Report to Inform a Habitats Regulations Assessment

Copeland Borough Council

Publication Draft Local Plan – Gypsy & Traveller Site Allocations

Date: July 2022

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1 Summary

Site	Copeland Local Plan 2021-2038: Potential Gypsy & Traveller Sites
Report Commissioned by	Copeland Borough Council
Report Purpose	To inform site allocations within the Local Plan.
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Pathways of Impact Screened	Designated Sites	Impacts requiring Appropriate Assessment
Recreational Pressure and Disturbance	Solway Firth SPA River Ehen SAC Lake District High Fells SAC Morecambe Bay and Duddon Estuary SPA	None
Reduced Water Quality	Solway Firth SPA River Ehen SAC River Derwent and Bassenthwaite Lake SAC Morecambe Bay and Duddon Estuary SPA	River Ehen SAC Reduced water quality (GTW5)
Altered Hydrology	River Ehen SAC Lake District High Fells SAC River Derwent and Bassenthwaite Lake SAC Morecambe Bay and Duddon Estuary SPA	None
Reduced Air Quality	River Derwent and Bassenthwaite Lake SAC Morecambe Bay SAC Morecambe Bay Ramsar Morecambe Bay and Duddon Estuaries SPA Duddon Estuary Ramsar Drigg Coast SAC Duddon Mosses SAC Subberthwaite, Blawith and Torver Low Commons SAC	None
Loss of Supporting Habitat	Solway Firth SPA Morecambe Bay and Duddon Estuary SPA	None

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Appendix 1 Site Locations in Relation to NSN Sites

2 Introduction

2.1 Background

David Archer Associates was commissioned by Copeland Borough Council to compile a shadow Habitats Regulations Assessment (HRA) in relation to the potential allocation of two gypsy and traveller sites within the emerging Local Plan, which is currently at Publication Draft stage consultation. The locations of the proposed sites, GTW3 and GTW5 are shown on **Figures 2.1 and 2.2** below.

Figure 2.1: Potential gypsy & traveller site GTW3

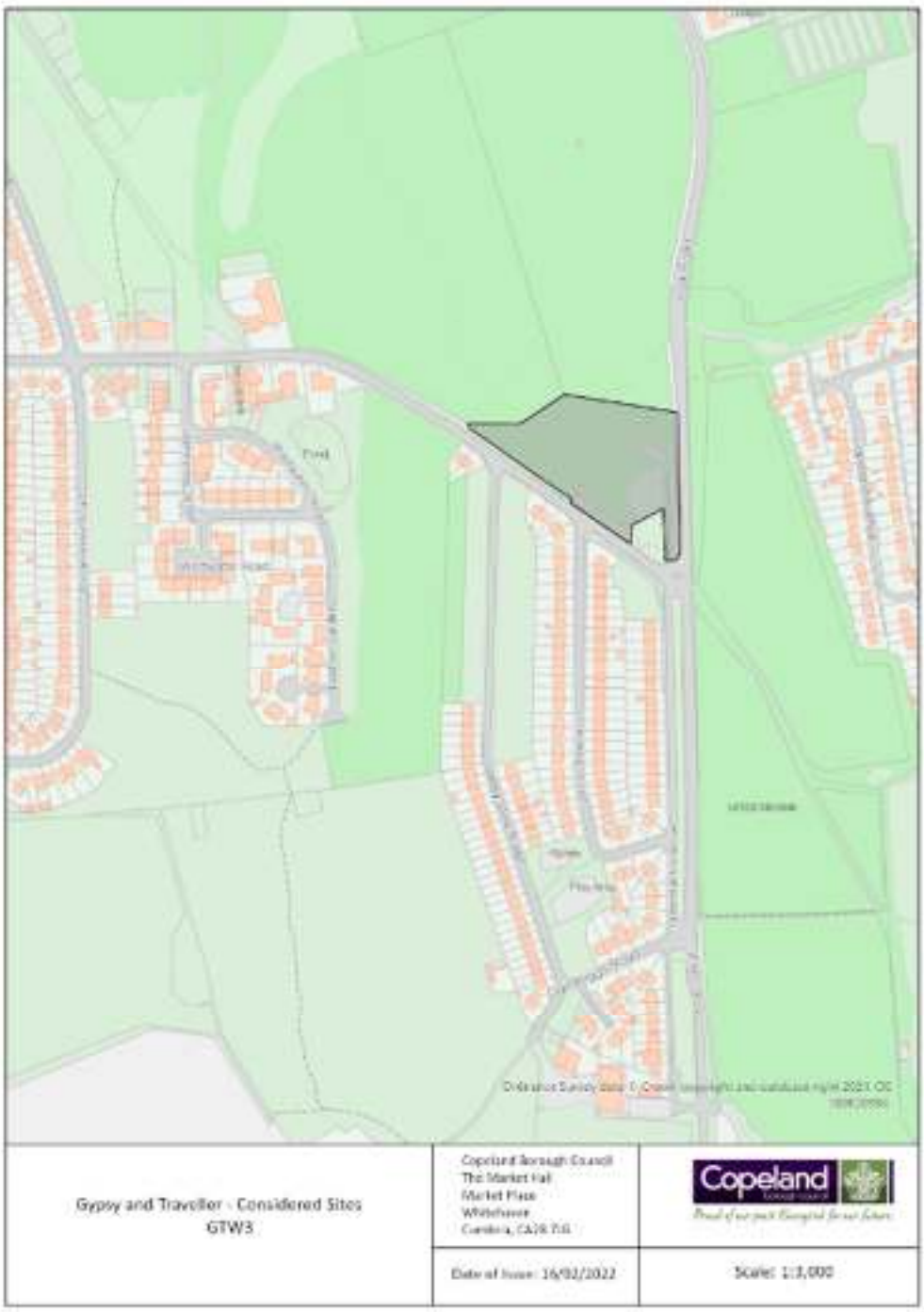
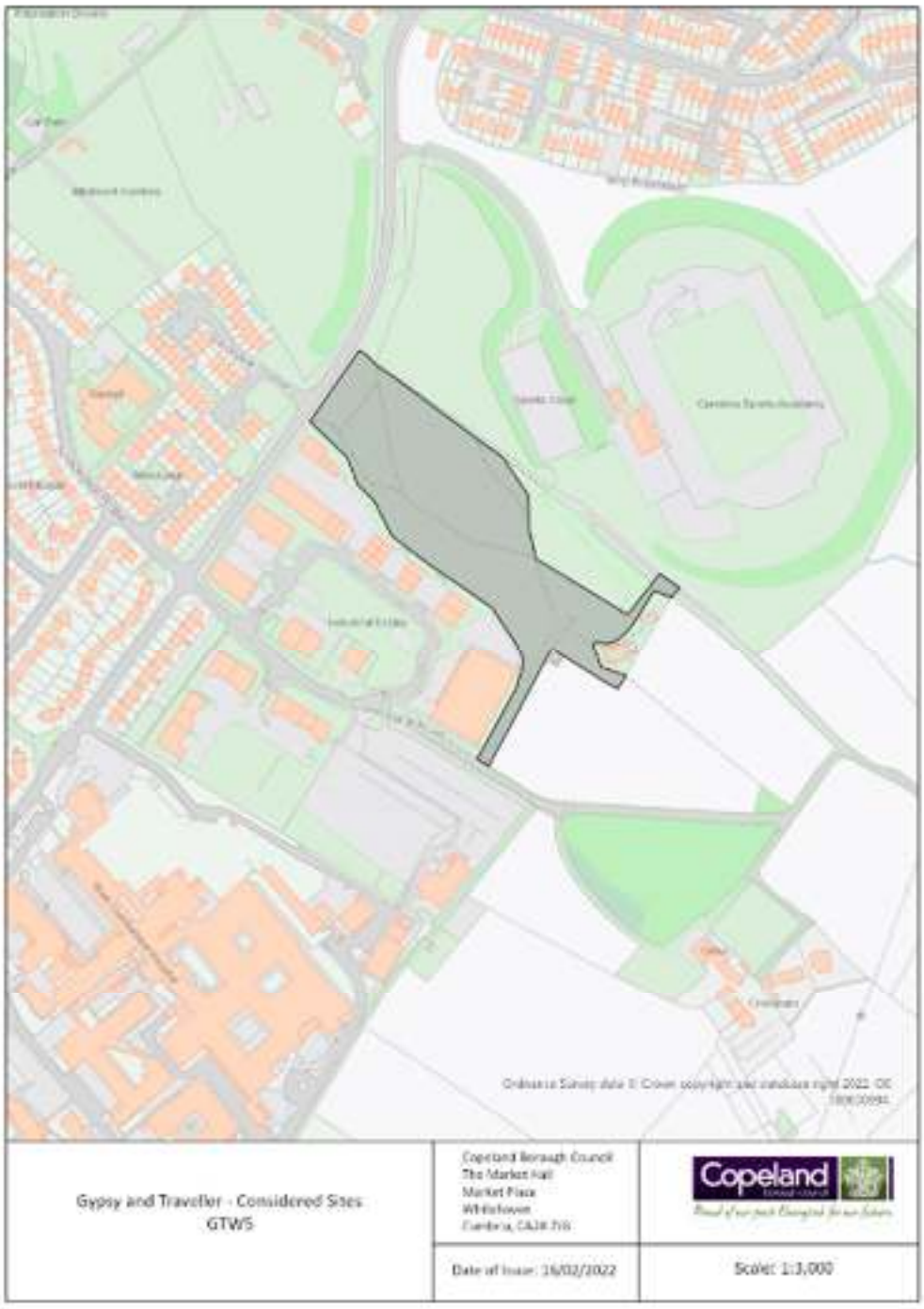


Figure 2.2: Potential gypsy & traveller site GTW5



2.2 Site Location and Description

The sites are located toward the southern part of Whitehaven, with GTW3 located in Greenbank immediately north and west of local roads, and north of existing housing, and GTW5 on the south-eastern edge of town, in close proximity to an industrial estate, the hospital and the Cumbria Sports Academy. GTW3 is located at central Ordnance Survey Grid Reference NX 9754 1611, whilst GTW5 is at NX 9917 1634. GTW3 comprises self-seeded woodland, and GTW5 is grassland with scattered trees and scrub.

2.3 The HRA Process

The Conservation of Habitats and Species Regulations 2017 and the Conservation of Offshore Marine Habitats and Species Regulations 2017 transpose the European Union Birds Directive 1979/2009 and Habitats Directive 1992 into UK law. Under these regulations, competent authorities are required to consider whether plans or projects will have a likely significant effect on the integrity of a SAC, SPA or Ramsar site.

As part of the post-Brexit legislative updates, the Conservation of Habitats and Species Regulations has been updated to form The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Under this legislation update, the protected SACs and SPAs, formerly known as Natura 2000 sites, European sites or internationally designated sites are now referenced as National Site Network (NSN) sites. The NSN absorbs existing SACs and SPAs and any future designations will occur under the new Regulations.

The Habitats Regulations Assessment process enables the competent authority to establish if the integrity of protected SAC, SPA and Ramsar sites is likely to be significantly impacted by a proposed plan or project by following a five-stage process as follows:

- **Stage 1:** Determine whether the proposal is directly connected to or necessary for the management of the NSN or Ramsar site.
- **Stage 2: Screening.** This stage identifies the potential effects of a plan or project on the qualifying features of NSN and Ramsar sites (without avoidance and mitigation) and assesses whether these effects will be significant alone or in combination with other plans or projects. Where there remains uncertainty, the potential effect is carried forward to the next stage.
- **Stage 3: Appropriate Assessment.** Where a likely significant effect (LSE) is found or uncertainty remains, more detailed assessment is carried out, considering adverse effects alone and in combination with other plans and projects. This stage considers avoidance and mitigation.
- **Stage 4: No Alternatives and Imperative reasons of overriding public interest (IROPI).** If Stage 3 concludes there is LSE that requires mitigation, but that mitigation is not deliverable, then the tests of no alternatives and IROPI must be met.
- **Stage 5: Compensatory Measures.** Where mitigation is not achievable and there are no alternatives, and IROPI applies, compensation to maintain the NSN or Ramsar conservation objectives must be delivered.

2.4 Objective

The objective of this report is to determine Stage 1 and then undertake Stage 2 Screening in order to ascertain whether Stage 3 Appropriate Assessment is required in relation to potential impacts of the proposed site allocations on relevant designated sites, and then to apply Stage 3 Appropriate Assessment if necessary.

3 Methodology

3.1 Author

This report has been prepared by Principal Ecologist Graeme Down, who is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and subject to the CIEEM Professional Code of Conduct.

3.2 Assessment Methodology

The proposed development is not directly connected to or necessary for the management of any NSN or Ramsar site.

Therefore, Stage 2 Screening has been undertaken and aims to ascertain what factors should 'trigger' Stage 3 Appropriate Assessment. In order to determine if the proposed allocations may have a 'likely significant effect' (LSE) on the integrity of each relevant designated site, each qualifying feature (or group of qualifying features, where appropriate) is compared against each potential significant effect from the plan or project. Only those effects which are likely to be significant are then advised for progression through to Stage 3 Appropriate Assessment.

Case law provides important direction in defining and determining the meaning of the words 'likely' and 'significant' in the context of HRA (Boggis v Natural England [2009] EWCA Civ 1061, 20th October 2009, paras 36 & 37; Advocate-General Sharpston's opinion in Sweetman v An Bord Pleanála [2011] CJEU C-258/11, 11th April 2013, para 48), as well as providing key information that confirms that mitigation measures must not be included in the Stage 2 Screening Assessment (People Over Wind & Sweetman v Coillte [2018] CJEU C-323/17, 12th April 2018).

For those effects that are unlikely to be significant with the allocations considered in isolation, these are then considered as part of a cumulative assessment in relation to other plans or projects which may impose the same or interlinked effects on the same designated sites. If such effects are likely to be considered significant in respect of in-combination impacts, these are then recommended for further consideration at Stage 3 Appropriate Assessment.

As this shadow HRA considers specific locations within Copeland Borough, it is proportionate to assess the potential LSE that may arise in combination with other policies and allocations contained within the emerging Local Plan, in line with the approach taken in assessing individual allocations included within the Local Plan publication draft.

Where it is considered not possible to 'screen out' likely significant effects without detailed appraisal, or where mitigation is required that would not be implemented were it not for the need to protect the designated site, it is necessary to progress to the later 'Appropriate Assessment' stage to explore the adverse effects and devise mitigation. This stage may in some instances involve detailed data collection and analysis, and development of mitigation approaches, however, in other cases, where mitigation is already available, it may simply be a case of identifying the need to implement such mitigation. In short, the assessment detail should be 'appropriate' to the situation at hand.

4 Screening Assessment

4.1 Determination of Designated Sites for Consideration

4.1.1 Solway Firth SPA

Qualifying Features

Solway Firth qualifies as a SPA due to supporting species over winter:

- Red-throated diver *Gavia stellata*;
- Whooper swan *Cygnus cygnus*;
- Barnacle goose *Branta leucopsis*;
- Golden plover *Pluvialis apricaria*;
- Bar-tailed godwit *Limosa lapponica*;
- Pink-footed goose *Anser brachyrhynchus*;
- Pintail *Anas acuta*;
- Scaup *Aythya marila*;
- Oystercatcher *Haematopus ostralegus*;
- Curlew *Numenius arquata*;
- Knot *Calidris canutus*;
- Redshank *Tringa totanus*;
- Shelduck *Tadorna tadorna*;
- Turnstone *Arenaria interpres*;
- Sanderling *Calidris alba*;
- Dunlin *Calidris alpina alpina*;
- Grey plover *Pluvialis squatarola*;
- Lapwing *Vanellus vanellus*;
- Shoveler *Anas clypeata*:
- Teal *Anas crecca*;
- Goldeneye *Bucephela clangula*;
- Herring gull *Larus argentatus*;
- Common gull *Larus canus*;
- Black-headed gull *Larus ridibundus*;
- Common scoter *Melanitta nigra*;
- Red-breasted merganser *Merganser merganser*; and
- Ringed plover *Charadrius hiaticula*.

Solway Firth also qualifies as a SPA due to supporting an assemblage of over-wintering birds.

4.1.2 River Ehen SAC

Qualifying Features

The River Ehen qualifies as a SAC due to supporting the Annex II species:

- Freshwater pearl mussel *Margaritifera margaritifera*; and
- Atlantic salmon *Salmo salar*.

4.1.3 Lake District High Fells SAC

Qualifying Features

The Lake District High Fells qualifies as a SAC due to supporting the Annex I habitats:

- Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels;
- Wet heathland with cross-leaved heath *Erica tetralix*;
- Dry heaths;
- Alpine and subalpine heaths;
- Juniper *Juniperus communis* on heaths or calcareous grasslands;
- Montane acid grasslands;
- Tall herb communities;
- Blanket bog;
- Acidic scree;
- Plants in crevices on acid rocks;
- Western acidic oak woodland;
- Species rich grassland with mat grass in upland areas;
- Calcium-rich, springwater-fed fens; and
- Plants in crevices in base-rich rocks.

The Lake District High Fells qualifies as a SAC due to supporting the Annex II species:

- Slender green feather-moss *Drepanocladus vernicosus*.

4.1.4 River Derwent and Bassenthwaite Lake SAC

Qualifying Features

The River Derwent and Bassenthwaite Lake qualify as a SAC due to supporting the Annex I habitats:

- Clear-water lochs or lakes with aquatic vegetation and poor to moderate nutrient levels;
- Rivers with floating vegetation often dominated by water crowfoot;
- Plants in crevices on acid rocks; and
- Bog woodland.

The River Derwent and Bassenthwaite Lake qualify as a SAC due to supporting the Annex II species:

- Marsh fritillary *Euphydryas aurinia*;
- Sea lamprey *Petromyzon marinus*;
- Brook lamprey *Lampetra planeri*;
- River lamprey *Lampetra fluviatilis*;
- Atlantic salmon *Salmo salar*;
- Otter *Lutra lutra*; and
- Floating water plantain *Luronium natans*.

4.1.5 Drigg Coast SAC

Qualifying Features

Drigg Coast qualifies as a SAC due to supporting the Annex I habitats:

- Estuaries;
- Coastal dune heathland;
- Dunes with creeping willow *Salix repens*;
- Intertidal mudflats and sandflats;
- Glasswort and other annuals colonising mud and sand;
- Atlantic salt meadows;
- Shifting dunes;
- Shifting dunes with marram *Ammophila arenaria*;
- Dune grassland; and
- Humid dune slacks.

4.1.6 Morecambe Bay and Duddon Estuary SPA

Qualifying Features

Morecambe Bay and Duddon Estuary qualifies as a SPA due to supporting the breeding species:

- Sandwich tern *Sterna sandvicensis*;
- Common tern *Sterna hirundo*;
- Little tern *Sterna albifrons*;
- Lesser black-backed gull *Larus fuscus*; and
- Herring gull *Larus argentatus*.

Morecambe Bay and Duddon Estuary qualifies as a SPA due to supporting species over winter:

- Whooper swan *Cygnus cygnus*;
- Little egret *Egretta garzetta*;
- Golden plover *Pluvialis apricaria*;
- Ruff *Calidris pugnax*;
- Bar-tailed godwit *Limosa lapponica*; and
- Mediterranean gull *Larus melanocephalus*.

Morecambe Bay and Duddon Estuary qualifies as a SPA due to supporting species on passage:

- Pink-footed goose *Anser brachyrhynchus*;
- Shelduck *Tadorna tadorna*;
- Oystercatcher *Haematopus ostralegus*;
- Ringed plover *Charadrius hiaticula*;
- Grey plover *Pluvialis squatarola*;
- Knot *Calidris canutus*;
- Sanderling *Calidris alba*;
- Dunlin *Calidris alpina alpina*;
- Black-tailed godwit *Limosa limosa*;

- Curlew *Numenius arquata*;
- Pintail *Anas acuta*;
- Turnstone *Arenaria interpres*;
- Redshank *Tringa totanus*; and
- Lesser black-backed gull *Larus fuscus*.

Morecambe Bay and Duddon Estuary qualifies as a SPA due to supporting an assemblage of breeding and over-wintering birds.

4.1.7 Duddon Mosses SAC

Qualifying Features
Duddon Mosses qualifies as a SAC due to supporting the Annex I habitats:

- Active raised bogs; and
- Degraded raised bogs.

4.1.8 Morecambe Bay SAC

Qualifying Features
Morecambe Bay qualifies as a SAC due to supporting the Annex I habitats:

- Estuaries;
- Intertidal mudflats and sandflats;
- Shallow inlets and bays;
- Coastal shingle vegetation outside the reach of waves;
- Glasswort and other annuals colonising mud and sand;
- Atlantic salt meadows;
- Shifting dunes with marram;
- Dune grassland;
- Humid dune slacks;
- Subtidal sandbanks;
- Lagoons;
- Reefs;
- Shifting dunes;
- Coastal dune heathand; and
- Dunes with creeping willow.

Morecambe Bay qualifies as a SAC due to supporting the Annex II species:

- Great crested newt

4.1.9 Subberthwaite, Blawith and Torver Low Commons SAC

Qualifying Features
Subberthwaite, Blawith and Torver Low Commons qualifies as a SAC due to supporting the Annex I habitats:

- Very wet mires often identified by an unstable ‘quaking’ surface; and

- Depressions on peat substrates.

4.1.10 Duddon Estuary Ramsar

Qualifying Features
Duddon Estuary qualifies as a Ramsar site due to supporting:

- Ramsar criterion 2: vulnerable, endangered, or critically endangered species or threatened ecological communities;
- Ramsar criterion 4: plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions;
- Ramsar criterion 5: 20,000 or more waterbirds; and
- Ramsar criterion 6: 1% of the individuals in a population of one species or subspecies of waterbird.

4.1.11 Morecambe Bay Ramsar

Qualifying Features
Morecambe Bay qualifies as a Ramsar site due to supporting:

- Ramsar criterion 4: plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions;
- Ramsar criterion 5: 20,000 or more waterbirds; and
- Ramsar criterion 6: 1% of the individuals in a population of one species or subspecies of waterbird.

4.2 Pathways of Impact

There are numerous pathways of impact that may connect a plan or project to potential likely adverse effects on a NSN or Ramsar site.

Table 4.1 shows details of the NSN and Ramsar sites scoped into this shadow HRA, and potential pathways of impact. These have been determined via their Natura 2000 forms and Natural England's Site Improvement Plans. Those that could be considered with potential to arise from plans such as the proposed site allocations are highlighted **in bold**.

Table 4.1: Pathways of Impact with Potential to lead to Likely Significant Effects on NSN and Ramsar Sites

NSN and Ramsar Sites	Pathways of Impact
Solway Firth SPA	• **Outdoor sports and leisure activities, recreational activities** • **Discharges** • **Pollution to surface waters** • Utility and service lines • Grazing • Renewable abiotic energy use • Changes in abiotic conditions • Changes in biotic conditions • Fishing and harvesting aquatic resources • Other ecosystem modifications

NSN and Ramsar Sites	Pathways of Impact
	• Hunting and collection of wild animals • Hunting, fishing or collecting activities (other) • Shipping lanes, ports, marine constructions • Exploration and extraction of oil or gas • Marine water pollution
River Ehen SAC	• **Pollution to groundwater (point sources and diffuse sources)** • **Human induced changes in hydraulic conditions** • **Public access/ disturbance** • Changes in biotic conditions • Invasive species • Forestry and woodland management • Low breeding success/ poor recruitment • Siltation
Lake District High Fells SAC	• **Outdoor sports and leisure activities, recreational activities** • **Air pollution, air-borne pollutants** • **Hydrological changes** • Changes in biotic conditions • Grazing • Problematic native species • Invasive species • Management • Disease
River Derwent and Bassenthwaite Lake SAC	• **Pollution to groundwater (point sources and diffuse sources)** • **Human induced changes in hydraulic conditions** • **Air pollution (atmospheric nitrogen)** • Invasive non-native species • Changes in land management • Forestry and woodland management • Physical modification • Siltation
Drigg Coast SAC	• **Air pollution, air-borne pollutants** • Grazing • Biocenotic evolution, succession • Fisheries (commercial)

NSN and Ramsar Sites	Pathways of Impact
Morecambe Bay and Duddon Estuary SPA	• **Outdoor sports and leisure activities, recreational activities** • **Air pollution, air-borne pollutants** • **Water pollution** • **Hydrological changes** • Airports, flight paths • Fishing and harvesting aquatic resources • Marine water pollution • Invasive non-native species • Inter-specific faunal relations • Changes in abiotic conditions • Changes in biotic conditions • Change in land management • Physical modification • Energy production
Duddon Mosses SAC	• **Air pollution, air-borne pollutants** • Human induced changes in hydraulic conditions* • Invasive non-native species • Changes in abiotic conditions • Inappropriate land management
Morecambe Bay SAC	• **Air pollution, air-borne pollutants** • Outdoor sports and leisure activities, recreational activities* • Water pollution* • Hydrological changes* • Inappropriate pest control • Invasive species • Fishing and harvesting aquatic resources • Biological resource use • Change in land management • Physical modification • Energy production • Changes in species distributions • Direct impacts by 3rd parties
Subberthwaite, Blawith and Torver Low Commons SAC	• **Air pollution, air-borne pollutants** • Outdoor sports and leisure activities, recreational activities* • Human induced changes in hydraulic conditions* • Water pollution* • Other human intrusions and disturbances • Modification of cultivation practices • Vehicles • Deer • Climate change

NSN and Ramsar Sites	Pathways of Impact
Morecambe Bay Ramsar	• **Air pollution (atmospheric nitrogen)** • Public access/ disturbance* • Hydrological changes* • Water pollution* • Inappropriate pest control • Invasive species • Fisheries and aquaculture • Biological resource use • Change in land management • Physical modification • Energy production • Change in species distributions • Direct impact from 3rd parties
Duddon Estuary Ramsar	• **Air pollution (atmospheric nitrogen)** • Public access/ disturbance* • Hydrological changes* • Water pollution* • Inappropriate pest control • Invasive species • Fisheries and aquaculture • Biological resource use • Change in land management • Physical modification • Energy production • Change in species distributions • Direct impact from 3rd parties

* Pathway theoretically possible but not screened due to distance of designated site from allocations meaning there is no realistic pathway of impact

The following 'pathways of impact' have been included within the assessment process.

4.2.1 Recreational Pressure and Disturbance

Recreational access to sites can have many potential impacts. Visitors may cause erosion, fragmentation of habitats and damage to habitats through trampling. Cycling, motorcycling and other forms of vehicular recreation may exacerbate such effects. For some freshwater and coastal NSN and Ramsar sites, water sports may also lead to habitat damage and disturbance of species.

NSN and Ramsar sites protected for species are vulnerable to disturbance, which may be caused by visual presence, noise, light or vibration. Although species such as bats and amphibians are subject to disturbance, concern regarding the effects of disturbance is primarily focused on NSN and Ramsar sites designated for birds. This stems from the fact that they are generally active during the day time or dependent on specific locations at certain tidal states and may be present in areas where human activity is most likely to conflict with use of a site and at which time they may be caused to expend energy unnecessarily. In parallel with this, disturbance tends to cause birds to be more alert and therefore less able to feed optimally. When birds are under stress (e.g. surviving winter conditions, or when attempting to raise young) the 'condition' and ultimately survival of the birds can be affected.

4.2.2 Air Quality

The main pollutants of concern for NSN and Ramsar sites are oxides of nitrogen (NOx), ammonia (NH3) and sulphur dioxide (SO2). NOx can have a directly toxic effect upon vegetation. In addition, greater NOx or ammonia concentrations within the atmosphere will lead to greater rates of nitrogen deposition to soils. An increase in the deposition of nitrogen from the atmosphere to soils is generally regarded to lead to an increase in soil fertility, which can have a serious negative effect on the quality of nitrogen-limited terrestrial habitats.

Ammonia emissions are dominated by agriculture, with some chemical processes also making notable contributions, whilst sulphur dioxide is primarily from industrial processes. A major source of NOx emissions, however, is the output of vehicle exhausts (28% of all emissions)[1]. According to the World Health Organisation, the critical NOx concentration (critical threshold) for the protection of vegetation is 30 µgm-3. In addition, ecological studies have determined 'critical loads'[2] of atmospheric nitrogen deposition (that is, NOx combined with ammonia NH3).

Following a judgement in 2017 (Wealden District Council v Secretary of State for Communities and Local Government, Lewes District Council and South Downs National Park Authority) it is no longer appropriate to scope out the need for a detailed assessment of an individual project or plan using, for example, the previously widely applied threshold of an increase of greater than 1000 annual average daily traffic (AADT) movements (Design Manual For Roads and Bridges (DMRB))[3] or the threshold of an increase of greater than 1% of the critical level or load as used by Defra/Environment Agency[4] without first considering the in-combination impact with other projects and plans. This position has been adopted by Natural England in its internal guidance for competent authorities assessing road traffic emissions under the Habitats Directive[5].

The Department of Transport's Transport Analysis Guidance that "*beyond 200m, the contribution of vehicle emissions from the roadside to local pollution levels is not significant*" is still accepted as valid and applicable.

4.2.3 Water Availability and Flows

Appropriate hydrological conditions are a key consideration for many NSN and Ramsar sites. These can be affected by many human induced processes. Water abstraction for consumption or for industrial processes (e.g. mineral extraction) can have effects on groundwater which has the potential to affect both terrestrial and freshwater NSN and Ramsar habitats and dependent species.

Water supply within Copeland is the responsibility of United Utilities (UU). Within the final Water Resources Management Plan (WRMP)[6] that covers the period from 2019-2045, UU have indicated that surplus water is available within the lifetime of Copeland's Local Plan, allowing for projected

[1] European Environment Agency, 2019. Emissions of Air Pollutants from Transport. Available online at: https://www.eea.europa.eu/data-and-maps/indicators/transport-emissions-of-air-pollutants-8/transport-emissions-of-air-pollutants-8

[2] The critical load is the rate of deposition beyond which research indicates that adverse effects can reasonably be expected to occur.

[3] Highways Agency, 2007, Design Manual for Roads and Bridges, Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 1 HA207/07 Air Quality.

[4] www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit

[5] Natural England, 2018, Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations.

[6] United Utilities (2019). Final Water Resources Management Plan 2019.

population growth within this period. Their strategy includes provision of new Water Treatment Works (WTWs) and a pipeline from Thirlmere reservoir into West Cumbria that will be operational from 2022.

4.2.4 Water Quality

High water quality is critical to many aquatic habitats for which NSN and Ramsar sites are designated. Both surface water and groundwater pollution can arise as a result of strategic planning and site allocations. Surface water pollution may arise as a result of run-off from hard surfaces or where existing catchments have been modified. Reduced water quality can also occur as a result of population increases which lead to increased pressure on waste water treatment works capacities, and can result in increased levels of nutrients in receiving water courses. In many urban areas, sewage treatment and surface water drainage systems are combined, and therefore a predicted increase in flood and storm events could increase pollution risk. Groundwater pollution can arise as a consequence of spillages infiltrating permeable surfaces within the catchment of NSN and Ramsar sites.

4.2.5 Loss of or Disturbance to Supporting Habitats

SPAs and most Ramsar sites are designated for bird species, which are mobile features and therefore often utilise land outside the geographic limits of the NSN or Ramsar site for feeding, roosting or even breeding. Some SACs are also designated in part for mobile species such as bats and fish. Where this occurs, the areas that the designated species utilise outside of the NSN or Ramsar site also require assessment under HRA as effects on such supporting habitats can have material effects on the protected populations of the NSN or Ramsar sites.

4.3 HRA Screening

4.3.1 Recreational Pressure and Disturbance

Solway Firth SPA

This SPA lies just offshore from Whitehaven and adjoins the coast further north within the Borough. It is designated for its wintering bird populations, which are vulnerable to coastal and offshore recreational and other activities that might cause disturbance. Recreational pressure and disturbance are listed as threats on the NSN form for the Solway Firth SPA. The large size, and largely offshore nature of the designation does mean that it is likely to be robust to pressures arising from individual developments, except where this would cause disturbance to critical bird feeding or roosting locations. The potential site allocations GTW3 and GTW5 are 0.83ha and 1.9ha in size respectively and would accommodate a maximum of 12 pitches individually if allocated. The site locations are 2.0km and 3.5km from the SPA respectively and therefore direct and significant levels of disturbance arising from an individual allocation are not likely to occur. Therefore no LSE will occur as a result of the allocations alone.

Potential site allocations relating to housing have been assessed within the HRA of the Publication Draft Local Plan. In particular HWH1 (Land at West Cumberland Hospital & Sneckyeat Road -127 dwellings), lies in a similar location to GTW3 and here no pathways of impact were identified. Site allocation HWH3 (Land at Edge Hill Park (former Marchon car park) - 510 dwellings) lies in a similar location to GTW5 and no recreational pressure or disturbance impacts were considered likely.

In combination with levels of development proposed across the Borough then it is conceivable that recreational pressure and disturbance could reach levels affecting the SPA.

However, the HRA of the Publication Draft Local Plan has determined that policy mechanisms exist that would allow recreational pressure and disturbance to be screened out in relation to the Solway Firth SPA. Furthermore, the site allocations would be delivered in the context of policy H9PU (Allocated Site for Gypsies, Travellers and Travelling Showpeople) which will include the need for such development to avoid leading to "*significant adverse impact on…nature conservation or biodiversity sites*."

Therefore the proposed gypsy and traveller site allocations, are unlikely to contribute to any LSE on the SPA through recreational pressure or disturbance, either alone or in combination with other plans and projects.

River Ehen SAC

The site locations GTW3 and GTW5 are 4.8km and 3.7km from the SAC respectively. The HRA of the emerging Local Plan has identified that this SAC is cited as being vulnerable to trampling, disturbance and pollution incidents in its Site Improvement Plan. It is considered unlikely however, that occupants of new allocations would cause LSE on the designated features of the SAC (freshwater pearl mussel and Atlantic salmon). The river does not appear to be formally accessible for walking alongside it via public footpaths.

Therefore the proposed development, given its small scale, is unlikely to contribute to any LSE on the SAC through recreational pressure, either alone or in combination with other plans and projects.

Lake District High Fells SAC

The site locations GTW3 and GTW5 are 11km and 9.5km from the SAC respectively at the closest points.

The SAC is designated for habitats that are vulnerable to trampling, erosion and fragmentation of, and recreational pressure is listed as a threat on the NSN and Ramsar form for the site. The large size, and distance from the proposed allocations does mean that it is likely to be robust to pressures arising from these individual developments. Direct and significant levels of disturbance arising from an individual allocation are not likely to occur. Therefore no LSE will occur as a result of the allocations alone.

In combination with development across the Borough then it is possible that recreational pressure could arise affecting the SAC.

However, the HRA of the Publication Draft Local Plan has determined that policy mechanisms exist that would allow recreational pressure to be screened out in relation to the Lake District High Fells SAC. Furthermore, the site allocations would be delivered in the context of policy H9PU (Allocated Site for Gypsies, Travellers and Travelling Showpeople) which will include the need for such development to avoid leading to "*significant adverse impact on…nature conservation or biodiversity sites*."

Therefore the proposed gypsy and traveller site allocations, are unlikely to contribute to any LSE on the SAC through recreational pressure or disturbance, either alone or in combination with other plans and projects.

Morecambe Bay and Duddon Estuary SPA

This SPA is designated for its breeding, passage and wintering bird populations, which are vulnerable to recreational and other activities that might cause disturbance. Recreational pressure and disturbance are listed as threats on the NSN form for the SPA. The large size of the designation does mean that it is likely to be robust to pressures arising from individual developments, except where this would cause disturbance to critical bird feeding or roosting locations. The potential site allocations GTW3 and GTW5 are 17km and 19km from the SPA respectively and therefore direct and significant levels of disturbance arising from an individual allocation are not likely to occur.

In combination with development across the Borough then it is possible that recreational pressure and disturbance could arise affecting the SPA.

However, the HRA of the Publication Draft Local Plan has determined that policy mechanisms exist that would allow recreational pressure and disturbance to be screened out in relation to the Morecambe Bay and Duddon Estuary SPA. Furthermore, the site allocations would be delivered in the context of policy H9PU (Allocated Site for Gypsies, Travellers and Travelling Showpeople) which will include the need for such development to avoid leading to "*significant adverse impact on…nature conservation or biodiversity sites*."

Therefore the proposed gypsy and traveller site allocations, are unlikely to contribute to any LSE on the SPA through recreational pressure or disturbance, either alone or in combination with other plans and projects.

4.3.2 Water Quality

Solway Firth SPA

Discharges and pollution to surface waters are listed as threats on the NSN form for the Solway Firth SPA. The large size, and largely offshore nature of the designation does mean that it is likely to be robust to pressures arising from individual developments. The potential site allocations GTW3 and GTW5 would accommodate a maximum of 12 pitches individually, if allocated. The site locations are 2.0km and 3.5km from the SPA respectively and no evident surface water pathways connect the allocation sites to the coast.

The HRA of the Publication Draft Local Plan has determined that policy mechanisms exist that would allow reduced water quality to be screened out in relation to the Solway Firth SPA.

The Publication Draft Local Plan includes policy N5PU (Protection of Watercourses). The policy commits to a specific requirement for new development to not be operational or occupied until such time as adequate waste-water infrastructure has been provided. Therefore the development of these site would need to ensure such provisions are provided prior to occupation in order to achieve planning approval.

Furthermore, the site allocations would be delivered in the context of policy H9PU (Allocated Site for Gypsies, Travellers and Travelling Showpeople) which will include the need for such development to avoid leading to "*significant adverse impact on…nature conservation or biodiversity sites*."

Therefore the proposed gypsy and traveller site allocations, are unlikely to contribute to any LSE on the SPA through reduced water quality.

River Ehen SAC

Pollution to groundwater (point sources and diffuse sources) is listed as a threat on the NSN form for the River Ehen SAC. The potential site allocation at GTW3 lies outside the operational catchment of the River Ehen, and thus no pathway of impact exists. Therefore no LSE will occur as a result of the allocation alone.

However, the southern part of GTW5 lies at the upper extremity of both the Pow Beck (South-west Lakes) and Keekle (lower) catchments.

The HRA of the Publication Draft Local Plan has determined that policy mechanisms exist that would allow reduced water quality to be screened out in relation to the River Ehen SAC.

The Publication Draft Local Plan includes policy N5PU (Protection of Watercourses). The policy commits to a specific requirement for new development to not be operational or occupied until such time as adequate waste-water infrastructure has been provided. Therefore the development of these sites would need to ensure such provisions are provided prior to occupation in order to achieve planning approval.

Furthermore, the site allocations would be delivered in the context of policy H9PU (Allocated Site for Gypsies, Travellers and Travelling Showpeople) which will include the need for such development to avoid leading to "*significant adverse impact on…nature conservation or biodiversity sites*."

However, construction of any gypsy and traveller site at location GTW5 could have potential to lead to likely significant effect on the SAC through water pollution. Therefore Appropriate Assessment is required in order to determine if this allocation can be delivered with mitigation to ensure no likely significant effects on the SAC through reduced water quality.

River Derwent and Bassenthwaite Lake SAC

The River Derwent and Bassenthwaite Lake SAC is listed as being vulnerable to pollution to groundwater (point sources and diffuse sources). The SAC lies 17km north-east of site allocation GTW3 and 16km north-east of GTW5. The operational catchment of the SAC lies well to the east of the proposed allocations and therefore the proposed gypsy and traveller site allocations, are unlikely to contribute to any LSE on the SAC through reduced water quality.

Morecambe Bay and Duddon Estuary SPA

The SPA is listed as being vulnerable to water pollution. However, it lies 20km south of site allocation GTW3 and 19km south of GTW5. The operational catchment of the SPA lies well to the south of the proposed allocations and therefore the proposed gypsy and traveller site allocations, are unlikely to contribute to any LSE on the SPA through reduced water quality.

4.3.3 Hydrological Changes

River Ehen SAC

Human induced changes in hydraulic conditions is listed as a threat on the NSN form for the River Ehen SAC. The potential site allocation at GTW3 lies outside the operational catchment of the River Ehen, and thus no pathway of impact exists. Therefore no LSE will occur as a result of the allocation alone.

However, the southern part of GTW5 lies at the upper extremity of both the Pow Beck (South-west Lakes) and Keekle (lower) catchments.

The HRA of the Publication Draft Local Plan has established that United Utilities Final Water Resource Management Plan (2019) indicates a projected water surplus from 2020-2040, inclusive of projected population growth.

Both allocations would be connected to mains water supplies, and as the allocations form part of the projected population growth within the Local Plan and within the lifetime of the Water Resource Management Plan, then it is possible to conclude no LSE on the SAC from either allocation.

Lake District High Fells SAC

Hydrological changes are listed as a threat on the NSN form for this SAC.

However, the HRA of the Publication Draft Local Plan has established that United Utilities Final Water Resource Management Plan (2019) indicates a projected water surplus from 2020-2040, inclusive of projected population growth.

Both allocations would be connected to mains water supplies, and as the allocations form part of the projected population growth within the Local Plan and within the lifetime of the Water Resource Management Plan, then it is possible to conclude no LSE on the SAC through hydrological changes.

River Derwent and Bassenthwaite Lake SAC

Human induced changes in hydraulic conditions is listed as a threat on the NSN form for this SAC.

However, the operational catchment of the SAC lies well to the east of the proposed allocations and therefore it is possible to conclude no LSE on the SAC through hydrological changes.

Morecambe Bay and Duddon Estuary SPA

Hydrological changes are listed as a threat on the NSN form for this SPA.

However, the operational catchment of the SPA lies well to the south of the proposed allocations and therefore it is possible to conclude no LSE on the SPA through hydrological changes.

4.3.4 Air Quality

Lake District High Fells SAC

The SAC is cited as being vulnerable to air pollution and air-borne pollution. Allocations GTW3 and GTW5 could theoretically contribute to this through vehicle journeys associated with the occupancy of the pitches. On its own the presence of 12 pitches is unlikely to lead to a level of vehicle journeys within 200m of the SAC, which lies 11km and 9.5km east of GTW3 and GTW5 respectively, that would

on its own be likely to lead to significant reductions in air quality within the SAC. Therefore no LSE will occur as a result of the allocations alone.

However, when taken in combination with all other growth proposed as a result of the emerging Local Plan, and with growth within surrounding local authorities, it is possible that pollution on roads passing within 200m of the SAC could reach levels where a significant adverse effect cannot be ruled out.

Air quality modelling undertaken in support of the HRA of the emerging Local Plan has identified that taking into account background levels of pollutants and growth within the Local Plan and within surrounding local authorities, no significant adverse effects on the SAC would be expected.

The Publication Draft Local Plan includes a specific policy DS11PU (Protecting Air Quality) that provides the precautionary text "*development proposals will only be granted planning permission where they will not give rise to unacceptable levels of air pollution*. *Unacceptable levels include those that would potentially lead to likely significant effects on National Site Network and Ramsar sites where mitigation is not possible*."

Furthermore, the site allocations would be delivered in the context of policy H9PU (Allocated Site for Gypsies, Travellers and Travelling Showpeople) which will include the need for such development to avoid leading to "*significant adverse impact on…nature conservation or biodiversity sites*."

Therefore it is possible to conclude no LSE on the SAC will occur through reduced air quality, either alone or in combination with other plans and projects.

River Derwent and Bassenthwaite Lake SAC

The SAC is cited as being vulnerable to air pollution and air-borne pollution. However, according to the Air Pollution Information System (APIS), "*deposition of ammonia, nitrate and other forms of nitrogen from the atmosphere is likely to be an important source of nitrogen for oligotrophic standing waters. Detailed nitrogen budgets of oligotrophic lakes, however, do not exist, so the relative inputs from atmospheric deposition are unknown*."

The River Derwent and Bassenthwaite Lake SAC habitat most sensitive to reduced air quality is its oligotrophic to mesotrophic standing waters habitat. The critical load for nitrogen deposition for this habitat is listed by APIS as 3-10kg/ha/yr. APIS also notes that "*the lower end of the range is intended for boreal and alpine lakes, and the higher end of the range for Atlantic softwaters. Site specific advice should be sought from the conservation agencies as to which part of the range is relevant. Note that the critical load should only be applied to oligotrophic waters with low alkalinity with no significant agricultural or other human inputs*."

Therefore the higher level of the critical load range would appear to be more applicable. However, the SAC has been subject to nutrient inputs from agricultural and other sources. The Centre for Ecology and Hydrology[7] state that "*sources in the catchment include surface runoff from fertilisers applied to the fields of nearby farms, septic tanks and effluent from nearby sewage treatment works*." This is referring to phosphorus inputs, but the same sources will also be responsible for nitrogen inputs.

[7] https://www.ceh.ac.uk/bassenthwaite-lake-uk-lake-restoration-case-study

It is also of note that the SSSI Unit that occupies the vast majority of the SAC is currently at conservation status 'unfavourable no change', but that the reasons provided for this do not include nutrient levels (either atmospheric or aquatic sources).

Air quality modelling undertaken in support of the HRA of the emerging Local Plan for the A66 several kilometres to the east has identified that taking into account background levels of pollutants and growth within the Local Plan and within surrounding local authorities, no significant adverse effects arising from on the Lake District High Fells SAC would be expected. The critical load for nitrogen here was 10kg/ha/yr and therefore, taking the same threshold for the River Derwent and Bassenthwaite Lake SAC, and assuming that the A66 traffic past the lake will not be significantly greater than as modelled further east, it can be concluded that no significant effects on the River Derwent and Bassenthwaite Lake SAC should be expected.

The Publication Draft Local Plan includes a specific policy DS11PU (Protecting Air Quality) that provides the precautionary text "*development proposals will only be granted planning permission where they will not give rise to unacceptable levels of air pollution*. *Unacceptable levels include those that would potentially lead to likely significant effects on National Site Network and Ramsar sites where mitigation is not possible*."

Furthermore, the site allocations would be delivered in the context of policy H9PU (Allocated Site for Gypsies, Travellers and Travelling Showpeople) which will include the need for such development to avoid leading to "*significant adverse impact on…nature conservation or biodiversity sites*."

Therefore it is possible to conclude no LSE on the SAC will occur through reduced air quality, either alone or in combination with other plans and projects.

Drigg Coast SAC

The SAC is cited as being vulnerable to air pollution and air-borne pollution.

The Drigg Coast SAC lies within 200m of the A595 road at two locations, with a total distance of over 1km of designated habitat length being within 200m. The majority of this habitat is atlantic salt marsh or coastal floodplain grazing marsh, both of which are habitats sensitive to reductions in air quality. However, the HRA of the Local Plan was able to determine that, neither alone or in combination that the critical load/levels will be exceeded for the Drigg Coast SAC.

Therefore, considering that the gypsy and traveller site allocations would be accommodated within the quantum of development allocated within the Local Plan, it is possible to conclude no LSE on the SAC will occur through reduced air quality, either alone or in combination with other plans and projects.

Morecambe Bay SAC, Morecambe Bay Ramsar, Morecambe Bay and Duddon Estuary SPA, Duddon Estuary Ramsar

The SAC is cited as being vulnerable to air pollution and air-borne pollution.

The Morecambe Bay and Duddon Estuary SPA lies within 200m of the A595 road at two locations, with a total distance of over 1km of designated habitat length being within 200m. The majority of this habitat is atlantic salt marsh or coastal floodplain grazing marsh, both of which are habitats sensitive

to reductions in air quality. However, the HRA of the Local Plan was able to determine that, neither alone or in combination that the critical load/levels will be exceeded for the SPA designation.

Outside of the Borough, the SAC, SPA and both Ramsar sites do lie within 200m of A-roads at various locations. The NSN and Ramsar sites are very extensive, and only very small proportions of the site areas lie within 200m of major roads.

It is therefore possible to conclude that considering that the gypsy and traveller site allocations would be accommodated within the quantum of development allocated within the Local Plan, no LSE on the Morecambe Bay designations will occur through reduced air quality, either alone or in combination with other plans and projects.

Duddon Mosses SAC

The SAC is cited as being vulnerable to air pollution and air-borne pollution.

The Duddon Mosses SAC lies within 200m of the A595 road for a total of almost 2km. The habitat is lowland raised bog and the HRA of the Local Plan concluded that nitrogen deposition is already being exceeded for the SAC and that, either alone or in combination with other plans and projects, the critical load for nitrogen could be further exceeded for the Duddon Mosses SAC.

Air quality modelling undertaken in support of the HRA of the emerging Local Plan has identified that taking into account background levels of pollutants and growth within the Local Plan and within surrounding local authorities, no significant adverse effects on the SAC would be expected.

The Publication Draft Local Plan includes a specific policy DS11PU (Protecting Air Quality) that provides the precautionary text "*development proposals will only be granted planning permission where they will not give rise to unacceptable levels of air pollution*. *Unacceptable levels include those that would potentially lead to likely significant effects on National Site Network and Ramsar sites where mitigation is not possible*."

Furthermore, the site allocations would be delivered in the context of policy H9PU (Allocated Site for Gypsies, Travellers and Travelling Showpeople) which will include the need for such development to avoid leading to "*significant adverse impact on…nature conservation or biodiversity sites*."

Therefore it is possible to conclude no LSE on the SAC will occur through reduced air quality, either alone or in combination with other plans and projects.

Subberthwaite, Blawith and Torver Low Commons SAC

The SAC is cited as being vulnerable to air pollution and air-borne pollution.

The SAC lies within 200m of the A5092 road for a total of just over 1km. The habitat is upland flushes, fens and swamps and the HRA of the Local Plan concluded that nitrogen deposition is already being exceeded for the SAC and that, either alone or in combination with other plans and projects, the critical load for nitrogen could be further exceeded for the SAC.

Air quality modelling undertaken in support of the HRA of the emerging Local Plan has identified that taking into account background levels of pollutants and growth within the Local Plan and within surrounding local authorities, then under a high growth scenario, levels of ammonia could be significantly increased within 200m of the A5092.

Approximately 1% of Subberthwaite, Blawith and Torver Low Commons SAC lies within 200m of the A5092. Within these small areas that lie within 200m of the road then any effects from traffic pollutants are likely to be subtle as the area closest to the roadside is the area most likely to be already affected by other factors such as runoff, drainage and previous impacts of the road construction/repairs.

The Publication Draft Local Plan includes a specific policy DS11PU (Protecting Air Quality) that provides the precautionary text "*development proposals will only be granted planning permission where they will not give rise to unacceptable levels of air pollution*. *Unacceptable levels include those that would potentially lead to likely significant effects on National Site Network and Ramsar sites where mitigation is not possible*."

Furthermore, the site allocations would be delivered in the context of policy H9PU (Allocated Site for Gypsies, Travellers and Travelling Showpeople) which will include the need for such development to avoid leading to "*significant adverse impact on…nature conservation or biodiversity sites*."

Therefore it is possible to conclude no LSE on the SAC will occur through reduced air quality, either alone or in combination with other plans and projects.

4.3.5 Loss of Supporting Habitat

Solway Firth SPA

The site inspection report for potential allocation GTW3 states that "*The site is 0.83ha and is located between Woodhouse Road and Low Road, Whitehaven, Cumbria. To the immediate south is Woodhouse Road and residential properties on Greenbank Avenue and Bowness Road. To the east is deciduous woodland along Low Road. There is also deciduous woodland to the north and unimproved grassland associated with the cemetery and the disused Woodhouse Quarry CWS to the north-west. To the west is deciduous woodland between Greenbank and Woodhouse. The site is comprised primarily of broadleaved woodland, continuous scrub, scattered trees and areas of semi-improved neutral and amenity grassland*."

The description for GTW5 states: "*The site is 1.81 ha and is located in Hensingham, Whitehaven, Cumbria. To the immediate south is Sneckyeat Industrial Estate and to the north are the Cumbria Sports Academy grounds. Residential properties and gardens on Sneckyeat Grove and the disused Overend Quarry (now open green space) are present to the west. Agricultural pasture is present to the east. The site is comprised primarily of semi-improved grassland and scrub*."

The bird species for which the Solway Firth SPA is designated are extremely unlikely to utilise habitat dominated by shrubs and trees, with a small total area, and bounded by residential properties.

Therefore it is possible to conclude no LSE on the SPA will occur through loss of supporting habitat.

Morecambe Bay and Duddon Estuary SPA

The site inspection report for potential allocation GTW3 states that "*The site is 0.83ha and is located between Woodhouse Road and Low Road, Whitehaven, Cumbria. To the immediate south is Woodhouse Road and residential properties on Greenbank Avenue and Bowness Road. To the east is deciduous woodland along Low Road. There is also deciduous woodland to the north and unimproved grassland associated with the cemetery and the disused Woodhouse Quarry CWS to the north-west.*

To the west is deciduous woodland between Greenbank and Woodhouse. The site is comprised primarily of broadleaved woodland, continuous scrub, scattered trees and areas of semi-improved neutral and amenity grassland."

The description for GTW5 states: "*The site is 1.81 ha and is located in Hensingham, Whitehaven, Cumbria. To the immediate south is Sneckyeat Industrial Estate and to the north are the Cumbria Sports Academy grounds. Residential properties and gardens on Sneckyeat Grove and the disused Overend Quarry (now open green space) are present to the west. Agricultural pasture is present to the east. The site is comprised primarily of semi-improved grassland and scrub*."

The bird species for which the Morecambe Bay and Duddon Estuary SPA is designated are extremely unlikely to utilise habitat dominated by shrubs and trees, with a small total area, and bounded by residential properties.

Therefore it is possible to conclude no LSE on the SPA will occur through loss of supporting habitat.

4.4 Summary of Screening Outcomes

The screening exercise undertaken to inform this shadow HRA has concluded that no likely significant effects will occur as a result of the potential site allocations GTW3 and GTW5 alone or in combination with other plans and projects through:

- Recreational pressure and disturbance;
- Hydrological changes;
- Reduced air quality; and
- Loss of supporting habitats.

The screening exercise undertaken to inform this HRA has concluded that likely significant effects remain in relation to the River Ehen SAC as a result of the potential site allocation GTW5 through:

- Reduced water quality.

Therefore, further Appropriate Assessment is required and this is considered in **Section 5**.

5 Appropriate Assessment

5.1 Reduced Water Quality

The southern part of the potential allocation GTW5 lies at the upper extremity of both the Pow Beck (South-west Lakes) and Keekle (lower) catchments that lead into the River Ehen SAC.

In order to be able to conclude no LSE on the SAC then were the potential allocation to be taken forward, at the time of any application being submitted a project-level HRA would be required.

To be able to conclude that the allocation is deliverable then the following measures should be put in place within the Local Plan in relation to this allocation. These should state that in order to be acceptable, any application must include details of:

- Pollution control measures within a Construction Environment Management Plan (CEMP). This would need to cover safe storage of vehicles, plant and materials containing potential pollutants (e.g. fuel, oil, chemicals) to avoid pollution through spills and run-off; and protocols for dealing with any accidental spillages including provision of spill kits.
- A drainage strategy that must be in place prior to first occupation. This will need to include provision for disposal of waste water and sewerage such that this is directed into approved and contained waste water systems whereby the effluent will not enter the catchment of the River Ehen SAC. The drainage strategy must also include details of how any surface water run-off will be managed, for example, if necessary through the provision of Sustainable Drainage Systems (SuDS) that would detain run-off and direct run-off away from the catchment of the SAC.

With these measures in place it is possible to conclude no LSE on the River Ehen SAC will remain through reduced water quality, either alone or in combination with other plans and projects.

6 Conclusion

This shadow HRA has been able to determine that as a result of the proposed site allocations GTW3 and GTW5, in relation to recreational pressure and disturbance, reduced water quality, hydrological changes, reduced air quality, and loss of supporting habitat there will be no likely significant effect on designated Natura 2000 sites, either as a result of the allocation alone, or in combination with any other plans or projects.

Appendix 1: Site Allocations in Relation to NSN Sites