ADVICE TO DORSET COUNCIL

PORTLAND ENERGY RECOVERY FACILITY REPORT TO INFORM APPROPRIATE ASSESSMENT

STATUS: FINAL VERSION

BY
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1 Introduction

1.1 Structure and function of this report

1.1.1 This report is submitted by DTA Ecology Ltd to Dorset Council in respect of the Habitats Regulations Assessment (HRA) for the Portland Energy Recovery Facility. The Council, in their role as competent authority has already completed the stage 1 assessment for likely significant effect. This report comprises the stage 2 'Appropriate Assessment' which involves a more detailed assessment of potential impact mechanisms which were identified at the stage 1 screening as having a likely significant effect, either alone or in combination with other plans and projects.

1.1.2 The report is comprised of the following sections:

- Section 2: Overview of the Habitats Regulations Assessment Process
- Section 3: European sites for which a likely significant effect has been identified
- Section 4: Approach to the in-combination assessment
- Section 5: Approach to the Appropriate Assessment
- Section 6: Baseline air quality data and relevant critical loads/levels
- Section 7: Appropriate Assessment of air quality effects from traffic emissions.
- Section 8: Applying the integrity test to in respect of air quality effects to Chesil and the Fleet SAC
- Section 9: Applying the integrity test in respect of air quality effects to Isle of Portland to Studland Cliffs SAC
- Section 10: Appropriate assessment of water quality effects and dust
- Section 11: Applying the integrity test to the project as a whole

1.1.3 This report draws upon the Shadow Appropriate Assessment submitted by the applicant[1] (hereafter referred to as the Shadow AA) and it should therefore be read alongside this document. Dorset Council are the competent authority under the Habitats Regulations. The statutory duty to undertake the assessment and apply the integrity test rests with the Council. The recommendations and conclusions within this report represent the professional opinion of DTA Ecology. The Council will need to review the findings and recommendations and decide whether they will adopt the conclusions for the purpose of their own assessment, or not.

1.2 The Project

1.2.1 The proposed development is for an Energy Recovery Facility with ancillary buildings and works including administrative facilities, gatehouse and weighbridge, parking and circulation areas, cable routes to ship berths and existing off-site electrical sub-station, with site access though Portland Port from Castletown. Further details of the proposal are available within chapter 2 of the Environmental Statement[2] and are not duplicated here.

[1] Portland Energy Recovery Facility Updated Shadow Appropriate Assessment – Working Draft, Nov 2022.
[2] Chapter 2 available from Dorset Council website here

1.3 Regulation 67 and the scope of the assessment to be undertaken by the Council

1.3.1 At the time of writing, the application for planning permission is being determined in parallel with the environmental permit application which has been submitted to the Environment Agency as the relevant competent authority. The proposal therefore requires the consent, permission or other authorisation of more than one competent authority and, in accordance with regulation 67(2) of the Habitats Regulations '*nothing in regulation 63(1) requires* [Dorset Council] *to assess any implications or a plan or project which would more appropriately be assessed under that provision by another competent authority'*.

1.3.2 The Council held a meeting with the Environment Agency in December 2022 and it was agreed that the authorities would coordinate their roles. This aligns with Defra published guidance on competent authority coordination which states[3]:

> *'When there's more than one competent authority carrying out an HRA for the same proposal, you should work together on the assessment. For example, a mineral extraction proposal may need the permission from the local authority and the Environment Agency or Natural Resources Wales.'*

1.3.3 The Defra guidance allows for the identification of a 'lead' competent authority but this was not felt to be necessary in this instance. Instead it was agreed that the scope of assessment effort undertaken by each authority would reflect their competencies. It was agreed that **the operation of the proposed plant and effects associated with the stack emissions and any permitted discharges to water will be subject to assessment by the Environment Agency as the relevant competent authority.**

1.3.4 The Council will consider other effect mechanisms within the scope of their assessment, including effects associated with traffic. This also aligns with Defra published guidance which continues to clarify:

> *'You should not assess any part of a proposal that another competent authority has a role to assess. The relevant competent authority will do their own assessment.'*

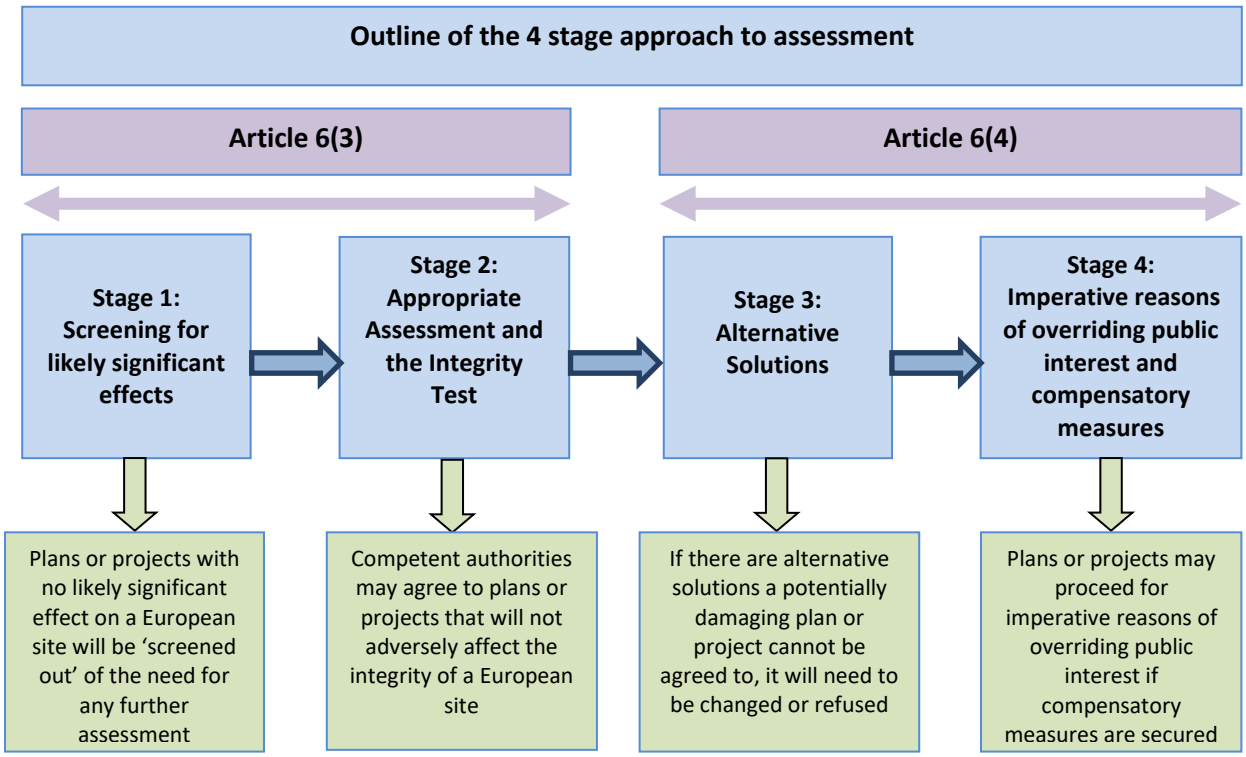
1.3.5 The final conclusion of the HRA for the project as a whole will therefore draw upon the work within this HRA and the accompanying HRA undertaken by the Environment Agency as the relevant competent authority in respect of the environmental permit, and is presented in section 11.

[3] https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site#make-decision-making-quicker

2 An overview of the Habitats Regulations Assessment process

2.1 A step-wise assessment process

2.1.1 The Habitats Regulations Assessment Handbook[4] sets out a four-stage approach to the HRA process as illustrated below:



2.1.2 The four stages to the assessment process are distinct and mark the points at which different plans or projects may no longer need further assessment work to be undertaken.

2.2 Approach to the appropriate assessment process

2.2.1 This appropriate assessment follows the principle set out in The Habitats Regulations Assessment Handbook. These principles were considered by Natural England's specialists during a period of 'guest access' to the Handbook prior to it being made available to subscribers in September 2013. Following consideration of the Handbook's guidance, and the consideration of the Handbook's 180 principles to be applied in HRA drawn from case law, EC and Government guidance, Natural England did not request any changes to be made to the text of the Handbook and proceeded to take out a concurrent user subscription to make it available for all staff members. Other subscribers include Government, the Planning Inspectorate, the Environment Agency, Marine Management Organisation, Marine Scotland,

[4] Tyldesley, D. and Chapman, C. (2013) *The Habitats Regulations Assessment Handbook,* Jan 2023 edition UK: DTA Publications Ltd.

the Joint Nature Conservation Committee and a growing number of local planning authorities, lawyers and consultants.

2.3 The test for likely significant effects

2.3.1 The test in regulation 63 is whether the project is likely to have a significant effect on a European site, either alone or in combination with other plans or projects. This requires, amongst other things, a preliminary examination of any potential effects of the project on each interest feature, and whether any effects would be likely and significant, alone or if not alone, in combination with other plans or projects.

2.3.2 As a competent authority the Council needs to be mindful of existing case law and relevant judgments from the Court of Justice of the European Union (CJEU) in relation to the application of the Habitats Regulations. DTA notes the ruling of the ECJ in Case C-127/02[5] (the Waddenzee judgment) which states at paragraph 45

> *"any plan or project not directly connected with or necessary to the management of the site is to be subject to an appropriate assessment of its implications for the site in view of the site's conservation objectives if it cannot be excluded, on the basis of objective information, that it will have a significant effect on that site, either individually or in combination with other plans or projects"*.

2.3.3 Contrary to the everyday meaning of the word 'likely' therefore, in the context of the Habitats Regulations case law has established that the test essentially asks whether a plan or project 'may' have a significant effect upon a site.

2.3.4 The Waddenzee Ruling also provides helpful clarification into the interpretation of the word 'significant'; paragraph 47 states that:

> *"where such a plan or project has an effect on that site but is not likely to undermine its conservation objectives, it cannot be considered likely to have a significant effect on the site concerned"*

2.3.5 The assessment is required to take account of the characteristics and specific environmental conditions of the site (see paragraph 49 of this judgment) and as such the decision needs to be made in the context of prevailing environmental conditions.

2.3.6 In light of the above authoritative ruling, in order to conclude no likely significant effect, it is necessary to be confident that any 'significant' effects (i.e. those which have the potential to undermine the conservation objectives) can be 'excluded, on the basis of objective information'.

2.3.7 Having said this it is also necessary to avoid legislative overkill and excessive approaches. In the case of ***Boggis***[6], the UK Courts have ruled that '*it is not that significant effects are probable, a risk is sufficient… but there must be credible evidence that there was a real rather than a hypothetical risk*'. This is further endorsed by the opinion of the Advocate General of the European Court in the case of ***Sweetman***[7] as follows:

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[5] European Court of Justice in Case C-127/02 (the Waddenzee ruling)

[6] Boggis and Easton Bavents Conservation v Natural England and Waveney DC Court of Appeal 20th October 2009.

[7] Case C-258/11 Sweetman v An Bord Pleanála Reference for a preliminary ruling (refer AG Opinion)

'The requirement that the effect in question be 'significant' exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on the site are thereby excluded…

…If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill.'

2.3.8 In other words, whilst applying a precautionary approach, there still needs to be credible evidence that there is a real rather than a hypothetical risk. The HRA tests are concerned with appreciable effects and competent authorities need to be mindful of legislative overkill.

2.3.9 For the purposes of this assessment, with reference to the guidance set out in Part C.8 of the Habitats Regulations Assessment Handbook, the "alone or in combination with other plans or projects" test is normally regarded as meaning the following.

a) Firstly the test is only applied to plans or projects, that is, to proposals, not to completed developments which should be treated as part of the baseline and whose effects are already part of the existing environmental conditions in the area.

b) Secondly, that if a plan or project would be likely to have a significant effect alone it is assessed alone. If it would have some effect on the site, which on its own would not be significant, it must then be assessed with the effects of other plans or projects, to see if their cumulative effects would be significant. Where a plan or project is likely to have a significant effect alone therefore, an in-combination assessment is not required until such a time as the project is no longer considered to have such an effect 'alone'.

c) It is not possible to pre-determine which other plans or projects would need to be assessed in combination until the effects of the subject project are understood. This is because there may be a wide range of plans and projects potentially applicable, but if they would not add in some way to the effects of the subject project, so as to make the subject project's effects either more likely and / or more significant, they are irrelevant to the in-combination test.

2.3.10 In the case of this assessment a likely significant effect in-combination has been identified at the stage 1 screening for likely significant effects. This appropriate assessment is therefore undertaken for the project 'in combination with other plans and projects' from the start.

2.4 An 'appropriate assessment'

2.4.1 The 'appropriate assessment' is only one step in one stage of Habitats Regulations Assessment, it can be misleading to use the term when referring to the whole process.

2.4.2 Various elements of an appropriate assessment are clearly set out in law. For instance, it is a legal requirement that an appropriate assessment be made 'in view of the conservation objectives'[8]. **The conservation objectives are therefore a central thread which run through the entire HRA process.** The Regulations also establish that:

- A person applying for consent must provide such information as a competent authority may reasonably require for the purpose of the assessment.

[8] Refer regulation 63(1)

- The competent authority must consult Natural England and have regard to their representations.
- Subject to regulation 64 (consideration of imperative reasons of over-riding public interest in the absence of alternative solutions), the competent authority may agree to a proposal only after having ascertained that it will not adversely affect the integrity of a European site.
- In considering whether a proposal will adversely affect the integrity of a site, the competent authority must have regard to the conditions or restrictions subject to which any permission may be given.

2.4.3 Section C.9 of the HRA Handbook establishes principles to be applied when undertaking an appropriate assessment. Some overarching principles relevant to an appropriate assessment generally are summarised in table 2.4.1 below:

Table 2.4.1: Key overarching principles from section C.9 of the HRA handbook
The assessment must be of the implications of the plan or project, for the qualifying features of the site, in view of the site's conservation objectives, in light of the best scientific knowledge in the field.
The assessment must consider all aspects of the plan or project which can, by themselves or in combination with other plans or projects affect the site's conservation objectives and take account of the specific environmental conditions and circumstances at the site.
The conclusions of the appropriate assessment must inform the integrity test and will therefore influence the decision on the application. It should provide the objective, scientific basis necessary to enable the competent authority to make its decision in respect of site integrity with the appropriate degree of confidence.
The appropriate assessment should be technically sound, based on up-to-date information, rigorous and robust and it must include a reasoned account of its conclusions. It must be complete, sufficiently precise and draw definitive conclusions which are capable of informing the 'integrity test'.
The assessment should be proportional to the scale and degree of risk of effects on the site and the relative complexity of the ecological judgements that need to be made.

2.4.4 It is important to recognise that whilst the appropriate assessment and integrity test are closely related, they are separate, subsequent steps. The purpose of the appropriate assessment is to understand what it going to happen if the plan or project goes ahead. The integrity test applies to the findings of the appropriate assessment and concerns the implications of the predicted changes for the qualifying features of the site concerned, in view of the conservation objectives. In other words, is it consistent with maintaining or restoring favourable conservation status[9]?

[9] Refer Case C-258/11 *Sweetman* Reference for Preliminary Ruling - Advocate General's Opinion, para 50.

2.5 The integrity test

2.5.1 The concept of site integrity is considered in section C.11 of the HRA Handbook and some key generic principles are summarised in table 2.5.1 below:

Table 2.5.1: Key overarching principles from section C.11 of the HRA handbook
In the context of the Regulations, the 'integrity' of a site is defined in England and Wales as 'the coherence of its ecological structure and function across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which the site is (or will be) designated'. In 2018 EC guidance modified this to read 'the coherent sum of the site's ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated.'
The 'integrity' of a site can also be considered to be the quality or condition of being whole or complete; or in a dynamic ecological context, as having resilience and an ability to evolve in ways that are favourable to conservation.
A site can be described as having a high degree of integrity where the inherent potential for meeting site conservation objectives is realised, the capacity for self-repair and self-renewal under dynamic conditions is maintained, and a minimum of external management support is required.
When looking at effects on the integrity of a site it is important to take into account a range of factors, including the possibility of effects manifesting themselves in the short, medium and long-term, the duration of the effects and their reversibility.
The 'integrity of a site' relates to the site's conservation objectives. Taking each qualifying feature in turn, if the conservation objectives for a feature will be undermined, site integrity is necessarily adversely affected. On the contrary, site integrity cannot be considered to be adversely affected if the findings of an appropriate assessment demonstrate that the conservation objectives will not be undermined alone or in combination with other plans or projects. This would include low-impact effects that are too small or short-lived to undermine the achievement of the conservation objectives. For example, this may include operations which may have short term effects but no significant long term adverse effects.
Plans or projects must not be approved unless the authority has made 'certain' that they will not have an adverse effect on site integrity. Such certainty would only exist where the competent authority is 'convinced' about the lack of effects on integrity which will be the case where no reasonable scientific doubt remains as to the absence of such effects
If suitably conservative assumptions are built into the calculation of scientifically sound 'integrity' thresholds, related to the site conservation objectives and targets, then the fact that the outcome of predictive modelling or calculations in a particular case is close to the threshold, does not mean that the competent authority ought to conclude that there must be reasonable scientific doubt about the absence of adverse effects on integrity. A further layer of precaution is unnecessary.
The test is whether there is 'reasonable' scientific doubt rather than an absolute certainty. It is not possible to demonstrate, nor is it necessary to show, an absolute guarantee that there will not be an adverse effect on site integrity; rather a competent authority, taking advice from the statutory nature conservation body, should identify the potential risks, so far as they may be reasonably foreseeable in light of such information as can reasonably be obtained, and put in place a legally enforceable framework with a view to preventing the risks from materialising.

3 European sites for which a likely significant effect has been identified

3.1 Summary of likely significant effect screening

3.1.1 The proposal lies within 10km of five statutory designated sites within the national site network (NSN). Four of these are terrestrial sites and one is a marine site:

- The Isle of Portland to Studland Cliffs SAC
- Chesil Beach and the Fleet SPA and Ramsar
- Chesil and the Fleet SAC
- Crookhill Brick Pit SAC.
- Studland to Portland SAC (marine)

3.1.2 The Council has already undertaken a stage 1 assessment for likely significant effects. Details of all sites subject to consideration at stage 1 screening are provided in section 4 of the Shadow AA. Dorset Council in their role as competent authority has undertaken the screening step and agrees with the findings in the Shadow AA of a likely significant effect upon four European sites.

3.1.3 The four sites which have been progressed through to appropriate assessment and the effect mechanisms for which a likely significant effect has been identified are summarised in table 3.1.1 below:

Table 3.1.1 Summary of likely significant effects as determined by Dorset Council

European site	Likely significant effect mechanism
Chesil and the Fleet SAC	Pollution of marine environment during construction and operation
	Air pollution from emissions and associated traffic movements
Chesil Beach and the Fleet SPA/Ramsar	Pollution of marine environment during construction and operation
Isle of Portland to Studland Cliffs SAC	Pollution of marine environment during construction and operation
	Dust generation
	Air pollution from emissions and associated traffic movements
Studland to Portland marine SAC	Pollution of marine environment during construction and operation

3.2 Scope of Council's assessment and competent authority co-ordination

3.2.1 As summarised in section 1.3, in accordance with regulation 67, a co-ordinated approach to the assessment has been agreed with the Environment Agency. With regards impacts associated with air pollution, the scope of this appropriate assessment undertaken by the Council is constrained to the effects associated with traffic emissions. **Associated impacts from stack emissions are subject to a permit by the Environment Agency and will be subject to assessment under the Habitats Regulations by the Environment Agency as the**

relevant competent authority. This aligns with Defra guidance to competent authorities[10] which states that:

> *'You should not assess any part of a proposal that another competent authority has a role to assess. The relevant competent authority will do their own assessment'.*

3.2.2 With regards water quality impacts the scope of the assessment is again constrained. Operational impacts associated with discharge of uncontaminated surface run-off will be subject to an environmental permit issued by the Environment Agency and will be considered in the HRA they are undertaking. Construction related impacts will be included within the scope of this assessment.

3.2.3 As such the scope of the appropriate assessment undertaken by the Council is as follows:

Table 3.2.1 Scope of the appropriate assessment to be undertaken by Dorset Council

European site	Likely significant effect mechanism
Chesil and the Fleet SAC	Pollution of marine environment during construction
	Air pollution from associated traffic movements
Chesil Beach and the Fleet SPA/Ramsar	Pollution of marine environment during construction
Isle of Portland to Studland Cliffs SAC	Pollution of marine environment during construction
	Dust generation
	Air pollution from associated traffic movements
Studland to Portland marine SAC	Pollution of marine environment during construction

3.3 Relevant details for European sites taken forward to appropriate assessment

Chesil and the Fleet SAC

3.3.1 The qualifying features for which the SAC has been designated are:

- Annual vegetation of drift lines
- Perennial vegetation of stony banks
- Mediterranean and thermo-Atlantic halophilous scrubs *(Sarcocornetea fruticosi)*
- Atlantic Salt meadows *(Glauco-Puccinellietalia maritimae)*
- Coastal Lagoons

3.3.2 The conservation objectives for the site are to:

> **Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;**
>
> - **The extent and distribution of qualifying natural habitats**
> - **The structure and function (including typical species) of qualifying natural habitats, and**
> - **The supporting processes on which qualifying natural habitats rely.**

[10] https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site#make-decision-making-quicker

3.3.3 The conservation objectives need to be read and interpreted in light of Natural England's conservation advice for marine protected areas. The supplementary advice[11] Information on what the supplementary advice is and when to use it reads as follows:

> ***Supplementary advice***
> *The Supplementary Advice on Conservation Objectives (SACOs) present attributes which are ecological characteristics or requirements of the designated species and habitats within a site. The listed attributes are considered to be those which best describe the site's ecological integrity and which if safeguarded will enable achievement of the Conservation Objectives. These attributes have a target which is either quantified or qualified depending on the available evidence.*
>
> *The target identifies as far as possible the desired state to be achieved for the attribute. In many cases, the attribute targets show if the current objective is to either 'maintain' or 'restore' the attribute. The targets given for each attribute do not represent thresholds to assess the significance of any given impact in Habitats Regulation Assessments. You will need to assess this on a case-by-case basis using the most current information available.*
>
> ***When to use***
> *You should use this information, along with the conservation objectives and case-specific advice issued by Natural England when developing, proposing or assessing an activity, plan or project that may affect the site.*
>
> *Any proposals or operations which may affect the site or its features should be designed so they do not adversely affect any of the attributes in the SACO or achievement of the conservation objectives*

Isle of Portland to Studland Cliffs SAC

3.3.4 The qualifying features for which the SAC has been designated are:

- Annual vegetation of drift lines
- Vegetated sea cliffs of the Atlantic and Baltic coasts
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (FestucoBrometalia)
- Gentianella anglica; Early gentian

3.3.5 The conservation objectives for the site are to:

> **Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;**
>
> - **The extent and distribution of qualifying natural habitats and habitats of qualifying species**

[11] Natural England Supplementary Advice to the conservation objectives for Chesil and the Fleet SAC

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

3.3.6 The conservation objectives need to be read and interpreted in light of Natural England's supplementary advice to[12] which states:

> *'You should use the Conservation Objectives, this Supplementary Advice and any case-specific advice given by Natural England, when developing, proposing or assessing an activity, plan or project that may affect this site.*
>
> *This Supplementary Advice to the Conservation Objectives presents attributes which are ecological characteristics of the designated species and habitats within a site. The listed attributes are considered to be those that best describe the site's ecological integrity and which, if safeguarded, will enable achievement of the Conservation Objectives. Each attribute has a target which is either quantified or qualitative depending on the available evidence. The target identifies as far as possible the desired state to be achieved for the attribute.'*

Chesil Beach and the Fleet SPA/Ramsar

3.3.7 The qualifying features for which the SPA/Ramsar has been classified are:

- *Anas Penelope*; Eurasian widgeon (Non-breeding)
- *Sterna Albifrons*; Little tern (Breeding)

3.3.8 The Ramsar Information Sheet refers to the site being of international importance for wintering waterbirds and lagoonal species.

3.3.9 The conservation objectives for the site are to:

> **Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;**
>
> - **The extent and distribution of the habitats of qualifying species**
> - **The structure and function of the habitats of qualifying species**
> - **The supporting processes on which the habitats of qualifying species rely**
> - **The populations of each the qualifying features, and,**
> - **The distribution of qualifying features within the site.**

[12] Natural England conservation objective and supplementary advice to conservation objectives for Isle of Portland to Studland Cliffs SAC

3.3.10 The conservation objectives need to be read and interpreted in light of Natural England's supplementary advice to[13] which states:

> *'The Supplementary Advice on Conservation Objectives (SACOs) present attributes which are ecological characteristics or requirements of the classified species within a site. The listed attributes are considered to be those which best describe the site's ecological integrity and which if safeguarded will enable achievement of the Conservation Objectives.*
>
> *You should use the Conservation Objectives, this Supplementary Advice and any case-specific advice given by Natural England, when developing, proposing or assessing an activity, plan or project that may affect this site'.*

3.4 SSSI reporting for affected sites

3.4.1 The condition assessment details for the affected underpinning SSSI sites are summarised in table 3.4.1 below:

Table 3.4.1: Summary of underpinning SSSI condition assessment

SSSI	Units	Overall condition assessment	Notes
Chesil and the Fleet	39	66% favourable 12% unfavourable recovering 22% unfavourable declining	Unit 1 adjacent to A354 is favourable.
Portland Harbour Shore	8	74% favourable 15% unfavourable no change 10% Not recorded	Unit 1 adjacent to A354 is favourable.
Isle of Portland SSSI	39	37% favourable 47% unfavourable recovering 7% unfavourable no change 9% unfavourable declining	Unit 33 adjacent to development site is unfavourable declining due to lack of sufficient scrub control and grazing.

3.5 Other sources of site-specific information

3.5.1 Beyond the site level reporting at SSSI unit level, Article 17 of the Habitats Directive requires the UK Government to submit a report to the European Commission on the implementation of measures taken under the Directive. This report concerns management measures as well as an evaluation of the impact of such measures on the 'conservation status' of the Annex 1 habitats and Annex 2 species (the habitats and species for which Special Areas of Conservation are designated).

3.5.2 At a habitat level (rather than a site level) Favourable Conservation Status is defined by reference to four parameters; 'range', 'area', 'structure and function' and 'future prospects'. The agreed method for the evaluation of conservation status assesses each of these parameters separately and then combines these assessments to give an overall assessment of 'conservation status'.

[13] Natural England conservation objective and supplementary advice to conservation objectives for Isle of Portland to Studland Cliffs SAC

3.5.3 A summary of the information contained in the 3rd UK Habitats Directive report (submitted in 2019) in relation to the habitats and species across the UK for which the affected SACs are designated is set out in table 3.5.1 below:

Table 3.5.1: Summary of Article 17 report assessment of favourable conservation status at UK level for qualifying features of Chesil and the Fleet SAC and the Isle of Portland to Studland Cliffs SAC

Qualifying Habitat Feature	Range	Area	Specific structures and functions	Future Prospects	Overall Assessment
Annual vegetation of drift lines	Unfavourable (Inadequate)	Unfavourable (Inadequate)	Unfavourable (bad)	Unfavourable (bad)	Unfavourable (bad)
Perennial vegetation of stony banks	Favourable	Unfavourable (Inadequate)	Unfavourable (bad)	Unfavourable (bad)	Unfavourable (bad)
Mediterranean and thermo-Atlantic halophilous scrubs *(Sarcocornetea fruticosi)*	Favourable	Unfavourable (Inadequate)	Unfavourable (bad)	Unfavourable (bad)	Unfavourable (bad)
Atlantic Salt meadows *(Glauco-Puccinellietalia maritimae)*	Favourable	Unfavourable (Inadequate)	Unfavourable (bad)	Unfavourable (bad)	Unfavourable (bad)
Coastal Lagoons	Favourable	Favourable	Unfavourable (Inadequate)	Unknown	Unfavourable (Inadequate)
Vegetated sea cliffs of the Atlantic and Baltic coasts	Favourable	Unfavourable (Inadequate)	Unfavourable (bad)	Unfavourable (bad)	Unfavourable (bad)
Semi-natural dry grasslands and scrubland facies: on calcareous substrates (FestucoBrometalia)	Favourable	Favourable	Unfavourable (bad)	Unfavourable (bad)	Unfavourable (bad)
Gentianella anglica; Early gentian	Favourable	Unfavourable (bad)	Unfavourable (Inadequate)	Unfavourable (bad)	Unfavourable (bad)

3.5.4 It is important to note that the Article 17 report relates to a 'feature level assessment' in respect of the distribution of the feature across the UK. As such, whilst this information is of some relevance to the development of a *project specific* HRA, it is not an indication of the conservation status of each feature within the SAC (at a site level). The information is nevertheless helpful to inform an HRA as it does provide an indication of the status of the habitat overall.

3.5.5 The Article 17 reports also provide a list of the main pressures and threats which are considered to be relevant to the qualifying habitat or species concerned. This information is also relevant at a UK level but it does provide an indication of the possible reasons and cases for unfavourable conservation status. The main pressures and threats (those of high or medium importance) recorded against the qualifying features at the UK level for which the two SACs are designated are summarised in table 3.5.2:

Table 3.5.2: Summary of main pressures and threats recorded against the qualifying features at a UK level	
Qualifying feature	**Main pressures and threats**
Annual vegetation of drift lines	• Sports, tourism and leisure activities (H) • Intensive grazing or overgrazing by livestock (M) • Modification of coastline, estuary and coastal conditions for development, use and protection of residential commercial and recreational infrastructure and areas (including sea defences or coastal protection works and infrastructure) (M) • Deposition and treatment of waste/garbage (M) • Other invasive alien species (M) • Sea-level and wave exposure changes due to climate change (M)
Perennial vegetation of stony banks	• Sea-level and wave exposure changes due to climate change (H) • Intensive grazing or overgrazing by livestock (M) • Abstraction of surface and ground water (M) • Mining and extraction activities (M) • Development and operation of energy plants (M) • Modification of coastline, estuary and coastal conditions for development, use and protection of residential commercial and recreational infrastructure and areas (including sea defences or coastal protection works and infrastructure) (M) • Modification of flooding regimes, flood protection for residential or recreational development (M)
Mediterranean and thermo-Atlantic halophilous scrubs *(Sarcocornetea fruticosi)*	• Intensive grazing or overgrazing by livestock (M) • Modification of coastline, estuary and coastal conditions for development, use and protection of residential commercial and recreational infrastructure and areas (including sea defences or coastal protection works and infrastructure) (M) • Mixed sources air pollution, air-borne pollutants (M) • Sea-level and wave exposure changes due to climate change (M)
Atlantic Salt meadows *(Glauco-Puccinellietalia maritimae)*	• Intensive grazing or overgrazing by livestock (H) • Modification of coastline, estuary and coastal conditions for development, use and protection of residential commercial and recreational infrastructure and areas (including sea defences or coastal protection works and infrastructure) (H) • Agricultural activities generating diffuse pollution to surface or ground waters (M) • Wind, wave or tidal power, including infrastructure (M) • Shipping lanes, ferry lanes and anchorage infrastructure (M) • Draining, land reclamation or conversion of wetlands, marshes, bogs etc. to industrial/commercial areas (M) • Other invasive alien species (M) • Mixed sources air pollution, air-borne pollutants (M) • Physical alteration of water bodies (M) • Sea-level and wave exposure changes due to climate change (M)
Coastal Lagoons	• Agricultural activities generating marine pollution (M) • Modification of coastline, estuary and coastal conditions for development, use and protection of residential commercial and recreational infrastructure and areas (including sea defences or coastal protection works and infrastructure) (M) • Modification of flooding regimes, flood protection for residential or recreational development (M) • Intensive grazing or overgrazing by livestock (H) • Other invasive alien species (M) • Mixed source marine water pollution • Wind, wave or tidal power, including infrastructure (M)

	• Modification of hydrological flow (M) • Temperature changes due to climate change (M) • Increases or changes in precipitation due to climate change (M) • Sea-level and wave exposure changes due to climate change (M) • Change of habitat location, size and/or quality due to climate change (M)
Vegetated sea cliffs of the Atlantic and Baltic coasts	• Intensive grazing or overgrazing by livestock (H) • Extensive grazing or overgrazing by livestock (H) • Other invasive species (H) • Modification of coastline, estuary and coastal conditions for development, use and protection of residential commercial and recreational infrastructure and areas (including sea defences or coastal protection works and infrastructure) (M) • Problematic native species • Mixed sources air pollution, air-borne pollutants (M)
Semi-natural dry grasslands and scrubland facies: on calcareous substrates (FestucoBrometalia)	• Abandonment of grassland management (e.g. cessation of grazing or mowing) (H) • Intensive grazing or overgrazing by livestock (H) • Extensive grazing or undergrazing by livestock (H) • Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (H) • Conversion from one type of agricultural land use to another (excluding drainage and burning) (M) • Application of synthetic (mineral) fertilisers on agricultural land (M) • Use of plant protection chemicals in agriculture (M) • Mixed source air pollution, air-borne pollutants (M) • Droughts and decreases in precipitation due to climate change (M) • Increases or changes in precipitation due to climate change (M)
Gentianella anglica; Early gentian	• Abandonment of grassland management (H) • Extensive grazing or undergrazing by livestock (H) • Application of synthetic (mineral) fertilisers on agricultural land (M)

3.5.6 Of relevance to this appropriate assessment, at a UK level, air pollution is listed as a threat or pressure against:

- Mediterranean and thermo-Atlantic halophilous scrubs *(Sarcocornetea fruticosi)*
- Atlantic Salt meadows *(Glauco-Puccinellietalia maritimae),*
- Vegetated sea cliffs of the Atlantic and Baltic coasts, and
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (FestucoBrometalia).

4 Approach to the in-combination assessment

4.1 The need for assessment in-combination

4.1.1 The need for an appropriate assessment can be triggered by two scenarios. Either a likely significant effect based on the effects of a plan or project 'alone', or a likely significant effect on the basis of the effects of a plan or project 'in combination with other plans and projects'.

4.1.2 In the current case, the need for an appropriate assessment is triggered on the basis of a likely significant effect having been identified from the effects of the proposed project in combination with other plans and projects.

4.2 The scope of the assessment

4.2.1 As assessment in combination with other plans and projects needs to be handled in a proportionate and flexible manner. This is clear from the response to an EC Parliamentary question and following authoritative UK Court decisions.

4.2.2 In the first instance a question was put to the EC parliament to query the scope of the in-combination question. EC guidance had stated that the in-combination provision should be restricted to other plans and project which have 'actually been proposed' and the question asked whether the Commission had a clear position on what they meant by this phrase. In responding to the question the Commission provided some important clarification as summarised below:

> *'In any event, any application of what is meant by 'actually proposed' needs to take account of particular circumstances of specific cases as well as the practical feasibility of making an assessment of combined effects. The combination provision must be applied in a manner that is proportionate to the timing, planning stage and the legality of the proposed plans and projects'.*

4.2.3 In 2011 a decision of the UK Courts relied upon the reasoning set out in the response to the parliamentary question to agree to an approach to in-combination which had been taken by the local planning authority in respect of the decision to approve the Aberdeen Western Peripheral Ring Road[14]. In this case objectors had argued that the decision was flawed as it failed to include two proposals which they felt should have been included. In this case the nature of the project was such that a large number of potential plans and projects were in chronological and geographic proximity. The Council, and consultants acting on their behalf, had therefore drawn up criteria to identify *relevant* plans and projects to be included in the in-combination assessment. The court considered the approach taken and ruled as follows:

> *'the respondents were entitled to exercise judgement as to the projects with whose effect the AWPR proposal had to be considered in-combination…* (para 74)
>
> *…'As regards the in-combination point, I again accept the submission on behalf of the respondents. In particular, I agree that there must be a degree of flexibility in assessing the projects with which a particular proposal should be regarded as having an in-combination effect. I can detect no unreasonableness in the approach taken by the respondents and their consultants in the present case.'*(para 75)

[14] *Walton* (Scottish Courts) [2011]CSOH 131

4.2.4 Some important principles can be drawn for these authoritative sources as follows.

- In-combination provisions must be interpreted and applied in a proportionate manner (EC parliamentary question).
- An in-combination assessment must be practically feasible (EC parliamentary question).
- there must be a degree of flexibility in an in-combination assessment (Walton).
- a competent authority is entitled to exercise judgment over which other plans and projects to take into account (Walton).

4.2.5 The list of other plans and projects which have been included within the scope of the in-combination assessment for the current assessment is provided in section 7 of the Shadow HRA. The Council, in their role as competent authority, are entitled to exercise their judgement as to the plans and projects which need to be included within the scope of the assessment effort. In doing so they need to be mindful of interpreting the provisions in a proportionate manner and recognising the practical feasibility of assessing combined effects.

4.2.6 It is the advice of DTA Ecology that the explanation given in the shadow HRA for excluding the development covered by the two harbour revisions orders[15] is justified. It would not be practically feasible to attempt to include the potential development that may arise as there is insufficient information at this time to enable a sensible assessment to be undertaken.

4.2.7 It is important to recognise that potential future combined effects will not be overlooked by excluding the Harbour revision orders from the scope of the in-combination assessment for this project. At a future point, if any development proposals come forwards under the harbour revisions orders, accompanied by sufficient detailed information to inform a meaningful assessment of potential effects, the baseline traffic levels which will be taken into account in considering the granting of any such permission will include the traffic from the proposed Portland Powerfuel plant.

4.2.8 This aligns with the decision in the UK Courts in the case of Forest of Dean FoE v Forest of Dean Council[16]. Here the Court considered how to apply the in-combination provisions in respect of series of anticipated development proposals. The Court ruled as follows:

> *it will be lawful when planning permission is sought for the first specific development project in the series for the relevant planning authority to assess that that project taken by itself will not have any relevant detrimental impact on the protected site (and then grant planning permission for it), even though it is possible that there might be future "in-combination" effects on the protected site if planning permission were later granted for the next project in the series.*
>
> *The planning authority will be able (and obliged) to ensure that adequate mitigation measures are incorporated in the later project to deal properly with any potential "in-combination" effects or to refuse to grant permission for that later project, and in this way safeguard the protected site and hence comply with the strict precautionary approach required by Article 6.*

[15] Refer table 16 in Shadow AA and supporting text

[16] *Forest of Dean (FoE) v Forest of Dean DC [2015] EWCA Civ 683*

The planning authority is entitled to adopt a staged approach to consideration of individual projects as they are brought forward, ensuring at each stage that the protected site is not subject to detrimental impact.'

4.2.9 The Council have confirmed that they are satisfied that there are no other plans and projects which need to be included beyond those identified in the shadow HRA.

4.2.10 The Council did note that planning application WP/20/00705/FUL for a Drive-through coffee shop and business units at Site P Osprey Quay was approved and was not included in the list of plans and projects put forward by the applicant. This scenario is an inevitable consequence of the in-combination provisions, and the fact that the list of 'other plans and projects' is in a state of flux. Decision-makers must therefore remain live to the potential for 'other plans and projects' to arise during the decision-making window, after submission of associated application documentation.

4.2.11 The Council have considered whether it is reasonable to request the modelling work to be re-done to include this proposal but are mindful that, in accordance with regulation 63(2) any requests for information to enable the appropriate assessment to be undertaken must remain reasonable. It is the advice of DTA Ecology that it would only be reasonable to request updated modelling if there is a realistic prospect that the results of such modelling will be sufficiently different to potentially influence the decision that might otherwise be reached. In the case of application WP/20/00705/FUL it is the decision of the Council that it is not reasonable to require further information to be submitted. There is no realistic prospect that including the permitted development within the scope of the in-combination assessment will change the decision that might otherwise be reached.

5 Approach to the Appropriate Assessment

5.1 How the integrity test relates to an appropriate assessment

5.1.1 Whilst closely related, the appropriate assessment and integrity test are discrete inter-related steps. The appropriate assessment is an objective assessment of the implications for the site if the plan or project goes ahead. The findings of the assessment inform the integrity test, which follows. This aligns with the ruling of the CJEU in the *Sweetman* case[17], where the court actually refers to the appropriate assessment and integrity test as separate 'stages' when describing the assessment process.

> *'That provision thus prescribes two stages. The first, envisaged in the provision's first sentence, requires the Member States to carry out an appropriate assessment of the implications for a protected site of a plan or project when there is a likelihood that the plan or project will have a significant effect on that site…*
>
> *…The second stage, which is envisaged in the second sentence of Article 6(3) of the Habitats Directive and occurs following the aforesaid appropriate assessment, allows such a plan or project to be authorised on condition that it will not adversely affect the integrity of the site concerned, subject to the provisions of Article 6(4).'*

5.1.2 The supporting Advocate General's opinion describes the question being asked through the appropriate assessment and integrity test in the following terms:

> *What will happen to this site if this plan or project goes ahead; and is that consistent with maintaining or restoring the 'Favourable Conservation Status' of the habitats and species concerned'*

5.1.3 This appropriate assessment record therefore clearly distinguishes the appropriate assessment, which sets out what will change if the plan or project goes ahead, from the integrity test, which considers the implications of the predicted changes in view of the conservation objectives. In other words the relative contribution the site makes to achieving favourable conservation status of the habitats and species for which it is designated.

5.2 Applying the integrity test generally

5.2.1 Building on the principles referred to in table 2.5.1, it is of the utmost important when applying the integrity test as part of an appropriate assessment to understand the conservation objectives for the site concerned. This is on the basis that it is a legal requirement under regulation 63 that an appropriate assessment be made 'in view of the conservation objectives'. The Natural England guidance NEA001[18] emphasises what this means in practice at paragraph 5.18:

> *'The Habitats Regulations state that appropriate assessments of plans and projects must be undertaken 'in view of that site's conservation objectives'.* ***The 'key question' for the appropriate assessment is, in view of these objectives, can it be***

[17] Case C-258/11 Reference for a preliminary ruling (The *Sweetman* Ruling)

[18] Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations (NEA001)

ascertained that, should the plan or project go ahead, there will be no adverse effect from it on the site's integrity so that the site's conservation objectives will not be undermined'.

5.2.2 Guidance from Natural England included within the supplementary advice to the conservation objectives is clear and explicit that:

> *'You should use this information, along with the conservation objectives and case-specific advice issued by Natural England when developing, proposing or assessing an activity, plan or project that may affect the site.*
>
> *Any proposals or operations which may affect the site or its features should be designed so they do not adversely affect any of the attributes in the SACO or achievement of the conservation objectives'.*

5.2.3 The connection between the conservation objectives and the concept of site integrity is also clear from authoritative EC guidance 'Managing Natura 2000' which states:

> *'It is clear from the context and from the purpose of the Directive that the 'integrity of a site' relates to the site's conservation objectives… In other words if none of the habitat types or species for which the site has been designated is significantly affected then the site's integrity cannot be considered to be adversely affected. However, if just one of them is significantly affected, taking into account the site's conservation objectives, then the site integrity is necessarily adversely affected.'*

5.2.4 When reading and interpreting the extract above form the EC guidance it is relevant to acknowledge that, in the context of HRA, an effect is regarded as 'significant' (at the earlier screening for likely significant effects step) only if it undermines the conservation objectives. Hence a habitat or species being 'significantly' affected is equivalent to the respective conservation objectives for the habitat or species concerned being undermined.

5.2.5 Having understood what will happen if the project goes ahead in terms of air quality impacts associated with traffic emissions (refer section 7) the application of the integrity test can helpfully be approached through an evaluation of the proposed changes in view of the conservation objectives and relevant attributes and targets in the supplementary advice.

5.3 Understanding the conservation objectives

5.3.1 Having recognised that an assessment must be made in view of the conservation objectives, it is helpful to explain how the conservation objectives are to be interpreted and applied. Natural England refer to conservation objectives in the following manner.

> *They provide a framework which should inform any 'Habitats Regulations Assessments' (which may include an Appropriate Assessment) that a competent authority may be required to make under the legislation referred to above. In addition, they can be used to inform any measures necessary to conserve or restore the European Site and/or to prevent the deterioration or significant disturbance of its qualifying features.*

5.3.2 The European Commission note on setting conservation objectives[19] provides further helpful clarification as follows:

> *'In its most general sense a conservation objective is the specification of the overall target for the species and/or habitat types for which a site is designated in order for it to contribute to maintaining or reaching favourable conservation status of the habitats and species concerned.'*

5.3.3 It is necessary to recognise that conservation objectives are established at a site level. They apply across the site and establish *overall* targets for the site concerned. A given site will, in most cases, be designated for a number of different habitats and species and site level conservation objectives are set for each of the qualifying features concerned. Given all qualifying features do not occur in all places within a site it logically follows that, when making an assessment 'in view of the conservation objectives' it is therefore necessary to acknowledge that the spatial application of any given objective will be dependent upon the distribution of qualifying features within the site.

5.3.4 By way of example if a site is designated for both woodland and heathland habitat types the conservation objectives for the woodland habitat would not apply in parts of the site hosting heathland habitat. The same logic applies where there is a restore objective at risk of being compromised; the spatial application of that objective will depend upon the distribution of the qualifying feature and local factors exerting an influence over condition.

5.3.5 It is also necessary to recognise that some sites contain areas which are referred to by Natural England as 'site fabric', being of no special nature conservation value. This is recognised in guidance document NEA001 at paragraph 4.18 as follows:

> *Many sites are designated for several different qualifying features. Not all features are present within a given location within the site. In some cases, a road surface and its adjacent verges may be included within a designated site boundary. This does not necessarily mean that it, and its associated verges, will be of nature conservation interest and form part of a qualifying feature. The inclusion of the hard surface of a road and/or its adjacent verges might simply have been unavoidable when denoting a boundary and included simply for convenience. These areas will therefore constitute 'site-fabric', being of no special nature conservation interest. Conversely, at some sites, roadside verges may have been deliberately included within a site boundary and be an integral part of a designated habitat. Therefore, a site's conservation objectives are unlikely to apply equally to all parts of a site and a competent authority may need to be made aware of this as necessary.*

5.3.6 The term 'site-fabric' is defined in a footnote within NEA001 as follows:

> *'Site-fabric' is a general term used by Natural England to describe land and/or permanent structures present within a designated site boundary which are not, and never have been, part of the special interest of a site, nor do they contribute towards supporting a special interest feature of a site in any way, but which have been unavoidably included within a boundary for convenience or practical reasons. Areas of site-fabric will be deliberately excluded from condition assessment and will not be expected to make a contribution to the achievement of conservation objectives.'*

[19] Commission Note on setting conservation objectives for Natura 2000 sites

5.3.7 The recognition that the spatial application of a conservation objective will be influenced by local factors is important when making an assessment in respect of air quality. This is due to the fact that air quality is not uniform across a given site. A given air quality target may be met in one part of a site and exceeded in another. Where this is the case, it would logically follow that a 'maintain' objective would apply to parts of a site where the baseline pollutant levels are already below the critical load/level and a 'restore' objective would apply to parts of the site subject to exceeding baseline pollutant levels.

5.3.8 Whilst this is entirely logical it is relevant to note that, historically, the APIS[20] website provided an average background pollutant level which applied across the site as a whole. At this time either a restore or a maintain objective would apply to a whole site on the basis of whether the average background level exceeded the relevant critical load / level. The baseline data was not historically available at a sufficient spatial resolution to recognise local variations within the site and allow a more spatially refined application of conservation objective targets.

5.3.9 Recent updates to the APIS website mean that baseline data is now provided at a 1km grid square resolution. This is a significant improvement, and it represents best available information allowing greater confidence to be attributed to baseline levels when making an assessment of predicted effects at a given location. It also enables a more refined application of underpinning conservation objective targets.

5.3.10 Given the updates are relatively recent, the published supplementary advice to conservation objectives have not yet been updated to recognise the enhanced spatial resolution for baseline air pollution data. Standard wording in Natural England's published supplementary advice to conservation objectives recognises that targets and attributes represent best available information and that they will be updated as new information becomes available. It is therefore the opinion of DTA Ecology that, for the purpose of the current assessment, the conservation objective targets for air pollution should take account of the current baseline values available on the APIS website. **As a consequence, conservation objective targets in respect of air quality will vary across a given site depending on the baseline levels provided**. It is the understanding of DTA Ecology that, at the time of writing, Natural England are in the process of updating the conservation objectives for Chesil and the Fleet SAC in this regard.

5.3.11 By way of a summary, in making an assessment in view of the conservation objectives it is necessary to acknowledge that:

- Conservation objectives set overall targets for the qualifying features concerned.
- The spatial application of any given objective will be dependent upon the distribution of qualifying features within the site and the baseline conditions.
- A site's conservation objectives are unlikely to apply equally to all parts of a site. Areas of 'site fabric' will not be expected to make a contribution to the achievement of a site's conservation objectives.

[20] Air Pollution Information System website

6 Baseline air quality information

6.1 How baseline air quality relates to conservation objectives and site integrity

6.1.1 As set out in case law, an appropriate assessment must take account of the specific environmental conditions and circumstances at the site[21]. It is established in case law that when applying the habitats regulations an effect is 'significant' if it undermines the conservation objectives[22].

6.1.2 A correct understanding of baseline conditions is therefore important when making an assessment of effects associated with air pollution *'in view of the conservation* objectives' (as legally required under regulation 63). As explained in 5.4 above, the prevailing air quality will influence the conservation objective targets for the site in respect of air quality and whether an objective to 'maintain' air quality (below the relevant critical load/level) applies or, instead, whether an objective of 'restoring' air quality (to achieve the critical load/level) applies.

6.2 Air Quality baseline information updates

6.2.1 The air quality scope of this report is constrained to the effects associated with traffic emissions. The baseline values which are of particular relevance are therefore those in the vicinity of the A354 Portland Beach Road (adjacent to Chesil and the Fleet SAC), and the Castletown and Main Road access routes (adjacent to Isle of Portland SAC).

6.2.2 As explained in section 1 to the Shadow AA submitted on behalf of the applicant, over the course of the application baseline data for ecological sites available on the Air Pollution Information System (APIS) has been updated. Technical Appendix D1 provides a baseline analysis to the 2020 September ES, but updates to the APIS website tool place in March 2021 and May 2022. The modelling work was updated to take account of baseline figures from March 2021 and an updated list of 'other plans and projects' in the in-combination assessment (2nd ES Addendum appendix 3-4 - January 2022). Further updates to modelling outputs following the May 2022 APIS baseline data changes were not provided. Updating modelling work is a significant undertaking for the applicant and, whilst the Council could request updated modelling work, any such request would need to be reasonable in accordance with regulation 63(2). Consultants acting on behalf of the applicant reviewed the more recent APIS updates and concluded that the changes have no effect on modelling outputs as the baseline concentrations are simply added to modelled data to determine the overall concentration of a potential airborne contaminant.

6.2.3 Of particular importance, a further important update was made to APIS baseline data at the time of writing. On January 18th the following user announcement was published:

> *We have noticed a mapping error in the ammonia data of the CBED data 2018-2020. That translates also to an error in the total nitrogen deposition. The origin of the error is an R software update problem using the library 'proj4' to project to BNG which did not project correctly. This function has now been updated with the library 'proj6' which does it correctly… We apologise for any inconvenience this has caused.*

[21] Refer Case C-127/02 Waddenzee Ruling para 48
[22] Refer Case C-127/02 Waddenzee Ruling para 47

Further QC checks have been put in place to help prevent this type of error occurring again'.

6.2.4 Baseline data currently available is therefore notably different to the data used in the Shadow AA. The Council was made aware of these updates and decided that **they did not 'reasonably require' (refer regulation 63) the applicant to re-submit the AA in order to undertake their appropriate assessment.** Potential changes arising from updated APIS baseline values could instead be simply calculated from the modelling data which has been provided.

6.2.5 This section 6 sets out DTA Ecology's advice on the baseline values and relevant critical loads and levels which should be used to inform the appropriate assessment. This is in recognition of the principles in table 2.4.1 and the need for the assessment to be made in light of the best scientific knowledge in the field.

6.3 Information provided in shadow AA

6.3.1 Paragraphs 1.4-1.5 of the Shadow HRA refer to the May 2022 APIS data and briefly summarise the changes compared to the March 2021 data upon which the assessment has been made.

6.3.2 Paragraphs 6.12 – 6.16 then provide information on baseline trends alongside narrative text on how APIS data has changed following the latest updates but there is no clear statement of precisely what baseline levels were used to inform the assessment within the Shadow AA. The shadow AA refers to the supporting 2nd ES Addendum Appendix 3.4 additional dispersion modelling and this document provides background concentrations and deposition rates as a note to tables 4-9 of the transect results from the traffic modelling work as follows.

Table 6.3.1 – baseline data used by applicant in Shadow AA

Site	NO_x background	Ammonia background*	N dep background
Chesil and the Fleet	9.67 ug/m^3	0.71 ug/m^3	8.48 kg/ha/yr
Isle of Portland	33.78 ug/m^3	0.71 ug/m^3	8.48 kg/ha/yr

**Ammonia baseline values in tables 4-9 are cited as 0.97 but 'do nothing' values in table 8 are all given at 0.72-0.74. The consultants acting on behalf of the applicant have confirmed via email that the baseline value cited is the report is an error and that a value of 0.71 was used instead.*

6.3.3 For the purpose of this assessment, these values are assumed to be the baseline values against which effects associated with emissions from traffic have been assessed. These values have been evaluated by DTA Ecology against the data provided on the Air Pollution Information System at the time of writing (i.e. following the Jan 2023 updates). The findings are summarised below.

6.4 NO_x concentrations

6.4.1 There is broad agreement with the baseline values provided for NO_x, although DTA Ecology notes that at the time of drafting APIS gave 31.3 as a baseline value for NOx around the Isle of Portland SAC adjacent to the road. The values are sufficiently similar that DTA Ecology recommends that the background levels used are appropriate. Both values indicate an

exceedance of the critical level and amendments will not change the outcome of the decision in respect of impacts associated with NO_x.

6.4.2 The average NO_x values at Chesil and the Fleet SAC for the 3 grid squares which include the stretch of the A354 which runs through the SAC is 9.86 ug/m^3. It is the advice of DTA Ecology that the baseline values used by the applicant are sufficiently similar to be regarded as appropriate to inform the assessment.

6.5 Ammonia concentrations

6.5.1 APIS levels of ammonia at the Chesil and the Fleet SAC are higher than those used in the shadow AA. The grid squares adjacent to the road are showing baseline levels of 1.3 ug/m^3 compared to levels of 0.71ug/m^3 used in the shadow AA. It is the advice of DTA Ecology that the updated baseline levels should be used in this appropriate assessment.

6.5.2 APIS does not provide background levels for ammonia for the grid square within the Isle of Portland SAC adjacent to the road. This is unfortunate as it has meant that the applicant has taken baseline values from adjacent grid squares as surrogate values. The current background values for ammonia in adjacent grid squares is given as 1.1 and 1.2 ug/m^3 respectively (refer figure 6.5.2) and these updated values should be used. However, the baseline values given for NO_x show a significant elevation within the grid square concerned (refer figure 6.5.1). It is not clear why baseline NO_x values are so elevated compared to adjacent grid squares, but it implies significant localised sources of pollution within the grid square.

6.5.3 This discrepancy between pollutant levels compared to adjacent grid squares calls into question the use of baseline values for ammonia from adjacent squares. It is not possible to state with certainty that ammonia levels will show a similar pattern to NO_x, but it is certainly possible that they might. The baseline data for ammonia at the Isle of Portland SAC should therefore be treated with caution as it may represent an underestimate of actual values.

Figure 6.5.1: Baseline values at Isle of Portland SAC on APIS for NO_x (ug/m^3)

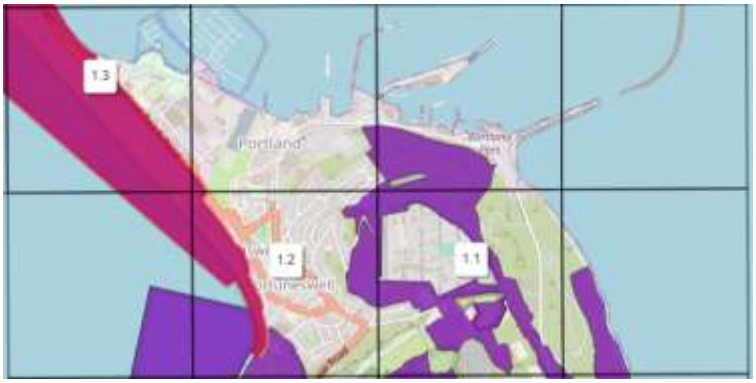


Figure 6.5.2: Baseline values at Isle of Portland SAC on APIS for ammonia (ug/m^3)

6.6 Nitrogen deposition rates for Chesil and the Fleet SAC

6.6.1 Baseline nitrogen deposition rates for both sites are given as 8.48 kg/ha/yr in the Shadow AA. DTA Ecology notes that this most closely reflects data on APIS given against the 'nitrogen deposition for moorland' pollutant layer in the March 2021 dataset.

6.6.2 In evaluating the baseline data used by the applicant it is important to recognise that APIS provides three options to a user in selecting baseline data for nitrogen deposition. The first two layers, 'nitrogen deposition to forest' and 'nitrogen deposition to moorland', reflect the influence that ground cover vegetation type exerts on deposition rates as explained within the APIS Q/A section[23] as follows:

> *'Reactive nitrogen deposits to woodland/forest at a higher rate than to shorter vegetation types. This is because forests and woodland habitats have a higher aerodynamic roughness (e.g. leaves, branches etc) as opposed to a shorter type of vegetation habitat types and deposition to woodland habitats can be twice as that for short vegetation. So even at the same location different habitats can receive different depositions of pollutant'. APIS provides the appropriate deposition values for each of the main habitats using either short vegetation (labelled moorland) or tree (woodland) deposition velocities.'*

6.6.3 A third pollutant layer is provided as 'nitrogen deposition for grid average'. The CBED model (which underpins the APIS data) has 5 land cover types: forest, moorland, urban, grassland and arable. What APIS refers to as the 'grid average' layer is an average of all of the five land covers. In other words APIS assumes a 20% cover of each of the land cover types within the grid square[24]. Hence, if you have a land cover which doesn't correlate well to moorland habitat structural characteristics it may be more appropriate to select the 'grid average' data layer.

6.6.4 Generally speaking the 'nitrogen deposition to grid average' layer gives lower deposition values than the moorland layer as the deposition velocities for the urban, grassland and agricultural land cover types as all lower than those for forest so the average value comes out lower than the moorland layer (compare figures 6.6.1 and 6.6.2 below).

[23] https://www.apis.ac.uk/FAQ
[24] Pers comm via email with APIS technical support staff

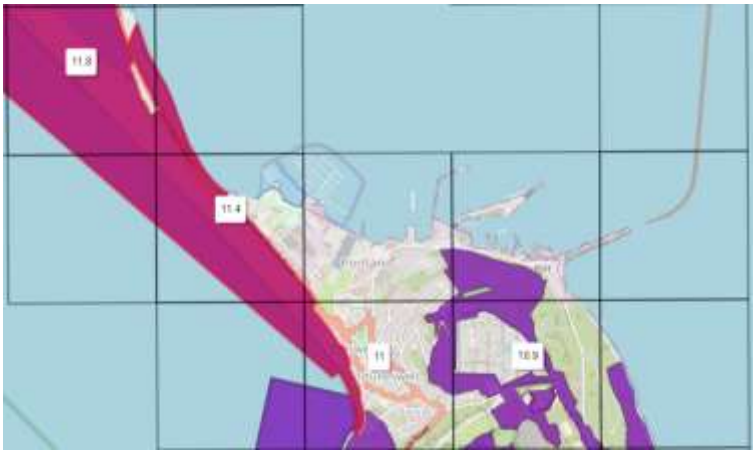


Figure 6.6.1: Baseline values on APIS for 'nitrogen deposition for moorland' layer (kg/ha/yr)

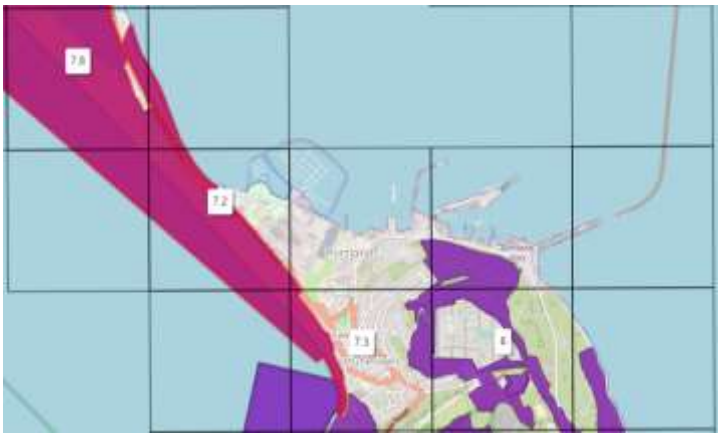


Figure 6.6.2: Baseline values on APIS for 'nitrogen deposition for grid average' layer (kg/ha/yr)

6.6.5 The habitat characteristics of the qualifying features for the Chesil and the Fleet SAC require careful consideration in deciding which of the APIS nitrogen deposition layers to use to inform the assessment. The shingle vegetation habitats across the SAC are often sparsely distributed and interspersed with extensive stretches of shingle beach. It is certainly not the case that there is the complexity of structure to the vegetation within the SAC that you might associate with typical moorland communities. Whilst some of the vegetation for which the site is designated may reach a similar height to a moorland plant the sparse distribution of the qualifying habitats within the SAC, and the extensive areas of shingle in and around the vegetation communities, are such that the deposition patterns can reasonably be expected to be more similar to grassland land cover than moorland. Of relevance to this HRA a 2012 survey for a proposed cycle route between Weymouth and Portland identified the sward height of vegetation alongside the A354 as being within a range of 3-15cm[25].

6.6.6 To look at it from another perspective, deposition is calculated in units of kg/ha/yr. A hectare of moorland habitat will have significantly more vegetation cover and a more complex structure than a given hectare of the Chesil and Fleet SAC. Whilst there are more uniform areas of MC5 grassland alongside the A354 it would still not be appropriate to compare this to a moorland habitat structure.

[25] August 2012 DERC SURVEY OF PROPOSED CYCLE ROUTE BETWEEN WEYMOUTH AND PORTLAND

6.6.7 The choice of the deposition layer in APIS is of material significance as the 'moorland' layer indicates that baseline deposition in the part of the SAC affected by traffic emissions exceeds the lower critical load for nitrogen deposition for perennial vegetation of stony banks qualifying feature (8-15 kg/ha/yr). If this is the case a 'restore' conservation objective would apply for air quality. The 'grid average' deposition layer indicates that there is no exceedance of the lower critical load at the affected part of the SAC as deposition is below 8kg/ha/yr. Baseline values for the grid squares adjacent to the A354 are 7.2 and 7.8 kg/ha/yr respectively, such that a 'maintain' objective would apply.

6.6.8 It is the opinion of DTA Ecology that the vegetation characteristics at the Chesil and Fleet SAC are sufficiently different to the structural characteristics of a moorland habitat to call into question the use of the moorland deposition layer on APIS, and that the most accurate deposition layer from APIS to inform the assessment of the project is the 'grid average' layer. This use of a grid average layer to estimate deposition for shingle beach vegetated habitat was confirmed in an email exchange with APIS technical support[26].

6.6.9 The grid average provides a straightforward average of all five landcover types (i.e. assuming 20% coverage in every grid square for each land cover type)[27] and the baseline data would still therefore represent a precautionary approach for the Council to adopt. The most appropriate deposition velocity would be that for grassland habitat which would give a baseline value even lower still than the grid average value which has been used. A grassland deposition layer is not available on APIS and the grid average layer is considered to provide the most accurate representation of baseline values from the three layers available.

6.6.10 A screenshot of a google maps 'streetview' image taken from the A354 looking northwards (fig 6.6.1) clearly shows a dominant grassland land cover.

Figure 6.6.1 screenshot of a google maps 'streetview' image taken from the A354 looking north

6.6.11 DTA recognises that it might be argued that the moorland layer should be used 'on a precautionary basis'. With reference to the principles at table 2.5.1, whilst the integrity test is inherently precautionary, where suitable conservative assumptions are built into assessment criteria, a further layer of precaution is unnecessary. It is the opinion of DTA Ecology that the grid average layer already includes a level of precaution (as deposition to grassland land cover will be lower than the grid average) and that further precaution through application of the moorland layer would represent an excessive approach.

[26] Personal communication with CEH team responsible for APIS database (email dated 9th January 2023)
[27] Personal communication with CEH team responsible for APIS database (email dated 13th January 2023)

6.6.12 The use of baseline levels which do not exceed the critical load also aligns with the condition monitoring which records both units adjacent to the road as being in favourable condition.

6.6.13 Natural England were consulted on the proposed use of the grid average layer to provide baseline deposition values and they responded[28] as follows:

> *'Natural England and the Councils advisor have agreed that the particular physical factors and configuration of the Chesil and the Fleet SAC, when considered with the low vegetation height indicate that for Nitrogen deposition the appropriate APIS background value should be the grid average rather than that for moorland. The use of this value also provides a degree of precaution concerning additional air pollution sources. At the A 354 the background values range from 7.2 to 7.8 kg/ha/year.'*

6.7 Nitrogen deposition rates for Isle of Portland to Studland Cliffs SAC

6.7.1 In respect of the vegetation characteristics at the Isle of Portland SAC, it is the opinion of DTA Ecology that baseline values are most accurately represented by the nitrogen deposition for moorland layer on APIS. This is due to the extensive areas of scrub and low growing vegetation in parts of the SAC adjacent to the road.

6.7.2 APIS does not provide background levels for nitrogen deposition for the grid square within the Isle of Portland SAC adjacent to the road. This is unfortunate as it has meant that the applicant has taken baseline values from adjacent grid squares as surrogate values. The current APIS data shows baseline levels in the adjacent grid square notably higher than those suggested by the applicant (11kg/ha/yr compared to 8.48 kg/ha/yr). The updated values for the adjacent grid square have therefore been used, but need to be treated with caution given levels within the affected grid square may be higher.

6.8 DTA proposed baseline data

Table 6.8.1 – baseline data proposed by DTA Ecology for Council AA and assessment of road traffic effects on affected roads. Updated values are shown in red.

Site	NO_x background	Ammonia background	N dep background
Chesil and the Fleet	9.67 ug/m^3	1.3 ug/m^3	7.8 kg/ha/yr*
Isle of Portland	31.3 ug/m^3	1.1 ug/m^3 **	11 kg/ha/yr**

*higher value of two 1km grid squares closest to A354

** Treat with caution as adjacent grid square baseline data used as surrogate

6.8.1 To avoid any confusion, DTA Ecology recognises that the above values are average baseline values which are derived from modelling at a 1km grid square resolution. **These values are not therefore representative of baseline concentrations adjacent to existing roads which are expected to be higher.** This is taken into account in the appropriate assessment and modelling work considered in section 7.

[28] Natural England letter to Council dated 14th February 2023

6.9 Relevant critical loads and levels

6.9.1 The critical loads and levels proposed by the applicant for the purpose of the assessment are summarised in table 6.9.1 below.

Table 6.9.1: Summary of critical loads and levels used in this assessment			
Qualifying feature	**NO_x (ug/m^3)**	**NH_3 (ug/m^3)**	**N dep (kg/ha/yr)**
Chesil and the Fleet SAC			
Annual vegetation of drift lines	30	Not sensitive	Not sensitive
Perennial vegetation of stony banks	30	3	8-15
Mediterranean and thermo-Atlantic halophilous scrubs *(Sarcocornetea fruticosi)*	30	3	20-30
Atlantic Salt meadows *(Glauco-Puccinellietalia maritimae)*	30	3	20-30
Coastal Lagoons	30	3	20-30
Isle of Portland to Studland Cliffs SAC			
Annual vegetation of drift lines	30	Not sensitive	Not sensitive
Vegetated sea cliffs of the Atlantic and Baltic coasts	30	1 or 3	No comparable load available
Semi-natural dry grasslands and scrubland facies: on calcareous substrates (FestucoBrometalia)	30	1	15-25
Gentianella anglica; Early gentian	30	3	15-25

6.9.2 DTA Ecology would agree that these are the correct environmental standards to apply for the purpose of screening for a likely significant effect. Natural England guidance advises that, for the purpose of an appropriate assessment it is necessary to 'review the environmental benchmarks (critical loads and levels) and feature sensitivity to nitrogen'.

6.9.3 For the purpose of the assessment of effects as Chesil and the Fleet SAC, the critical load for perennial vegetation of stony banks exerts a strong influence over decision-making as the lower end of the critical load range (8kg/ha/yr) is significantly more stringent than for other qualifying habitats (15 or 20 kg/ha/yr). Critical loads are presented as a range to reflect field-based surveys across Europe for the habitat concerned. The range accounts for localised variations in topography, precipitation and underlying soil characteristics. Where particular attributes are recognised as influencing the range notes are provided on the APIS system or within the original published critical loads.

Critical load for perennial vegetation of stony bank qualifying feature

6.9.4 The APIS website assigns the critical load for the EU Nature Information System (EUNIS) habitat classification 'coastal stable dune grasslands' to the perennial vegetation of stony banks feature. APIS provides a table entitled '*indicative values within nutrient nitrogen critical load ranges for use in air pollution impact assessments*' which notes that whilst 8kg/ha/yr is the recommended value to apply at screening stage for this habitat, the recommended value to use on the detailed assessment is influenced by underlying soil characteristics[29]. The table states that for calcareous dunes a lower CL range of 10kg/ha/yr should be applied and the 8kg/ha/yr is only relevant to acid dunes. Further clarification is

[29] Refer https://www.apis.ac.uk/indicative-critical-load-values

provided in a supporting 'APIS critical load range document' available through a link at the bottom of the webpage[30]. This explains that:

> *'For acid dunes use 8-10 kgN/ha/yr range; for calcareous dunes use the 10-15 kgN/ha/yr range'.*

6.9.5 Given the baseline values for the SAC are approaching 8kg/ha/yr, it is of material significance to ensure that the correct CL range is applied. The shadow AA discusses the vegetation communities identified in the survey work for the site in paras 6.108-6.112. Paragraph 6.113 concludes that:

> *'Assessment of the vegetation community against an acid sand dune community suggests that the Annex I habitats on Chesil Beach are not growing on strongly acid base material. It is possible that the application of an 8kg/N/ha/yr critical load threshold is too low for the communities that form part of the Annex I habitat in this particular part of the SAC.'*

6.9.6 This assertion is supported by a vegetation survey carried out in 2012 of a proposed cycle route between Weymouth and Portland. The survey identified a number of species which favour calcareous conditions and Natural England[31] has confirmed that *'In the light of evidence from the plant species present within the zone influenced around the A354 road, Natural England advises that the thin soil substrates present support a range of plants consistent with calcareous conditions and so a lower CLo value for Nitrogen deposition of 10 kg/ha/year is suitable.'*

6.9.7 It is also noteworthy that the British Geological Survey 'Geology Viewer' website refers to the superficial deposits alongside the A354 as 'limestone rich' gravels.

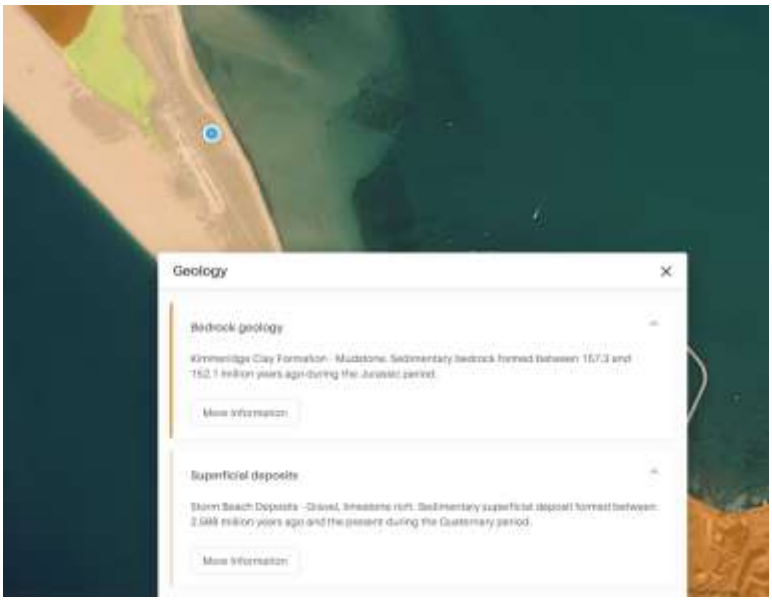


Figure 6.9.1: screenshot of BGS geology viewer website

6.9.8 The Shadow AA proposes the use of 8kg/ha/yr as a precautionary approach, but it is the opinion of DTA Ecology that this level of precaution is excessive. In accordance with the APIS website, and the advice on the indicative values for use in detailed assessments, a critical

[30] Refer https://www.apis.ac.uk/sites/default/files/downloads/APIS%20critical_load_range_document.pdf
[31] Natural England letter to Council dated 14th February 2023

load range of 10-15 kg/ha/yr is advised as appropriate for the purpose of this assessment. This has been confirmed with Natural England.

Critical Level for ammonia for assessment of traffic emissions at Isle of Portland to Studland Cliffs SAC

6.9.9 The scope of this assessment is constrained to the associated emissions from traffic. Effects are therefore limited to the area of the SAC within 200m of the road. Paragraph 6.36 of the shadow AA explains that:

> *'Where the PC from the ERF is greater than 1% of the critical level for lichen sensitive communities (close to Castle Road where there is an additional contribution from road traffic), the Magic website classifies the areas within this zone as maritime cliffs and slopes (the Annex I habitat vegetated sea cliffs of the Atlantic and Baltic Coasts) rather than calcareous grassland.'*

6.9.10 DTA Ecology have verified on MAGIC that the calcareous grassland habitat is mapped to parts of the SAC further away from the road and that the habitat adjacent to the road is mapped as maritime cliffs and slopes as indicated in figure 6.9.1 below:

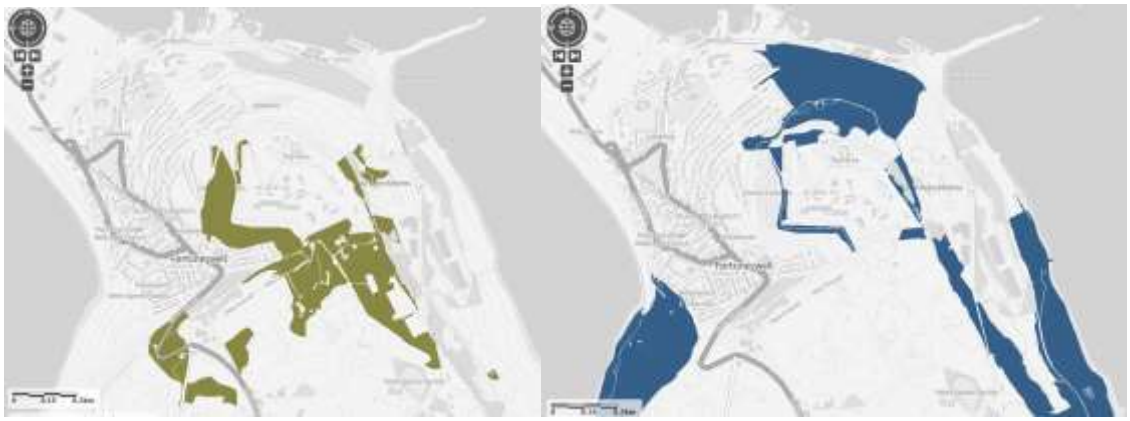


Figure 6.9.1 Screenshot from MAGIC website showing mapped habitat inventory for lowland calcareous grassland priority habitat (left) and maritime cliffs and slopes (right).

6.9.11 It is therefore not appropriate to apply the critical level for Semi-natural dry grasslands and scrubland facies: on calcareous substrates (FestucoBrometalia) when assessing the impacts associated with traffic emissions. The critical level for the vegetated sea cliffs of the Atlantic and Baltic Coasts feature is given as 1 or 3 on the APIS website. This recognises that, in some locations the habitat may have associated lichen communities which are recognised as important.

6.9.12 The supplementary advice to the conservation objectives have been reviewed to better understand the distribution of sensitive lichen and bryophyte species. The site background and geography section refers to restricted lichen and bryophyte assemblages on the Portland peninsula in the following terms:

> *'The Portland peninsula demonstrates clearly the contrast between an exposed western coast, with sheer rock faces and sparse maritime vegetation, and a more sheltered eastern side. On this sheltered coast and on the mainland cliffs east of White Nothe there are extensive slumped undercliffs and landslides with a mix of massive fallen boulders, grassland and scrub. The scrub contains a high proportion of wayfaring-tree Viburnum latana, while wood spurge Euphorbia amygdaloides occurs widely in the grassland. The open habitats that occur on sands and clays as a result*

of frequent landslips are an especially rich habitat for may localised invertebrate species. Calcareous boulders in this turf support important and restricted lichen and bryophyte assemblages.'

6.9.13 It is unclear where within the peninsula the lichen communities are present. Further information in page 5 'About the qualifying features of the site' makes no reference to lower plant communities in the description for the vegetated sea cliffs of the Atlantic and Baltic coasts habitat but the Semi-natural dry grasslands and scrubland facies: on calcareous substrates qualifying habitat is described as follows:

'Semi-natural dry grassland occurs at this site in both inland and coastal situations on both chalk and Jurassic limestone. The site contains extensive species-rich examples of CG4 Brachypodium pinnatum grassland in the southern part of its UK range. Smaller areas of CG2 Festuca ovina - Avenula pratensis grassland occur on shallow soils on steeper slopes. Transitions from calcareous grassland to both chalk heath and acid grassland are also present. The site has well-developed terricolous and saxicolous lichen and bryophyte communities associated with open turf, chalk rock and pebbles, and flinty soils.'

6.9.14 Given the presence of extensive areas of semi-natural dry grasslands and scrubland facies: on calcareous substrates within the peninsula this would appear to support a view that the lichen communities referred to are those associated with this habitat, rather than the vegetated sea cliffs of the Atlantic and Baltic coasts habitat. However, further analysis of the supplementary advice targets and attributes reveals that 'lichen and bryophyte assemblage' is included within the target list of 'key structural and influential species' under the structure and function attribute for vegetated sea cliffs of the Atlantic and Baltic coasts habitat, The supporting notes include the following text:

'One of the richest coastal limestone lichen sites in the British Isles including 16 Red Data Book, 2 Nationally Rare and 39 Nationally Scarce species. The site is internationally important for Lecania chlorotiza, Syncesia myrticola and Opegrapha saxigena. Bryophyte assemblage of particular interest for its Mediterranean characteristics; includes 6 Red Data Book and 13 Nationally Scarce species'.

6.9.15 Another target to 'control and minimise human access' to the habitat includes the following text within the supporting notes 'Climbing activity can damage ledges and the vegetation growing on them, scuffing of rock faces can have a deleterious effect on lichens and bryophytes'. This site-specific information contained within the supplementary advice targets and attributes for the vegetated sea cliffs of the Atlantic and Baltic coasts thus implies that there are important lichens and bryophytes associated with the vegetated sea cliffs of the Atlantic and Baltic coasts habitat within the site. The key issue therefore is whether any lichens or bryophyte species are present within 200m of the road.

6.9.16 Helpfully in this regard, Appendix 2 of the Shadow AA report includes a report by the Dorset Environmental Record Centre of a lower plant survey of the Isle of Portland to Studland cliffs SAC. Maps 1 and 2 (copied below) show the location of sensitive lichens and bryophytes.

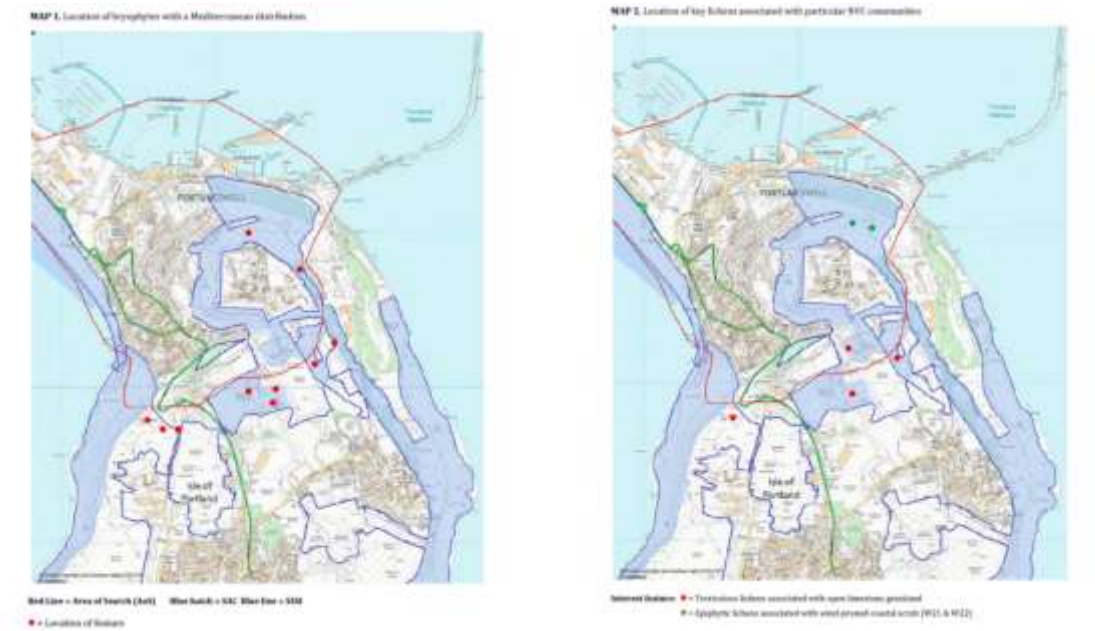


Figure 6.9.2: maps from Appendix 2 of Shadow AA showing location of lichen and bryophyte features

6.9.17 It is clear that there are no specimens recorded within 200m of the road. In this regard it is relevant to note that the lower plant communities of interest are associated with boulders within the site. It is not therefore reasonable to apply the 1ug/m^3 critical level on a precautionary basis in view of a *potential* for lichens to colonise the parts of the SAC within 200m of the road at some future point. The distribution is constrained by local circumstances.

6.9.18 Natural England have agreed that a critical level of 3ug/m^3 is appropriate[32] when assessing the impacts associated with traffic emissions on the Isle of Portland to Studland SAC.

6.9.19 Refinement of critical loads and levels is important to ensure that the appropriate assessment is based on best available information. Applying a more stringent critical load or levels does not represent a precautionary approach when the underpinning evidence can be relied upon to demonstrate that such standards are not appropriate to the habitat present within the affected area of the SAC and there are no management intentions for restoration in the area affected. Critical loads and levels are derived on a suitable precautionary and evidence-based approach; with reference to table 2.5.1, further layers of precaution are unnecessary.

6.9.20 The critical loads and levels applied to the appropriate assessment are summarised in table 6.9.2 below. Refinements to the critical loads/levels applied at screening are shown in red.

[32] Letter from Natural England to Dorset Council dated 10th February 2023

Table 6.9.2: Summary of critical loads and levels used in this assessment			
Qualifying feature	**NO_x (ug/m^3)**	**NH_3 (ug/m^3)**	**N dep (kg/ha/yr)**
Chesil and the Fleet SAC			
Annual vegetation of drift lines	30	Not sensitive	Not sensitive
Perennial vegetation of stony banks	30	3	10-15 (calcareous substrate)
Mediterranean and thermo-Atlantic halophilous scrubs *(Sarcocornetea fruticosi)*	30	3	20-30
Atlantic Salt meadows *(Glauco-Puccinellietalia maritimae)*	30	3	20-30
Coastal Lagoons	30	3	20-30
Isle of Portland to Studland Cliffs SAC			
Annual vegetation of drift lines	30	Not sensitive	Not sensitive
Vegetated sea cliffs of the Atlantic and Baltic coasts	30	3 (no sensitive lower plants present)	No comparable load available
Semi-natural dry grasslands and scrubland facies: on calcareous substrates (FestucoBrometalia)	30	Not present in affected area	15-25
Gentianella anglica; Early gentian	30	3	15-25

7 Appropriate assessment of air quality effects from traffic at Chesil and the Fleet SAC and Isle of Portland SAC

7.1 The approach to assessing air quality effects

7.1.1 This appropriate assessment follows the guidance provided by Natural England to competent authorities on the assessment of road traffic emissions under the Habitats Regulations[33].

7.1.2 It is relevant to note that the NE guidance includes the use of a 1% (or 1000AADT) threshold when assessing air quality impacts. A predicted environmental change of less than 1% of the relevant critical load or level is applied as a threshold below which effects can be regarded as imperceptible. This is set out at para 4.25 of the NE guidance as follows:

> *As a result, the AADT thresholds and 1% of critical load/level are considered by Natural England's air quality specialists (and by industry, regulators and other statutory nature conservation bodies) to be suitably precautionary, as any emissions below this level are widely considered to be imperceptible and, in the case of AADT, undetectable through the DMRB model. There can therefore be a high degree of confidence in its application to screen for risks of an effect (para 4.25)*

7.1.3 Steps 4a-4c of the NE guidance are relevant to the screening for likely significant effects stage and the guidance is clear that the 1% threshold is to be applied both to predicted effects 'alone' and also to predicted effects 'in combination with other plans and projects'.

7.1.4 When undertaking an appropriate assessment it is of particular importance to note that an exceedance of 1% of the critical load or level (either alone or in-combination) triggers a requirement for an appropriate assessment. **NE guidance is clear at paragraph 5.13 that the 1% threshold should not be applied as an adverse effect threshold (emphasis added)**.

> *Natural England has advised that a threshold equivalent to 1% of the critical load/level can be applied as a guideline to initially check which road traffic plans and projects might require appropriate assessment. At appropriate assessment stage, Natural England recommends that this same 1% threshold is not used as a means of determining whether there is an adverse effect on site integrity from a road traffic project. Other factors are relevant which may mean that a plan or project that exceeds the 1% screening threshold can still demonstrate no adverse effect on site integrity through an appropriate assessment.*

7.1.5 The purpose of an appropriate assessment is to assess the implications of a predicted exceedance of 1% of a critical load in view of the conservation objectives. As emphasised in the NE guidance, other factors beyond the exceedance of the 1% threshold need to be taken into account in reaching a decision as to whether there is a threat to the integrity of a site, or not. Part 5 of the NE guidance identifies the following factors as potentially relevant to an appropriate assessment as follows.

- Consider the European site's conservation objectives.

[33] NEA001 Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations, June 2018.

- Consider background pollution (review critical loads/levels; check for exceedance; consider trends).
- Consider designated site in national context.
- Consider best available evidence on small incremental impacts from nitrogen deposition
- Consider the spatial scale and duration of the predicted impact and the ecological functioning of the affected area.
- Consider site survey information.
- Consider national, regional or local initiatives or measures which can be relied upon to reduce background levels at the site.
- Consider measures to avoid or reduce the harmful effects of the plan or project on site integrity.
- Consider any likely in-combination effects with other live plans and projects from other sources.

7.1.6 Before turning to these factors, the first step in the appropriate assessment is to understand the predicted effects from the proposed project.

7.2 Modelling outputs – what will happen if the project goes ahead?

7.2.1 The modelling outputs in respect of traffic emissions are not very clearly presented within the Shadow HRA. No summary tables are provided and the effects are discussed within the main body of the text. A brief summary of the information presented in the shadow AA in respect of the process contribution, either alone or in-combination with other plans and projects is provided in table 7.2.1 below:

Table 7.2.1: summary of findings of Shadow AA		
Pollutant	**'Assessment 'alone'**	**Assessment 'in-combination'**
NO_x	Para 6.70 - Air quality modelling shows that alone the impact of the development (traffic and emissions from the plant) is negligible, with NO_x [concentrations] only exceeding 1% of the relevant critical level within 3m of the edge of the carriageway (A354 Portland Beach Road).	Para 7.36 – With the changes in NO_x emissions related to the development added to the cumulative traffic growth associated with other plans and projects, the concentration of NOx close to the carriageway will be c90% of the critical level. The impacts of NO_x emissions are localised, with levels falling to below 70% of the critical level within 7m of the road.
NH_3	Para 6.89 - the total contribution of NH_3 from the proposed development is less than 1% of the critical level within about a metre of the A354 Portland Beach Road, outside the SAC.	Para 7.26 - When the changes in NH_3 emissions related to the development added to the cumulative traffic growth associated with other plans and projects are modelled, it shows the critical level of NH_3 will not be exceeded. The effects of increased NH_3 concentrations are localised, with levels falling to below 70% of the critical level within 4m of edge of the carriageway.
N deposition	Para 6.119 - the total contribution of nitrogen deposition from the proposed development remains above 1% of the	Para 7.51 - With the changes in nitrogen deposition related to the development added to the cumulative traffic growth

	critical load for a distance of about 100 m from the A354 Portland Beach Road	associated with other plans and projects the additional nitrogen deposition will exceed 1% of the critical load of nitrogen over 200m from the edge of the carriageway.

7.2.2 Whilst this information is helpful it doesn't provide as full an understanding of the impacts as might be derived from the modelling outputs. It also doesn't take into account the updated Jan 2023 APIS baseline data. The Shadow HRA refers a reader to the more detailed air quality modelling work undertaken by Fichtner which is presented in appendix 3-4 of the 2nd ES Addendum (January 2022 erratum version).

7.2.3 The scope of the air quality assessment undertaken by the Council is limited to effects from traffic emissions. Tables 4-9 of appendix 3-4 provide the detailed transect results which allow a comparison to be made between different traffic scenarios which have been modelled. The tables are duplicated as Appendix 1 to this report; they provide baseline levels (without the proposal) as well as the predicted process contributions from the proposal alone (total impacts) and in combination with other plans and projects (cumulative impact). The relative contributions from road emissions and process emissions from the proposal are also provided. The predicted environmental concentrations (i.e. baseline levels plus process contributions) are not provided and the data is not presented as percentages of the relevant critical loads or levels.

7.2.4 To better inform the appropriate assessment some further analysis has therefore been undertaken by DTA Ecology. This includes further evaluation of the information provided in tables 4-9 of appendix 3-4 (refer Appendix 1) to present the modelling outputs in a manner which is better suited to evaluating impacts in view of the conservation objectives as follows:

- Presentation of the predicted changes 'alone' and 'in-combination' as a % of the relevant critical load/level.
- Update baseline values to take account of the Jan 2023 APIS data error correction.
- Presentation of predicted environmental concentrations expressed both in units and as a % of relevant critical load/level.

7.2.5 Tables 7.2.2 – 7.2.5 below present the further analysis of modelling outputs. Further analysis of data is presented up to 200m from the road but at less frequent intervals than provided in the tables. The analysis is considered to be sufficient for the purpose of information the appropriate assessment, but further detail can be provided by reading the tables alongside the original transect modelling results in tables 4-9 of appendix 3-4 of the 2nd ES Addendum (January 2022 erratum version) presented in Appendix 1.

7.2.6 Tables 7.2.2 and 7.2.4 are the outputs based on the baseline levels and critical loads/levels provided by the applicant in the Shadow AA (refer tables 6.3.1 and 6.9.1 above). Tables 7.2.3 and 7.2.5 presents the modelling outputs for Chesil and the Fleet SAC adjusted to take account of the proposed DTA baseline values and critical loads/levels (refer tables 6.8.1 and 6.9.2) above. The NO_x modelling work is unchanged by the DTA amendments but the predicted impacts for both ammonia and nitrogen deposition are different.

Table 7.2.2 Further analysis of detailed transect results for Chesil and the Fleet SAC (from tables 4-6 of appendix 3.4 to 2nd ES Addendum) based on applicant baseline values. Figures in red show a contribution of >1% of the critical load/level or an exceedance of the critical load/level.

Pollutant	Baseline	PC 'alone'	%CL	PC 'i-c'	%CL	PEC (i-c)	%CL
NO_x (ug/m^3) against critical level of 30ug/m^3							
2m	27.42	0.32	1.07	1.01	3.37	28.43	94.77
5m	22.25	0.27	0.90	0.77	2.57	23.02	76.73
10m	18.30	0.24	0.80	0.58	1.93	18.88	62.93
25m	14.25	0.21	0.70	0.39	1.30	14.64	48.80
50m	12.34	0.19	0.63	0.30	1.00	12.64	42.13
60m	11.98	0.19	0.63	0.28	0.93	12.26	40.87
70m	11.70	0.18	0.60	0.27	0.90	11.97	39.90
100m	11.17	0.18	0.60	0.24	0.80	11.41	38.03
200m	10.47	0.16	0.53	0.19	0.63	10.66	35.53
NH_3 (ug/m^3) against critical level of 3ug/m^3							
2m	2.24	0.02	0.67	0.09	3.00	2.33	77.67
5m	1.79	0.02	0.67	0.07	2.33	1.86	62.00
10m	1.45	0.01	0.33	0.05	1.67	1.50	50.00
25m	1.10	0.01	0.33	0.03	1.00	1.13	37.67
50m	0.93	0.01	0.33	0.02	0.67	0.95	31.67
60m	0.90	0.01	0.33	0.02	0.67	0.92	30.67
70m	0.87	0.01	0.33	0.02	0.67	0.89	29.67
100m	0.83	0.01	0.33	0.02	0.67	0.85	28.33
200m	0.77	0.01	0.33	0.01	0.33	0.78	26.00
N dep (kg/ha/yr) against lower critical load of 8kg/ha/yr							
2m	17.83	0.12	1.50	0.53	6.63	18.36	229.50
5m	15.10	0.11	1.38	0.40	5.00	15.50	193.75
10m	13.00	0.10	1.25	0.30	3.75	13.30	166.25
25m	10.85	0.09	1.13	0.20	2.50	11.05	138.13
50m	9.83	0.08	1.00	0.14	1.75	9.97	124.63
60m	9.64	0.08	1.00	0.13	1.63	9.77	122.13
70m	9.50	0.08	1.00	0.12	1.50	9.62	120.25
100m	9.22	0.08	1.00	0.11	1.38	9.33	116.63
200m	8.85	0.07	0.88	0.09	1.13	8.94	111.75

Table 7.2.3 Further analysis of detailed transect results for Chesil and the Fleet SAC **corrected to take account of DTA proposed baseline values and critical load/level**. Figures in red show a contribution of >1% of the critical load/level or an exceedance of the critical load/level.

Pollutant	Baseline	PC 'alone'	%CL	PC 'i-c'	%CL	PEC (i-c)	%CL
NO_x (ug/m^3) against critical level of 30ug/m^3							
2m	27.42	0.32	1.07	1.01	3.37	28.43	94.77
5m	22.25	0.27	0.90	0.77	2.57	23.02	76.73
10m	18.30	0.24	0.80	0.58	1.93	18.88	62.93
25m	14.25	0.21	0.70	0.39	1.30	14.64	48.80
50m	12.34	0.19	0.63	0.30	1.00	12.64	42.13
60m	11.98	0.19	0.63	0.28	0.93	12.26	40.87
70m	11.70	0.18	0.60	0.27	0.90	11.97	39.90
100m	11.17	0.18	0.60	0.24	0.80	11.41	38.03
200m	10.47	0.16	0.53	0.19	0.63	10.66	35.53
NH_3 (ug/m^3) against critical level of 3ug/m^3							
2m	2.83	0.02	0.67	0.09	3.00	2.92	97.33
5m	2.38	0.02	0.67	0.07	2.33	2.45	81.67
10m	2.04	0.01	0.33	0.05	1.67	2.09	69.67
25m	1.69	0.01	0.33	0.03	1.00	1.72	57.33
50m	1.52	0.01	0.33	0.02	0.67	1.54	51.33
60m	1.49	0.01	0.33	0.02	0.67	1.51	50.33
70m	1.46	0.01	0.33	0.02	0.67	1.48	49.33
100m	1.42	0.01	0.33	0.02	0.67	1.44	48.00
200m	1.36	0.01	0.33	0.01	0.33	1.37	45.67
N dep (kg/ha/yr) against lower critical load of 10kg/ha/yr							
2m	17.15	0.12	1.20	0.53	5.30	17.68	176.80
5m	14.42	0.11	1.10	0.40	4.00	14.82	148.20
10m	12.32	0.10	1.00	0.30	3.00	12.62	126.20
25m	10.17	0.09	0.90	0.20	2.00	10.37	103.70
50m	9.15	0.08	0.80	0.14	1.40	9.29	92.90
60m	8.96	0.08	0.80	0.13	1.30	9.09	90.90
70m	8.82	0.08	0.80	0.12	1.20	8.94	89.40
100m	8.54	0.08	0.80	0.11	1.10	8.65	86.50
200m	8.17	0.07	0.70	0.09	0.90	8.26	82.60

Table 7.2.4 Further analysis of detailed transect results for Isle of Portland to Studland Cliffs SAC (from tables 7-9 of appendix 3.4 to 2nd ES Addendum) based on applicant baseline values. Figures in red show a contribution of >1% of the critical load/level or an exceedance of the critical load/level.

Pollutant	Baseline	PC 'alone'	%CL	PC 'i-c'	%CL	PEC (i-c)	%CL
NO_x (ug/m^3) against critical level of 30ug/m^3							
2m	34.13	0.60	2.00	0.61	2.03	34.74	115.80
5m	34.07	0.46	1.53	0.46	1.53	34.53	115.10
10m	34.02	0.36	1.20	0.36	1.20	34.38	114.60
25m	33.98	0.26	0.87	0.27	0.90	34.25	114.17
50m	33.96	0.23	0.77	0.23	0.77	34.19	113.97
60m	33.96	0.22	0.73	0.23	0.77	34.19	113.97
70m	33.96	0.21	0.70	0.22	0.73	34.18	113.93
100m	33.96	0.20	0.67	0.21	0.70	34.17	113.90
200m	33.96	0.17	0.57	0.18	0.60	34.14	113.80
NH_3 (ug/m^3) against critical level of 1ug/m^3							
2m	0.74	0.04	4.00	0.04	4.00	0.78	78.00
5m	0.73	0.03	3.00	0.03	3.00	0.76	76.00
10m	0.73	0.02	2.00	0.03	3.00	0.76	76.00
25m	0.72	0.02	2.00	0.02	2.00	0.74	74.00
50m	0.72	0.01	1.00	0.02	2.00	0.74	74.00
60m	0.72	0.01	1.00	0.02	2.00	0.74	74.00
70m	0.72	0.01	1.00	0.01	1.00	0.73	73.00
100m	0.72	0.01	1.00	0.01	1.00	0.73	73.00
200m	0.72	0.01	1.00	0.01	1.00	0.73	73.00
N dep (kg/ha/yr) against lower critical load of 15kg/ha/yr							
2m	8.64	0.26	1.73	0.28	1.87	8.92	59.47
5m	8.61	0.20	1.33	0.21	1.40	8.82	58.80
10m	8.59	0.16	1.07	0.16	1.07	8.75	58.33
25m	8.57	0.11	0.73	0.12	0.80	8.69	57.93
50m	8.56	0.10	0.67	0.10	0.67	8.66	57.73
60m	8.56	0.10	0.67	0.10	0.67	8.66	57.73
70m	8.55	0.10	0.67	0.10	0.67	8.65	57.67
100m	8.55	0.09	0.60	0.09	0.60	8.64	57.60
200m	8.55	0.08	0.53	0.08	0.53	8.63	57.53

Table 7.2.5 Further analysis of detailed transect results for Isle of Portland to Studland Cliffs SAC **corrected to take account of DTA proposed baseline values and critical load/level**. Figures in red show a contribution of >1% of the critical load/level or an exceedance of the critical load/level.

Pollutant	Baseline	PC 'alone' (road plus stack)	%CL	PC 'i-c'	%CL	PEC (i-c)	%CL
NO_x (ug/m^3) against critical level of 30ug/m^3							
2m	34.13	0.60	2.00	0.61	2.03	34.74	115.80
5m	34.07	0.46	1.53	0.46	1.53	34.53	115.10
10m	34.02	0.36	1.20	0.36	1.20	34.38	114.60
25m	33.98	0.26	0.87	0.27	0.90	34.25	114.17
50m	33.96	0.23	0.77	0.23	0.77	34.19	113.97
60m	33.96	0.22	0.73	0.23	0.77	34.19	113.97
70m	33.96	0.21	0.70	0.22	0.73	34.18	113.93
100m	33.96	0.20	0.67	0.21	0.70	34.17	113.90
200m	33.96	0.17	0.57	0.18	0.60	34.14	113.80
NH_3 (ug/m^3) against critical level of 3ug/m^3							
2m	1.13	0.04	1.33	0.04	1.33	1.17	39.00
5m	1.12	0.03	1.00	0.03	1.00	1.15	38.33
10m	1.12	0.02	0.67	0.03	1.00	1.15	38.33
25m	1.11	0.02	0.67	0.02	0.67	1.13	37.67
50m	1.11	0.01	0.33	0.02	0.67	1.13	37.67
60m	1.11	0.01	0.33	0.02	0.67	1.13	37.67
70m	1.11	0.01	0.33	0.01	0.33	1.12	37.33
100m	1.11	0.01	0.33	0.01	0.33	1.12	37.33
200m	1.11	0.01	0.33	0.01	0.33	1.12	37.33
N dep (kg/ha/yr) against lower critical load of 15kg/ha/yr							
2m	11.16	0.26	1.73	0.28	1.87	11.44	76.27
5m	11.13	0.20	1.33	0.21	1.40	11.34	75.60
10m	11.11	0.16	1.07	0.16	1.07	11.27	75.13
25m	11.09	0.11	0.73	0.12	0.80	11.21	74.73
50m	11.08	0.10	0.67	0.10	0.67	11.18	74.53
60m	11.08	0.10	0.67	0.10	0.67	11.18	74.53
70m	11.07	0.10	0.67	0.10	0.67	11.17	74.47
00m	11.07	0.09	0.60	0.09	0.60	11.16	74.40
200m	11.07	0.08	0.53	0.08	0.53	11.15	74.33

7.2.7 With reference to tables 7.2.2-7.2.5 the predicted effects from traffic emissions on the DTA updated baseline and critical load/level values are summarised in table 7.2.6. The differences between the applicant data and the DTA further analysis data are explained in section 6 and relate to either a) updated baseline data on APIS, b) refined use of APIS nitrogen deposition layers, or c) refined application of critical loads/levels taking account of local circumstances.

Table 7.2.6 Summary of transect results of predicted effects from traffic emissions	
Chesil and the Fleet SAC	
NO_x	Applicant and DTA data • The maximum in-combination process contribution is 3.37% of the critical level adjacent to the road. • The contribution falls below 1% of the critical level by 50m from the road. • The predicted environmental concentration does not exceed the relevant critical level in any location. It reaches 95% of the critical level adjacent to the road but falls to 77% of the critical level at 5m from the road.
Ammonia	Applicant data • The maximum in-combination process contribution is 3% of the critical level adjacent to the road. • The contribution falls below 1% of the critical level at 25m from the road. • The predicted environmental concentration does not exceed the relevant critical level in any location and is at 77% of the critical level adjacent to the road. DTA further analysis • The maximum in-combination process contribution is 3% of the critical level adjacent to the road. • The contribution falls below 1% of the critical level at 25m from the road. • The predicted environmental concentration does not exceed the relevant critical level in any location. It reaches 97% adjacent to the road but falls to 69% of the critical level at 10m from the road.
Nitrogen deposition	Applicant data • The maximum in-combination process contribution is 6.6% of the critical load adjacent to the road. • The in-combination contribution exceeds 1% of the critical load up to 200m from the road. • The predicted environmental loading exceeds the relevant critical load at 200m from the road. • The SAC exceeds the lower critical load across its whole area. DTA further analysis • The maximum in-combination process contribution is 5.3% of the critical load adjacent to the road. • The in-combination contribution exceeds 1% of the critical load up to 120m from the road. • With reference back to original transect modelling, the predicted environmental loading exceeds the relevant critical load up to 35m from the road • The SAC exceeds the lower critical load within 8 of the 1km grid squares comprising the SAC, all located beyond 200m from the road.

Table 7.2.6 Summary of transect results of predicted effects from traffic emissions	
Isle of Portland SAC	
NO_x	• The maximum in-combination process contribution is 2% of the critical level adjacent to the road. • The predicted in-combination contribution falls below 1% of the critical level by 25m from the road. • The predicted environmental concentration exceeds the relevant critical level at 200m from the road. • The SAC exceeds the critical level within the affected 1km grid square only.
Ammonia	Applicant data • The maximum in-combination process contribution is 4% of the critical level adjacent to the road. • The contribution is 1% of the critical level, or above, for the entire 200m transect. • The predicted environmental concentration does not exceed the relevant critical level in any location and is at 78% of the critical level adjacent to the road*. • The SAC does not exceed the critical level. DTA further analysis • The maximum in-combination process contribution is 1.3% of the critical level adjacent to the road. • The contribution falls below 1% of the critical level by 25m from the road. • The predicted environmental concentration does not exceed the relevant critical level for the habits present within 200m of the road. It reaches 39% adjacent to the road*.
Nitrogen deposition	Applicant data • The maximum in-combination process contribution is 1.87% of the critical load adjacent to the road. • The in-combination contribution falls below 1% of the critical level by 25m from the road. • The predicted environmental concentration does not exceed the relevant critical load in any location and is at 60% of the critical load adjacent to the road*. DTA further analysis • The maximum in-combination process contribution is 1.87% of the critical load adjacent to the road. • The in-combination contribution falls below 1% of the critical level by 25m from the road. • The predicted environmental concentration does not exceed the relevant critical load in any location and is at 76% of the critical load adjacent to the road*.

*Treat with caution as baseline pollutant levels are taken from adjacent grid squares and may under-represent actual levels.

7.3 Initial analysis of risk to Chesil and the Fleet SAC

7.3.1 Before progressing to a more detailed assessment, case law has established that, whilst the approach provided for by the Habitats Regulations is precautionary, competent authorities need to be mindful of legislative overkill. As set out in paragraph 2.3.7 there needs to be credible evidence that a risk is real (rather than hypothetical) and proposals that have no appreciable effect on a site are excluded from further detailed assessment.

NOx concentrations

7.3.2 Whilst contributions exceed 1% of the critical level for up to 50m from the road the predicted environmental concentrations for NO_x will not exceed the critical level in any location within the SAC. Levels reach 95% of the critical level adjacent to the road but fall to 76% within 5m. The risk to site integrity is therefore considered to be low without a need for further consideration of site-specific factors. **There is no credible evidence of a real risk to the integrity of the SAC from NO_x pollution arising from traffic emissions and further consideration of site-specific factors is not required**.

Ammonia concentrations

7.3.3 The predicted environmental concentrations for NH_3 will not exceed the critical level in any location. Levels reach 97% of the critical level adjacent to the road but fall to 76% within 5m. The risk to site integrity is therefore considered to be low without a need for further consideration of site-specific factors. **There is no credible evidence of a real risk to the integrity of the SAC from NH_3 pollution arising from traffic emissions and further consideration of site-specific factors is not required**.

Nitrogen deposition

7.3.4 The modelling shows that the in-combination process contribution exceeds 1% of the lower end of the critical load range up to 120m from the road. The predicted environmental loading falls below the lower end of the critical load at approximately 35m from the road.

7.3.5 It is therefore the case that the in-combination contribution exceeds 1% of the critical load in an area of the site where the critical load is predicted to exceed the lower critical load range within 35m from the road. **A more detailed assessment is required to fully understand the risk to site integrity.**

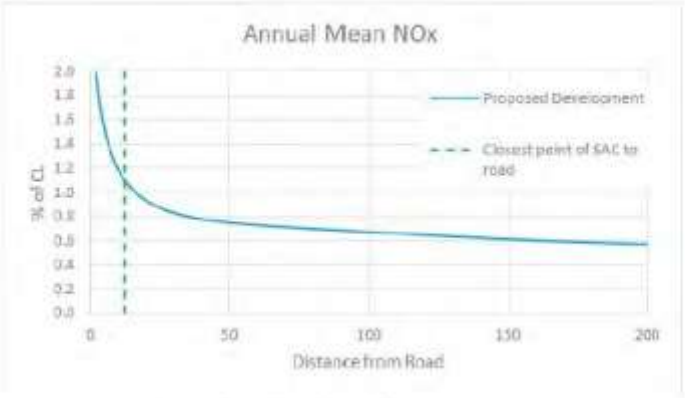
7.4 Initial analysis of risk to Isle of Portland to Studland Cliffs SAC

NOx concentrations

7.4.1 The critical level for NO_x is exceeded in the grid square containing the habitat adjacent to the affected roads. According to APIS this is the only exceeded grid square across the SAC as a whole. The maximum in-combination process contribution of 2% of the critical level applies adjacent to the road but the contribution falls to below 1% within 25m from the road. The nearest SAC habitat is located 12m from the road.

7.4.2 Looking at the transect modelling more closely, the predicted contribution is 1.2% at 10m from the road and 0.87% at 25m from the road. Figure 23 from the appendix 3.4 dispersion modelling report shows the maximum contribution from the development ‘alone’ with the nearest boundary of the site marked and is copied below.

Figure 23: Annual Mean NOx Proposed Development Only – Isle of Portland to Studland Cliffs



Note: Impacts presented as % of critical level of 30 µg/m³

7.4.3 It is clear that the 1% exceedance extends by only a few meters into the boundary of the site. A precise figure is not possible to define but the 1% exceedance will be limited to within the first 10m of the site boundary.

7.4.4 An equivalent plot has not been produced for the predicted in-combination contribution but table 7.2.4 above shows a very minor contribution from other plans and projects. The in-combination contributions at 10m and 25m are 1.2% and 0.9% respective. These compare to 'alone' contributions of 1.2% and 0.87% respectively. Whilst the predicted 1% contribution from in-combination effects will therefore theoretically extend slightly beyond that for the contribution 'alone' the difference is inconsequential and not meaningful in ecological terms across a site which extends to 1440ha.

7.4.5 It is also relevant to note that the site is only adjacent to the road for 790m as shown in figure 7.4.1 below:

Figure 7.4.1: extent of SAC boundary which runs adjacent to roads affected by traffic emissions.

7.4.6 It is also relevant that the site boundary is only within 20m of the road (where the contribution exceeds 1%) for part of the 790m. The total area of the site within 20m of the road extends to approximately 0.2ha as illustrated in figure 7.4.2 below:

Figure 7.4.2: Area of SAC within 20m of the road where predicted contributions exceed 1%

7.4.7 It is therefore the case that the risk to the SAC from road-based emissions extends across an area of 0.2ha or 0.01% of the SAC. Background concentrations only exceed the critical level within the 1km grid square where the impacts associated with traffic emissions occur. Background levels are well below the critical level (10ug/m^3 or below) in all other grid squares which comprise the SAC. The shadow AA argues at paragraphs 6.20 – 6.21 that the high background concentration in the grid square is an anomaly and that levels within the SAC are likely to be lower. DTA Ecology does not have evidence to support the view that the modelled baseline is an error or anomaly. Whilst there is some logic to the argument that levels within the SAC will be lower than those closer to the shipping areas, there is again an absence of evidence to support this.

7.4.8 DTA Ecology has therefore taken a precautionary view and assessed the predicted effects against a baseline of 31ug/m^3. It is noted that this baseline is a very marginal exceedance of the critical level of 30ug/m^3. On the basis of professional judgement, and in view of the widespread compliance with the critical level across the SAC as a whole, it is the opinion of DTA Ecology that the limited spatial extent of the predicted contribution of <1% means that **there is no credible evidence of a real risk to the integrity of the SAC from NO_x pollution arising from traffic emissions. With reference to the Sweetman ruling (refer para 2.3.7), the spatial scale of the predicted change is not appreciable and there is no prospect that the conservation objectives will be meaningfully undermined. Further consideration of site-specific factors is not required**.

7.4.9 When considering the spatial extent of a predicted 1% contribution DTA Ecology notes that paragraph 6.23 of the shadow HRA identifies an area of 5.19 ha over which the emissions from the stack contribute >1% of the critical level. This area of exceedance occurs in an adjacent grid square however where background levels do not exceed the critical level. A contribution of >1% where the predicted environmental concentration remains well below the critical level cannot undermine the conservation objectives for the SAC to maintain the site below the critical levels.

Ammonia concentrations

7.4.10 The modelling shows that the in-combination process contribution falls below 1% of the lower end of the critical load range by 25m from the road. The predicted environmental

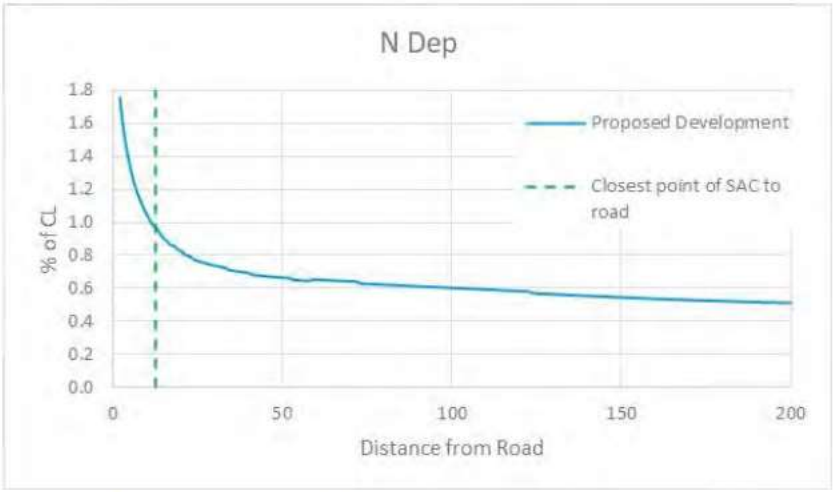
concentration will not exceed the relevant critical level for the habitat which is present within 200m of the road. **There is no credible evidence of a real risk to the SAC from NH_3 pollution arising from traffic emissions and further consideration of site-specific factors is not required.**

Nitrogen deposition

7.4.11 The modelling shows that the in-combination process contribution falls below 1% of the lower end of the critical load range by 25m from the road.

7.4.12 Looking at the transect modelling more closely, the predicted in-combination contribution is 1.07% at 10m from the road and 0.8% at 25m from the road. Figure 32 from the appendix 3.4 dispersion modelling report shows the maximum contribution from the development 'alone' with the nearest boundary of the site marked and is copied below.

Figure 32: Annual mean N Dep Proposed Development Only – Isle of Portland to Studland Cliffs



Note: Impacts presented as % of critical load of 15 kgN/ha/yr and include the contribution from nitrogen dioxide and ammonia emissions from traffic and the ERF

7.4.13 It is clear that the 1% 'alone' exceedance does not extend to within the site boundary. An equivalent plot has not been produced for the predicted in-combination contribution but table 6.3.5 above shows a very minor contribution from other plans and projects. The in-combination contributions at 10m and 25m are 1.07% and 0.80% respective. These compare to 'alone' contributions of 1.07% and 0.73% respectively. Whilst the predicted 1% contribution from in-combination effects will therefore theoretically extend slightly beyond that for the contribution 'alone' the difference is inconsequential and not meaningful in ecological terms across a site which extends to 1440ha. **There is no credible evidence of a real risk to the SAC from nitrogen deposition arising from traffic emissions. With reference to the Sweetman ruling (refer para 2.3.7), the spatial scale of the predicted change is not appreciable and there is no prospect that the conservation objectives will be meaningfully undermined. Further consideration of site-specific factors is not required**.

7.5 Summary of Initial analysis of risk

7.5.1 An initial analysis of risk for effects at the Chesil and Fleet SAC identified that risks to site integrity from impacts associated with NO_x and NH_3 can be excluded on the basis of the relevant critical loads or levels not being exceeded. No further assessment is required for NO_x and NH_3. **Impacts associated with nitrogen deposition will be subject to further detailed assessment in section 8 in view of the conservation objectives and the Natural England guidance.**

7.5.2 The initial analysis of risk at the Isle of Portland to Studland Cliffs SAC has identified that risks to site integrity can be excluded for NO_x, NH_3 and nitrogen deposition due to the location of the nearest boundary to the SAC relative to the road, the limited spatial extent of the predicted effects and, in the case of ammonia, the critical level not being exceeded. No further assessment is required. The integrity test conclusions are formally recorded in section 9.

7.5.3 Impacts associated with stack emissions are subject to a separate assessment by the Environment Agency.

8 Applying the Integrity test in respect of air quality effects at Chesil and the Fleet SAC

8.1 Considering the relevant factors from the Natural England guidance

8.1.1 Information presented in section 7 above, and a simple evaluation of credible evidence of a real risk, supports a conclusion that there will be **no adverse effect to the integrity of the Chesil and Fleet SAC from effects associated with NO_x and NH_3.** It has not been possible to exclude the risk to site integrity from nitrogen deposition and further detailed assessment is required. The relevant factors to consider within a more detailed assessment are set out in section 5 of the Natural England guidance and are listed below.

- Consider the European site's conservation objectives.
- Consider the spatial scale and duration of the predicted impact and the ecological functioning of the affected area.
- Consider background pollution (review critical loads/levels; check for exceedance; consider trends).
- Consider designated site in national context.
- Consider best available evidence on small incremental impacts from nitrogen deposition.
- Consider site survey information.
- Consider national, regional or local initiatives or measures which can be relied upon to reduce background levels at the site.
- Consider measures to avoid or reduce the harmful effects of the plan or project on site integrity.
- Consider any likely in-combination effects with other live plans and projects from other sources.

8.1.2 These are considered in turn below before an evaluation of predicted effects in view of the conservation objectives attributes and targets is provided in section 8.2.

Consider the European site's conservation objectives.

8.1.3 The conservation objectives in respect of nitrogen deposition for perennial vegetation of stony banks is currently published as 'to restore the deposition of air pollutants to below the site-relevant Critical Load given for this feature of the site on the Air Pollution Information System'. The current published version of the conservation objectives explains that the restore objective applies and the supporting notes provide justification with reference to a baseline deposition of 16 kg/ha/yr (against a lower critical load of 8kg/ha/yr).

8.1.4 As explained in section 5.3 above, the baseline data which informs the setting of the conservation objectives has been updated in recent years. Originally a site average value was given which applied to the protected site as a whole. This enabled the setting of *either* a maintain objective (if the baseline was below the critical load) *or* a restore objective if the baseline exceeded the critical load. The current APIS website now gives baseline data for each 1km grid square within the site. This information is much more accurate, as it captures local variations in air quality within a given site, but it means that the conservation objectives for air quality may vary across a site. A maintain objective will apply to parts of

the site which meet the critical load or level and a restore objective will apply in areas which do not. **The overall conservation objectives for atmospheric deposition based on the current (best available) information will therefore be to 'maintain or restore the deposition of air pollutants to below the site-relevant Critical Load given for this feature of the site on the Air Pollution Information System'.** The 'maintain or restore' objective applies on the basis that the lower critical load of 8 kg/ha/yr is exceeded is some (but not all) grid squares. This is agreed with Natural England, who are currently in the process of updating the conservation objectives.

8.1.5 To avoid confusion, whilst this assessment has applied a lower critical load of 10kg/ha/yr, on the basis of local survey information, it is only appropriate to revise the lower critical load where evidence of local conditions provides a necessary evidence base to do so. In the absence of specific information for other parts of the SAC the lower critical load of 8kg/ha/yr would apply elsewhere as a default precautionary approach.

8.1.6 This assessment is constrained to the air quality effects associated with emissions from traffic. The grid squares through which the A354 runs are showing as being below the critical load for nitrogen deposition. The conservation objective target when considering the effects from traffic along the A354 is therefore to 'maintain' the deposition of air pollutants below the site-relevant Critical Load within the grid squares affected.

8.1.7 It is relevant to note that whilst the 1km grid squares are showing as being below the lower critical load, levels adjacent to the road will be higher that the grid square average. Having said this, a localised exceedance of a critical load does not necessarily mean that a restore conservation objectives applies for the grid square. The conservation objectives apply to the site as a whole and a site can be considered to meet its objectives in respect of air quality even where some localised exceedances may occur. In this instance, when considering the extent to which the conservation objectives might be undermined, it is necessary to consider the spatial scale and duration of the predicted exceedance and the ecological functioning of the affected area.

Consider the spatial scale and duration of the predicted impact and the ecological functioning of the affected area.

8.1.8 The stage 2 screening work identified PVSB as being present within 200m of the road and the screening proceeded on that basis. It is a highly pertinent that the transect modelling work shows that the only predicted exceedance of a relevant air quality standard occurs within 35m of the road. The lower critical load of 10kg/ha/yr applies on the basis of local survey work in respect of nitrogen deposition for the perennial vegetation of stony banks (PVSB) qualifying feature and underlying soil characteristics. The lower critical load for other qualifying habitats of 20kg/ha/yr is not exceeded in any location across the SAC.

8.1.9 The location and distribution of PVSB habitat within 35m of the road is therefore highly relevant to understanding the risk to site integrity. The Footprint Ecology NVC survey undertaken in 2018 described the PVSB habitat in the following terms:

> *'Perennial vegetation of stony banks is found on beaches where pebbles thrown up above the high tide line remain sufficiently stable for plants to become established. Variation in the vegetation depends on the size of the pebbles and amount of sand/silt; climate and the width of the foreshore. The formation of the beach, its ridges and hollows, also influence the vegetation. Only vegetation with species such*

as Yellow Yellow-horned Poppy Glaucium flavum , Sea-kale Crambe maritima and Sea Pea Lathyrus japonica that can tolerate some movement is described by the NVC.

Chesil Beach supports a substantial area of this vegetation, including the most extensive populations of Sea-kale and Sea Pea in the UK. Much of the vegetation is sparse due to sea water wash-over and percolation in storm conditions. Shingle grassland is found in more stable areas and has been included within the Annex I habitat.'

8.1.10 The NVC report then goes on to list seven variants of the SD1 community as well as the MC5 and MC8 shingle grassland communities as NVC habitat types which comprise the PVSB qualifying feature. This aligns with the supplementary advice published by Natural England which states against the distribution of the feature attribute that '*Perennial vegetation of stony banks has been divided into pioneer shingle communities (represented by eight variants of the NVC-defined SD1 community) and shingle grasslands (largely composed of variants of MC5 and MC8)*'.

8.1.11 The NVC survey identifies MC5 habitat in polygon 1 to the north of the A354. To the south of the A354 there are pockets of the MC8 community to the south of the Chesil carpark (polygons 19_2, 1_1, 3_1 and 4_1) but these are all more than 35m from the road. There are two records of the SD1 community areas to the south of the A354 at polygons 6_2, 16_1 and 10_1 located 120, 51m and 10m from the road respectively. Some MC5 habitat is also identified at polygon 8_1 to the south of the road located some 46m from the road.

8.1.12 It is therefore the case that PVSB habitat is present within 35m of the road but the distribution within 35m from the road is restricted to the MC5 shingle grassland to the north of the A354 and the SD1 habitat at polygon 10_1 to the south of the A354.

8.1.13 The distribution of the habitats referred to above (and respective polygon codes) can be seen in maps 16 and 17 from the NVC report which are copied as figures 8.1.1 and 8.1.2 below.

Figure 8.1.1: Copy of map 16 from the NVC report showing the location of polygons 1, 19_2, 1_1, 3_1, 4_1 and 6_2 containing PVSB habitat.

Figure 8.1.2: Copy of map 17 from the NVC report showing the location of polygons 1, 3_1, 4_1, 16_1, 8_1 and 10_1 containing PVSB habitat.

8.1.14 The habitat community at 10_1 is very spatially constrained. Whilst it is present within 10m from the road the spatial extent of the SD1 habitat in this location (approximately 250m^2) is insufficient to represent a risk to the integrity of the SAC. The SD1 communities within the SAC are primarily located along the chesil shingle bar between the fleet and the coast as visible in maps 7-15 in the NVC report. There are no current management objectives to increase PVSB habitat adjacent to the road. The anthropogenic influence and widespread disturbance alongside the road would render this an unsuitable location for restoration measures.

8.1.15 The MC5 community to the north of the A354 therefore represents the main area of PVSB habitat which will be exposed to nitrogen deposition that exceeds the critical load The MC5 habitat is present adjacent to the road for a length of 1.2km. **The predicted critical load exceedance only extends to 35m from the road and the total spatial extent of MC5 habitat within 35m of the road is approximately 4.2ha**.

8.1.16 The standard data form for the SAC refers to the overall spatial extent of PVSB habitat being 81.75ha. It therefore follows that 5% of the qualifying feature is located within 35m from the road. This is not an insignificant spatial extent but it is necessary to recognise that the habitat in this location is already exposed to a critical load exceedance and the additional contribution to this exceedance ranges from 2 – 5.3% of the lower critical load.

8.1.17 The ecological role and function of the affected area is that it represents qualifying habitat. There is nothing of noteworthy ecological significance or importance within the 35m zone adjacent to the road to suggest that it makes a disproportionate contribution to achieving the conservation objectives for the site.

Consider background pollution.

8.1.18 Background pollution levels are considered in detail in section 6 above. Baseline levels within the 1km grid squares affected are currently below the lower end of the critical load range which applies to the area of the SAC within 200m of the road of 10kg/ha/yr.

8.1.19 Some grid squares elsewhere within the site exceed the lower critical load range for the PVSB habitat generally (8kg/ha/yr) and the objectives in respect of air pollution will be to achieve the critical load in those sites (unless local evidence indicates calcareous substrate and supports the application of a revised lower critical load range of 10kg/ha/yr).

Consider designated site in national context.

8.1.20 The standard data form for the Chesil and Fleet SAC refers to the quality and importance of the SAC in the following terms:

> *'Coastal lagoons for which this is considered to be one of the best areas in the United Kingdom. Annual vegetation of drift lines for which this is one of only four known outstanding localities in the United Kingdom. which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 100 hectares. Perennial vegetation of stony banks for which this is considered to be one of the best areas in the United Kingdom. Atlantic salt meadows (Glauco-Puccinellietalia maritimae) for which the area is considered to support a significant presence. Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi) for which this is one of only four known outstanding localities in the United Kingdom. which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares.'*

8.1.21 It is therefore the case that the Chesil and Fleet SAC is an important site in a UK context for the qualifying features for which it has been designated. It is recognised as 'one of the best areas in the UK' for Coastal lagoons and perennial vegetation or stony banks and is one of only four known outstanding localities of the Mediterranean and thermo-Atlantic halophilous scrubs *(Sarcocornetea fruticosi)* habitat.

Consider best available evidence on small incremental impacts from nitrogen deposition

8.1.22 NE guidance refers to the Natural England commissions report 210[34]. Paragraph 6.129 of the shadow AA refers to this report in the following terms:

> *'When considering species-richness in sand dune habitats the Caporn et al, 2016 study found that where background levels of nitrogen deposition are 5kg/N/ha/yr increases in nitrogen deposition of between 0.1 and 0.3kg/N/ha/yr. are required to reduce measured species richness by one species. For sites with background levels of deposition of 10kg/N/ha/yr. increases in nitrogen deposition of between 0.5 and 0.6kg/N/ha/yr. are required to reduce measured species richness by one species. Large amounts of additional nitrogen deposition are required to reduced species richness by one species in acid grassland habitats with the same background rates of nitrogen deposition.'*

8.1.23 The predicted in combination contribution is 0.53kg/ha/yr adjacent to the road, falling to 0.4kg/ha/yr by 5m and 0.2kg/ha/yr by 25m. It therefore follows that levels adjacent to the road may be sufficient to trigger a reduction in species richness, beyond 5m from the road the in-combination contribution will not lead to a reduction in species richness.

Consider site survey information.

[34] Assessing the effects of small increments of atmospheric nitrogen deposition (above the critical load) on semi-natural habitats of conservation importance (NECR210).

8.1.24 Site survey information from the NVC report has been considered within this assessment with regards the location and spatial extent of the predicted effects and has also provided the evidence base upon which to apply a critical load range of 10-15kg/ha/yr to the area of the SAC affected by traffic emissions.

8.1.25 The area of the SAC which is affected in the part of the site immediately adjacent to the A354. Key pressures in this part of the site arise from recreational disturbance and intermittent disturbance due to service utilities being buried in the shingle along the road. It would not be appropriate to refer to the adjacent land as 'site fabric', as qualifying habitat is present, but the proximity to the A354 when the site was designated will influence how the conservation objectives targets are interpreted and applied when compared to other parts of the SAC.

Consider national, regional or local initiatives or measures which can be relied upon to reduce background levels at the site.

8.1.26 There is a national improving trend in emissions from traffic which is anticipated because of the shift to a cleaner technologies and, eventually, to electric vehicles (e.g. non-combustion engine). It is reasonable to assume that emissions from traffic along the A354 will, over the medium to longer term improve compared to the current and historic situation.

8.1.27 Helpful clarification has been provided in the 2019 Examination in Public of the Wealden Local Plan[35] (since withdrawn). In spite of evidence that local measurements did not reflect nationally forecast improvements, the Planning Inspectorate nevertheless concluded that predicted forecasts based on nationally agreed emissions factors (which account for measures which are already in place or which can reasonably be relied upon to be in place) provide an adequate basis upon which to assess the anticipated effects of future development. The Planning Inspectorate had regard to advice from Natural England in coming to this position.

8.1.28 It is recognised that improvements in vehicle emission abatement technology may give rise to a short term rise in ammonia emissions (due to ammonia being a by-product of catalytic converters) but the critical level for ammonia (3ug/m^3) is not exceeded within the site and this short-term increase before the wider shift to electric vehicles brings associated reductions in pollutants is therefore of little concern.

Consider measures to avoid or reduce the harmful effects of the plan or project on site integrity.

8.1.29 No measures to reduce traffic emissions have been proposed.

Consider any likely in-combination effects with other live plans and projects from other sources.

8.1.30 Effects in combination with other plans and projects are taken into account in the assessment of predicted effects.

[35] https://www.wealden.gov.uk/transparency-spending-and-performance/data-protection/freedom-of-information/local-plan-freedom-of-information/

8.2 Will the project undermine the achievement of the conservation objectives for Chesil and the Fleet SAC?

8.2.1 It is a legal requirement that an appropriate assessment be made 'in view of the conservation objectives'. As set out in sections 2.2 an effect is only 'significant' from a HRA perspective where it 'undermines the conservation objectives' and EC guidance is clear that 'the integrity of a site' relates to the site's conservation objectives. Having understood the predicted effects of the project (section 7), and considered the factors referred to in Natural England guidance (section 8.1) the final step in applying the integrity test is to consider the predicted effects in view of the conservation objectives for the site, and to determine whether they would be undermined, or not.

8.2.2 Table 8.2.1 identifies key attributes and targets from the conservation objectives supplementary advice and provides an evaluation of the predicted effects and the extent to which they might undermine the achievement of the conservation objective targets.

Table 8.2.1: Evaluation of predicted effects on Chesil and the Fleet SAC in view of the relevant conservation objective attributes and targets			
Attribute	**Target**	**Supporting Notes (relevant extracts)**	**DTA Comment**
Supporting processes: air quality (habitat)	Restore concentrations and deposition of air pollutants to below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System	This target has been included because this habitat type is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition and causing the loss of sensitive typical species associated with it. Critical Loads and Levels are recognised thresholds below which such harmful effects on sensitive UK habitats will not occur to a significant level, according to current levels of scientific understanding. There are critical levels for ammonia (NH_3), oxides of nitrogen (NO_x) and sulphur dioxide (SO_2), and critical loads for nutrient nitrogen deposition and acid deposition. The site-relevant critical load of nitrogen for this feature in the Chesil and The Fleet SAC is 8-15 kg N/ha/yr. With a maximum deposition of 16.1 kg N/ha/yr, nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects (Centre for Ecology & Hydrology (CEH), 2017). The impact of air pollution could also be a contributing factor to poor water quality (Natural England (NE), 2014). There is evidence from survey or monitoring to suggest that aerial nitrogen deposition exceeds site relevant critical loads for these features.	As summarised in section 6.6, DTA Ecology is of the view that the relevant baseline data for the Chesil and Fleet SAC is provided by the ''nitrogen deposition grid average' layer on APIS. This has been agreed with Natural England. It is therefore the case that the 16.1kg/ha.yr value in the published COSA is out of date and the maximum deposition across the SAC from APIS ranges from 7.2 – 8.6kg/ha/yr. This would, in turn, imply that the target for air quality should be updated to 'maintain or restore concentrations and deposition of air pollutants to below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System'. The predicted environmental concentration does not exceed the relevant critical level for NO_x or NH_3 in any location within the SAC. **The target will not therefore be undermined for NO_x and NH_3.** The predicted nitrogen deposition critical load is not exceeded for the 1km grid squares containing the A354. The lower critical load is exceeded for the PVSB within 35m of the A354 and the contribution from the project in combination with other plans and projects ranges between 1.4 – 5.3% within this 35m zone.

Table 8.2.1: Evaluation of predicted effects on Chesil and the Fleet SAC in view of the relevant conservation objective attributes and targets			
Attribute	**Target**	**Supporting Notes (relevant extracts)**	**DTA Comment**
			With reference to section 5.4, the spatial application of conservation objectives for air quality allows for localised exceedances. The limited spatial extent of the predicted exceedance adjacent to an existing road, where emissions from traffic are on an improving trend will not, in this instance, compromise the current 'maintain' target for air quality. Levels adjacent to the road will have been higher in the past and are on an improving long-term trend. Action to 'restore' other parts of the SAC to achieve their air quality targets will not involve any change to vehicle emissions along the A354. The project will not prevent or disrupt restoration work, or the potential for future restoration on other parts or the site, or otherwise undermine the continuing achievement of the conservation objective target within the grid squares affected.
Distribution of the feature, including associated transitional habitats, within the site	**Restore** the range and continuity of the habitat and its natural transitions within the site that enable the full succession from older to younger ridges to be represented.	This target has been included because a contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future environmental changes. The most recent NVC survey in 2018 has shown declines throughout the SAC of the pioneer shingle	The predicted effects are constrained to within 35m of the road (where an exceedance of the critical load is predicted). There is no credible evidence of any risk that a change in air quality within 35m of the road will meaningfully undermine the achievement of this objective for the SAC. The distribution of the PVSB feature is largely influenced by anthropogenic activities such as

Table 8.2.1: Evaluation of predicted effects on Chesil and the Fleet SAC in view of the relevant conservation objective attributes and targets			
Attribute	**Target**	**Supporting Notes (relevant extracts)**	**DTA Comment**
		communities (SD1) that partly constitute this feature, whilst the shingle grassland communities (MC5 and MC8) have remained relatively stable (Lake et al., 2018).	recreational pressures and beach reprofiling works for flood defence purposes. The decline in distribution of SD1 habitat is therefore unrelated to air pollution effects. Para 6.130 of the shadow AA refers to utilities (gas mains, water mains and electricity cables) buried in the shingle either side of the A354. The area adjacent to the road has therefore already been heavily modified and the area of MC5 habitat has remained stable. The project will not prevent or disrupt restoration work, or the potential for future restoration, or otherwise undermines the achievement of this conservation objective target.
Extent of the feature within the site	Restore the total extent of the feature to baseline value of 105 hectares	This target is included because there should be no measurable reduction (excluding any trivial loss) in the extent and area of this feature and, in some cases, the full extent of the feature may need to be restored. The most recent NVC survey in 2018 has shown declines throughout the SAC of the pioneer shingle communities (SD1) that partly constitute this feature, whilst the shingle grassland communities (MC5 and MC8) have remained relatively stable. SD1 communities have declined by between 38-84% and the overall feature extent has reduced from 105 hectares in 2005 to 58.5 hectares in 2018 (Lake et al., 2018)	NVC survey results show that whilst the SD1 communities have reduced in extent the MC5 and MC8 shingle grasslands have remained stable. The effects of the project are limited to MC5 grassland to the north of the A354. The continued presence of the habitat alongside the A354 indicates that the reduction in extent of PVSB habitat overall is not related to effects from traffic. The extent of the PVSB feature is largely influenced by anthropogenic activities such as recreation and beach reprofiling works for flood defence purposes. The area adjacent to the road has already been heavily modified. Para 6.130 of the shadow AA refers to utilities

Table 8.2.1: Evaluation of predicted effects on Chesil and the Fleet SAC in view of the relevant conservation objective attributes and targets			
Attribute	**Target**	**Supporting Notes (relevant extracts)**	**DTA Comment**
			(gas mains, water mains and electricity cables buried in the shingle either side of the A354. The project will not prevent or disrupt restoration work, or the potential for future restoration, or otherwise undermines the achievement of this conservation objective target.
Structure and function (including its typical species): key structural, influential and distinctive species	Restore the abundance of the species listed to enable each of them to be a viable component of the Annex I habitat feature: Sea-kale Crambe maritima, Sea pea Lathyrus japonicus, Sea campion Silene uniflora, Herb-robert Geranium robertianum, Curled dock Rumex crispus, Yellow horned-poppy Glaucium flavum, Red fescue Festuca rubra, Various lichens.	Some plant or animal species (or related groups of such species) make a particularly important contribution to the necessary structure, function and/or quality of an Annex I habitat feature at a particular site. These species will include; Structural species which form a key part of the Annex I habitat's structure or help to define that habitat on a particular SAC (see also the attribute for 'vegetation community composition') Influential species which are likely to have a key role affecting the structure and function of the habitat (such as bioturbators (mixers of soil/sediment), grazers, surface borers, predators or other species with a significant functional role linked to the habitat) Site-distinctive species which are considered to be a particularly special and distinguishing component of an Annex I habitat on a particular SAC. There may be natural fluctuations in the frequency and cover of each of these species. The relative contribution made by them to the overall ecological integrity of a site may vary, and Natural England will provide bespoke advice on this as necessary. The most recent NVC survey in 2018 has shown declines throughout the SAC of the pioneer shingle	NVC survey results show that whilst the SD1 communities have reduced in extent the MC5 and MC8 shingle grasslands have remained stable. The effects of the project are limited to MC5 grassland to the north of the A354. The continued presence of the habitat alongside the A354 indicates that the reduction in species abundance is not related to effects from traffic. The project will not prevent or disrupt restoration work, or the potential for future restoration, or otherwise undermines the achievement of this conservation objective target across the site as a whole.

Table 8.2.1: Evaluation of predicted effects on Chesil and the Fleet SAC in view of the relevant conservation objective attributes and targets			
Attribute	**Target**	**Supporting Notes (relevant extracts)**	**DTA Comment**
		communities (SD1) that partly constitiute this feature, whilst the shingle grassland communities (MC5 and MC8) have remained relatively stable (Lake et al., 2018). Wide-scale loss and fragmentation of pioneer shingle communities has been attributed to recreational activities and also concur with areas of dense anthropogenic litter (Lake et al., 2018).	
Structure and function: nutrient availability	Maintain the low nutrient status of the sediment and soils that support the specialised vegetation communities	The combination of inorganic and organic substrate is an important precursor to the development of the habitat and its successful establishment on an annual basis. Both elements will be regulated by coastal processes.	The spatial effects of the project are limited to 35m from the A354. Whilst the project will increase nutrient levels within the substrate that supports the MC5 community the spatial scale of the effect is not sufficient to threaten the achievement of the conservation objective target to maintain the low nutrient status across the site as a whole. With reference to para 2.3.7 of the main report there is no credible evidence of a real risk that the conservation objectives will be undermined. The application of the conservation objectives to land adjacent to the road can also take account of the presence of the road at designation and the improving trend in roadside emissions in the intervening years.

8.2.3 With reference to table 8.2.1 above it is the advice of DTA Ecology that the predicted effects associated with traffic emissions from the Portland Powerfuel proposal, in combination with other plans and projects, will not undermine the achievement of the conservation objectives for the Chesil and Fleet SAC. Case law has established that an effect is only significant in HRA terms if it 'undermines the conservation objectives'. With reference to authoritative guidance from the EC '*if none of the habitats for which a site has been designated is significantly affected then the site's integrity cannot be considered to be adversely affected*'. **It is therefore the advice of DTA Ecology that the predicted effects associated with traffic emissions from the Portland Powerfuel proposal, in combination with other plans and projects, will have no adverse effect on the integrity of the Chesil and Fleet SAC.**

8.2.4 In coming to this decision account DTA Ecology recognises that some grid squares elsewhere within the site exceed the lower critical load range and the objectives in respect of air pollution will be to restore air quality to achieve the critical load in those sites. Achieving this objective will require a reduction from existing sources but the effects from road traffic emissions do not extend beyond 200m of the road. Restrictions on traffic can only rationally be linked to *undermining* the achievement of the conservation objectives for a site where a) there is an objective to reduce pollution within a grid square affected by the road concerned and b) where a reduction in vehicle emissions can reasonably be argued as a meaningful part of an approach to achieve the necessary reductions. **In the case of the Chesil and the Fleet SAC, measures to achieve the critical load in other grid squares would not involve any reduction in emissions from existing traffic sources on the A354**.

8.3 Sensitivity analysis of integrity test conclusion for Chesil and the Fleet SAC

8.3.1 DTA Ecology recognises that the various updates and further amendments following the original submission of the Shadow AA updates have influenced the justification for the conclusions reached. A brief sensitivity analysis has been carried out below to examine the extent to which different approaches might influence the decisions which have been reached.

The use of the 'grid average' background deposition layer on APIS for Chesil and the Fleet SAC

8.3.2 As set out in section 6.6 it is the advice of DTA Ecology that the grid average nitrogen deposition layer is the most appropriate for the qualifying habitats within the Chesil and the Fleet SAC. If the moorland baseline layer is applied instead the predicted environmental deposition will exceed the critical load for the full 200m from the boundary of the SAC (rather than for 35m as considered in this assessment). In additional the lower critical load range (whether 8kg/ha/yr or 10 kg/ha/yr) would be exceeded across the SAC.

8.3.3 The spatial scale of the predicted contribution of greater than 1% to an area of the SAC which already exceeds its critical load would need to be carefully considered. The distribution of PVSB habitat is primarily located to the north of the A354 and the strip of the SAC supporting the MC5 grassland communities does not extend to 200m from the road before meeting the sea. The area of MC5 habitat exposed to a contribution above 1% would increase from 4.2ha to 8.4ha. Some discrete patches of PVSB to the south of the A354 would also be exposed to contribution above 1% but these are more spatially limited. **It is the opinion of DTA Ecology that reverting to the 'moorland' nitrogen deposition layer in APIS**

would represent a moderate risk of a change to the integrity test conclusion in respect of the impacts associated with nitrogen deposition.

8.3.4 The importance of selecting the correct layer from the APIS database is illustrated by this sensitivity analysis. As explained in section 6.6, the grid average provides a straightforward average of all five landcover types (i.e. assuming 20% coverage in every grid square for each land cover type)[36] so **the baseline data would still represent a precautionary approach for the Council to adopt. The most appropriate deposition velocity would be that for grassland habitat which, applied across the whole grid square, would give a baseline value even lower still than the grid average value which has been used.** DTA Ecology maintains that the grid average layer is most appropriate layer given the local circumstances at the site in this case.

Applying a lower critical load of 10kg/ha/yr rather than 8kg/ha/yr at Chesil and the Fleet SAC

8.3.5 Table 8.3.1 below provides the revised analysis of the transect data presented in table 7.2.3 had a critical load of 8kg/ha/yr been applied.

Table 8.3.1 – analysis of transect data from 7.2.3 against critical load of 8kg/ha/yr

Distance from road	Baseline	PC 'alone' (road plus stack)	%CL	PC 'i-c'	%CL	PEC (i-c)	%CL
2m	17.15	0.12	1.50	0.53	6.63	17.68	221.00
5m	14.42	0.11	1.38	0.40	5.00	14.82	185.25
10m	12.32	0.10	1.25	0.30	3.75	12.62	157.75
25m	10.17	0.09	1.13	0.20	2.50	10.37	129.63
50m	9.15	0.08	1.00	0.14	1.75	9.29	116.13
60m	8.96	0.08	1.00	0.13	1.63	9.09	113.63
70m	8.82	0.08	1.00	0.12	1.50	8.94	111.75
100m	8.54	0.08	1.00	0.11	1.38	8.65	108.13
200m	8.17	0.07	0.88	0.09	1.13	8.26	103.25

8.3.6 Were the lower critical load range of 8kg/ha to be applied, the baseline levels would exceed the critical load within 200m. The process contribution would also exceed 1% of the critical load for the full length of the 200m transect. This would have the effect of increasing the total spatial extent of MC5 which is exposed to contributions above 1% where the lower critical load is exceeded from 4.2ha to approximately 8.4ha. The increase is smaller than might be expected as the width of the strip of MC5 habitat to the east of the A354 does not extend to 200m and varies in width from 35 – 100m.

8.3.7 There would be localised exceedances within 200m of the road to the west of the A354 in isolated patches of PVSB habitat, and elsewhere within the SAC of the lower critical load range. Achieving the critical load in other parts of the SAC (beyond 200m from the road) cannot be linked to traffic flows on the A354 but larger spatial extent of the contributions above 1% where the lower predicted critical load is exceeded within 200m of the road would need to be evaluated in view of other localised exceedances across the SAC as a whole.

[36] Personal communication with CEH team responsible for APIS database (email dated 13th January 2023)

8.3.8 It would also be necessary to recognise the 8-15kg/ha/yr critical load as a range and to consider the actual risk to site integrity from an exceedance of the lower end of a critical load range (compared to an exceedance of the higher end of the range).

8.3.9 Finally, but importantly, it is necessary to recognise that the predicted exceedance is dependent on the baseline values from the APIS 'grid average' layer using the higher of the two grid squares that include the A354 (showing as 7.8kg/ha/yr). The other grid square including the A354 has a baseline deposition of 7.2kg/ha/yr. The analysis was undertaken against the higher baseline on a precautionary basis but the 7.2kg/ha/yr baseline results are presented in table 8.3.2, which shows that the predicted exceedance would now be limited to within 100m of the road.

Table 8.3.2 – analysis of transect data against critical load of 8kg/ha/yr using baseline of 7.2kg/ha/yr

Distance from road	Baseline	PC 'alone' (road plus stack)	%CL	PC 'i-c'	%CL	PEC (i-c)	%CL
2m	16.55	0.12	1.50	0.53	6.63	17.08	213.50
5m	13.82	0.11	1.38	0.40	5.00	14.22	177.75
10m	11.72	0.10	1.25	0.30	3.75	12.02	150.25
25m	9.57	0.09	1.13	0.20	2.50	9.77	122.13
50m	8.55	0.08	1.00	0.14	1.75	8.69	108.63
60m	8.36	0.08	1.00	0.13	1.63	8.49	106.13
70m	8.22	0.08	1.00	0.12	1.50	8.34	104.25
100m	7.94	0.08	1.00	0.11	1.38	8.05	100.63
200m	7.57	0.07	0.88	0.09	1.13	7.66	95.75

8.3.10 Table 8.3.1 and 8.3.2 rely on APIS values for 'grid average' nitrogen deposition layer which provides a straightforward average of all five landcover types (forest, moorland, grassland, arable and urban) and assumes 20% coverage in every grid square for each land cover type. It is therefore inevitable that deposition to the grid square if a grassland land cover is assumed would give an even lower baseline value. Lower baseline values would further influence the calculations. It is not possible to accurately state what the actual baseline deposition is, simply to assert that it will be lower than the value given on the APID 'grid average' layer. A baseline of 6.5 is presented in table 8.3.3 below by way of comparison. This would reduce the predicted exceedance further to within 50m of the road.

Table 8.3.3 – analysis of transect data against critical load of 8kg/ha/yr using baseline of 6.5kg/ha/yr

Distance from road	Baseline	PC 'alone' (road plus stack)	%CL	PC 'i-c'	%CL	PEC (i-c)	%CL
2m	15.85	0.12	1.50	0.53	6.63	16.38	204.75
5m	13.12	0.11	1.38	0.40	5.00	13.52	169.00
10m	11.02	0.10	1.25	0.30	3.75	11.32	141.50
25m	8.87	0.09	1.13	0.20	2.50	9.07	113.38
50m	7.85	0.08	1.00	0.14	1.75	7.99	99.88
60m	7.66	0.08	1.00	0.13	1.63	7.79	97.38
70m	7.52	0.08	1.00	0.12	1.50	7.64	95.50
100m	7.24	0.08	1.00	0.11	1.38	7.35	91.88
200m	6.87	0.07	0.88	0.09	1.13	6.96	87.00

8.3.11 Finally, it is also relevant to note that average windspeed along the strip of land connecting Portland to the mainland is 8m/s and wind blows predominantly from the south-west. Whilst the modelling will have been based on local weather data the wind speed along the road is likely to be high given the exposure and traffic emissions will rapidly be carried away to the north-east across the Portland Harbour and into the bay.

8.3.12 Table 8.3.3 shows the sensitivity of the calculated impacts from road traffic emissions to the baseline deposition values. It has not been necessary to explore this in detail within the main assessment as a lower critical load of 10kg/ha/yr has been agreed with Natural England. Had it been decided that the 8kg/ha/yr value was correct, the appropriate assessment would need to take account of the precautionary nature of the APIS 'grid average' layer and explore the extent to which it is reasonable to assume that actual baseline deposition would be lower and consider the overall risk to site integrity in view of local circumstances.

8.3.13 It is the opinion of DTA Ecology that reverting to the lower critical load range of 8kg/ha/yr would represent a low risk of a change to the integrity test conclusion in respect of the impacts associated with nitrogen deposition.

9 Applying the Integrity test in respect of air quality effects to the Isle of Portland to Studland Cliffs SAC

9.1 Considering the relevant factors from the Natural England guidance

9.1.1 Information presented in section 7 above, and a simple evaluation of credible evidence of a real risk, supports a conclusion that there will be **no adverse effect to the integrity of the Isle of Portland to Studland Cliffs SAC from effects associated with NO_x, NH_3 and nitrogen deposition**.

9.1.2 With reference to the information presented in section 7 it is the advice of DTA Ecology that the predicted effects associated with traffic emissions from the Portland Powerfuel proposal, in combination with other plans and projects, will not undermine the achievement of the conservation objectives for the Isle of Portland to Studland Cliffs. Case law has established that an effect is only significant in HRA terms if it 'undermines the conservation objectives'. With reference to authoritative guidance from the EC that 'if none of the habitats for which a site has been designated is significantly affected then the site's integrity cannot be considered to be adversely affected'. **It is therefore the advice of DTA Ecology that the predicted effects associated with traffic emissions from the Portland Powerfuel proposal, in combination with other plans and projects, will have no adverse effect on the integrity of the Isle of Portland to Studland Cliffs SAC.**

9.2 Sensitivity analysis of integrity test decision for Isle of Portland to Studland Cliffs SAC

9.2.1 DTA Ecology recognises that the various updates and further amendments following the original submission of the Shadow AA updates have influenced the justification for the conclusions reached. A brief sensitivity analysis has been carried out below to examine the extent to which different approaches might influence the decisions which have been reached.

Applying the higher critical level of 3ug/m^3 for ammonia rather than 1ug/m^3 at Isle of Portland to Studland Cliffs SAC

9.2.2 As explained in section 6.9, DTA Ecology has advised that the correct critical level for ammonia for the habitats within 200m of the road should be 3ug/m^3. The application instead of a critical level of 1ug/m^3 would mean that the process contribution is 1% of the critical level or above for the entire 200m transect. The updated APIS baseline values for ammonia would also mean that the critical level would be exceeded for the entire 200m transect, as well as elsewhere within the SAC.

9.2.3 At face value this seems to be a significant consideration. However the predicted exceedance of 1% of the critical level for the entire 100m transect needs to be understood correctly. This assessment has considered the effects from road emissions in combination with the stack emissions. Tables 6.3.2 – 6.3.5 provide a summary of the data presented in tables 4-9 of Appendix 3.4 of the ES 2nd addendum. The 'PC 'alone' column in tables 6.3.2 – 6.3.5 present the combined effects of the project (i.e. the road emissions and the stack emissions). Table 8 of Appendix 3.4 provides further detail of the transect modelling which presents the road emissions separately to the stack emissions. Table 8 clearly shows that

contribution from traffic emissions fall to zero at 35m from the road. The 1% process contribution between 35m – 200m is therefore entirely from the stack emissions.

9.2.4 The emissions from the stack exceed 1% of the 1ug/m^3 critical level across an area of the SAC which extend considerably beyond the 200m adjacent to the road. The effects associated with stack emissions are subject to separate assessment by the Environment Agency as the relevant competent authority and will include consideration of the full extent of the predicted contribution above 1% of the critical level. The findings of the EA assessment in respect of emissions from the stack are presented in section 11.2 to this report.

9.2.5 The predicted contribution from traffic emissions therefore exceeds 1% of the 1ug/m^3 critical level for ammonia within 35m of the road. The spatial extent of the exceedance of the 1% threshold is therefore constrained and **it is the opinion of DTA Ecology that applying an ammonia critical level of 1ug/m^3 within 200m of the SAC would represent a low risk of a change to the integrity test conclusion in respect of the impacts associated with ammonia.**

Accepting the use of adjacent grid square baseline values for ammonia and nitrogen deposition at the Isle of Portland to Studland SAC

9.2.6 In the absence of local monitoring data background levels for the area of the Isle of Portland to Studland Cliffs SAC within 200m of the road are taken from adjacent grid squares. As recognised in table 3.3.1 the background values therefore need to be 'treated with caution'. Especially given the fact that baseline NO_x values for the affected grid square is notably higher than adjacent squares.

9.2.7 The Council could request monitoring data to verify baseline levels for nitrogen deposition and ammonia which might indicate levels which exceed those applied. In the case of nitrogen deposition the process contribution above 1% of the critical load is spatially constrained to within 20m of the road. The spatial extent of the exceedance would still be inconsequential even if baseline deposition values were higher than those which were taken into account in the assessment.

9.2.8 Likewise, in the case of ammonia, the process contribution above 1% of the critical level is spatially constrained to within 25m of the road. The spatial extent of the exceedance would still be inconsequential even if baseline deposition values were higher than those which were taken into account in the assessment.

9.2.9 It is the opinion of DTA Ecology that it would not be reasonable to request additional monitoring data in respect of background levels within the SAC closest to the road on the basis that there is a very low risk of a change to the integrity test conclusion in respect of the impacts associated with nitrogen deposition or ammonia if levels were found to be higher than the background levels used in the current assessment.

10 Appropriate Assessment of water quality effects and dust

10.1 Scope of assessment

10.1.1 This section considers the potential impacts on the marine environment due to emissions arising from the proposed development. The following documents have been referred to:

- Portland ERF Shadow Appropriate assessment working draft November 2022 (Sections 4-7)
- Portland ERF Environmental Statement Addendum Appendices June 2021 (Section 9.3: Potential marine impacts of the proposed Portland ERF)
- Portland ERF ES Section 8: Ground Conditions and water quality September 2020
- Portland ERF ES Technical Appendix C: Framework Construction Environmental Management Plan 28 August 2020

10.1.2 Three distinct aspects of potential marine pollution require consideration: accidental or unmanaged emissions to water arising from run off, fuel spill or release of other contaminants during construction or operation; planned emissions to water through managed wastewater discharges during operation; entry of contaminants into the marine environment through emissions to air during operation / construction.

10.1.3 As summarised in section 1.3, emissions to air and water, run off etc that may occur during operation of the ERF facility itself will be included in the ERF HRA undertaken by the Environment Agency as competent authority for industrial emissions. The scope of this HRA is therefore constrained to impacts associated with construction.

10.2 Sites for which a likely significant effect has been identified

10.2.1 The following sites include marine features that might be exposed to construction related releases to the marine environment:

- Chesil Beach and the Fleet SPA/Ramsar (Sect 4.2 in shadow HRA): feeding areas for breeding little terns, wintering waders and wildfowl. The tidal lagoon supports rich marine plant and invertebrate communities.
- Chesil and the Fleet SAC: lagoon habitat, inundated salt meadows and shoreline intertidal communities.
- Isle of Portland to Studland Cliffs SAC: annual vegetation of drift lines (which are subject to periodic overtopping by high tides or storms)
- Studland to Portland SAC: designated for reef habitat.

10.3 Run off, fuel spill or release of other contaminants during construction

10.3.1 Section 5.9 of the sHRA considers the potential for runoff / spills etc to cause pollution of the marine environment during construction / operation. It concludes there is a realistic pathway for marine pollutants to enter Chesil Beach and the Fleet SPA and Chesil and the Fleet SAC. Studland to Portland SAC is hydrologically linked to the site, but the sHRA

considers no activities will be of a scale to impact the marine site, whilst any pollution events would need to be of sufficient scale for a likely significant effect to occur (Sect 5.10). No evidence is provided to support the claim that "…no activities associated with the construction or operation of the ERF are considered to be of a scale that would result in a pollutant reaching this site in sufficient volumes or concentrations to result in likely significant effects".

10.3.2 In addition, section 5.11 of the shadow AA concludes there is no hydrological link between the application site and the Isle of Portland to Studland Cliffs SAC and no realistic potential impact pathway relating to pollution of the marine features. However, as noted above, periodic overtopping during high tide events will occur. DTA Ecology would agree there is no realistic risk of pollution during routine operations, there is a potential for a pollution event of sufficient scale to affect annual vegetation of drift lines should it coincide with such periodic overtopping.

10.3.3 Further assessment is therefore required for Chesil Beach and the Fleet SPA, Chesil and the Fleet SAC, Studland to Portland SAC and Isle of Portland to Studland Cliffs SAC. The mitigation measures proposed for management of risks of pollution are relevant and can be taken into account as part of the appropriate assessment.

10.3.4 The appropriate assessment for water pollution is set out in sections 6.159- 6.166 of the Shadow AA. Chesil and the Fleet SAC, Chesil and Fleet SPA and Studland to Portland SAC are all more than 2km from the ERF but impacts via contamination of Portland Harbour are possible. For its conclusion of no adverse effect on these sites, the shadow AA relies on the framework CEMP (Construction Environment Management Plan) for protection of Portland Harbour. This sets out industry standard good practice working methods and mitigation measures as set out in Environment Agency guidance. The Isle of Portland to Studland Cliffs SAC is in closer proximity, but risks to this site from pollution of the marine environment will only occur if a pollution event coincides with periodic overtopping during high tides or storm events. The risk to the Isle of Portland to Studland Cliffs SAC can also be addressed through the framework CEMP.

10.3.5 The outline CEMP is presented in ES Technical Appendices Section C. The management mitigation plan in section 3 summarises the site-specific mitigation which will be required during construction. The detailed CEMP will be produced following approval of the scheme and appointment of contractors, and will be agreed with the Council in advance of works commencing on the site. Measures connected with unmanaged or accidental losses to the water environment during construction are included in the outline CEMP which recognises that some may require EA consent for discharge to controlled waters or storage of controlled substances. **Section 8 in the ES states that in the absence of mitigation there will be a large impact on coastal water quality, leading to a very substantial significant adverse effect. Agreement with the Council and compliance with the detailed CEMP during the construction phase will therefore be important in enabling a conclusion of no adverse effect on the sites potentially at risk.**

10.3.6 Risks to coastal water in the absence of mitigation are considerable. However, the mitigation referred to in the outline CEMP are widely relied upon and all have associated industry standard construction related approaches. **Assuming the detail concerning the measures in the outline CEMP are secured in the detailed CEMP it is reasonable to rely on the CEMP to avoid adverse effects to site integrity for Chesil Beach and the Fleet SPA, Chesil and the Fleet SAC, Studland to Portland SAC and Isle of Portland to Studland Cliffs SAC.**

10.4 Operational impacts on the water environment:

10.4.1 Although the review by ABPMer (Sect 9.3 ES Addendum, 2021) distinguishes between operational and construction impacts on the water environment, this distinction is not made clear in the sHRA. The outline CEMP has been developed to deal only with construction impacts so cannot be relied upon to deal with operational impacts.

10.4.2 There is potential for spills etc during operation (Sect 8.6.1 in ES) as well as direct discharge of surface water runoff. A permit will be required from the Environment Agency for uncontaminated surface runoff (e.g. from carparks and roofs) which are to be discharged via a retention interceptor and swales. **The Environment Agency will consider any associated effects as part of their HRA for the environmental permit.**

10.4.3 All planned process and foul water effluent discharges will be made to sewer and not direct to the marine environment.

10.5 Impacts associated with dust

10.5.1 Dust associated with construction is first considered in paragraphs 5.5 – 5.8 of the Shadow AA which identifies a likely significant effect for:

- Isle of Portland to Studland Cliffs SAC

10.5.2 Section 6.167 of the Shadow AA asserts that generic dust suppression measures that are set out in the CEMP will be sufficient to avoid any adverse effect on Isle of Portland to Studland cliffs SAC. It is the advice of DTA Ecology that this conclusion is robust. Dust suppression measures referred to in the outline CEMP are widely relied upon to avoid or reduce associated effects and all have associated industry standard related approaches.

10.6 In combination effects

10.6.1 In combination effects (with other projects included in the revised sHRA) from dust during construction and water pollution during construction are considered in sections 7.84 and 7.85 of the shadow AA. There is reliance on good practice being followed in these other projects, and given the spatial differences (dust) and temporal risks (accidental discharge) we would concur that there will be no adverse effects to site integrity in combination with other plans and projects.

10.7 Applying the integrity test

10.7.1 The risks associated with potential impacts to the marine environment and dust are considered in the outline CEMP. Mitigation measures listed in the outline CEMP will all have associated industry standard construction related approaches which can be secured as part of the detailed CEMP. Further detail will be agreed with the Council as part of a detailed CEMP prior to work commencing on site. **Assuming the detailed CEMP addresses all the risks identified within the outline CEMP, and is agreed prior to work commencing, it is possible to conclude that there will be no adverse effect to the integrity of any European sites from construction related water quality related impacts.**

10.7.2 DTA Ecology would also advise that it would be good practice to also include a condition to secure agreement of the Detailed CEMP with Natural England.

10.7.3 In accordance with regulation 63(6) of the Habitats Regulations, in considering whether a plan or project will adversely affect the integrity of a site the competent authority must have regard to the manner in which it is proposed to be carried out or to any conditions or restrictions subject to which it proposes that the consent, permission or other authorisation should be given.

10.7.4 DTA Ecology would therefore advise that a conclusion of no adverse effect to site integrity in respect of water quality and dust can rely on the use of conditions or restrictions subject to which planning permission might be granted. A suitable condition to **ensure that the detailed CEMP is submitted and agreed with the Council and (preferably) Natural England <u>prior</u> to work commencing on the site should enable the Council to be satisfied that adverse effects to site integrity will be avoided**. It will be for the Council, in their role as competent authority, to agree the wording of any such condition.

11 Applying the integrity test to the project as a whole

11.1 The conclusions of the HRA undertaken by the Council

11.1.1 The conclusions in respect of the HRA undertaken by the Council are summarised in sections 8 - 10 above. The scope of the assessment undertaken by the Council is explained in section 1.3 and involves a co-ordinated approach with the Environment Agency.

11.1.2 The Council has concluded from their assessment that, assuming any permission is subject to appropriate conditions or restrictions in respect of the detailed CEMP being agreed with the Council and (preferably) Natural England prior to work commencing, the project will have no adverse effect to the integrity of any European site, either alone or in-combination with other plans and projects.

11.2 The conclusions of the HRA undertaken by the Environment Agency

11.2.1 At the time of writing the Environment Agency has not completed its HRA in respect of effects associated with the operation of the plant as subject to control through the environmental permit application.

11.3 The conclusions of the HRA for the project as a whole

11.3.1 As set out in section 1.3, the application for planning permission is being determined in parallel with the environmental permit application which has been submitted to the Environment Agency as the relevant competent authority. The proposal therefore requires the consent, permission or other authorisation of more than one competent authority and, in accordance with regulation 67(2) of the Habitats Regulations, '*nothing in regulation 63(1) requires* [Dorset Council] *to assess any implications or a plan or project which would more appropriately be assessed under that provision by another competent authority*'.

11.3.2 The Council and the Environment Agency agreed that they would coordinate their roles in alignment with Defra guidance[37] that 'You should not assess any part of a proposal that another competent authority has a role to assess. The relevant competent authority will do their own assessment'.

11.3.3 The final HRA conclusion is therefore dependent upon the outcome of the EA permit application and supporting HRA work. It is therefore the advice of DTA Ecology that, if the Council are minded to grant planning permission, any resolution to do so should be subject to receipt of the EA appropriate assessment and confirmation that it does not require the need for additional mitigation or compensation to be controlled under the planning regime.

[37] https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site#make-decision-making-quicker

APPENDIX 1 – Tables 4-9 from Appendix 3-4 of 2nd ES Addendum

Table 4: Detailed Transect Results – Annual Mean Oxides of Nitrogen – Chesil Beach

Distance from Road		Do Nothing (µg/m³)	Do Minimum (µg/m³)	Proposed Development Road Contribution (µg/m³)	Proposed Development Process Emissions Contribution (µg/m³)	Total Impact (µg/m³)	Cumulative Impact (µg/m³)
2		27.42	28.12~~28.28~~	0.16	0.16	0.32	1.01
3		25.22	25.83~~25.99~~	0.14	0.16	0.30	0.91
4		23.56	24.11~~24.27~~	0.12	0.16	0.28	0.83
5		22.25	22.75~~22.91~~	0.11	0.16	0.27	0.77
6		21.18	21.63~~21.79~~	0.10	0.16	0.26	0.72
7		20.28	20.70~~20.86~~	0.10	0.16	0.26	0.68
8		19.53	19.92~~20.08~~	0.09	0.16	0.25	0.64
9		18.87	19.23~~19.39~~	0.09	0.16	0.25	0.61
10		18.30	18.65~~18.81~~	0.08	0.16	0.24	0.58
15		16.29	16.55~~16.71~~	0.06	0.16	0.22	0.49
20		15.07	15.29~~15.45~~	0.05	0.16	0.21	0.43
25		14.25	14.44~~14.60~~	0.05	0.16	0.21	0.39
30		13.66	13.82~~13.98~~	0.04	0.16	0.20	0.36
35		13.21	13.36~~13.52~~	0.04	0.16	0.20	0.34
40		12.86	12.99~~13.15~~	0.03	0.16	0.19	0.32
45		12.58	12.70~~12.86~~	0.03	0.16	0.19	0.31
50		12.34	12.45~~12.61~~	0.03	0.16	0.19	0.30
60		11.98	12.07~~12.23~~	0.03	0.16	0.19	0.28
70		11.70	11.78~~11.94~~	0.02	0.16	0.18	0.27
80		11.49	11.56~~11.72~~	0.02	0.16	0.18	0.25
90		11.31	11.38~~11.54~~	0.02	0.16	0.18	0.24
100		11.17	11.23~~11.39~~	0.02	0.16	0.18	0.24
120		10.95	11.00~~11.15~~	0.02	0.16	0.17	0.22
140		10.78	10.83~~10.98~~	0.01	0.15	0.17	0.21
160		10.65	10.69~~10.84~~	0.01	0.15	0.16	0.20
180		10.55	10.58~~10.73~~	0.01	0.15	0.16	0.19
200		10.47	10.50~~10.64~~	0.01	0.15	0.16	0.19

Notes:
Do Nothing and Do Minimum concentration includes background contribution of 9.67 µg/m³

Table 5: Detailed Transect Results – Annual Mean Ammonia – Chesil Beach

Distance from Road		Do Nothing (µg/m³)	Do Minimum (µg/m³)	Proposed Development Road Contribution (µg/m³)	Proposed Development Process Emissions Contribution (µg/m³)	Total Impact (µg/m³)	Cumulative Impact (µg/m³)
2		2.24	2.312.32	0.01	0.01	0.02	0.09
3		2.05	2.112.12	0.01	0.01	0.02	0.08
4		1.91	1.961.97	0.01	0.01	0.02	0.07
5		1.79	1.841.85	0.01	0.01	0.02	0.07
6		1.70	1.741.75	0.01	0.01	0.02	0.06
7		1.62	1.661.67	<0.01	0.01	0.02	0.06
8		1.56	1.591.60	<0.01	0.01	0.02	0.05
9		1.50	1.531.54	<0.01	0.01	0.01	0.05
10		1.45	1.481.49	<0.01	0.01	0.01	0.05
15		1.27	1.301.31	<0.01	0.01	0.01	0.04
20		1.17	1.191.20	<0.01	0.01	0.01	0.03
25		1.10	1.111.12	<0.01	0.01	0.01	0.03
30		1.04	1.061.07	<0.01	0.01	0.01	0.03
35		1.01	1.021.03	<0.01	0.01	0.01	0.03
40		0.97	0.991.00	<0.01	0.01	0.01	0.02
45		0.95	0.960.97	<0.01	0.01	0.01	0.02
50		0.93	0.940.95	<0.01	0.01	0.01	0.02
60		0.90	0.910.92	<0.01	0.01	0.01	0.02
70		0.87	0.880.89	<0.01	0.01	0.01	0.02
80		0.86	0.860.87	<0.01	0.01	0.01	0.02
90		0.84	0.850.86	<0.01	0.01	0.01	0.02
100		0.83	0.830.84	<0.01	0.01	0.01	0.02
120		0.81	0.810.82	<0.01	0.01	0.01	0.02
140		0.80	0.800.81	<0.01	0.01	0.01	0.01
160		0.78	0.790.80	<0.01	0.01	0.01	0.01
180		0.78	0.780.79	<0.01	0.01	0.01	0.01
200		0.77	0.770.78	<0.01	0.01	0.01	0.01

Notes:
Do Nothing and Do Minimum concentration includes background contribution of 0.97 µg/m³

**Ammonia baseline value cited as 0.97 but 'do nothing' values are below this level beyond 40m. The consultants acting on behalf of the applicant have confirmed via email that the baseline value cited is the report is an error and that a value of 0.71 was used instead.*

Table 6: Detailed Transect Results – Annual Mean N Deposition – Chesil Beach

Distance from Road	Do Nothing (kgN/ha/yr)	Do Minimum (kgN/ha/yr)	Proposed Development Road Contribution (kgN/ha/yr)	Proposed Development Process Emissions Contribution (kgN/ha/yr)	Total Impact (kgN/ha/yr)	Cumulative Impact (kgN/ha/yr)
2	17.83	18.24	0.05	0.07	0.12	0.53
3	16.67	17.03	0.05	0.07	0.12	0.48
4	15.79	16.11	0.04	0.07	0.11	0.43
5	15.10	15.39	0.04	0.07	0.11	0.40
6	14.53	14.80	0.04	0.07	0.11	0.37
7	14.06	14.30	0.03	0.07	0.10	0.35
8	13.65	13.88	0.03	0.07	0.10	0.33
9	13.30	13.52	0.03	0.07	0.10	0.31
10	13.00	13.21	0.03	0.07	0.10	0.30
15	11.93	12.09	0.02	0.07	0.09	0.25
20	11.29	11.41	0.02	0.07	0.09	0.22
25	10.85	10.96	0.02	0.07	0.09	0.20
30	10.53	10.63	0.01	0.07	0.09	0.18
35	10.30	10.38	0.01	0.07	0.08	0.17
40	10.11	10.19	0.01	0.07	0.08	0.16
45	9.96	10.03	0.01	0.07	0.08	0.15
50	9.83	9.90	0.01	0.07	0.08	0.14
60	9.64	9.69	0.01	0.07	0.08	0.13
70	9.50	9.54	0.01	0.07	0.08	0.12
80	9.38	9.42	0.01	0.07	0.08	0.12
90	9.29	9.33	0.01	0.07	0.08	0.12
100	9.22	9.25	0.01	0.07	0.08	0.11
120	9.10	9.13	0.01	0.07	0.07	0.10
140	9.01	9.04	<0.01	0.07	0.07	0.10
160	8.95	8.97	<0.01	0.07	0.07	0.09
180	8.90	8.91	<0.01	0.07	0.07	0.09
200	8.85	8.87	<0.01	0.07	0.07	0.09

Notes:
Do Nothing and Do Minimum concentration includes background contribution of 8.480 kgN/ha/yr

Table 7: Detailed Transect Results – Annual Mean Oxides of Nitrogen – Isle of Portland

Distance from Road	Do Nothing (µg/m³)	Do Minimum (µg/m³)	Proposed Development Road Contribution (µg/m³)	Proposed Development Process Emissions Contribution (µg/m³)	Total Impact (µg/m³)	Cumulative Impact (µg/m³)
2	34.13	34.14	0.45	0.15	0.60	0.61
3	34.11	34.11	0.38	0.16	0.54	0.54
4	34.09	34.09	0.34	0.16	0.49	0.50
5	34.07	34.08	0.30	0.16	0.46	0.46
6	34.06	34.06	0.27	0.16	0.43	0.44
7	34.05	34.05	0.25	0.16	0.41	0.41
8	34.04	34.04	0.23	0.16	0.39	0.39
9	34.03	34.04	0.21	0.16	0.37	0.38
10	34.02	34.03	0.20	0.16	0.36	0.36
15	34.00	34.01	0.15	0.16	0.31	0.31
20	33.99	34.00	0.12	0.16	0.28	0.29
25	33.98	33.99	0.10	0.16	0.26	0.27
30	33.98	33.98	0.08	0.17	0.25	0.26
35	33.97	33.98	0.07	0.17	0.24	0.25
40	33.97	33.97	0.07	0.17	0.23	0.24
45	33.97	33.97	0.06	0.17	0.23	0.24
50	33.96	33.97	0.05	0.17	0.23	0.23
60	33.96	33.97	0.05	0.17	0.22	0.23
70	33.96	33.96	0.04	0.17	0.21	0.22
80	33.96	33.96	0.04	0.17	0.21	0.22
90	33.96	33.96	0.03	0.17	0.21	0.21
100	33.96	33.96	0.03	0.17	0.20	0.21
120	33.96	33.96	0.02	0.17	0.19	0.20
140	33.95	33.96	0.02	0.17	0.19	0.19
160	33.96	33.96	0.02	0.16	0.18	0.19
180	33.96	33.96	0.02	0.16	0.18	0.18
200	33.96	33.96	0.02	0.16	0.17	0.18

Notes:
Do Nothing and Do Minimum concentration includes background contribution of 33.78 µg/m³

Table 8: Detailed Transect Results – Annual Mean Ammonia – Isle of Portland

Distance from Road	Do Nothing (µg/m³)	Do Minimum (µg/m³)	Proposed Development Road Contribution (µg/m³)	Proposed Development Process Emissions Contribution (µg/m³)	Total Impact (µg/m³)	Cumulative Impact (µg/m³)
2	0.74	0.75	0.03	0.01	0.04	0.04
3	0.73	0.75	0.03	0.01	0.04	0.04
4	0.73	0.74	0.02	0.01	0.03	0.04
5	0.73	0.74	0.02	0.01	0.03	0.03
6	0.73	0.74	0.02	0.01	0.03	0.03
7	0.73	0.74	0.02	0.01	0.03	0.03
8	0.73	0.74	0.02	0.01	0.03	0.03
9	0.73	0.74	0.01	0.01	0.02	0.03
10	0.73	0.74	0.01	0.01	0.02	0.03
15	0.73	0.74	0.01	0.01	0.02	0.02
20	0.72	0.74	0.01	0.01	0.02	0.02
25	0.72	0.74	0.01	0.01	0.02	0.02
30	0.72	0.73	0.01	0.01	0.02	0.02
35	0.72	0.73	0.00	0.01	0.02	0.02
40	0.72	0.73	0.00	0.01	0.02	0.02
45	0.72	0.73	0.00	0.01	0.02	0.02
50	0.72	0.73	0.00	0.01	0.01	0.02
60	0.72	0.73	0.00	0.01	0.01	0.02
70	0.72	0.73	0.00	0.01	0.01	0.01
80	0.72	0.73	0.00	0.01	0.01	0.01
90	0.72	0.73	0.00	0.01	0.01	0.01
100	0.72	0.73	0.00	0.01	0.01	0.01
120	0.72	0.73	0.00	0.01	0.01	0.01
140	0.72	0.73	0.00	0.01	0.01	0.01
160	0.72	0.73	0.00	0.01	0.01	0.01
180	0.72	0.73	0.00	0.01	0.01	0.01
200	0.72	0.73	0.00	0.01	0.01	0.01

Notes:
Do Nothing and Do Minimum concentration includes background contribution of 0.97 µg/m³

**Ammonia baseline value cited as 0.97 but 'do nothing' values are all below this level. The consultants acting on behalf of the applicant have confirmed via email that the baseline value cited is the report is an error and that a value of 0.71 was used instead.*

Table 9: Detailed Transect Results – Annual Mean N Deposition – Isle of Portland

Distance from Road	Do Nothing (kgN/ha/yr)	Do Minimum (kgN/ha/yr)	Proposed Development Road Contribution (kgN/ha/yr)	Proposed Development Process Emissions Contribution (kgN/ha/yr)	Total Impact (kgN/ha/yr)	Cumulative Impact (kgN/ha/yr)
2	8.64	8.66	0.19	0.07	0.26	0.28
3	8.63	8.64	0.16	0.07	0.23	0.25
4	8.62	8.63	0.15	0.07	0.21	0.23
5	8.61	8.62	0.13	0.07	0.20	0.21
6	8.61	8.62	0.12	0.07	0.19	0.20
7	8.60	8.61	0.11	0.07	0.18	0.19
8	8.60	8.61	0.10	0.07	0.17	0.18
9	8.59	8.60	0.09	0.07	0.16	0.17
10	8.59	8.60	0.09	0.07	0.16	0.16
15	8.58	8.59	0.06	0.07	0.13	0.14
20	8.57	8.58	0.05	0.07	0.12	0.13
25	8.57	8.57	0.04	0.07	0.11	0.12
30	8.56	8.57	0.04	0.07	0.11	0.12
35	8.56	8.57	0.03	0.07	0.11	0.11
40	8.56	8.56	0.03	0.08	0.10	0.11
45	8.56	8.56	0.02	0.08	0.10	0.11
50	8.56	8.56	0.02	0.08	0.10	0.10
60	8.56	8.56	0.02	0.08	0.10	0.10
70	8.55	8.56	0.02	0.08	0.10	0.10
80	8.55	8.56	0.01	0.08	0.09	0.10
90	8.55	8.56	0.01	0.08	0.09	0.09
100	8.55	8.56	0.01	0.08	0.09	0.09
120	8.55	8.56	0.01	0.08	0.09	0.09
140	8.55	8.56	0.01	0.07	0.08	0.09
160	8.55	8.56	0.01	0.07	0.08	0.08
180	8.55	8.56	0.01	0.07	0.08	0.08
200	8.55	8.56	0.01	0.07	0.08	0.08

Notes:
Do Nothing and Do Minimum concentration includes background contribution of 8.480 kgN/ha/yr