

Canterbury District Local Plan review Public Examination 2014

Topic Paper no 3

Habitat Regulations Issues



19 November 2014

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1. Introduction

This Topic Paper addresses Habitat Regulation issues. It outlines the discussions had with Natural England and other relevant organisations over the previous two years. It assesses the likelihood of significant effects on international wildlife sites arising from the Publication Draft of the Canterbury District Local Plan (Local Plan) and discusses the measures to be put in place to address any effects that may arise within and adjacent to Canterbury District in line with the Habitat Regulations 2010. In most instances Natural England have agreed the results of the assessments and the mitigation measures put forward.

2. Overview

Canterbury City Council has had ongoing discussions and consultation with Natural England since 2012 with respect to its Local Plan proposals and compliance with the Conservation of Habitats and Species Regulations 2010 (also known as the Habitat Regulations).

The Canterbury District Local Plan was submitted for examination on 20 November 2014. In a letter dated 18 July 2014 submitted to Council in response to the consultation on the Publication Draft Local Plan, Natural England advised as part of their representation (Objective ID778374) that:

“We advise that we are not satisfied with the HRA as there is insufficient information to allow a conclusion of no likely significant effect on internationally designated sites (N2K sites) to be drawn.

We also consider that the plan is not currently sound, on the grounds that it is not consistent with national policy, as it is not fully compliant with the National Planning Policy framework. Our concerns about the plan focus on the lack of policy detail on protection of N2K sites and mitigation.

We are confident that the issues we have identified can be overcome, and have made recommendations to this effect. Canterbury City Council have always worked positively with us regarding the natural environment in planning matters and we would be happy to agree wording changes with the Local Planning Authority (LPA) in advance of the Examination.

We have also recommended a number of minor modifications which will in our view improve the quality of the plan.

More detail on the issues is set out below.

Habitats Regulations Assessment – lack of information in relation to air quality, water quality and recreational disturbance impacts on internationally designated sites (N2K)

We advise that the current HRA of the draft local plan does not assess adequately the potential impacts that may arise from the plan and therefore does not comply with the Habitats Regulations. This potentially leaves the plan unsound with regard to ensuring that the quantum of housing set out in the plan can be delivered. This is because the evidence in the HRA is insufficiently detailed to screen out potentially significant impacts.

Natural England advises that air quality and water quality impacts need further consideration for all sites and in particular the Blean Complex Special Area of Conservation (SAC) and the Stodmarsh SAC / Ramsar site.

Currently the plan leaves these impacts to be assessed at project level via policy SP7, (according to the HRA). This is not appropriate because:

- 1) Some air quality impacts will not be picked up at the project stage because they are only significant when considered cumulatively. Air quality impacts are not considered in-combination at the project stage if they are not significant individually, so must be considered now.*

2) As a result, there is a risk that developments that occur first will proceed to the detriment of later developments, which could be constrained by the need to deliver mitigation.

3) Mitigation may be delivered best at a strategic level.

We note that the mitigation measures currently suggested by policy SP7 in the local plan would address recreational pressures but would not be appropriate for issues of air quality or water quality". (Objective ID

Canterbury City Council has been working closely with Natural England and other relevant organisations to resolve these issues. Two pieces of work were commissioned ¹ before the consultation on the Publication Draft Local Plan 2014. The outcomes of both this work and additional research have informed the assessments and mitigation proposals set out in this Topic Paper.

Since receiving the representation the Council has been in communications with Natural England via email and telephone including a telephone conference on 10 September 2014 where these issues were discussed and follow up emails. On the 8 October Natural England were asked to confirm the issues and how they would like them addressed. They responded on 15 October 2014. The outcomes of these consultations were:

- *Satisfied that if Council follow the mitigation measures put forward for Swale Coast by the North Kent Planning Group.*
- *With respect to Thanet Coast, the issue is declining bird (Turnstones) numbers due to human/dog disturbance through recreational pressure. There was a need to justify the zone of influence of the impact, identify mitigation measures and calculate contributions for these measures, define in perpetuity, ensure proportionate mitigation measures and delivery, work with adjacent local authorities. Strategic access management and monitoring of the site is the best approach, due to the draw of the coastal site.*
- *Strategic assessment of the impact of air pollution on all internationally designated site within 200m of an affected road. In this instance the impact on the Blean Woods SPA/SAC resulting from increased traffic movements on the A290 over the plan period. The initial screening threshold is an increase of 1000 ADDT within 200m of SPA/SAC. The assessment would need to look at the worst case scenario of background air quality, model traffic movements, and calculate NO₂ emissions and resulting nitrogen deposition on the Blean woodland. If the increase in deposition is less than 1% of the critical load then no further action needs to be taken. This needs to be fully documented and confirmed by Natural England.*

¹ Thanet Coast & Sandwich Bay SPA Visitor Survey 2014, Footprint Ecology.

Strategic Access Management and Monitoring Strategy 2014 – In respect of the Thanet Coast and Sandwich Bay SPA.

- *With respect to the Stodmarsh SAC/SPA/RAMSAR site need to ensure water quality and quantity maintenance. Is there enough sewage treatment capacity at processing points and receiving waters, in particular the Stour? Where are the treatment works and outlets? The water companies need to confirm equivalence capacity in the system to deal with the Plan proposals and that the infrastructure is not failing during storm events. The Environment Agency show state is the review of Consents is complete and if the plan proposals have been assessed against the water framework directive.*
- *Make sure enough recreation space is provided for new development and that it contributes to GI across the district to ensure sustainable development.*
- *Tankerton Slopes and Swalecliffe SAC are there issues or mitigation needed? Is the site owned/managed by the Council? Is trampling currently an issue?*
- *Look at wording of Policy SP7.*

The Council produced this Topic Paper to address these concerns and a draft was submitted to Natural England on 3 November for their comments.

This paper has been discussed with Natural England and provides their responses to the assessments undertaken and mitigation measures proposed (as laid out in an email dated 13 November 2014). The Council is satisfied that it will ensure that the Habitat Regulations are complied with.

The paper considers each of the sites of international importance:

- The Swale SPA, Ramsar;
- Thanet Coast and Sandwich Bay SPA and Ramsar;
- The Blean Complex SAC;
- Stodmarsh SAC, SPA and Ramsar;
- Tankerton Slopes and Swalecliffe SAC.

3. The Swale – Special Protection Area and Ramsar Site.

This assessment includes three protected sites. The Swale Site of Special Scientific Interest (SSSI) Special Protection Area (SPA) and Ramsar site is designated for its breeding and overwintering wildfowl populations, important wetland and coastal habitats and their associated assemblages of plants and invertebrates. The Conservation Objectives² for the site include avoiding the deterioration of the habitats of the qualifying features and the significant disturbance of those qualifying features. The Thames and Medway Estuaries, also internationally designated wildlife sites, lie close by. This flat open landscape of grazing marsh and intertidal mudflats stretching from the River Thames estuary in the west to the Swale Estuary in the east are together known as the North Kent Marshes. The estuaries are close to highly populated areas of Kent and recreation disturbance is an important issue.

Studies have shown a marked decline in key bird species. There is currently insufficient evidence to adequately assess the cause of these declines. Disturbance is one potential factor, and studies have shown recreational activities to cause disturbance impacts to birds. The declines in birds have been detected at the SPA level³.

A study titled 'Phase 1 Bird Disturbance Report (2012)' draws together the information gathered to date to provide a review of the impacts of recreational disturbance. In summary it concludes:

- There have been declines in the number of birds using the three SPAs and Ramsar Sites. Declines in the Medway are apparent in parts of the estuary with a high level of access;
- A range of recreational activities take place along the coastline with a number of heavily used sites;

² **Avoid the deterioration of the habitats of the qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive.**

Subject to natural change, to maintain or restore:

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features;
- The supporting processes on which the habitats of the qualifying features rely;
- The populations of the qualifying features;
- The distribution of the qualifying features within the site.

³ The work to date has produced:

- A baseline study of the current information on birds and habitats (Natural England Commissioned Report 082: What do we know about the birds and habitats of the north Kent marshes? 2011)
- A bird disturbance report (Bird Disturbance Study North Kent 2010/2011)
- A visitor Survey (North Kent Visitor Survey Results, Sept 2011)
- A North Kent Comparative Recreation Study (2012)
- Estuary Users Survey (2011)
- Roost Survey (2011)
- A concluding report summarising the results (Phase 1- Bird Disturbance Report, July 2012).

- Disturbance is a potential cause of decline. The disturbance study shows birds respond to the presence of people and in particular those with dogs;
- That there may be some relationship between levels of access and bird disturbance, bird numbers at locations with high numbers of visitors were low;
- Access levels are linked to local housing, with much of the access involving frequent use by local residents;
- Development within 6km of access points to the SPAs and Ramsar Sites, and large developments beyond this, are likely to lead to increased recreational use of the designated sites;

It is not possible to demonstrate no adverse effect on the integrity of the European sites and mitigation measures will need to be considered. Therefore, there is risk of significant impacts on the European sites, either further assessment needs to be conducted that proves disturbance is not an issue or mitigation put in place to avoid any adverse impacts.

Mitigation

It is, therefore, appropriate to put in place, proactively, a Strategic Access Management and Monitoring (SAMM) strategy. A SAMM will present a means by which it can be assured that development will not have a likely significant effect. This would mean that any development that contributed at an appropriate level to the SAMM would not need to be subject to an appropriate assessment under the Habitat Regulations as it would be screened out as no likely significant effect. This would help to streamline determination of planning applications and enable the delivery of new housing, whilst ensuring no significant impact from recreational disturbance occurred on site.

The Thames, Medway and Swale Estuaries – Strategic Access and Recreation Management Plan has been drafted and discussion by all affected local planning authorities in July 2014, however a timetable for publication and adoption has yet to be agreed. The SAMM seeks to resolve disturbance issues to wintering birds on the North Kent Marshes. The report focuses on the European Protected Sites (Thames Estuary and Marshes SPA/Ramsar, Medway Estuary and Marshes SPA/Ramsar and The Swale SPA/Ramsar Site) and their internationally important bird interest features.

New development will further exacerbate the pressures on these internationally important sites. New development (in the region of 68,000 dwellings are set out in the relevant local plans) brings more people to the local area and access levels have been predicted to increase on the coastal sites by around 15%. Such an increase will be gradual and long-term, across a wide stretch of coast; robust solutions are required to ensure that this level of development, considered in-combination, does not have an adverse effect on the integrity of the European sites.

The Strategic Access and Recreation Management Plan addresses disturbance impacts and provides a strategic, cross-boundary solution to issues relating to disturbance. There are two clear aims:

- To support sustainable growth whilst protecting the integrity of European wildlife sites from impacts relating to recreational disturbance
- To reduce the existing recorded recreation impact on birds on the European wildlife sites in order to meet duties relating to the maintenance and restoration of European sites, as required by Article 4(4) of the Birds Directive.

Key Elements within the plan are:

- A North Kent Coast Dog Project
- Wardening/Visitor Engagement
- New Access Infrastructure
- Parking (Strategic Review and Changes to Parking)
- Codes of Conduct
- Interpretation/signage
- Work with local club/group
- Refuge
- Enhancement of existing sites to create hub
- Enhancement to existing GI away from SPA
- Enforcement
- Monitoring

Implementation

The Strategic Access and Recreation Management Plan was commissioned by the North Kent Planning Group⁴, which has been working together for a number of years to develop strategic and cross boundary approaches to mitigating for the impacts of growth on European sites.

Each local authority remains responsible for ensuring compliance with the Habitat Regulations for any plan or project taken forward under their authority. However a strategic and cross boundary approach can provide notable benefits in terms of shared administration and collaborative working.

The next steps for implementation, set out in the Strategic Access and Recreation Management Plan, are as follows:

- Establishment of a developer contributions tariff, based on calculations within this SARMP

⁴ The North Kent Planning Group includes: North Kent Local Planning Authorities (Dartford, Gravesham, Medway, Swale, Canterbury, Thanet); Natural England; Environment Agency; Greening the Gateway; Kent Wildlife Trust; RSPB; KCC; HCA

- Continued review of spatial planning documents to ensure that the SARMP is plan led
- Establishment of a partnership/board/panel with Terms of Reference and memorandums/commitments agreed
- Agreement on the level of individual/joint working to take the scheme forward.
- Agreement on a lead authority and administrative procedures.
- Consideration of dedicated staff/allocated resources for the SARMP within each organisation
- Planning for the implementation of immediate measures
- Progression on the detail of more aspirational measures to establish level of contribution to the two objectives of the SARMP

The Council will continue to work with the North Kent Environment Group to ensure this happens.

All elements of the plan are categorised as one of the following:

- A. Clear mitigation for new development (as related to particular housing allocations/areas of notable growth, or necessary to be confident of no adverse effect on integrity, as a result of cumulative impacts of new development over a broad area).
- B. Clearly linked to a current issue or required to rectify current problem.
- C. More aspirational or less defined at this stage. This may be an opportunity to avoid or mitigate for impacts but they could be implemented in a number of ways, with a variety of partners providing input, or may be such that it is best refined over time, and/or being informed by new information.

Using the above criteria, elements that are categorised as ‘A’ are those that could form part of a tight, clearly defined mitigation package. Such elements include a senior ranger post, two seasonal rangers, a Dog Project, interpretation boards, changes to parking, signs, and monitoring. The total capital costs for these elements is £185,300, plus an annual figure of £95,000.

Based on the assumption that there will be 35,000 dwellings constructed within 6km of the SPA boundaries (and annual costs scaled to apply annually for 80 years), this would equate to **£223.58 per dwelling**. European Protected wildlife site mitigation will receive the highest level of funding prioritisation. This commitment to the protection and delivery of necessary mitigation measures for European Protected wildlife sites and species will ensure the Council’s legal requirements are satisfied.

This figure may be subject to some amendment but will be applied to all new dwellings within 6km of the SPA. In terms of proposed allocations in the Canterbury District Local Plan this will include:

- **Site 007: North of the Thanet Way**

Conclusion

Natural England has supported this approach as an effective solution for these sites subject to the Local Planning Authorities committing to the Thames, Medway and Swale Estuaries – Strategic Access and Recreation Management Plan.

4. Thanet Coast and Sandwich Bay – Special Protection Area and Ramsar Site

The Thanet Coast and Sandwich Bay SPA follows the coast around the north-eastern tip of Kent. It consists of a long stretch of rocky shore, adjoining areas of estuary, sand dune, maritime grassland, saltmarsh and grazing marsh. The Thanet Coast and Sandwich Bay SPA also lie close to the Thanet Coast Special Area of Conservation and other related designations include the North East Kent European Marine Site and the Thanet Coast Marine Conservation Zone.

The Special Protection Area is designated for three species: Golden Plover *Pluvialis apricaria* (non-breeding) Turnstone *Arenaria interpres* (non-breeding) and Little Tern *Sterna albifrons* (breeding). The Conservation Objectives⁵ include avoiding deterioration of their habitats and any significant disturbance.

To date, advice from Natural England is that the planned quantum of housing in the Canterbury and Thanet districts will result in a likely significant effect on the bird interest (over-wintering Turnstones) of the Thanet Coast and Sandwich Bay SPA and Ramsar Site from increased recreational disturbance associated with new housing. Surveys in 2013 identified a significant reduction in Turnstone numbers, in almost all sections of the coast. This reduction has been confirmed by further surveys in 2014⁶. A report for Natural England by the Sandwich Bird Observatory Trust⁷ made the following statement:

“The population of Turnstones within the Thanet and Sandwich Bay SPA in six previous surveys between 2001 and 2010 was found to vary between 1,087 and 1,335, with a mean of 1,227. Against this background, the co-ordinated count of only 620 in the 2013 survey gives significant cause for concern, particularly as numbers were found to be reduced in almost all sections of the coast.

Although disturbance from walkers was found to be reduced, dogs continue to be the primary cause of roost disturbance and this type of disturbance appears to be increasing. This needs to be addressed in any disturbance avoidance measures implemented in future. The current survey reinforced the importance of signage and interpretation as a means of informing beach users

⁵ **Avoid the deterioration of the habitats of the qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive.**

Subject to natural change, to maintain or restore:

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features;
- The supporting processes on which the habitats of the qualifying features rely;
- The populations of the qualifying features;
- The distribution of the qualifying features within the site.

⁶ Thanet Coast Turnstone (*Arenaria interpres*) Monitoring January – February 2014 A Report to Natural England by Ian Hodgson On behalf of Sandwich Bay Bird Observatory Trust (SBBOT)

⁷ Sandwich Bird Observatory Trust (February 2013) Thanet Coast Turnstone (*Arenaria interpres*) Monitoring.

about the Turnstones and helping to reduce disturbance incidents has been highlighted in previous reports. Most of the key roost sites are judged to require effective signage / interpretation, backed-up by frequent contact with wardens as the best means of minimising disturbance in future”.

The survey was repeated in 2014, reporting that:

“Despite concerns that some birds may have been missed in the 2013 survey, results from two co-ordinated counts in 2014, supported by a programme of roost site monitoring, confirmed that the apparent decrease has been genuine.”⁸

The report states that although it is not possible to conclude the reasons for the decline, it notes the increased willingness of some Turnstones to tolerate human activity, but a high number of dogs off leads, speculating that this is likely to be a significant factor in the decline of the over wintering Turnstone population.

An amber WeBS alert has been issued for Turnstones within this SPA due to a 46% decline in population numbers since classification⁹. These decreases are not tracking regional trends but appear to be due to site specific pressures. These disturbance factors may also be impacting on the other SPA qualifying species including Golden Plover (*Pluvialis apricaria*), and Little Tern (*Sterna albifrons*).

New development within Canterbury and adjacent districts will further exacerbate the pressures on this internationally important site. The Publication Draft of the Canterbury District Local Plan 2014 anticipates construction of 15,600 houses by 2031, 6,638 of which will be in the coastal towns within easy access of the coast. In total new development (in the region of 40,000 dwellings) are proposed in the Canterbury, Thanet and Dover Local Plans, which are at different stages of development. This will bring more people to the local area and access levels have been predicted to increase on the coastal sites. Such an increase will be gradual and long-term, across a wide stretch of coast; therefore, robust solutions are required to ensure that this level of development, considered in-combination, does not have an adverse effect on the integrity of the European site. Although the visitor survey¹⁰ provides valuable data on visitors to the SPA, it will not be possible to accurately use the survey data to predict precise changes in visitor numbers resulting from housing development for a variety of reasons including changes in demographics and changes in the leisure and tourism markets as well as countrywide economic changes. However, measures proposed in the mitigation plan will include on-going visitor surveys to assess changes in visitor numbers and patterns.

⁸ Thanet Coast Turnstone (*Arenaria interpres*) Monitoring January – February 2014 A Report to Natural England by Ian Hodgson On behalf of Sandwich Bay Bird Observatory Trust (SBBOT)

⁹ <http://blx1.bto.org/webs-reporting/?tab=alerts>

¹⁰ Thanet Coast & Sandwich Bay SPA Visitor Survey 2014, Footprint Ecology

As the risk of significant impacts on the site resulting from the Publication draft of the Local Plan cannot be excluded for and potentially could have an adverse effect on the integrity of the European site. Either further evidence is required with respect to the impact of recreational disturbance and/or mitigation can be implemented to avoid the likelihood of significant effects on the site.

Mitigation Strategy

Discussions with Natural England have identified that access management, awareness raising and education delivered through a wardening scheme would be appropriate mitigation to reduce impacts on Turnstones during their over-wintering period (Sept – April), with further monitoring to ensure these measures are effective. These measures will be required in-perpetuity.

It is, therefore, appropriate to proactively put in place a Strategic Access Management and Monitoring (SAMM) strategy. Canterbury City Council commissioned consultants Blackwood Bayne and Val Hyland to design a Strategic Access Management and Monitoring mitigation package, to include costings and tariff calculations.¹¹

The SAMM considers the impacts of increases in recreation activities resulting from additional housing allocations on the Thanet Coast and Sandwich Bay SPA qualifying species and outlines monitoring and mitigation to reduce the recreation impact on qualifying species in particular the Turnstones. The key issues reviewed were:

- Turnstone disturbance including:
 - Distribution of Turnstone over-wintering feeding sites and high tide roosts;
 - The proximity of visitors and disturbance to Turnstone areas;
 - The availability of ‘refuge’ areas for Turnstones;
- Visits with dogs;
- Visitor awareness and behaviour;
- Visitor access;
- Visitor ‘honey-pot’ sites;
- Cross-boundary issues;
- Sustainability.

The SAMM strategy presents a means by which it can be assured that development avoids a likely significant effect on the site. Therefore any development that contributes at an appropriate level to the SAMM would not need to be subject to an appropriate assessment under the Habitat Regulations. This

¹¹ Strategic Access Management and Monitoring Strategy 2014 – In respect of the Thanet Coast and Sandwich Bay SPA.

would help to streamline determination of planning applications and enable the delivery of new housing as well as providing effective monitoring, management and mitigation of the SPA.

To help support and compliment the specific mitigation measures outlined above new developments must also include sufficient and appropriate on site green infrastructure to meet sustainable development and developer contributions needs. Although the coastal experience cannot be replaced by open space provision on development sites, some pressure relief maybe provided by provision of onsite locally accessible recreation and dog walking space. It will also contribute to habitat gain. A proportion of dog walks could be satisfied if on-site, locally available, good walking provision is made, such as, an attractive circular route of adequate length and fenced off-lead exercise areas, provision of parking and bins. Such on-site open space provision will be expected on all strategic development sites. The Thanet Coast and Sandwich Bay Visitor Survey 2014 indicated that a high proportion of dog walkers selected locations based on their proximity to home.¹²

Zone of Influence

A 'Zone of Influence' needs to be established in order to inform the scale and range of the impact on the European site and subsequent mitigation. The Zone of Influence is the area within which it is considered that an impact on European site interest can be identified. It defines a geographical area within which there is potential for significant impacts (for example: additional housing allocation increasing recreation pressure) that need to be avoided or mitigated for, and outside which it unlikely to result in a significant impact on the European site. It is necessary that a Zone of Influence is identified to ensure that development will contribute where it is likely to have a significant effect through in combination impacts, alone or in combination with other development sites.

In 2014 Canterbury City Council commissioned Footprint Ecology to establish which future housing sites are most likely to contribute to this recreational impact. Visitor surveys¹³ were carried out in February and March 2014. The survey data and methodology are set out in the final report: *Thanet Coast and Sandwich Bay Visitor Survey 2014*. This helped to identify how far people travelled to visit the SPA, what the general pattern of visits was, and the purpose of the visit.

There is no adopted standardised method to identify a 'zone of influence' as each site and their surrounding physical features differ greatly. The identification of a 'zone of influence' is an exercise in identifying a logical pragmatic boundary that is; representative of visitor patterns to the site, the

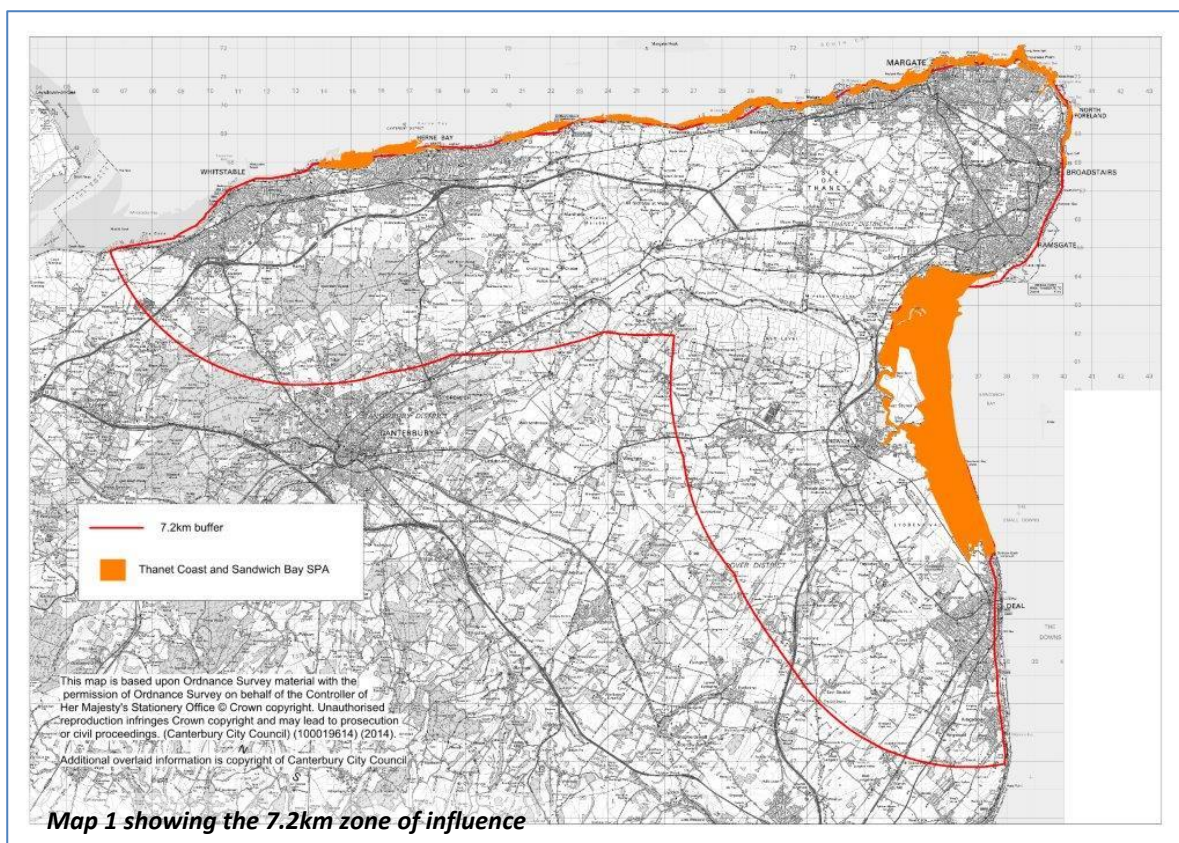
¹² Thanet Coast & Sandwich Bay SPA Visitor Survey 2014, Footprint Ecology.

¹³ In total, 8 days of face to face interviews were carried out, such that 16 hours of survey work were conducted at each survey location, split equally over one weekday and one weekend day.

physical features of the site, infrastructure, current housing distribution and the nature of the surrounding area. European site strategic mitigation schemes for recreational pressure tend to use visitor surveys to define a zone of influence based on 75% of the regular visitors or a similar approach to identify the core area.

Canterbury City Council intends to apply a 7.2km buffer around the SPA see Map 1. This zone incorporates 90% of all regular visitors to the SPA, 76% of which were there to walk dogs as outlined in the 2014 Footprint visitor surveys. This zone incorporates the strategic allocations at Sturry/Broad Oak, Hersden, Herne Bay and Whitstable, amounting to 6638 houses (including predicted windfalls). The 5210 residential units that make up the 3 strategic allocations of South Canterbury, Kent and Canterbury Hospital site and the Barracks in Canterbury City are located outside the zone of influence being 10.8km, 10.9km and 10km away from the SPA respectively. Based on the current survey data it is considered that residents of these sites are unlikely to be regular visitors to the coast. However, visitor numbers and their origin will be regularly surveyed and the zone of influence reassessed if future surveys show a change in visitor patterns.

The Council has a duty to ensure that no significant impacts occur on the SPA. Continuing declines in Turnstone numbers are a cause for concern so the precautionary approach is appropriate. The zone of influence will need to be kept under review as new housing develops to ensure that it accurately reflects use of the SPA. As such, visitor surveys are planned for year 2 and year 5 of the Local Plan and there after every 5 years. The outcomes of these surveys and Turnstone population monitoring may lead to the zone of influence being reviewed.



Implementation

The impact of recreational disturbance is considered a key concern for the coastal SPAs and evidence suggests that risk of significant effects occurring on the SPA and Ramsar bird interest features cannot be ruled out from housing development. This potential impact is most efficiently mitigated at a strategic level, due to the in-combination nature of the impact and the distances from which visits occur.

An evidence based approach to mitigation enables local planning authorities as competent authorities under the European Directives and Habitat Regulations to effectively fulfil their duties relating to the restoration and maintenance of European sites, and their protection from future impacts. Within the identified Zone of Influence, the Council must plan for the measures necessary to prevent further impacts arising from new residential development.

Access management, awareness raising and wardening have been identified as appropriate mitigation to reduce impacts on roosting Turnstones during their over wintering period (8 months), with monitoring in place to ensure that these measures are effective.

Given the level of housing coming forward these measures will be **required in-perpetuity**. In this instance in-perpetuity has been defined as the on-going quantity of funds required to provide self-

sufficient mitigation strategy year on year from the end of the plan period. It includes initial set up costs and a capital pot. The timeframes is assessed as at least 125 years.

As the Thanet and Sandwich Bay SPA extends through 3 districts (Canterbury, Thanet and Dover) and the impacts are cumulative and cross-boundary the issues would ideally be resolved on and East Kent basis. Key to the implementation of the SAMM will be cross-boundary working with neighbouring Local Authorities. However, the seriousness of the Turnstone decline was not apparent until 2013 and Canterbury City Council has had to move on with the targeted mitigation plans for Turnstone. Canterbury City Council will be working with Thanet and Dover District Councils. Discussions have begun about implementation of the wardening scheme with Thanet District Council. Discussions with officers demonstrate that Thanet is keen to work jointly with Canterbury to develop and implement a mitigation scheme through the Thanet Coast Project - North East Kent Marine Protected Area Group would necessitate this. CCC has been working with Dover and Thanet for some time on East Kent Green Infrastructure¹⁴. It should be noted that a survey in 2012¹⁵ identified that over 80% of visitors to Sandwich Bay and surrounds lived within 3km, so visitors from Canterbury District have little impact on the eastern section of the SPA/Ramsar site.

The following mitigation scheme will be implemented in perpetuity:

- Strategic co-ordination of the project cross boundary with adjacent Local Authorities in particular Thanet District Council.
- A wardening service to work on the ground at European sites to reduce disturbance levels and initiate specific measures at the sites to reduce disturbance levels. It is likely that the post will be managed by the Thanet Coast Project - North East Kent Marine Protected Area Group based at Thanet District Council. This arrangement will have the advantage of access to an existing Action Plan, monitoring scheme and volunteer coastal wardens and immediate implementation.
- Enforcement may include the extension of dog control orders and byelaws.
- Signs, interpretations, education and community engagement
- Management of visitors on site;
- A monitoring schemes for visitors and qualifying species.

In support of the mitigation strategy there may need to be a review of parking charges, access to parking and consideration of a coastal dog project to keep dogs on leads and/or away from Turnstones during the roosting season September to April particularly for 1.5 hours either side of high tide. This will be particularly important in the time before wardens are in post to ensure there is no significant impact,

¹⁴ An East Kent Approach to Green Infrastructure and recreation, April 2014, Val Hyland and Blackwood Bayne.

¹⁵ Dover Visitor's Survey: Pegwell Bay & Sandwich Bay Thanet Coast & Sandwich Bay SPA/Ramsar site

as there may be a 'lag' before enough contributions are collected. However, if the current project running in Thanet is extended as proposed there should be little lag time.

The Council acknowledges that disturbance from a new development can occur across several local authorities and discussion will continue with Thanet and Dover District Councils to ensure that the impacts of development on the whole SPA/Ramsar are appropriately mitigated. The wardening service and other proposed mitigation measures will be designed to work across district boundaries creating a flexible suite of measures to ensure resources are placed most productively to reduce disturbance.

This mitigation scheme has been scaled on the amount of development in the Publication Draft of the Local Plan. This allows developers to benefit from economies of scale in implementing the mitigation.

This package of measures is considered sufficient in order to effectively mitigate the significant effect which may arise from proposed development. The package of measures will need to be secured in perpetuity, to ensure that it is in place for the lifetime of the development. As such, sufficient funds will need to be invested so that by the end of the plan period the mitigation scheme is self-financing.

The total cost of the mitigation framework will be vicinity of £569 per net additional dwelling provided through a development scheme¹⁶. An administration charge will also apply. All development within the Zone of Influence must complete a planning obligation (s106) prior to a grant of planning permission which provides the necessary level of mitigation, proportionate to the scale of development being proposed.

This tariff has been designed to provide a self-financing scheme in perpetuity (at least 125 years). Thus the tariff breakdown is:

- £154 per dwelling towards the revenue costs of setting up and operating the mitigation plan
- £415 per dwelling towards a capital fund which will accrue during the period of development.

European Protected wildlife site mitigation will receive the highest level of funding prioritisation. This commitment to the protection and delivery of necessary mitigation measures for European Protected wildlife sites and species will ensure the Council's legal requirements are satisfied.

Mitigation requirements will apply to all development within the Zone of Influence, including the following proposed allocations:

¹⁶ Strategic Access Management and Monitoring Strategy 2014 – In respect of the Thanet Coast and Sandwich Bay SPA.

- **Land at Sturry / Broad Oak**
- **Hillborough site, Herne Bay**
- **Herne Bay Golf Course**
- **Strode Farm, Herne Bay**
- **Land at Greenhill, Herne Bay**
- **Thanet Way, Whitstable**
- **Land North of Hersden**
- **Land at Bullockstone Road, Herne Bay**

The tariff may also be applied to other development not identified in the Local Plan that comes forward that is shown to have an impact on the SPA which could include:

- A development of sufficient scale, within or outside of the zone of influence that would generate significant effects, alone or in combination;
- A development in sufficient proximity to the protected site to generate additional significant effects, alone or in combination;
- Increases in holiday accommodation close to the coast;
- Extension of the period of residency at caravan parks close to the coast;
- Conversion of business use to residential use within the zone of influence;
- Conversion of buildings or beach huts, to holiday accommodation within the zone of influence.

Conclusion

Through implementation of the Strategic Access Management and Monitoring Strategy and associated tariff it should then be possible for the Habitat Regulations Assessment to conclude that a significant effect on the SPA as a result of the development is unlikely.

In principle Natural England would support this approach as an effective solution this site.

5. The Blean Complex Special Area of Conservation

The Blean Woods Complex is one of the largest woodland areas in England, stretching 10 miles east to west and 4.5 miles north to south. The main reason for it remaining woodland are the heavy clay or sterile gravels making it agriculturally poor, this is also a limiting factor in its overall biodiversity.

The Joint Nature Conservation Committee (JNCC) define the Blean as Sub-Atlantic and medio-European oak or oak-hornbeam forests of the *Carpinion betuli*. More specifically, hornbeam *Carpinus betulus* coppice occurs interspersed with pedunculate oak *Quercus robur* stands and introduced sweet chestnut *Castanea sativa*. Great wood-rush *Luzula sylvatica* is locally dominant in the woodland, and the characteristic greater stitchwort *Stellaria holostea* is found in more open patches. The stands have traditionally been managed as coppice, and are one of the British strongholds for the heath fritillary butterfly *Mellicta athalea*¹⁷.

The Conservation Objectives¹⁸ for the site include avoiding the deterioration of the natural habitats and habitats of the qualifying species and the significant disturbance of those qualifying species.

Screening under the Habitat Assessment Regulations for the Canterbury District Local Plan identified that, on a precautionary basis, the increased number of vehicles resulting from additional housing and employment provision, as proposed in the Publication Draft of the Local Plan, has the potential to indirectly impact on, through air pollution, the vegetation and soil constituting the habitat designated as a Special Area of Conservation (SAC) known as the Blean Complex of Blean Woods.

Canterbury City Council has considered the predicted traffic generated by the Local Plan allocations and whether associated air quality changes would be likely to have a significant effect on Blean Special Area of Conservation in accordance with the Design Manual for Roads and Bridges (DMRB). The detailed methodology is set out at Appendix 1.

Natural England has made the following statement:

“The proposals are likely to generate additional nitrogen emissions as a result of increased traffic generation, which can be damaging to the natural environment.

¹⁷ <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUcode=UK0013697>

¹⁸ **Avoid the deterioration of the qualifying natural habitats and the habitats of the qualifying species, and the significant disturbance of the qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.**

Subject to natural change, to maintain or restore:

- The extent and distribution of the qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species;
- The supporting processes on which the qualifying natural habitats and habitats of qualifying species rely;
- The populations of the qualifying species;
- The distribution of the qualifying species within the site.

No assessment has been carried out in the HRA to screen out the issue of air quality; rather it has been left to policy SP7 of the local plan to address the issue at the project level. This is not appropriate as individual projects are only assessed in-combination with one another if they are above the significance threshold by themselves. The assessment at the plan level is an opportunity to assess the impact of all proposed development to determine if there is likely to be a significant effect and to address this strategically.

We advise that designated sites at risk from local impacts are those within 200m of a road with increased traffic, and which feature habitats that are vulnerable to nitrogen deposition/acidification. It is also possible that air quality impacts from the wider road network may impact on vulnerable sites. The effects on such sites should therefore be assessed using traffic projections and the 200m distance criterion followed by local Air Quality modelling where required.

We advise that, in addition to assessing local air quality effects, consideration should also be given to national air quality impacts resulting from diffuse pollution over a greater area. The UK Government has international commitments to reduce national emissions of pollutants and consideration should be given to impacts that occur on a regional, national and international scale and which also contribute to background concentrations.

From evidence we have seen in a HRA carried out for the Herne Bay Golf Course development (one of the allocated sites in the local plan), this suggests that the Annual Average Daily Total (AADT) movement generated by the local plan are likely to be approximately 2,940 AADT on the A290 road between Canterbury and Whitstable passing within 200m of the Blean Complex SAC. Therefore AADT appear to exceed the significance threshold and would therefore require further assessment.

We have already advised Canterbury City Council of this issue. We understand that they are investigating. However, this detail must be in the HRA”.

The pollutant of most concern for sensitive vegetation and ecosystems near roads is nitrogen (NO_x)¹⁹. NO_x is composed of nitric oxide (NO) and its oxidation product nitrogen dioxide (NO_2). In the atmosphere NO is oxidised to NO_2 in by combining with O_3 (ozone). Nitrogen dioxide is taken up by plants principally through their stomata. Concentrations of NO_2 are higher close to roads so vegetation in these areas is exposed to a larger source of nitrogen (N). While plants are able to detoxify and assimilate low exposure to atmospheric concentrations of NO_x , high levels of uptake can lead to detrimental impacts.

The exceedance of the identified critical load²⁰ means, when applying the precautionary principle, that there may already be an impact on the favourable status of the SAC in the future. The Blean Complex

¹⁹ Design Manual for Roads and Bridges volume II, section 3 Part 1.

²⁰ **Critical load** - a quantitative estimate of exposure to deposition of one or more pollutants, below which significant harmful effects on sensitive elements of the environment do not occur, according to present knowledge. The exceedance of a critical load is defined as the atmospheric deposition of the pollutant above the critical load (APIS). Critical loads are the annual quantity of pollutants a particular habitat can safely absorb.

SAC components are currently identified as being mainly in favourable status, despite a significant critical load exceedance²¹. This may be because of a delayed response to nitrogen deposition, or because its status may still be judged as favourable despite some impacts of nitrogen.

Although the numbers of cars and associated pollutants are likely to increase during the period of the plan it is difficult to predict the cumulative impacts of these changes, particularly when considered against the already substantial background pollutant levels.

Assessment

Changes in traffic volumes or speed on an affected road within 200m of a designated site may have deleterious impacts on the site due to increases in air pollution²². The speed of traffic on the road is unlikely to change but the Average Annual Daily Traffic (AADT) is predicted to increase. The DMRB Indicates that increases in traffic of less than 1000 AADT are unlikely to have a significant impact. The current AADT is 12212 and traffic modelling done by CCC and KCC using VISUM has predicted that the increase in AADT resulting from local plan allocations will be 1567 with the total increase in traffic across the Local Plan period predicted to be 4388 AADT. As the increase in traffic as a result of the Local Plan across the plan period is greater than 1000 AADT on the A290 is considered an affected road. Further assessment was required to determine whether this increase in AADT is likely to significant effects.

Therefore, Natural England requested further assessment of the air quality impacts that would be generated from the increase in traffic due to Local Plan allocations on affected roads. The only road found to be affected within 200m of an SAC was the A290 at Blean. The SAC is closely related to the A290 at three points, Ellenden Wood at Pean Hill and Church Wood at Blean Common and Tile Kiln Hill (see appendix 3). Natural England has stated that if the quantity of nitrogen deposition resulting from increased air pollution due to increases in the AADT from the Local Plan allocations was less than 1% of the critical load of the relevant vegetation type then the potential impact on the woodland would be unlikely to be significant in terms of the Habitat Regulations.

Each of these locations was assessed by inputting the traffic counts predicted by the VISUM modelling into the Design Manual for Road and Bridges: Assessment of Local Air Quality (DMRB model)²³ modelling along with the 2011 predicted background NO_x and NO₂ values from the Department for Environment, Food and Rural Affairs (DEFRA) background maps²⁴. This provided NO_x emissions for the three traffic scenarios (current, background and total including the Local Plan allocations) at each of points where

These are determined by the UK Air Pollution Information System (APIS) for particular vegetation types. In this instance the Blean SAC is considered a Meso and eutrophic oak hornbeam woodland and has a critical loading of 15-20 kgN/ha/yr

²¹ Critical loads within the Blean Complex are already known to be exceeded by 12-21 kgN/ha/yr (APIS deposition data 2010-2012)

²² Highways Agency (2007) Design Manual for Roads and Bridges (DMRB) Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 1 Air Quality.

²³ Highways Agency (2007), Revised Guidance for Air Quality Assessments DMRB 11.3.1

<http://www.dft.gov.uk/ha/standards/guidance/air-quality.htm>

²⁴ <http://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html>

the SAC comes within 200m of the affected road. These were converted into nitrogen deposition amounts using conversion ratio (to calculate resulting NO₂) then a dry deposition flux calculation²⁵ and converted into deposition amounts using a conversion factor of 96. The increase in nitrogen deposition resulting from the local plan allocations was calculated and assessed against the critical loading for the site given by APIS for meso and eutrophic oak hornbeam woodland as 15 kgN/ha/yr²⁶. All three of the sites for all scenarios were found to have annual increases of nitrogen deposition of less than 1% of critical load as shown in table 1 (see appendix 1 for full details).

Table 1: Summary table showing the predicted increased in Nitrogen deposition resulting from predicted increases in traffic on the A290 across the plan period.

Site	Traffic counts AADT	Distance to receptor (m)	Predicted NO _x conc'n (ug/m ³) ²⁷	Calculated NO ₂ conc'n (ug/m ³)	Flux (NO ₂ ugm ⁻² s ⁻¹)	Deposition amounts (kg/ha/yr)	Nitrogen deposition increase as a % of critical volume ²⁸
Pean Hill current/baseline	12212	35	20.5 ²⁹	31.433	0.0943	9.053	
Pean Hill without LP	15033	35	21.5	32.967	0.0989	9.494	
Pean Hill total with LP	16600	35	21.8	33.427	0.1003	9.627	0.883%
Blean Common current/Baseline	12212	59	18.4	28.213	0.0846	8.125	
Blean Common without LP	15033	59	19	29.133	0.0874	8.390	
Blean Common total with LP	16600	59	19.1	21.287	0.0879	8.435	0.294%
Tile Kiln Hill Current/baseline	12212	106	17	26.067	0.0782	7.507	
Tile Kiln Hill without LP	15033	106	17.2	26.373	0.0791	7.596	
Tile Kiln Hill total with LP	16600	106	17.3	26.527	0.0796	7.639	0.294%

Conclusion

Therefore, the results of the air quality assessment found a non-significant increase in nitrogen deposition due to the Local Plan allocation and across the Local Plan period.

In addition at two of these sites houses along the roadside may provide a barrier to much of the air pollution arising from vehicle exhausts locally. Further, implementation of a challenging Transport

²⁵ Dry deposition flux ($\mu\text{g m}^{-2} \text{s}^{-1}$) = ground level concentration ($\mu\text{g m}^{-3}$) x deposition velocity (m s^{-1}).

²⁶ Air Pollution Information Systems (APIS) Table of Critical Loads - <http://www.apis.ac.uk/indicative-critical-load-values>

²⁷ NO_x amounts calculated using the DMRB model for assessing air pollution and DEFRA's 2011 background pollution levels.

²⁸ Percentage increase in nitrogen deposition at each of the receptor sites directly attributable to traffic arising from the local plan proposals.

²⁹ The NO_x data is calculated using the 2011 air pollution levels

Strategy to limit vehicle use and progression in the development of low emission vehicles, should also further limit pollutant levels locally.

This assessment demonstrates that there is unlikely to be a significant impact on the Blean Complex Special Area of Conservation due to nitrogen deposition resulting from proposals/allocations in the Publication Draft of the Canterbury District Local Plan.

It can, therefore, be concluded that there is ‘no likely significant effect’ as a result of the allocations in the Publication draft Local Plan provided that the Council commits to ensuring that the number of vehicles on the A290 does not increase significantly beyond that predicted.

Natural England agrees with the conclusions of this assessment for these sites.

6. The Stodmarsh Special Area of Conservation, Special Protection Area and Ramsar Site

Stodmarsh is a wetland resulting from coal mining subsidence under the valley of the Great Stour. The range of wetland habitats include open water, extensive reed beds, grazing marsh and alder and contain noteworthy flora and fauna. Stodmarsh Special Area for Conservation (SAC) and Special Protection Area (SPA) and Ramsar site is designated for a sizeable population of Desmoulin's whorl snail *Vertigo moulinsiana* that lives beside ditches within pasture on the floodplain of the River Stour and its breeding and overwintering wildfowl populations, important wetland habitats and their associated assemblages of plants. The birds of particular note and the reason for its Special Protection Area are:³⁰

Over winter the area regularly supports:

Anas clypeata, Anas strepera, Botaurus stellaris, Circus cyaneus

During the breeding season the area regularly supports:

Anas strepera

During the breeding season the site also regularly supports an international important assemblage of birds including:

Acrocephalus schoenobaenus, Acrocephalus scirpaceus, Anas penelope, Anas platyrhynchos, Anser albifrons albifrons, Aythya ferina, Aythya fuligula, Gallinago gallinago, Locustella luscinioides, Locustella naevia, Podiceps cristatus, Rallus aquaticus, Tringa totanus, Vanellus vanellus.

The Conservation Objectives (SPA and SAC)³¹ for the site include avoiding the deterioration of the habitats of the qualifying features and species, and the significant disturbance of those qualifying features and species.

³⁰ Natura 200 Standard Data Form UK9012121 - <http://jncc.defra.gov.uk/pdf/SPA/UK9012121.pdf>

³¹ **Avoid the deterioration of the qualifying natural habitats and the habitats of the qualifying species, and the significant disturbance of the qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.**

Subject to natural change, to maintain or restore:

- The extent and distribution of the qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species;
- The supporting processes on which the qualifying natural habitats and habitats of qualifying species rely;
- The populations of the qualifying species;
- The distribution of the qualifying species within the site

Avoid the deterioration of the habitats of the qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive.

Subject to natural change, to maintain or restore:

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features;
- The supporting processes on which the habitats of the qualifying features rely;
- The populations of the qualifying features;
- The distribution of the qualifying features within the site

The Stodmarsh reserve is of particular importance being an inland wetland with a mix of habitats including water bodies, bog, marsh, heath, scrubland and improved grassland. It is considered to be one of the best areas in the United Kingdom for Desmoulin's whorl snail, whose habitat and need for high humidity relies on close proximity to water courses.

The site is not presently considered to be vulnerable as approximately half of the site is managed as a National Nature Reserve, the remainder being managed in a way that is compatible with nature conservation.³² The area of habitat has recently been expanded, improving the situation for wetland birds by acquiring an area of turf fields adjacent to the SPA and Ramsar site for conversion to reed bed, open water and grazing marsh.³³ Also recent surveys in England have indicated that *Vertigo moulinsiana* is not as rare as previously thought³⁴.

Natural England have made the following statement

Natural England advises that air quality and water quality impacts need further consideration for all sites and in particular the Blean Complex Special Area of Conservation (SAC) and the Stodmarsh SAC / Ramsar site.

Currently the plan leaves these impacts to be assessed at project level via policy SP7, (according to the HRA). This is not appropriate because: ...

- 2) As a result, there is a risk that developments that occur first will proceed to the detriment of later developments, which could be constrained by the need to deliver mitigation.*
- 3) Mitigation may be delivered best at a strategic level.*

We note that the mitigation measures currently suggested by policy SP7 in the local plan would address recreational pressures but would not be appropriate for issues of air quality or water quality.

Water Quality Assessment

The HRA provides no assessment of water quality. Without baseline data it will not be possible to understand the current water quality constraints (in particular the capacity of the receiving water for sewage discharge), where development set out in the local plan will feed into the sewage network and discharge into the natural environment. The HRA therefore does not demonstrate whether the quantum of housing required by the plan has the potential to have a likely significant effect on N2K sites.

The HRA suggests continuing to liaise with Environment Agency and water companies, and policy CC13 within the plan, says that monitoring will be carried out. However, without understanding the baseline and future needs, it is difficult to plan for any required infrastructure or monitor for potential impacts. The HRA screening of policy CC13, states that is not clear how the council will

³² UK SAC data form, Stodmarsh, Natura 2000 Data Form Produced by JNCC., 27/07/11

³³ UK SPA data form, Stodmarsh, Standard Natura 2000 Data Form Produced by JNCC. Version 1.1, 05/05/06

³⁴ JNCC - <http://jncc.defra.gov.uk/ProtectedSites/SACselection/species.asp?FeatureIntCode=S1016>

address future capacity issues. This matter needs to be addressed to provide assurance of deliverability without impact on N2K sites.

CC3 - What is the current sewage capacity, what is required, is there a predicted short fall and how will that be made up, are there issues with receiving waters etc? No figures are provided for a baseline assessment.

The concern is that the housing required cannot be delivered if the capacity is exceeded, the local plan is an opportunity to ensure delivery of housing occurs without impact on N2K sites.

In response to consultation with the Council in an email dated 15 October Natural England provided details about their specific concerns:

- Need to be sure that sufficient infrastructure is in place for the quantum of housing being delivered.
- Water companies will need to confirm that there is sufficient population equivalence capacity within the system to deal with Local Plan proposals and that the network is in good condition and not failing during storm weather.
- The Environment Agency to confirm that the review of consents is complete and that the Local Plan has been assessed against the water framework directive.
- The location of the sewage works in relation to the designated sites (on a map) and whether there are any issues with the infrastructure.
- Natural England need to see an assessment of the potential for significant impacts on the N2K sites from water quality as a result of the plan.

Housing development in Canterbury, Sturry and Hersden will drain both in terms of sewerage system and surface water drainage into the Lower Stour Management Catchment, which is within the South East River Basin District

The Environment Agency have out for consultation (October 2014-April 2015), the draft South East River Basin Management Plan (RBMP) – The Stour Management Catchment³⁵. The document has identified the water quality within the Stour Management Catchment both in fluvial rivers and inland surface water bodies and in the coastal water bodies as not currently achieving good status/potential. One of the primary causes of this is identified as “pollution from waste water” from “the water industry”. The Environment Agency has identified a number of potential measures to address the issues.

³⁵ Environment Agency South East River Basin Management Plan (RBMP) – The Stour Management Catchment https://consult.environment-agency.gov.uk/portal/ho/wfd/draft_plans/consult?pointId=3034101

Natural England has produced a Site Improvement Plan for Stodmarsh (31 October 2014)³⁶. This document recommends an investigation into nutrient levels to determine what management measures are required to improve water quality amongst other measures.

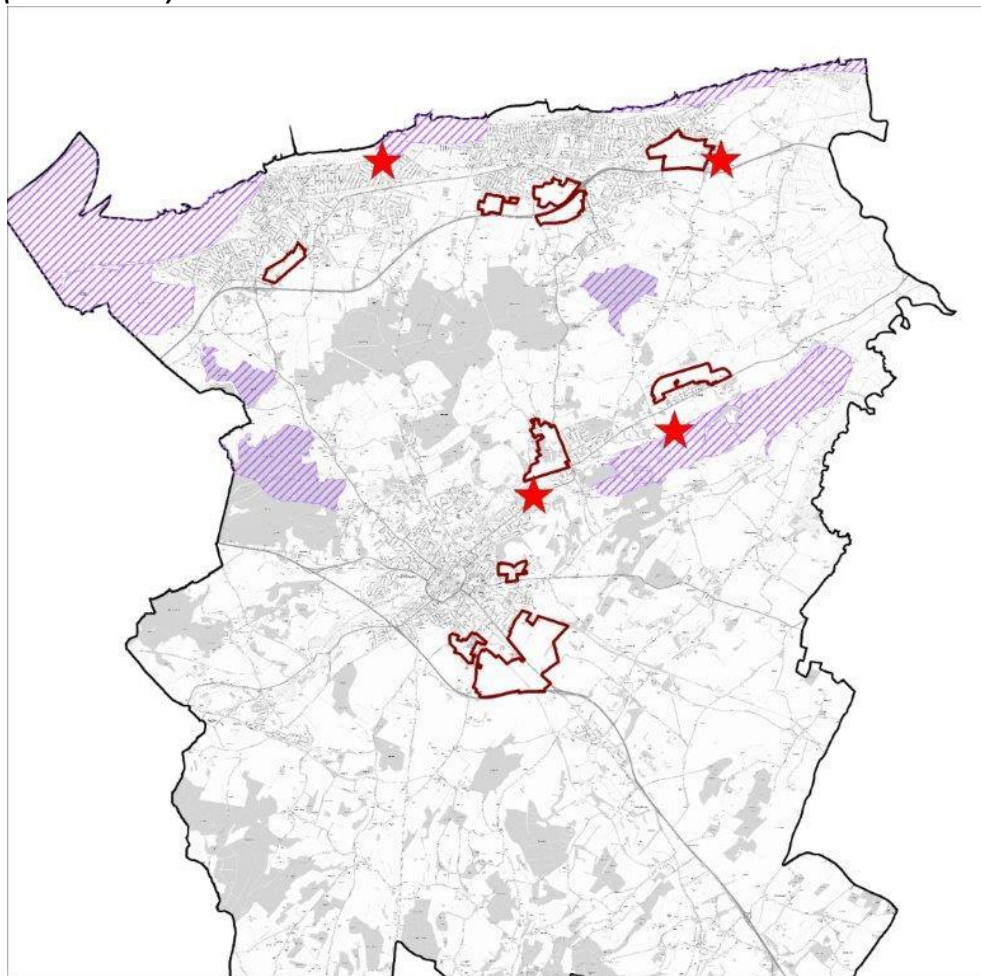
Natural England is concerned that these issues may be linked to the sewage works upstream of or alongside Stodmarsh. They have noted that these issues/measures will need to be addressed through the Environment Agency’s Water Framework Directive. One possible measure following investigations is implementation of a nutrient plan.

The European Commission Urban Waste Water Treatment Directive (UWWTD, 91/271/EEC) sets down minimum standards for the discharge of treated effluent from waste water treatment works (WWTWs). The Directive was transposed into legislation in England in 1994 in the form of the Urban Waste Water Treatment (England and Wales) Regulations 1994 as amended in 2003. The regulations require that all significant discharges of sewage be treated whether the discharge is to inland surface waters, groundwater, estuaries or coastal waters. Where these discharges go into sensitive water bodies they are to be treated to higher levels such as secondary (bacterial breakdown) or tertiary (nutrient removal). The River Stour is considered a sensitive water body/receiving environment and as such is treated to a secondary level. Any changes to the WWTW discharge would have to be consistent with the requirements of the Urban Wastewater Treatment Directive 91/271/EEC and all discharges would need consent from the Environment Agency (who themselves would then need to consider the effects on any downstream designated sites in consultation with Natural England).

Southern Water, have stated that they have sufficient capacity to support the development. Southern Water has a statutory duty to serve new development and is committed to providing the right infrastructure in the right place at the right time. Depending on the exact location of the development, this is likely to include improved local sewers and water mains and potentially strategic assets such as trunk sewers, pumping stations and treatment works. (Objective ID292358).

³⁶ Site Improvement Plan: Stodmarsh 31.10.14, Natural England
<http://publications.naturalengland.org.uk/publication/5749196032311296?category=6149691318206464>

Map 2: Showing the Sewage works (red star) and the international wildlife sites (purple hatch) and strategic allocations (brown outline).



Sewage from the Local Plan allocations in Canterbury and Sturry will be processed at Sturry which empties into the Stour above Stodmarsh. Hersden sewage is likely to go to the works at Hersden. Sewage from the Thanet Way site will be fed to sewage works at Swalecliffe which has an outfall out to sea the Herne Bay developments will go to the works at May Street which is thought to empty into the Stour below the Stodmarsh SPA/SAC/Ramsar site at Plucks Gutter. In total 6830 houses (including windfalls, allocations and unimplemented permissions) are estimated to be constructed in Canterbury across the plan period. An additional 1000 houses are allocated at Sturry and up to 500 at Hersden. This means that there could be approximately 8330 new connection to the sewer network draining into this catchment area by 2031.

In an email dated 21 October in response to the concerns raised by Natural England, Southern Water stated that it:

“... operates its wastewater treatment works (WWTWs) in accordance with environmental permits set by the Environment Agency (EA). These permits define the volume of treated water we are permitted to release, and the treatment standards we must meet. Permits also deal with storm discharges which are permitted in certain circumstances (e.g. exceptionally wet weather).

The EA work in collaboration with Natural England and set the environmental permits so that water quality objectives are met.”

Southern Water stated that they had assessed the proposals set out in the Local Plan at a high level and had not identified any concerns. If new development increases the volume of sewage arriving at the treatment works above that which they are permitted to release new permits would be obtained.

“Southern Water can apply to the Environment Agency for a new or revised permit. The Agency is likely to agree to increase the volume but tighten the treatment standards so that the overall load to the environment is not increased. This is often referred to as the “no deterioration” principle.”

Any improvements in infrastructure required would be timed to ensure that this was available when required. Southern Water has assessed the Local Plan allocations and has not identified any constraints that would prevent them from delivering waste water treatment in parallel with development. The Local Plan proposals will inform their forecasts and investment planning.

The Environment Agency indicated verbally that they have assessed the Local Plan against the appropriate framework and consider that there is no foreseeable adverse impact on the environment resulting from increase in sewage discharges. Any changes to discharge from these works would need permission from the Environment Agency who would ensure that water quality and the downstream habitat was maintained. It should be noted that the Environment Agency supported policies CC11, 12 and 13 of the Local Plan Publication Draft relating to water use and quality (Objective ID255372).

Southern Water have stated that they are able to deal with the potential increases of sewage resulting from proposed allocations in the Publication draft of Local Plan either through existing capacity or through planned investment in improved infrastructure and treatment. Therefore WWTW capacity will be in place in advance of any future development as outlined by policy CC13 of the Publication Draft of Local Plan. Any changes to the WWTW will have to be consistent with the requirements of the Urban Wastewater Treatment Directive 891/271/EEC and all discharges would consented by the Environment Agency.

Natural England have requested that the issues with respect to water quality in the Lower Stour catchment area are highlighted in particular with respect to housing sites coming forward in Canterbury Sturry and Hersden and potential in related polices regarding designated sites and water quality.

In Conclusion/Summary

Measures to address the currently unfavourable status of the water bodies within the Stodmarsh SAC/SPA will need to be addressed by the Environment Agency through the Water Framework Directive. The South East River Basin Management Plan outlines a number of measures to improve water quality. The Site Improvement Plan for Stodmarsh also outlines a number of actions to be taken to improve the quality of the designated site. Southern Water has stated that they have sufficient capacity to support the development and any improvements required will be dealt with through their 5 year investment plan. Any changes to or increase in discharge from the waste water treatment works would require consent from the Environment Agency in accordance with the Urban Wastewater Treatment Directive.

As such the Council concluded that there is unlikely to be a significant impact on the extent, distribution, structure, function and supporting processes of qualifying natural habitats and habitats of qualifying species and features, and on the qualifying species and features populations as a result of potential waste water treatment works discharges into the Great Stour resulting from allocation within the Publication Draft of the Canterbury District Local Plan. In so far as the Council has a role through its planning function it will continue to work with the Environment Agency, Southern Water and Natural England to act to ensure that the local plan has no likely significant impact on Stodmarsh SAC/SPA/Ramsar.

7. The Tankerton Slopes and Swalecliffe Special Area of Conservation

These Tankerton Slopes and Swalecliffe SPA sites form part of the Tankerton Coastal Park, managed by Canterbury City Council with the aim to:

“To protect, enhance and promote a Coastal Park that appeals to a wide range of residents and visitors offering a variety of high quality seaside experiences - traditional, sporting, unspoilt, historic and natural”

Within the Coastal Park on the north facing slopes are two areas of managed coastal grassland which is protected from disturbance and allowed to develop naturally. These areas of coastal grassland are of special interest as they support three British Red Data Book Species:

- Hog’s fennel: *Peucedanum officinale* is a nationally rare plant confined to a few coastal localities in Essex and Kent. This site supports the largest single population of this large umbellifer in Britain.
- *Agonopterix putridella* is a nationally rare moth dependent solely on hog’s fennel as its food plant.
- Fisher’s Estuarine moth: *Gortyna borelii lunata* uses hog’s fennel as its main larval food plant. False oat grass plays a vital role in the egg phase of the invertebrate’s lifecycle as this is where ovum is laid and where they overwinter.

The conservation objectives are that the sites are to maintain favourable condition for their nature conservation interest. Favourable condition is considered to be:

- To maintain an area of coastal grassland supporting large populations of **hog’s fennel**, 1001 - 3000 individual plants
- To maintain a viable population of ***Agonopterix putridella***
- To maintain a viable population of **Fisher’s Estuarine moth**.

The species that is a primary reason for selection of these sites is the Fisher’s estuarine moth *Gortyna borelii lunata* which has a localised population distribution in the UK, due to its specific habitat requirements and is only found in two areas, the north Essex coast and the north Kent Coast. Tankerton slopes and Swalecliffe supports approximately 20% of the UK population. The site's north facing slopes are composed of London Clay and support a tall herb community dominated by its food source plant hog's fennel (*Peucedanum officinale*), together with areas of neutral grassland also required by the species for egg laying³⁷. The habitat is considered to be entirely humid grassland, mesophile grassland (100%).

³⁷ JNCC - <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0030378>

The Tankerton Slopes portion of the protected site is considered to be in favourable condition and has in place a site management statement agreed between the Canterbury City Council and Natural England.³⁸

The statement outlines aims including; objectives for management to enhance its conservation value and how effective management of the site will maintain its special features including invasive species removal.

In December 2012 Natural England gave assent under section 28H of the Wildlife and Countryside Act 1981, to allow management of the Swalecliffe/Long Rock site and access/activities in relation to coastal protection. This runs until December 2018 and Natural England consider that any impacts of the works proposed were considered minor and unlikely to affect the integrity of the site.³⁹

Natural England indicated in their email of 16 October 2014 that the main concern of with respect to this site was people moving off the paths damaging the plants that make up the moths habitat by trampling. At the present time this is not shown to occur and as such Natural England does not currently view this as an issue.

The sites are sloped and contain tall grassland and hogs fennel plants making them unfavourable and difficult for people to access especially when compared with the well maintained paths and amenity grassland adjacent. Also the sites are managed and monitored by the Council and are considered to be in a favourable condition. Any change in this status would be quickly picked up and simple mitigation measures such as signage and fencing could be undertaken.

Conclusion

The sites are considered to be in favourable at present, there are currently no issues with people trampling the grassland, and the sites are well maintained and monitored already by Canterbury City Council. Any potential recreational impact along the coast will also be being monitored and managed via the extension to the Thanet Coast wardening programme (section 2).

As such, it can be concluded that there is unlikely to be a significant impact resulting from the Publication Draft of the Local Plan allocations provided that the Council commits to continuing its proactive management of the sites. Natural England agrees with the conclusion of the assessment for this site.

³⁸ CCC and Natural England – Tankerton Slopes SSSI Site Management Statement July 2010-June 2015

³⁹ Natural England 7.12.2012 - Assent under section 28H of the Wildlife and Countryside Act 1981

Blean Complex Special Area of Conservation - Air Quality Assessment

The assessment of the potential air quality impacts of the increase in traffic resulting from the Canterbury District Publication Draft Local Plan 2014 on the Blean Complex Special Area of Conservation. **7 November 2014**

1. Introduction

In June 2014 the Habitat Regulations Assessment of the Preferred Option Draft Local Plan made following statement and recommendations.

Assessment: The quantum of development could also increase the number of cars in the district with a resulting adverse impact on air quality in the vicinity of Blean Complex Special Area of Conservation (SAC) and Lydden and Temple Ewell Downs SAC in particular. Changes in emissions to air, because of changes in traffic volumes or speed on the highway network adjacent to these sites, could be indirectly damaging to their favourable condition.

Recommendation: In relation to air quality emissions the Highways Agency Design Manual for Roads and Bridges (DMRB) air quality assessment method⁴⁰ identifies that, at a local level, only designated sites within 200m of a road, subject to changes in traffic volume or speed, have the potential to be significantly affected by air quality changes. Policy T17 within the local plan provides sufficient protection in this regard through the requirement for a transport assessment where necessary.

Concerns have been raised by Natural England, however, regarding the issue of air quality affecting SAC's, they are seeking more detailed screening to ensure that the cumulative impact of development proposed in the plan would not have a likely significant impact on the Blean SAC.

⁴⁰ Highways Agency (2007) Design Manual for Roads and Bridges (DMRB) Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 1 Air Quality

Table 1: Interest Features, Conservation Objectives, Condition and Vulnerability

European Site	Interest Features	Conservation Objectives	Component SSSI within 15km	Condition Status and Reasons if Unfavourable	Vulnerabilities
Blean Complex SAC	Sub-Atlantic and medio-European oak or oak hornbeam forests of the <i>Carpinion betuli</i> – oak hornbeam forests	Subject to natural change, to maintain in favourable condition the Annex I habitat for which it is designated.	Church Woods, Blean SSSI East Blean Woods SSSI Ellenden Woods SSSI	92.2% favourable 7.8% unfavourable recovering 99.29% favourable 0.71% unfavourable recovering 100% favourable	There is a mixture of woodland habitat types at this site. Some require coppicing to maintain their features of interest (such as, heath fritillary butterfly), although this is not essential to maintain the <i>Stellario-Carpinetum</i> habitat type. Coppice management continues in areas of the site that are maintained as nature reserves by Natural England, Kent Wildlife Trust and the Royal Society for the Protection of Birds, but has been difficult to maintain elsewhere.

Screening under the Habitat Assessment Regulations for the Canterbury District Local Plan identified that, on a precautionary basis, the increased number of vehicles resulting from additional housing and employment provision, as outlined in the draft Local Plan, could have an indirect impact on the vegetation and soil constituting the habitat designated as a Special Area of Conservation (SAC) known as the Blean Complex.

This paper sets out the methodology and results regarding the traffic generated by the Local Plan allocations and whether associated air quality changes would have a likely significant effect on Blean Special Area of Conservation.

2. Background

Nitrogen deposition can affect woodlands through eutrophication and acidification and these changes are likely to predispose woodlands to more highly deleterious indirect effects. Woodlands are complex ecosystems, comprising of various compartments with different sensitivities to nitrogen. The key component are the trees, but in many woodlands there is an under storey of woody shrubs, forbs and grasses and below this, lower plants (cryptograms) carpeting the forest floor. Seasonally, sporocarps, fruiting bodies may appear and below ground there will be a diverse array of mycorrhizal fungi associated with plant roots, which are especially sensitive to nitrogen deposition. In addition the trees may support epiphytic communities of bryophytes and algae. Thus woodlands, and the different vegetation types they comprise of, provide a diverse habitat for wildlife, especially insects, birds and small mammals. Nitrogen deposition can compromise this biodiversity or conservation value through changes in cover (protection), food type, quantity and quality, changes in the overall environment for predators and timing of food source availability via effects on phenology (bud burst, bud set, flowering).

The main pollutant effects of interest are acid deposition and eutrophication caused by nitrogen deposition.

Acid deposition: caused by oxides of nitrogen (NO_x)⁴¹ (or sulphur dioxide, SO₂) reacting with atmospheric water to form nitric (or sulphuric) acid. It is caused primarily by fossil fuel energy generation, as well as road traffic and industrial combustion. Both wet and dry acid deposition have been implicated in the damage and destruction of vegetation (heather, mosses, liverworts and lichens are particularly susceptible to cell membrane damage due to excessive pollutant levels) and in the degradation of soils and watercourses (due to acidification and reduced microbial activity).

Eutrophication by nitrogen deposition: consists of the input of nitrogen from NO_x (and sometimes ammonia NH₃) emissions by deposition. It is caused primarily by road traffic, as well as energy generation, industrial combustion and agricultural practices. Nitrogen deposition although a vital nutrient for growth in excessive amounts it becomes toxic and can cause direct damage to slower growing plants especially those in the ground cover and shrub layers such as heather, mosses, liverworts and lichens, because of their sensitivity to additional atmospheric nitrogen inputs, inability to compete with faster growing nitrogen fixers and reduced stress and pest resistance⁴². Thus increases in deposition can also lead to long term compositional changes in vegetation and reduced diversity.

The pollutant of most concern for sensitive vegetation and ecosystems near roads is nitrogen (NO_x) and is also perhaps the best understood. NO_x is composed of nitric oxide (NO) and its oxidation product nitrogen dioxide (NO₂). In the atmosphere NO is oxidised to NO₂ in by combining with O₃ (ozone). Nitrogen dioxide is taken up by plants principally through their stomata. Concentrations of NO₂ are higher close to roads so vegetation in these areas is exposed to a larger source of nitrogen (N).

While plants are able to detoxify and assimilate low exposure to atmospheric concentrations of NO_x, high levels of uptake can lead to detrimental impacts including:

- a) Inhibition of pigment biosynthesis, leading to reduced rates of photosynthesis;
- b) Water soaking as NO₂ molecules attach to lipids in membranes, causing plasmolysis (removal of water) and eventually necrosis (death);
- c) Inhibition of lipid biosynthesis, leading to reduced rates of regeneration and growth;
- d) Injury to mitochondria and plastids, essential to internal processing of energy and proteins;
- e) Decrease in stomatal conductance of air and water vapour; and
- f) Inhibition of CO₂ fixation (at least under low light levels).

3. Critical loads

A **critical load** is defined by the UK Air Pollution Information System (APIS) as a quantitative estimate of exposure to deposition of one or more pollutants, below which significant harmful effects on sensitive elements of the environment are not known to occur. The exceedance of a critical load is defined as the atmospheric deposition of the pollutant above the critical load. In other words critical loads are the annual quantity of pollutants a particular habitat can safely absorb. These are determined by APIS for

⁴¹ Oxides of nitrogen are referred to as NO_x – from vehicle combustion this is predominately made up of NO with some components of NO₂.

⁴² http://www.apis.ac.uk/overview/pollutants/overview_N_deposition.htm

particular vegetation types. In this instance the Blean SAC is considered a Meso and eutrophic oak hornbeam woodland and has a critical loading of 15-20 kgN/ha/yr⁴³.

Over half of all emissions of nitrogen and nitrogen oxides in the UK are the result of vehicle exhausts. As the Local Plan is not proposing increases in industry nor fossil fuel based energy production, cumulative nitrogen emissions from traffic generated by residential and commercial developments as allocated in the Publication Draft of the Canterbury District Local Plan (Local Plan) will form the focus of this assessment.

Table 2: Nitrogen Deposition at the Blean Complex SAC

<p>Nutrient Nitrogen (Source – Air Pollution Information System (APIS))</p> <p>Habitat sensitive to Nitrogen? Yes</p> <p>Relevant Nitrogen Critical Load Class: Meso- and eutrophic Quercus woodland</p> <p>Empirical Critical Loads: 15-20 kg N/ha/yr</p> <p>Exceedance Impacts: Changes in ground vegetation.</p>
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Nitrogen deposition was considered for all three Blean SAC sites within the district. The UK ‘Air Pollution Information System’ (APIS) provides predictions for the relative contributions to nitrogen deposition at designated sites from different sources. A summary of the data from APIS is provided in the table below. It should be noted that this is a simplified representation of contributions over a wide area. The APIS data is based on research by Defra into the various sources of nitrogen emissions affecting the UK and modelling of the effect of those emissions to calculate deposition at a resolution of up to 5km².

Table 3: Parts of the Blean Complex SAC and their relative nitrogen loadings

Site	Grid reference	Nitrogen sensitive habitat	Minimum (and maximum) Critical Loads (KgN/ha/yr) ⁴⁴	Actual Nitrogen deposition (KgN/ha/yr) ⁴⁵	Exceedance Ranges (KgN/ha/yr)
Church Woods ⁴⁶	611210,160110	Meso- and eutrophic Quercus woodland	15 (20)	32 (2010-2012)	17 - 12
Ellenden Woods ⁴⁷	610880,162480	Meso- and eutrophic Quercus woodland	15 (20)	32	17 - 12
East Blean Woods ⁴⁸	618950,164460	Meso- and eutrophic Quercus woodland	15 (20)	35.7	20.7 – 15.7

⁴³ Air Pollution Information Systems (APIS) Table of Critical Loads - <http://www.apis.ac.uk/indicative-critical-load-values>

⁴⁴ APIS provides a critical load range – on a precautionary basis, this assessment uses the lowest figure in that range

⁴⁵ To a resolution of 5 km

⁴⁶ SAC site within 200m of an affected road

⁴⁷ SAC site within 200m of an affected road

⁴⁸ East Blean Woods are in the Blean Complex SAC but not within 200m of an affected road

The exceedance of the identified critical load⁴⁹ means, when applying the precautionary principle, that there may already be an impact on the favourable status of the SAC in the future. The Blean Complex SAC components are currently identified as being mainly in favourable status, despite a significant critical load exceedance⁵⁰. This may be because of a delayed response to nitrogen deposition, or may be because its status may still be judged as favourable despite some impacts of nitrogen.

4. Assessment Guidance

The DMRB provides guidance on the assessment of the impact that road projects may have on local air quality. Specific provision is made in relation to sites designated pursuant to the Habitats Directive. In accordance with this guidance, and in consultation with Natural England, this assessment, for the purposes of the Habitat Regulations, will examine whether there is a likely significant effect using the DMRB guidance. DMRB (Chapter 3) provides a scoping assessment for local air quality, this initially requires the identification of roads which are likely to be affected by the proposals.

The criteria for defining an **affected road** are:

- a) road alignment will change by 5 metres or more; or
- b) daily traffic flows will change by 1000 Annual Average Daily Traffic (AADT) or more; or
- c) Heavy Duty Vehicle (HDV) flows will change by 200 AADT or more; or
- d) Daily average speed will change by 10km/hr or more; or
- e) Peak hour speed will change by 20km/hr or more.

The scoping assessment then requires that nature conservation sites within 200 metres of the road and their characteristics be identified (including SACs and SPAs). The guidance clarifies that if none of the roads in the network meet the traffic/alignment criteria (that is they are not affected roads) or there are no relevant designated sites near the affected roads, then the impact of the scheme can be considered neutral in terms of local air quality and no further work is needed.

The population within the Canterbury District is generally concentrated in the two coastal towns and the City of Canterbury. Routes from Herne Bay and Whitstable pass through The Blean Complex to access Canterbury and the A28. The A299 Thanet Way is a major link road and passes to the north and the A2 to the south of the Blean. There are two 'A' roads directly linking the coastal towns with Canterbury and the surrounding primary South East road network, that pass through the Blean Complex. These are:

- A290 - Whitstable to Canterbury
- A291 - Herne Bay to Sturry

⁴⁹ Highways Agency (2007) Design Manual for Roads and Bridges (DRMB) Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 1 Air Quality

⁵⁰ Critical loads within the Blean Complex are already known to be exceeded by 12-21 kgN/ha/yr (APIS deposition data 2010-2012)

Other minor roads in the area include:

Dargate Road	Bogshole Lane	Bushyfields Road
Fox's Cross Hill	Radfall Road	Ridgeway Road
Wraik Hill	Thornden Wood Road	Hicks Forstal Road
Pye Alley Lane	Hackington Road	Maypole Road
Fox's Cross Road	Tyler Hill Road	Hoath Road
Denstroude Lane	Bullockstone Road	
Rough Common Road		

5. Local Plan proposals

The proposed development allocations in the Publication Draft of the Canterbury District Local Plan 2014 are as follows:

Table 4: Showing towns and sites allocated for development in the local plan

Herne Bay	
Allocations and permissions as at March 2013	3607
Potential windfalls	702
Permissions Granted between Mar2013-Apr 2014	57
Total	4366

Whitstable	
Allocations and permissions as at March 2013	921
Potential windfalls	702
Permissions Granted between Mar2013-Apr 2014	90
Total	1713

Rural (north)	
Allocations and permissions as at March 2013	1649
Potential windfalls	100
Permissions Granted between Mar2013-Apr 2014	33
Total	1782

Grand total (excluding Canterbury)	7861
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Canterbury	
Allocations and permissions as at March 2013	6280
Potential windfalls	450
Permissions Granted between Mar2013-Apr 2014	100
Total	6830

Grand total (including Canterbury)	14691
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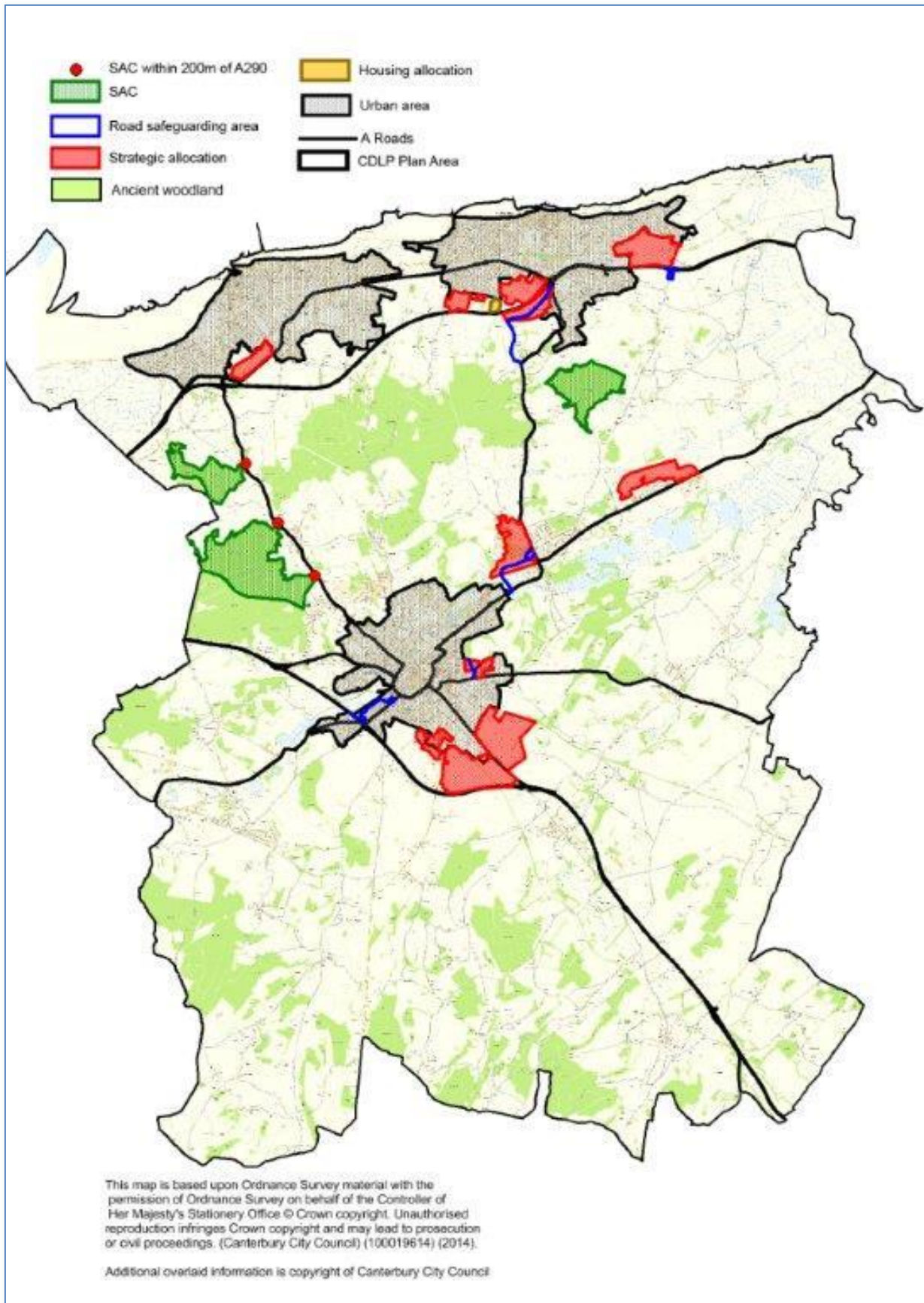
Table 5: Shows Major development sites:

Site	No of homes	Employment floor space
South Canterbury	4000	70,000m ²
Sturry/Broad Oak	1000	
Hillborough, Herne Bay	1300	33000m ²
Herne Bay Golf Course	600	
Strode farm, Herne Bay	800	15000 m ²
Land at Greenhill, Herne Bay	300	
Thanet Way, Whitstable	400	
North of Hersden	500	10,000m ²
Land at Howe Barracks, Canterbury	400	
Kent and Canterbury hospital, Ridlands Farm and Langton Field, Canterbury	810	

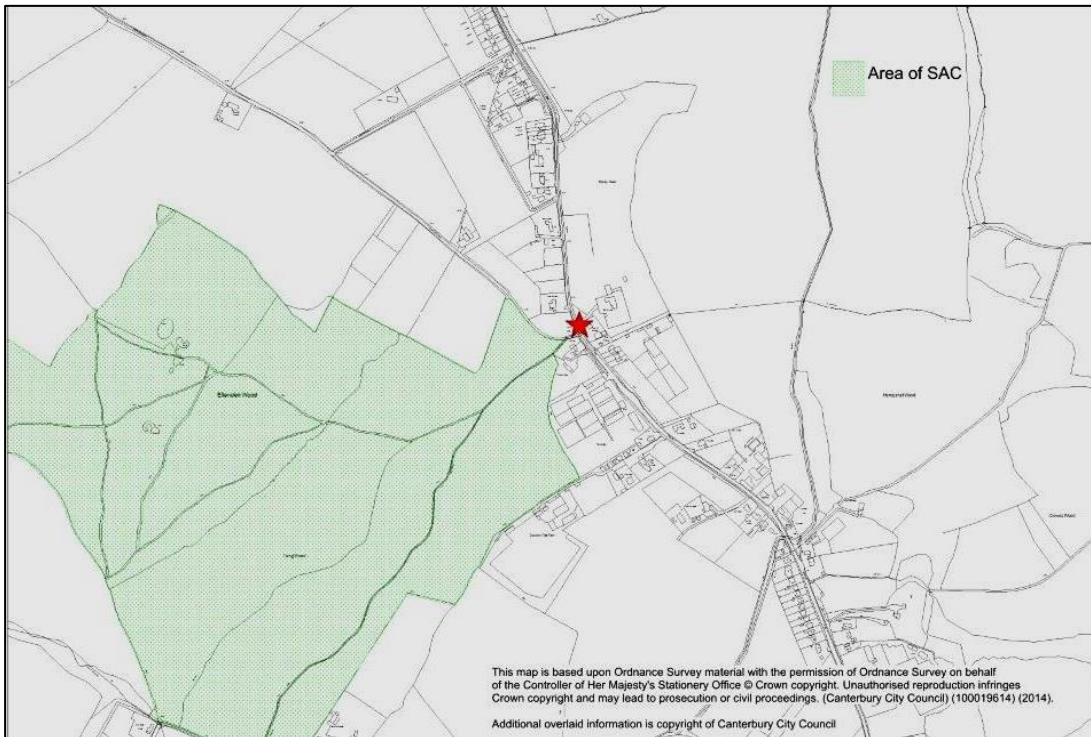
6. Proximity of SAC to the roadside

There are only three points on the A290 where the SAC comes within 200m of the affected road. Contributions from road transport are typically greatest within 200m of the roadside, meaning the relative impact on nitrogen deposition from road traffic is higher at these locations. Beyond this distance, the ambient concentrations of pollutants tend to decrease to background levels. Approximately 1.1 % of the SAC area is within 200m of an 'A' or 'B' road, although this figure includes East Blean Woods, which is not within 200m of an **affected road**.

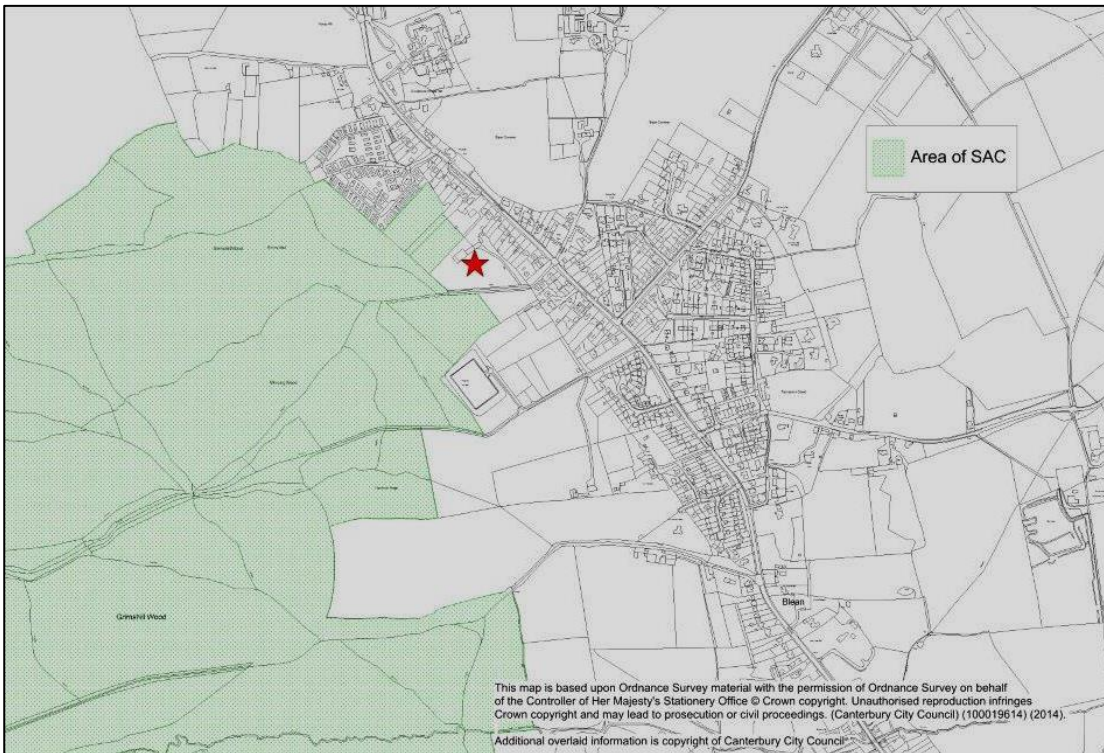
Map 1: Showing Strategic allocations and affected points on A290.



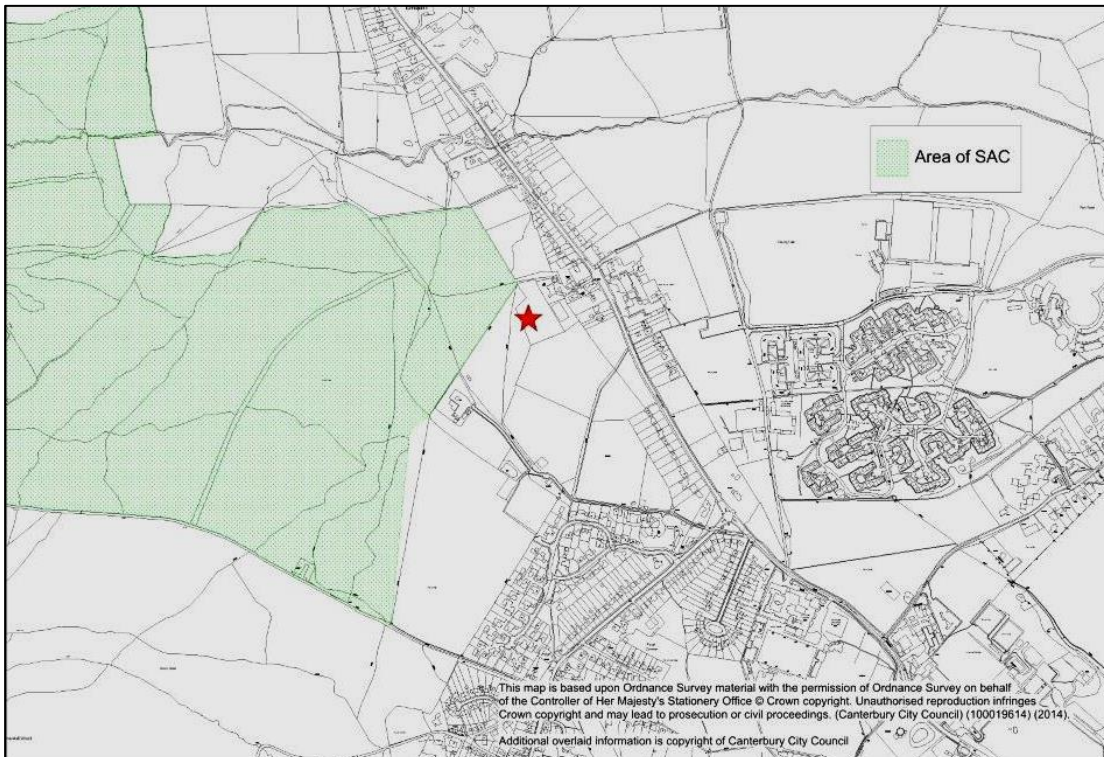
Map 2: Junction of Pean Hill/ Fox's Cross Road



Map 3: South east of Woodlands at Blean Common



Map 4: West of Moat Cottage, Tile Kiln Hill



7. Traffic Modelling

Changes in traffic volumes or speed on a busy road within 200m of a designated site may have deleterious impacts on the site due to increases in air pollution⁵¹. Amey were commissioned by Kent County Council (KCC) and Canterbury City Council (CCC) to provide transport modelling support to test the traffic impact of a revised Local Plan development scenario (Preferred Option) for Canterbury City and other local district centres.

In support of the Local Plan process the commission required the use of the existing Canterbury VISUM model, as previously developed by Jacobs on behalf of KCC and CCC, to assess forecast demand for car travel, commercial road vehicles, park & ride, bus and rail services as a result of the allocations in the Local Plan.

The existing model includes a 2008 Base Year and covers the Canterbury District with the detailed model area focussing on Canterbury City and immediate surrounding area. The horizon year is 2026.

Traffic across the district is predicted to rise 18% by 2031 (averaged across the main roads in the district) as general background growth not including strategic allocations. Traffic flows are predicted to rise by a further 10% as a result of the strategic allocations.

Along the A290 road the baseline traffic is **12212** AADT taken from the 2013 traffic counts. Extrapolating from the traffic modelling it is estimated that the AADT at the end of the plan period would be **16600** against this baseline. This results in a predicted total increase in traffic of **4388** AADT along the A290. This is made up of a predicted increase of **2821** vehicles per day on the A290 with general background growth, and a further **1567** vehicles per day resulting from the Publication Draft of the Local Plan strategic site allocations. The smaller increase in traffic movements with the strategic sites is in part due to the greater investment in sustainable transport required on these sites.

DMRB indicates that increases in traffic of less than 1000 AADT are unlikely to have a significant impact. Changes that result in an increase in traffic of more than 1000 AADT on a specific road means that the road is considered to be an affected road and has the potential to have an adverse impact on the designated SAC. As the increase in traffic as a result of Local Plan allocations across the plan period is greater than 1000 AADT (1567), the A290 is considered an affected road and therefore has the potential to have a deleterious impact on adjacent SAC vegetation and habitats of qualifying species located within it.

⁵¹ Highways Agency (2007) Design Manual for Roads and Bridges (DMRB) Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 1 Air Quality.

8. Simple Assessment

Although the numbers of cars and associated pollutants are likely to increase during the period of the plan it is difficult to predict the cumulative impacts of these changes, particularly when considered against the already substantial background pollutant levels.

Therefore, Natural England requested a Simple Assessment of the worst case scenario of the air quality impacts that would be generated from the increase in traffic due to Local Plan allocations on affected roads. As outlined above the only road found to be affected within 200m of an SAC was the A290 at Blean. The Blean Complex SAC is closely related to the A290 at three points, Ellenden Wood at Pean Hill and Church Wood at Blean Common and Tile Kiln Hill (see section 6).

Natural England has stated that if the quantity of nitrogen deposition resulting from increased air pollution due to increased AADT resulting from the Local Plan allocations was less than 1% of the minimum critical load of the relevant vegetation type then there was unlikely to be a significant impact on Blean SAC in terms of the Habitat Regulations. DMRB states that if there is an increase in concentrations of $2\mu\text{g}/\text{m}^3$ or more, then the sensitivity of that species to NO_x should be commented upon.

Each of these locations was assessed by inputting the traffic counts predicted by the VISUM modelling into the DMRB Assessment of Local Air Quality Model⁵² along with the 2011 background NO_x and NO_2 values from Defra⁵³, the average speed of traffic and the distance to the designated site, (see table 7).

It should be noted that the NO_x arising from the current AADT of 12212 was assessed using the 2011 background air emissions to give a comparable baseline. The NO_x arising from the predicted traffic numbers for the end of the plan period (with and without plan allocations) were also assessed using the 2011⁵⁴ background levels of NO_x and NO_2 from Defra.

This provided NO_x emissions/concentrations (in $\mu\text{g}/\text{m}^3$) at each of the three sites along the A290 where the SAC comes within 200m of the affected road for the three AADT traffic quantities (current 12212, background 15033 across plan period and total with plan allocations 16600) at each of the three sites that are designated.

⁵² <http://www.dft.gov.uk/ha/standards/guidance/air-quality.htm>

⁵³ <http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2011>

⁵⁴ This gives the worst case scenario in terms of background air quality, as it assumes no improvements in air quality due to technological improvements, legislation or changes in transport behaviours.

To calculate nitrogen deposition NO_x needed to be converted to NO_2 . A conversion ratio was obtained from the Environment Agency⁵⁵:

In modelling air dispersion of NO_x from combustion sources, the source term should be expressed as NO_2 , e.g., $\text{NO}_x \text{ mass (expressed as } \text{NO}_2) = \text{total NO (mole)} \times 46/30$.⁵⁶

These were converted into nitrogen deposition amounts using a dry deposition flux calculation provided by Natural England:

The annual dry deposition flux can be obtained from the modelled annual average ground level concentration via use of the formula:

$$\text{Dry deposition flux} = \text{ground level concentration} \times \text{deposition velocity.}$$

$$(\mu\text{g m}^{-2} \text{ s}^{-1}) \quad (\mu\text{g m}^{-3}) \quad (\text{m s}^{-1})$$

Natural England provided deposition velocities for various air pollutants related to habitat type these are shown below in Table 6.

Table 6 Recommended dry deposition velocities.

Chemical species	Habitat	Recommended deposition velocity, m s^{-1}
NO_2^*	Grassland	0.0015
NO_2	Forest	0.003

A **conversion factor of 96** was multiplied against the dry flux to give an annual deposition amount of nitrogen per hectare (N kg/ha/yr) for each site and each scenario.

The difference between the two scenarios was calculated. The nitrogen deposition resulting from anticipated background increases in traffic over the plan period (AADT 15033) was subtracted from the total anticipated increase in traffic on the A290 during the plan period including Local Plan allocations (AADT 16600). This was then assessed against the minimum critical loading for each site given by APIS for meso and eutrophic oak hornbeam woodland as 15 kgN/ha/yr.

The results of the calculations are shown in **Table 8**.

⁵⁵ Environment Agency – Conversion Ratios for NO_x and NO_2
http://webarchive.nationalarchives.gov.uk/20140328084622/http://www.environment-agency.gov.uk/static/documents/Business/noxno2conv2005_1233043.pdf

⁵⁶ Note that these conversion ratios are only considered appropriate for combustion processes, where no more than 10% of the NO_x is emitted as NO_2 .

Table 7: Information put into DMRB Assessment of Local Air Quality to provide predicted NO_x amounts resulting from predicted increases in traffic on the A290 due to allocations in the publication draft of the Canterbury District Local Plan, across the plan period.

Site ⁵⁷	Assessment	Total predicted Traffic volumes (AADT) (for plan period)	Distance to receptor (m) (designated habitat)	Average Speed km/h	Road type	Predicted Background NO _x ⁵⁸ (ug/m ³)	Predicted Background NO ₂ ⁵⁹ (ug/m ³)
Pean Hill	Current/baseline	12212 (actual)	35	64	A	15.8	11.8
Pean Hill	Without LP	15033	35	64	A	15.8	11.8
Pean Hill	Total with LP	16600	35	64	A	15.8	11.8
Blean Common	Current/baseline	12212 (actual)	59	56	A	15.8	11.8
Blean Common	Without LP	15033	59	56	A	15.8	11.8
Blean Common	Total with LP	16600	59	56	A	15.8	11.8
Tile Kiln Hill	Current/baseline	12212 (actual)	106	61	A	16.2	12.2
Tile Kiln Hill	Without LP	15033	106	61	A	16.2	12.2
Tile Kiln Hill	Total with LP	16600	106	61	A	16.2	12.2

⁵⁷ Road locations within 200m of the SAC woodland.

⁵⁸ For the year 2011 – Taken from DEFRA Modelling.

⁵⁹ For the year 2011 – Taken from DEFRA Modelling

Table 8: Nitrogen deposition amounts for the Blean Woodland within 200m of the A290 resulting from predicted increases in traffic due to allocations in the publication draft of the Canterbury District Local Plan, across the plan period.⁶⁰

Site ⁶¹	Increases ⁶²	Total Traffic volumes (AADT)	Predicted NO _x conc'n for plan period(ug/m ³) ⁶³	NO ₂ conc'n for year 2025 (NO ₂ = NOug/m ³ x (46/30))	Flux (NO ₂ ugm ⁻² s ⁻¹) (ground level conc'n X velocity {0.003})	N Deposition amounts (kg/ha/yr) (NO ₂ ugm ⁻² s ⁻¹ X conversion factor 96)	Difference between without and with plan allocations (N kg/ha/yr) ³	Nitrogen deposition increase as % of critical load (15kg/ha/yr) {(diff/15) X 100} btwn with/without plan
Pea Hill	Current baseline	12212	20.5	31.4333	0.0943	9.0528		
Pea Hill	Without LP	15033	21.5	32.9667	0.0989	9.4944		
Pea Hill	Total with LP	16600	21.8	33.4267	0.1003	9.6269	0.1325	0.883
Blean Common	Current baseline	12212	18.4	28.2133	0.0846	8.1254		
Blean Common	Without LP	15033	19	29.1333	0.0874	8.3904		
Blean Common	Total with LP	16600	19.1	21.2867	0.0879	8.4346	0.0442	0.294
Tile Kiln Hill	Current baseline	12212	17	26.0667	0.0782	7.5072		
Tile Kiln Hill	Without LP	15033	17.2	26.3733	0.0791	7.5955		
Tile Kiln Hill	Total with LP	16600	17.3	26.5267	0.0796	7.6397	0.0442	0.294

⁶⁰ Predicted using air pollution levels for the year 2011 – NO_x emissions converted to probable deposition rates

⁶¹ Road locations within 200m of the SAC woodland.

⁶² This and the next column show the current traffic count, the predicted increase in traffic without the local plan, and the predicted total increase in traffic (with local plan allocations) over the Local Plan period. The total includes the local plan allocations and background increases in car ownership and use.

⁶³ NO_x amounts calculated using the DMRB model for assessing air pollution and Defra's predicted background pollution levels. The NO_x data is calculated using Defra's 2011 air pollution levels.

All three of the sites for all scenarios were found to have annual increases of nitrogen deposition of less than 1% when compared with the minimum critical load and a difference in air pollution levels of less than 2µg/m³.

The Pean Hill site which is closest to the road was calculated to have a percentage increase of nitrogen deposition of 0.88% this site is closest to the A290 and has the highest background levels of NO_x. There was an increase in deposition of 0.29% at the Blean Common and Tile Kiln Hill locations. At Blean Common the road traffic speeds are slower and at Tile Kiln Hill the site is much further from the road, therefore the lower percentages of nitrogen deposition when assessed against the critical load are probably due to the distances of the sites from the road and the screening effects of the houses adjacent to the road.

Therefore, the simple assessment found a non-significant increase in nitrogen deposition due to the allocations proposed in the Publication Draft of the Local Plan across the plan period.

In addition at two of these sites houses along the roadside provide a barrier to much of the air pollution arising from vehicle exhausts locally. Further, implementation of a challenging Transport Strategy to limit vehicle use, and progression in the development of low emission vehicles, should also help to further limit pollutant levels locally.

9. Conclusion

This demonstrates that there is unlikely to be a significant impact on the Blean SAC due to nitrogen deposition resulting from proposals/allocations in the Publication Draft of the Canterbury District Local Plan. It can therefore be concluded that there is 'no likely significant effect' provided that the Council commits to ensuring that the number of vehicles on the A290 does not increase substantially beyond that predicted.