a considerable distance from this European Site. There are no hydrological connections to this European Site from the LTP proposals. Significant impacts are considered unlikely. | | | | | | | | |

| Matrix 28 – Langholm – Newcastleton Hills SPA | |
|---|---|
| requirements;<br>- Duration of construction, operation, decommissioning etc.;<br>- Increase in damage or disturbance as result of access recreation and other human activity<br>- Other | |
| *Likely Significant Effects* | None |
| *In-Combination Effect* | None |