



YORK

CITY OF YORK
LOCAL PLAN
Habitat Regulation Assessment
of the Local Plan
April 2018



Habitats Regulations Assessment of the City of York Council Local Plan

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Summary

The City of York Council is in the process of producing its Local Plan. This Habitats Regulations Assessment (HRA) represents the evaluation of the Plan under the Conservation of Habitats and Species Regulations 2017 (the *Habitats Regulations*).

Its role is to test the impact of the proposed policies and allocations on the internationally important sites for biodiversity in and around the City. Together, these Special Protection Areas, Special Areas of Conservation and Ramsar sites are known as European sites.

HRA asks very specific questions of a local plan. Firstly, it “*screens*” the plan to identify which policies or allocations may have a *likely significant effect* (LSE), *alone or* (if necessary) *in combination* with other plans and projects, on the European sites. If LSEs can be ruled out, then the plan may be adopted but if they cannot be ruled out, the plan must be subjected to the greater scrutiny of an ‘*appropriate assessment*’ to find out if the plan will have an *adverse effect on the integrity* (AEOI) of the European sites. Again, if AEOI can be ruled out, the plan may be adopted. If necessary, the plan should be amended to *mitigate* any problems, which typically means that some policies or allocations need to be modified or, more unusually, may have to be removed altogether.

This document follows best practice (drawing heavily, in particular, on guidance contained within the Habitats Regulations Assessment Handbook¹) and takes full account of Government policy and law. This HRA also draws on the outputs of the draft HRAs completed in 2014 and 2017 which were carried out to inform development of the Plan.

163 policies and associated allocations were screened; the individual outcomes of the preliminary screening of each policy and allocation can be found in Appendix B and are summarised in Table 6. The subsequent screening outcomes appear in summarised form only in Tables 7. Overall, this HRA found that LSE could be ruled out for 158 policies and allocations which could be excluded from any further scrutiny.

However, LSE could not be ruled out alone in terms of Policies SS19/ST35, E18 and H59 because of anticipated increases in recreational pressure, changes to the hydrological regime and the effect of air pollution on the adjacent Strensall Common. Again, because of anticipated increases in recreational pressure, LSE could not be ruled out alone for Policy SS18/ST33 on the Lower Derwent Valley. Finally, even though situated several kilometres from the Lower Derwent Valley, LSE could not be ruled out alone for Policy SS13/ST15 for two reasons: again because of anticipated increases in recreational pressure but also for impacts on the bird communities of the European site that utilised land beyond the European site boundary.

Accordingly, having regard to CJEU case law, an appropriate assessment was carried out. After further scrutiny, including changes to policy wording, it was concluded that the Plan would not have an adverse effect on the integrity of any European site. There was no need for an in combination assessment.

The requirement for HRA is driven from the European Union’s Habitats Directive and the decision to leave the EU potentially throws doubt on the need for the HRA of this local plan. However, UK law and policy is currently unchanged and the need for HRA remains. The HRA of the Council’s Local Plan will therefore continue and the recommendations will be acted upon until such time as Government indicates otherwise

¹ Tyldesley, D., and Chapman, C., (2013) *The Habitats Regulations Assessment Handbook*, DTA Publications Ltd

1. Introduction

Background

- 1.1. The City of York Council (the *Council*) is developing its Local Plan. This will deliver the strategic vision and objectives in York over a 20 year period. When adopted, the Local Plan will influence all future development within the Council's boundaries.
- 1.2. The Habitats Directive requires local (or '*competent*') authorities to assess the impact of development plans on the Natura 2000 network of protected sites. The Directive is given domestic effect by the Habitats and Species Regulations 2017² (the '*Habitats Regulations*'). In England, this requirement is implemented via a *Habitats Regulations Assessment (HRA)* which comprises a series of mandatory tests.
- 1.3. A draft HRA (Amec, 2014)³ was prepared alongside the Local Plan Publication draft. However, consultation on this document and its supporting evidence base was halted following a decision by Full Council in October 2014 to undertake further work on the Local Plan evidence base in relation to housing numbers. Work continued to update the policies and portfolio of site allocations within the Plan until late 2017.
- 1.4. Subsequently, a further draft HRA was completed (Waterman, 2017)⁴ to evaluate the impact of these changes to the Plan. However, this only comprised an initial 'screening assessment (alone)' and did not explore the in combination or appropriate assessment (or AA) stages.
- 1.5. Defra guidance⁵ (expanded in C12.1 of the Handbook⁶) allows competent authorities to reduce the duplication of effort by drawing on earlier conclusions where there has been no material change in circumstances. If there is any doubt, the allocation or policy is assessed as normal. Consequently, this current HRA draws on the findings of both previous documents where possible but evaluates the Plan in the context of contemporary evidence.

Habitats Regulations Assessment of Local Plans, Natura 2000 and European sites

- 1.6. Natura 2000 is the cornerstone of European nature conservation policy; it is an EU-wide network of Special Protection Areas (SPA) classified under the 1979 Birds Directive and Special Areas of Conservation (SAC) designated under the 1992 Habitats Directive. Together, the network comprises over 27,500 sites⁷ and safeguards the most valuable and threatened habitats and species across Europe; it represents the largest, coordinated network of protected areas in the world.
- 1.7. In the UK, these sites are commonly referred to as 'European sites' which, according to Government policy⁸, also comprise 'Wetlands of International Importance', or Ramsar sites. Over 8% of the UK land area forms part of this network including, locally, sites such as Strensall Common, Skipwith Common, the Lower Derwent Valley and River Derwent. Further afield, it also incorporates such well known sites as the Yorkshire Dales and the North York Moors.
- 1.8. The Regulations employ a series of mandatory tests outlined in Fig 1 (derived from Circular 06/05).

² The Conservation of Habitats and Species Regulations 2017 SI No 1012

³ City of York Council Habitats Regulations Assessment of the Local Plan. AMEC Environment & Infrastructure UK limited. September 2014 (DRAFT).

⁴ HRA of Plan Allocations. Habitats Regulations Assessment of City of York Council Local Plan. Waterman Infrastructure & Environment Limited. September 2017

⁵ Habitats Directive – Guidance on competent authority coordination under the Habitats Regulations, Defra (July 2012).

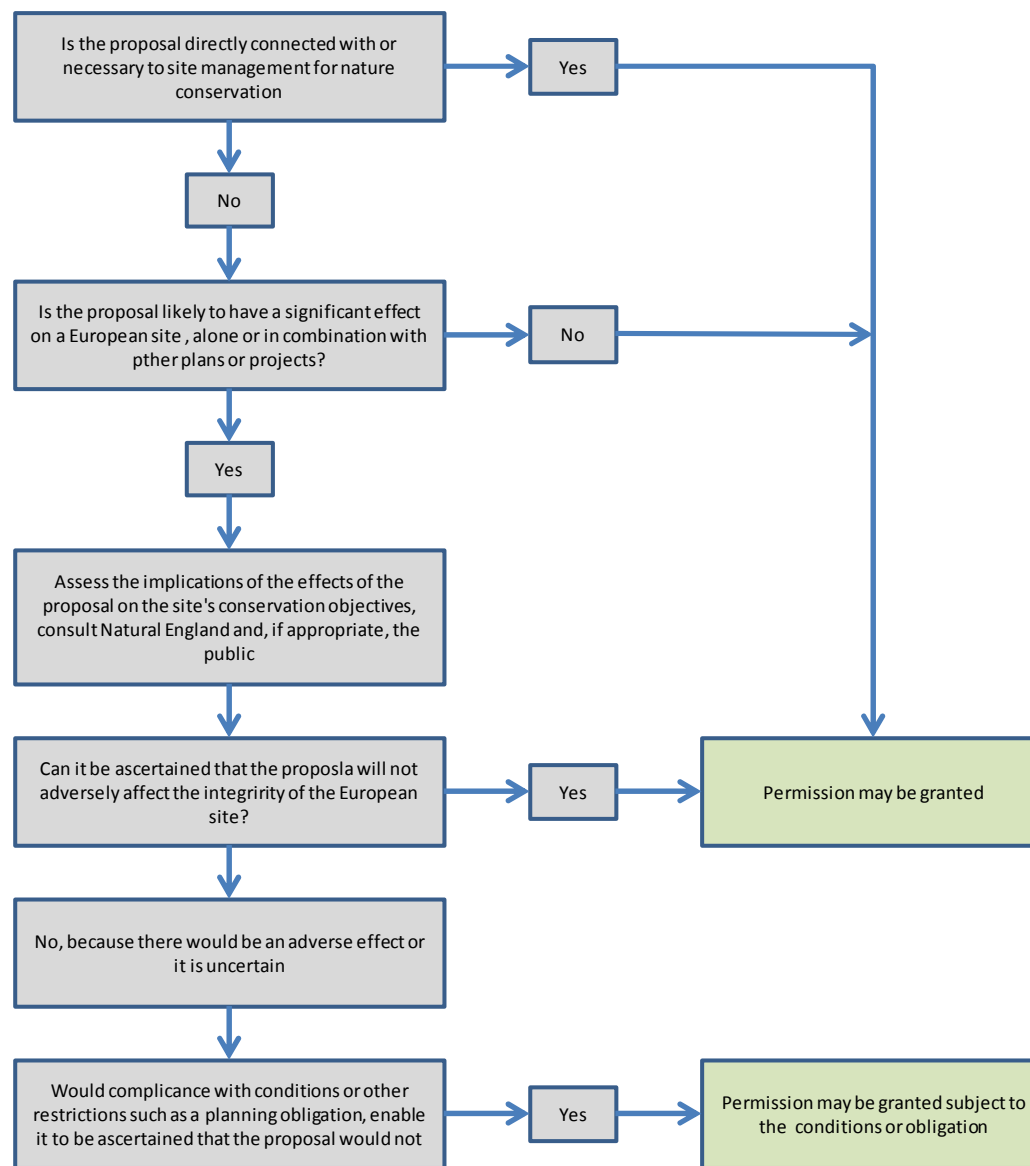
⁶ Tyldesley, D., and Chapman, C., (2013) *The Habitats Regulations Assessment Handbook*, DTA Publications Ltd

⁷ Natura 2000 Barometer

<https://view.officeapps.live.com/op/view.aspx?src=http://ec.europa.eu/environment/nature/natura2000/barometer/docs/Natura%202000%20barometer.xlsx> accessed 30 March 2018

⁸ ODPM Circular 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System (16 August 2005)

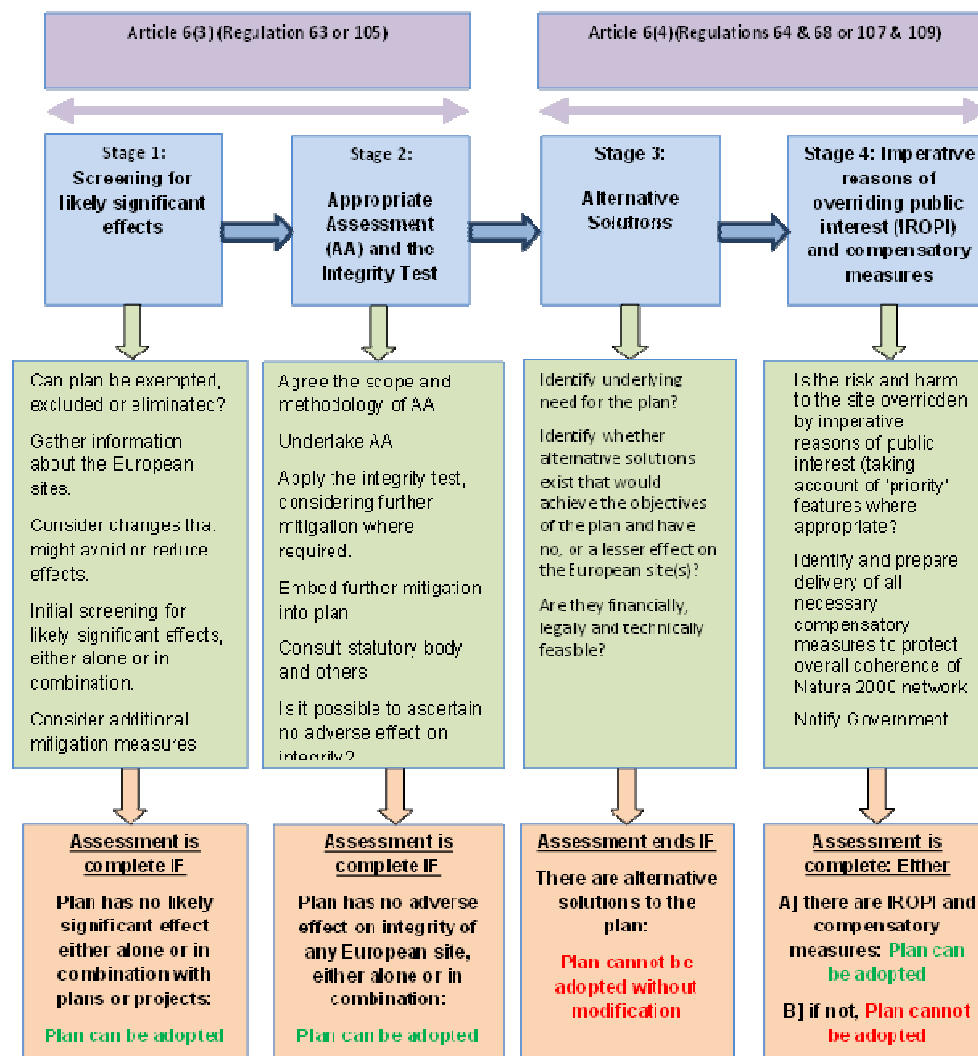
Figure 1: Consideration of development proposals affecting European sites



- 1.9. In practical terms, experience gained from implementation of the process has encouraged the adoption of additional filters at the outset to explore if the plan even needs to be subject to HRA at all. This more sensible approach is laid out in Fig 2 where many of the component steps are given expression. It is the process described in Fig 2 that is followed in this HRA.
- 1.10. So, for example, the initial test adopted in this HRA (in Section 2) firstly explores if the plan can be excluded from the HRA simply because it is considered that it could not have any conceivable effect on a European site before exploring whether the plan is actually necessary for the management of a European site (in section 2 of this HRA).
- 1.11. If the plan cannot be ruled out at this stage, the competent authority (ie the Council) must then identify whether the plan is '*... likely to have a significant effect on a European Site ... either alone or in combination with other plans or projects*'. If significant effects are found to be absent or can be avoided, the plan may be adopted without further scrutiny.

- 1.12. An in-combination assessment is required where an impact is identified which would have an insignificant effect on its own ('a residual effect') but where likely significant effects arise cumulatively with other plans or projects. Together, these first few steps of Stage 1 (in Fig 2) are often referred to as 'Screening'.

Figure 2: The four stage assessment of plans under the Habitats Regulations



- 1.13. This HRA utilises guidance provided by the Habitats Regulations Assessment Handbook. The Handbook draws on best practice and case law at home and across the EU to identify over 180 principles that inform how HRA should be carried out. Subscribers to the Handbook include Natural England, the Environment Agency and the Planning Inspectorate which ensures that key decision-makers will be familiar with the approach shown in Fig 2.

Definitions, Evidence, the Precautionary Principle and Case Law

- 1.14. The meaning of the key terms in HRA is of considerable importance and the following definitions apply:

- ... irrespective of the normal English meaning of 'likely', in this statutory context a 'likely significant effect' is a possible significant effect; one whose occurrence cannot be excluded on the basis of objective information';
- A significant effect is any effect that would undermine the conservation objectives for a European site ...;
- 'Objective', in this context, means clear verifiable fact rather than subjective opinion. ... There should be credible evidence to show that there is a real rather than a hypothetical risk of effects that could undermine the site's conservation objectives. Any serious possibility of a risk that the conservation objectives might be undermined should trigger an 'appropriate assessment'.

1.15. In other words, this means the initial screening phase should not be exhaustive, a point candidly described by Advocate General Sharpston in paragraphs 49 and 50 of the Sweetman case⁹ when describing the levels of scrutiny to be applied to each test as follows:

'The threshold at the first stage [the test for LSE] ... is thus a very low one. It operates merely as a trigger, in order to determine whether an appropriate assessment must be undertaken ... The threshold at (the second) [the appropriate assessment] stage is noticeably higher than that laid down at the first stage. That is because the question (to use more simple terminology) is not 'should we bother to check?' (the question at the first stage) but rather 'what will happen to the site if this plan or project goes ahead ...'.

1.16. The judge in the Bagmoor Wind case¹⁰ was similarly clear:

'If the absence of risk ... can only be demonstrated after a detailed investigation, or expert opinion, that is an indicator that a risk exists and the authority must move from preliminary examination to appropriate assessment'.

1.17. Fundamentally, the HRA process employs the precautionary principle and Regulation 105¹¹ ensures that where a plan is 'likely to have a significant effect', it can only be adopted if it can be ascertained that it 'will not adversely affect the integrity of the European site' (or AEOI).

1.18. Indeed, the test in an 'appropriate assessment' is more thorough and must determine whether it can be 'ascertained that the plan will not adversely affect the integrity of the European site'). If AEOI can be avoided, the plan can again be adopted (Fig 1). If AEOI cannot be avoided, derogations would have to be sought to allow the plan to continue; these are regarded as a last resort and considered only in exceptional circumstances. These latter stages are not shown in Fig 1 but the entire process is summarised in Stages 2, 3 & 4 of Fig 2.

1.19. The HRA of development plans was first made a requirement in the UK following a ruling by the European Court of Justice in EC v UK¹². However, the judgement¹³ recognised that any assessment had to reflect the actual stage in the strategic planning process and the level of evidence that might or might not be available. This was given expression in the UK High Court (Feeney¹⁴) which stated: "Each ... assessment ... cannot do more than the level of detail of the strategy at that stage permits". Further, the Supreme Court (Champion)¹⁵ has found "appropriate" is not a technical term and indicates no more than that the assessment should be appropriate to the task in hand.

⁹ C-258/11 Sweetman reference for a preliminary ruling from the Supreme Court of Ireland .. opinion of the Advocate General 22 November 2012

¹⁰ Bagmoor Wind Limited v The Scottish Ministers Court of Sessions [2012] CSIH 93

¹¹ Change in Regulation numbers from previous HRA relates to consolidation of the 2010 Regulations in 2017

¹² Case C-6/04: Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland judgment of the Court 20 October 2005.

¹³ Opinion of advocate general Kokott, 9th June 2005, Case C-6/04. Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland

¹⁴ Sean Feeney v Oxford City Council and the Secretary of State CLG para 92 of the judgment dated 24 October 2011 Case No CO/3797/2011, Neutral Citation [2011] EWHC 2699 Admin

¹⁵ R (on the application of Champion) v. North Norfolk District Council [2015] UKSC 52.

- 1.20. HRA is an iterative process enabling the early identification of potential conflicts and providing the opportunity to resolve them prior to publication of the Submission Plan, perhaps by steering development away from sensitive sites or by influencing their design or scale. As both the European and domestic courts have shown though, there are limits to the effectiveness of undertaking a full, formal assessment during these early stages when evidence regarding ecological matters and indeed the actual allocations is often lacking.
- 1.21. This is where a way has to be found that whilst mindful of the need for the precautionary principle to be applied, the HRA must strive to identify only those plausible effects and not the extremely unlikely. Indeed, the Court of Appeal (re Boggis¹⁶) stated that there should be “*credible evidence that there was a real, rather than a hypothetical, risk*”.
- 1.22. Because this is a strategic plan, the ‘*objective information*’¹⁷ required by the HRA is typically only available at a strategic or high level, without the detail that might be expected at the planning application stage.
- 1.23. Just prior to the publication of this HRA, European Court of Justice gave its ruling on the People Over Wind¹⁸ case which provided a new interpretation of when and how mitigation measures should be considered in an HRA. In departing from previous decisions, it clearly identifies that measures designed specifically to avoid or reduce likely significant effects should not be evaluated at the screening stage but reserved for the appropriate assessment. The implications of this recent judgment are still to be fully understood, in circumstances where the plan which the specific subject of consideration under the Directive and Regulations itself includes policies which provide for mitigation, but for the avoidance of doubt this HRA takes full account of this ruling by considering mitigation as part of any appropriate assessment.
- 1.24. The owner of land affected by Policies SS19/ST35, H59 and E18 at Strensall, DIO, has produced two Shadow HRA s(December 2017)^{19 20} to inform their aspirations. Some evidence provided by the DIO has been taken into account in this HRA, where appropriate, but it should be noted that the DIO evaluated a ‘larger’ scheme and the Council has not accepted some of its conclusions.
- 1.25. Also landowners affected by Policies SS13/ST15 have independently produced ecological information in support of their proposals and this is taken account of in the evaluation of those policies.
- 1.26. The requirement for this HRA is embedded in the European Union’s Habitats Directive and so the decision to leave the EU potentially throws doubt on the need for the HRA of this and other local plans. However, UK law and policy is currently unchanged and the need for HRA remains. The HRA of the Council’s Local Plan will therefore continue and the recommendations will be acted upon until such time as Government indicates otherwise.
- 1.27. Lastly, although this HRA has been prepared to help the Council discharge its duties under the Habitats Regulations, the Council is the competent authority and it must decide whether to adopt this report or otherwise.

¹⁶ Peter Charles Boggis and Easton Bavants Conservation v Natural England and Waveney District Council, High Court of Justice Court of Appeal case C1/2009/0041/QBACF Citation No [2009] EWCA Civ. 1061 20th October 2009

¹⁷ European Court of Justice Case C – 127/02 *Waddenzee* 7 September 2004

¹⁸ [Case C/323-17 People Over Wind](#)

¹⁹ Amec Foster Wheeler Environment & Infrastructure Limited. December 2017. DIO York Sites: Queen Elizabeth Barracks (QEB). Information to support a Habitats Regulations Assessment.

²⁰ Amec Foster Wheeler Environment & Infrastructure Limited. December 2017. DIO York Sites: Towthorpe Lines. Information to support a Habitats Regulations Assessment.

2. Identifying the European Sites potentially at risk

- 2.1. Prior to the identification of vulnerable European sites, Stage 1 of Fig.2 (elaborated in F3.2 – F3.4 of the Handbook) encourages a brief review of the plan to explore if it can be:
- **Excluded** from the HRA because 'it is not a plan within the meaning and scope of the Habitats Directive', or
 - **Eliminated** from the HRA because it can easily be shown that although 'it is a plan ... it could not have any conceivable effect on any European site', or
 - **Exempted** from the HRA because it is '... directly connected with or necessary to the management of the ... European site' (ie the first formal stage of the HRA - Fig 1).
- 2.2. Taking these in turn, **it is clear the Local Plan represents a real plan with the potential to harm European sites and so can neither be excluded nor eliminated from the HRA. Likewise, the purpose of the Plan is not the nature conservation management of any European sites and so it cannot be made exempt from further assessment.** Consequently, the next steps in Stage 1 of Fig 2 need to be pursued by identifying which European sites and which features may be vulnerable as follows.
- 2.3. To encourage a consistent, reliable and repeatable process, the *Handbook* (F4.4) identifies 16 generic criteria, listed below in Table 1 (Columns 1 & 2), that when evaluated generates a precautionary, 'long' list of European sites in Column 3 which might be affected by the Plan²¹. However, when considered further, using readily available information and local knowledge (Column 4) the list of plausible threats can be refined and the list of affected sites reduced (Column 5). Albeit a coarse filter, this enables the exercise to comply with the Boggis case and attempts to only consider realistic and credible threats whilst avoiding the hypothetical or extremely unlikely.
- 2.4. If Column 5 remains empty of European sites, following the tests in Column 2, then no European sites will be considered to be at risk and no further scrutiny will be required. Note that sites identified against the first criterion (ie '1. All plans') should be ignored as this is simply a list of European sites within the City Council's boundary.
- 2.5. The search was restricted to those European sites found within 20km of the district boundary as this was considered to be the maximum extent that policies and allocations could seriously be considered to generate measurable effects. This focuses the attention of this HRA on the River Derwent, Lower Derwent Valley and Strensall Common European sites, which are all found within the Council boundary and, Kirk Deighton, Skipwith Common, the Thorne and Hatfield Moor complex and the Humber Estuary which are all found in neighbouring local authorities.
- 2.6. It is important to note that although the outcomes of this site identification task will reflect the type and location of activities proposed within the plan and/or the ecological characteristics of the European sites, it does not represent the test for likely significant effect (which follows later).

²¹ This table is taken from the Handbook albeit with changes to the number and titles of Columns appropriate to this HRA.

Table 1: Potential mechanisms and the initial list of European sites that could be affected

Types of plan (or potential effects)	Sites to scan for and check	Initial list of potentially affected European sites	Additional context	Final list of European sites selected
1. All plans (terrestrial, coastal and marine)	Sites within the geographic area covered by or intended to be relevant to the plan	Lower Derwent Valley (SPA, SAC, Ramsar) River Derwent (SAC) Strensall Common (SAC)	This 'test' simply identifies all the European sites in the Council's geographic area. All sites present will be included.	Lower Derwent Valley River Derwent Strensall Common
2. Plans that could affect the aquatic environment	Sites upstream or downstream of the plan area in the case of river or estuary sites	Humber Estuary (SPA, SAC, Ramsar) Lower Derwent Valley (SPA, SAC, Ramsar) River Derwent (SAC)	Effects considered are those associated with the physical presence of built development and the <i>localised</i> effects on surface/groundwater resources and quality, resulting from changes in run-off, sedimentation, erosion etc. No development is proposed that could lead to such effects in the vicinity of any of the three European sites. Therefore, effects on the aquatic environment of the Humber Estuary, the Lower Derwent Valley and the River Derwent can be ruled out and are removed from further consideration. Note that the <i>indirect</i> effects of changes to wastewater disposal are assessed separately under '7b'.	None
	Open water, peatland, fen, marsh and other wetland sites with relevant hydrological links to land within the plan area, irrespective of distance from the plan area	Skipwith Common (SAC) Strensall Common (SAC)	Effects considered are those associated with the physical presence of built development and the <i>localised</i> effects on surface/groundwater resources and quality, resulting from changes in run-off, sedimentation, erosion etc. No development is proposed that could lead to such effects in the vicinity of Skipwith Common.	Strensall Common

Types of plan (or potential effects)	Sites to scan for and check	Initial list of potentially affected European sites	Additional context	Final list of European sites selected
			<p>Therefore, effects on the aquatic environment of Skipwith Common can be ruled out and are removed from further consideration.</p> <p>However, this may not be the case at Strensall Common where development immediately adjacent to this wetland site is proposed. Consequently, adverse effects cannot be ruled out here and so Strensall Common will remain in the assessment.</p> <p>Note that the <i>indirect</i> effects of changes to wastewater disposal are assessed separately under '7b'.</p>	
3. Plans that could affect the marine environment	Sites that could be affected by changes in water quality, currents or flows; or effects on the inter-tidal or sub-tidal areas or the sea bed, or marine species	Humber Estuary (SPA, SAC, Ramsar)	Given the distance and lack of public access to the closest parts of the Upper Estuary, it is considered almost inconceivable that any aspect of the Plan could affect any of the physical and biological processes/features of the Humber Estuary. Consequently, effects on the marine environment on the Humber Estuary are removed from any further consideration in this HRA.	None
4. Plans that could affect the coast	Sites in the same coastal 'cell', or part of the same coastal ecosystem, or where there are interrelationships with or between different physical coastal processes	None	N/A	None
5. Plans that could	Sites whose qualifying features	Humber Estuary (SPA, SAC,	This considers direct impacts of plan proposals on	Humber Estuary

Types of plan (or potential effects)	Sites to scan for and check	Initial list of potentially affected European sites	Additional context	Final list of European sites selected
affect mobile species	include mobile species which may be affected by the plan irrespective of the location of the plan's proposals or whether the species would be in or out of the site when they might be affected	Ramsar) Kirk Deighton (SAC) Lower Derwent Valley (SPA, SAC, Ramsar) River Derwent (SAC)	mobile species. Given that the great crested newts of Kirk Deighton SAC will be restricted to the breeding pond and surrounding land, and that no development is proposed nearby, then adverse effects can be ruled out. Therefore, effects on mobile species at Kirk Deighton SAC are removed from any further consideration in this HRA. However, impacts on various bird, mammal and fish populations of the Humber and River Derwent and Lower Derwent Valley cannot be ruled out at this stage and so these sites remain in the HRA for further consideration.	Lower Derwent Valley River Derwent
6. Plans that could increase recreational pressure on European sites potentially vulnerable or sensitive to such pressure	(a) Such European sites in the plan area	Lower Derwent Valley (SPA, SAC, Ramsar) River Derwent (SAC) Strensall Common (SAC)	Due to the proximity of development, impacts on the three European sites cannot be ruled out at this stage and so they remain in the HRA for further consideration.	Lower Derwent Valley River Derwent Strensall Common
	(b) Such European sites within an agreed zone of influence or other reasonable and evidence-based travel distance of the plan area boundaries that may be affected by local recreational or other visitor pressure from within the plan area	Humber Estuary (SPA, SAC, Ramsar) Kirk Deighton (SAC) Thorne Moor (SAC) Hatfield Moor (SAC) Thorne & Hatfield Moors (SPA) Skipwith Common (SAC)	Kirk Deighton SAC lies around 15km from the nearest allocation on private land with no public access and so effects from recreational pressure at Kirk Deighton SAC are removed from any further consideration in this HRA. In terms of public pressure, the otherwise fragile sites of all the components of the Thorne & Hatfield Moors complex , display either restricted access and/or effective visitor management to	Humber Estuary Skipwith Common



Types of plan (or potential effects)	Sites to scan for and check	Initial list of potentially affected European sites	Additional context
			<p>strongly suggest that not only would visitor numbers would be low, but they are likely to be well managed and the sites (and associated mobile species) would be resilient to change brought about by this Plan. Therefore, effects of recreational pressure on the Thorne and Hatfield Moor sites are removed from any further consideration in this HRA.</p> <p>Impacts from recreational pressure on the Humber Estuary and Skipwith Common cannot be ruled out at this stage and so remain in the HRA for further consideration.</p>

Types of plan (or potential effects)	Sites to scan for and check	Initial list of potentially affected European sites	Additional context	Final list of European sites selected
	irrespective of distance from the plan area	River Derwent (SAC) Skipwith Common SAC Strensall Common (SAC)	either alone or in combination with other plans or projects ²² . All potentially affected sites can therefore be ruled out from further scrutiny.	
	(b) Sites used for, or could be affected by, discharge of effluent from waste water treatment works or other waste management streams serving the plan area, irrespective of distance from the plan area	Humber Estuary (SAC, Ramsar) Lower Derwent Valley (SAC, Ramsar) River Derwent (SAC)	Yorkshire Water has a legal duty to provide wastewater treatment for new dwellings. Policy GI2 (vii) effectively relates the construction of new development to the availability of capacity at wastewater treatment works across the area. Consequently, adverse effects on the receiving water bodies from the anticipated increase in wastewater disposal can be ruled out of this HRA with no residual effects. All potentially affected sites can be removed from further scrutiny.	None
	(c) Sites that could be affected by the provision of new or extended transport or other infrastructure	None	No such infrastructure proposed	None
	(d) Sites that could be affected by increased deposition of air pollutants arising from the proposals, including emissions from significant increases in traffic	Lower Derwent Valley (SPA, SAC, Ramsar) River Derwent (SAC) Skipwith Common (SAC) Strensall Common (SAC)	Adverse impacts from increased air pollution can be possible on sites found within 200m of roads. Components of all four listed European sites are situated within this limit and so all are retained for further assessment.	Lower Derwent Valley River Derwent Skipwith Common Strensall Common
8 Plans for linear developments or infrastructure	Sites within a specified distance from the centre line of the proposed route (or alternative	None	No such infrastructure proposed	None

²² Water Resource Management Plan 2014 Strategic Environmental Assessment Post Adoption Statement Cascade/Yorkshire Water

Types of plan (or potential effects)	Sites to scan for and check	Initial list of potentially affected European sites	Additional context	Final list of European sites selected
	routes), the distance may be varied for differing types of site / qualifying features and in the absence of established good practice standards, distance(s) to be agreed by the statutory nature conservation body			
9. Plans that introduce new activities or new uses into the marine, coastal or terrestrial environment	Sites considered to have qualifying features potentially vulnerable or sensitive to the effects of the new activities proposed by the plan	None	No such activities proposed	None
10. Plans that could change the nature, area, extent, intensity, density, timing or scale of existing activities or uses	Sites considered to have qualifying features potentially vulnerable or sensitive to the effects of the changes to existing activities proposed by the plan	None	No such activities proposed	None
11. Plans that could change the quantity, quality, timing, treatment or mitigation of emissions or discharges to air, water or soil	Sites considered to have qualifying features potentially vulnerable or sensitive to the changes in emissions or discharges that could arise as a result of the plan	None	No such activities proposed	None
12. Plans that could	Sites whose qualifying features	None	No such activities proposed	None

Types of plan (or potential effects)	Sites to scan for and check	Initial list of potentially affected European sites	Additional context	Final list of European sites selected
change the quantity, volume, timing, rate, or other characteristics of biological resources harvested, extracted or consumed	include the biological resources which the plan may affect, or whose qualifying features depend on the biological resources which the plan may affect, for example as prey species or supporting habitat or which may be disturbed by the harvesting, extraction or consumption			
13. Plans that could change the quantity, volume, timing, rate, or other characteristics of physical resources extracted or consumed	Sites whose qualifying features rely on the non-biological resources which the plan may affect, for example, as habitat or a physical environment on which habitat may develop or which may be disturbed by the extraction or consumption	None	No such activities proposed	None
14. Plans which could introduce or increase, or alter the timing, nature or location of disturbance to species	Sites whose qualifying features are considered to be potentially sensitive to disturbance, for example as a result of noise, activity or movement, or the presence of disturbing features that could be brought about by the plan	Lower Derwent Valley (SPA, SAC, Ramsar) River Derwent (SAC) Thorne & Hatfield Moors (SPA) Humber Estuary (SPA, SAC, Ramsar) Kirk Deighton (SAC)	For the purposes of this HRA, it is considered that the effects of this category will be captured effectively via the application of criteria 5 (mobile species) and/or 6 (recreation). Therefore, this criterion is screened out to avoid duplication and so impacts resulting from 'Disturbance' will be removed from further consideration in this HRA on all five European sites listed.	None
15. Plans which could introduce or increase or change the timing,	Sites whose qualifying features are considered to be potentially sensitive to the effects of changes	None	No such activities proposed	None

Types of plan (or potential effects)	Sites to scan for and check	Initial list of potentially affected European sites	Additional context	Final list of European sites selected
nature or location of light or noise pollution	in light or noise that could be brought about by the plan			
16. Plans which could introduce or increase a potential cause of mortality of species	Sites whose qualifying features are considered to be potentially sensitive to the source of new or increased mortality that could be brought about by the plan	None	No such activities proposed	None

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- 2.7. The outputs of the review carried out in Table 1 not only reduce the number of factors at play but clarify the nature of potential impacts.
- 2.8. Firstly, this exercise rules out the possibility of any credible effects from any aspect of the Plan on Kirk Deighton SAC, Thorne Moor SAC, Hatfield Moor SAC and Thorne & Hatfield Moors SPA. These sites will therefore be ruled out of any further scrutiny in this HRA.
- 2.9. Secondly, it confirms that the focus of this HRA should be restricted to only the following European sites, features and issues:

European sites	Feature
Aquatic environment	Strensall Common SAC
Mobile species	Humber Estuary SPA, SAC and Ramsar Lower Derwent Valley SPA, SAC and Ramsar River Derwent SAC
Recreational pressure	Humber Estuary SPA and Ramsar Lower Derwent Valley SPA, SAC and Ramsar Skipwith Common SAC Strensall Common SAC
Airborne pollution	Lower Derwent Valley SPA, SAC and Ramsar River Derwent SAC Skipwith Common SAC Strensall Common SAC

- 2.10. The net result, and benefit to the HRA, is that the list of issues and sites potentially affected is reduced, making for a shorter and more focused HRA than would otherwise be the case.
- 2.11. However, as impacts on a number of European sites cannot be ruled out, further ecological information needs to be gathered to inform subsequent tests in the HRA. Consequently, all five sites that remain at risk are described and their reasons for designation (or qualifying features) listed in Table 2 below. Their conservation objectives, and a list of the 'pressures and threats' they experience (the latter drawn from Natural England's Site Improvement Plans or SIPs) are provided in Appendix A.

Table 2: Description of European Sites

Site name	Description	Qualifying Features
Humber Estuary SAC, SPA & Ramsar	<p>The Humber Estuary carries a high suspended sediment load which sustains a dynamic system of intertidal and subtidal mudflats, sandflats, saltmarsh and reedbeds extending to around 37,000ha. Other notable habitats include sand dunes, coastal lagoons and sub-tidal sandbanks. Qualifying (mobile) species include river and sea lamprey which migrate through the estuary to rivers in the Humber catchment.</p> <p>Importantly, the estuary regularly supports around 150,000 wintering and passage waterbirds. At high tide, large mixed flocks congregate in key roost sites often beyond the European site boundary due to the combined effects of extensive land claim, coastal squeeze and lack of grazing marsh and grassland on both banks of the estuary. In summer, the site supports important breeding populations of Bittern, Marsh harrier, Avocet and Little tern.</p> <p>Natural England has assessed 98% of the underpinning Humber Estuary SSSI to be in 'favourable' or 'unfavourable recovering' condition. 2% of the site has been assessed to be in 'unfavourable no change' or 'unfavourable declining' condition, although the majority of the affected units are associated with Barton and Barrow Claypits far away on the south bank. However, the 'threat' level is considered to be 'high' across a much wider area.</p> <p>The corresponding SIP for the European site identifies, <i>inter alia</i>, a number of threats including water pollution and public pressure.</p> <p>Whilst therefore potentially vulnerable to a wide range of factors, its size, considerable distance from any point sources within the Council area and relative robustness of many of the features make the likelihood of harmful effects rather remote.</p> <p>The one possible exception to this is the population of lamprey which migrate from the sea, via the Humber to breeding grounds in the River Derwent. Physical or chemical barriers to migration may cause harm and so factors like wastewater disposal can require careful scrutiny if not addressed effectively in policy terms.</p>	<p>SPA</p> <ul style="list-style-type: none"> • A021 <i>Botaurus stellaris</i>; great bittern (Non-breeding); • A021 <i>Botaurus stellaris</i>; great bittern (Breeding); • A048 <i>Tadorna tadorna</i>; common shelduck (Non-breeding); • A081 <i>Circus aeruginosus</i>; Eurasian marsh harrier (Breeding); • A082 <i>Circus cyaneus</i>; hen harrier (Non-breeding); • A132 <i>Recurvirostra avosetta</i>; pied avocet (Non-breeding); • A132 <i>Recurvirostra avosetta</i>; pied avocet (Breeding); • A140 <i>Pluvialis apricaria</i>; European golden plover (Non-breeding); • A143 <i>Calidris canutus</i>; red knot (Non-breeding); • A149 <i>Calidris alpina alpina</i>; dunlin (Non-breeding); • A151 <i>Philomachus pugnax</i>; ruff (Non-breeding); • A156 <i>Limosa limosa islandica</i>; black-tailed godwit (Non-breeding); • A157 <i>Limosa lapponica</i>; bar-tailed godwit (Non-breeding); • A162 <i>Tringa totanus</i>; common redshank (Non-breeding); • A195 <i>Sterna albifrons</i>; little tern (Breeding); • Waterbird assemblage. <p>SAC Annex I habitats:</p> <ul style="list-style-type: none"> • 1130 Estuaries; • 1110 Sandbanks which are slightly covered by sea water all the time; • 1150 Coastal lagoons * Priority feature; • 1310 Salicornia and other annuals colonizing mud and sand; • 1330 Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>); • 2110 Embryonic shifting dunes;

Site name	Description	Qualifying Features
		<ul style="list-style-type: none"> • 2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes); • 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes) * Priority feature; • 2160 Dunes with <i>Hippophae rhamnoides</i>. <p>SAC Annex II species:</p> <ul style="list-style-type: none"> • 1095 sea lamprey <i>Petromyzon marinus</i>; • 1099 river lamprey <i>Lampetra fluviatilis</i>; • 1364 grey seal <i>Halichoerus grypus</i>. <p>Ramsar</p> <p>Criterion 1 – near natural estuary;</p> <p>Criterion 3 – breeding colony of grey seals;</p> <p>Criterion 5 – Internationally important assemblage of wintering waterfowl;</p> <p>Criterion 6 – Internationally important populations of waterbirds on passage: Eurasian golden plover <i>Pluvialis apricaria</i>, red knot <i>Calidris canutus</i>, dunlin <i>Calidris alpina</i>, black-tailed godwit <i>Limosa limosa islandica</i> and redshank <i>Tringa tetanus</i>;</p> <p>Criterion 6 – Internationally important populations of waterbirds in winter: common shelduck <i>Tadorna tadorna</i>, Eurasian golden plover <i>Pluvialis apricaria</i>, red knot <i>Calidris canutus</i> and dunlin <i>Calidris alpina</i>;</p> <p>Criterion 8 – migration route for river lamprey <i>Lampetra fluviatilis</i> and sea lamprey <i>Petromyzon marinus</i>.</p>

Site name	Description	Qualifying Features
<p>Lower Derwent Valley SAC, SPA & Ramsar</p>	<p>The Lower Derwent Valley (LDV) supports the largest single expanse of wet, neutral (MG4) hay meadow in the UK. The site also hosts alder woodland and internationally important populations of breeding and wintering waterbirds. The habitats are reliant in part on the maintenance of a favourable hydrological regime, including periodic inundation, whilst the mobile species remain susceptible to public pressure and disturbance. Wintering and breeding waterbirds communities both utilise functionally-linked land outside the designated site, sometimes several kilometres distant. In common with the River Derwent SAC, the qualifying features include otter.</p> <p>Importantly, the Ramsar designation adds wetland invertebrates, passage birds, ruff and whimbrel. Reflecting the ecology of the species and habitats, an approach based on the evaluation of just the SPA and SAC features is considered adequate to embrace all features across all designations.</p> <p>Most of the site is privately owned and farmed with limited public access but all is managed for nature conservation in partnership with Natural England, including the LDV National Nature Reserve. Limited car parking and a formal arrangement of screens, footpaths and hides effectively reduces the impact of existing recreational pressure although some 'informal' access or trespass occurs. Despite this, the site is relatively robust but large increases in visitors may be difficult to accommodate without adequate mitigation including, eg the establishment of new wet grassland with associated visitor facilities in less fragile locations.</p> <p>The grassland and water bodies remain vulnerable to nutrient enrichment - the addition of inorganic nitrogen fertiliser is not allowed - but birds and mammals can be considered resilient to this pressure.</p> <p>There are five component SSSIs. All of Derwent Ings SSSI to be in 'favourable' or 'unfavourable recovering' condition. 99.6% of the River Derwent SSSI is 'favourable' or 'unfavourable recovering'; 0.4% is 'unfavourable no change' but the threat level is 'high' across a much wider area. All of Newton Mask SSSI, Brighton Meadows SSSI and Melbourne and Thornton Ings SSSI are in favourable condition but carry a range of threats.</p> <p>The corresponding SIP for the European site identifies, <i>inter alia</i>, a number of threats including public pressure, undergrazing and invasive species.</p>	<p>Lower Derwent Valley SAC</p> <ul style="list-style-type: none"> H91E0: Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) H6510: Lowland hay meadows (<i>Alopecurus pratensis</i>, <i>Sanguisorba officinalis</i>) S1355: <i>Lutra lutra</i>: otter <p>Lower Derwent Valley SPA</p> <ul style="list-style-type: none"> Waterbird assemblage A052(NB) <i>Anas crecca</i>: Eurasian teal A050(NB) <i>Anas penelope</i>: Eurasian wigeon A056(B) <i>Anas clypeata</i>: Northern shoveler A151(NB) <i>Philomachus pugnax</i>: ruff A140(NB) <i>Pluvialis apricaria</i>: European golden plover A037 (NB) <i>Cygnus columbianus bewickii</i>: Bewick's swan (not listed in SIP) (NB) non-breeding (B) breeding <p>Lower Derwent Valley Ramsar</p> <ul style="list-style-type: none"> Criterion 2 - Assemblage of wetland invertebrates. Criterion 4 – Nationally important populations of ruff <i>Philomachus pugnax</i> and whimbrel <i>Numerius phaeopus</i> on passage Criterion 5 – Internationally important assemblage of wintering birds Criterion 6 – Internationally important populations of wigeon <i>Anas penelope</i> and teal <i>Anas crecca</i>

Site name	Description	Qualifying Features
River Derwent SAC	<p>The River Derwent represents one of the best examples in England of a lowland river stretching from Ryemouth in the north to its confluence with the Ouse in the south of the District – a small section lies within the Lower Derwent Valley National Nature Reserve.</p> <p>It supports diverse communities of flora and fauna, notably floating vegetation dominated by water crowfoot; and river lamprey <i>Lampetra fluviatilis</i>, sea lamprey <i>Petromyzon marinus</i>, otter <i>Lutra lutra</i> and bullhead <i>Cottus gobio</i>. The mobile species utilise extensive stretches of water both upstream and downstream of the designated site, and elsewhere within the catchment beyond the boundaries of the SAC, and are critically dependent on the maintenance of a favourable hydrological conditions throughout their range. In particular, lamprey migrate to the open sea via the Derwent, Ouse and Humber Estuary providing an intimate link between both sites.</p> <p>The Derwent carries a high nutrient load providing a degree of resilience against air pollution and whilst the fish and mammal features can be considered unaffected by air pollution, the floating vegetation communities may be vulnerable.</p> <p>Limited car parking and a formal arrangement of footpaths reduces the impact of existing recreational pressure (although informal access or trespass also occurs) and the simple width of the channel reduces direct impacts. Overall, the site is relatively robust but vulnerable to changes in water quality (especially inputs of phosphate) from wastewater disposal, for instance.</p> <p>There are two component SSSIs – the River Derwent and Newton Mask. Natural England has assessed 99.6% of the River Derwent SSSI to be in ‘favourable’ or ‘unfavourable recovering’ condition; 0.4% is ‘unfavourable no change’ but the threat level is considered to be ‘high’ across a much wider area. All of Newton Mask SSSI is considered to be in favourable condition but carries a ‘medium’ threat level.</p> <p>The corresponding SIP for the European site identifies, <i>inter alia</i>, a number of threats including water pollution, physical changes to the channel and hydrological changes.</p>	<ul style="list-style-type: none"> • H3260. Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation; rivers with floating vegetation often dominated by water-crowfoot; • S1095. <i>Petromyzon marinus</i>; sea lamprey; • S1099. <i>Lampetra fluviatilis</i>; river lamprey; • S1163. <i>Cottus gobio</i>; bullhead; • S1355. <i>Lutra lutra</i>; otter.

Site name	Description	Qualifying Features
Skipwith Common SAC	<p>Skipwith Common supports extensive areas of both wet and dry heath, with rush pasture, mire, reedbed, open water and woodland. The entire European site is managed as a National Nature Reserve by Natural England, grazed with cattle and sheep and has been dedicated as open access land under CRoW. The number of visitors is thought to be increasing causing some erosion and disturbance of grazing animals, and the heathland could be vulnerable to nitrogen deposition. The site remains both fragile and vulnerable.</p> <p>The underpinning Skipwith Common SSSI was assessed by Natural England to be in 'favourable' or 'unfavourable recovering' condition in 2014. The corresponding SIP for the European site identifies, <i>inter alia</i>, a number of threats including public pressure, air pollution and drainage.</p>	<ul style="list-style-type: none"> • H4010. Northern Atlantic wet heaths with <i>Erica tetralix</i>; wet heathland with cross-leaved heath (or 'wet heath'); • H4030. European dry heaths (or 'dry heath').
Strensall Common SAC	<p>Strensall Common is managed in part by the Yorkshire Wildlife Trust and MOD, and, at over 570ha, supports one of the largest areas of lowland heath in northern England. Extensive areas of both wet and dry heath occur and form a complex habitat mosaic with grassland, woodlands and ponds.</p> <p>Vulnerable to nitrogen deposition, it is also subject to considerable visitor pressure although an established network of paths reduces trampling pressure; regular closures of much of the heath by the MOD to allow safe operation of the adjacent firing ranges also helps reduce the intensity of this threat. However, both the dry and wet heath habitats are particularly vulnerable, not only to erosion etc, but also changes to the local hydrological regime and so construction proposed nearby will require careful scrutiny.</p> <p>The underpinning SSSI is considered by Natural England to be in favourable or unfavourable-recovering condition. The corresponding SIP for the European site identifies, <i>inter alia</i>, a number of threats including public pressure and air pollution</p>	<ul style="list-style-type: none"> • H4010. Northern Atlantic wet heaths with <i>Erica tetralix</i>; wet heathland with cross-leaved heath; • H4030. European dry heaths.

2.12. The outputs of Table 1 allow this HRA to focus solely on a restricted number of possible impacts on five European sites: the Humber Estuary, Lower Derwent Valley, the River Derwent and both Skipwith and Strensall Commons. However, by drawing on the additional information provided in Table 2, the HRA is able to further refine the possible impacts to specific features, habitats and species. These, the key issues for the next, formal stage of this screening exercise are presented in Table 3.

Table 3: Summarised, initial list of European sites, affected features and potential effects

European site	Potential effects	Specific features
Lower Derwent Valley SPA, SAC & Ramsar	(5) Impacts on mobile species	Breeding, non-breeding birds and otter
	(6) Impacts from recreational pressure	All habitats and species
	(7d) Impacts from air pollution	All habitats
River Derwent SAC	(5) Impacts on mobile species	Otter, bullhead and lamprey
	(6) Impacts from recreational pressure	Otter, bullhead and lamprey Floating vegetation dominated by water crowfoot
	(7d) Impacts from air pollution	Floating vegetation dominated by water crowfoot
Skipwith Common SAC	(6) Impacts from recreational pressure	Wet heath and Dry heath
	(7d) Impacts from air pollution	Wet heath and Dry heath
Strensall Common SAC	(2) Impacts on the aquatic environment	Wet heath and Dry heath
	(6) Impacts from recreational pressure	Wet heath and Dry heath
	(7d) Impacts from air pollution	Wet heath and Dry heath
Humber Estuary SAC, SPA, Ramsar	(5) Impacts on mobile species	Lamprey, grey seal and both breeding and non-breeding birds
	(6) Impacts from recreational pressure	Breeding and non-breeding birds

2.13. Note that whilst Ramsar features often share considerable overlap with SPA and SAC features and so can frequently be considered as one, the relationship is not always so convenient. For instance, the wetland invertebrate assemblage in the Lower Derwent Valley (a Ramsar feature) is not represented in the corresponding SAC. However, as the safeguard of these features depends on ensuring that the supporting wetland and grassland habitats of the SAC are retained in favourable conservation status, then assessing the impact of the plan proposals on the latter will be sufficient to deliver the necessary scrutiny of Ramsar sites as required by current Government policy. Therefore, there will no specific reference to Ramsar features in the following screening exercise unless it is required for clarity.

3. Screening the Policies – process and outcomes

Methodology

- 3.1. Section 2 of this HRA confirmed that the Local Plan could not be excluded from scrutiny and identified which European sites and which features might be affected by it. Again, by drawing on the Handbook, the next step, encompassing the second formal test from Fig 1, is to identify if there is a credible risk that a proposal in the Local Plan may lead to a LSE on a European site (by threatening to undermine its conservation objectives). It achieves this by evaluating the proposals in the plan against the following criteria to see if they are:
- **Screened out from further scrutiny** (because the individual policies or allocations are considered not 'likely to have a significant effect on a European site, either alone or in combination with other plans and projects');
 - **Screened in for further scrutiny** (because the individual policies or allocations are considered 'likely to have a significant effect on a European site, either alone or in combination with other plans and projects').
- 3.2. To achieve this, the Handbook provides a list of 'screening categories' (Table 4) designed to evaluate both policy and site-based allocations to provide a rigorous and transparent approach to the screening process.

Table 4: Screening Categories

Code	Category	Outcome
A	General statement of policy/general aspiration	Screened out
B	Policy listing general criteria for testing the acceptability/sustainability of the plan	Screened out
C	Proposal referred to but not proposed by the plan	Screened out
D	Environmental protection/site safeguarding policy	Screened out
E	Policies or proposals which steer change in such a way as to protect European sites from adverse effects	Screened out
F	Policy that cannot lead to development or other change	Screened out
G	Policy or proposal that could not have any conceivable effect on a site	Screened out
H	Policy or proposal the (actual or theoretical) effects of which cannot undermine the conservation objectives (either alone or in combination with other aspects of this or other plans or projects)	Screened out
I	Policy or proposal with a likely significant effect on a site alone	Screened in
J	Policy or proposal with an effect on a site but not likely to be significant alone, so need to check for likely significant effects in combination	Check
K	Policy or proposal not likely to have a significant effect either alone or in combination (screened out after the in combination test)	Check
L	Policy or proposal likely to have a significant effect in combination (screened in after the in combination test)	Check

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- 3.3. The impact of each potential effect is evaluated against the conservation objectives (Appendix A) of the relevant features of the European sites (Table 3) and categorised according to criteria in Table 4 for every policy and/or allocation in the Plan. This provides a bespoke screening opinion for each and every policy and/or allocation in the Plan. The outcomes are summarised in Tables 5 and 6 but given the large number of policies and allocations, the preliminary screening outcome for each policy and allocation is only presented in Appendix B.
- 3.4. Issues of particular importance, arranged by potential effect, which influenced the outcome of this exercise, are discussed below.

Screening

Potential Effect – Aquatic environment

European sites	Feature
Strensall Common	Wet heath and Dry heath

Context

- 3.5. This potential effect is concerned with built development and its localised effects on surface and sub-surface flows both in terms of water quality and water resources resulting from changes in run-off, sedimentation, erosion etc. Table 3 shows that both the wet heath and dry heath communities of Strensall Common could be affected and consequently, only three policies/allocations required evaluation.
- 3.6. The Council proposes development at three locations immediately adjacent or in close proximity to the Strensall Common European site (Policies SS19/ST35, E18 and H59). Together these comprise the development of 545 dwellings (500 under SS19/ST35 and 45 under H59) and a 4ha employment area. Despite supporting extensive areas of wet heath, a threatened habitat with a restricted distribution in the UK and beyond, changes to the hydrological regime are not identified as a key pressure or threat in the Strensall Common SIP (Appendix A).

Screening opinions

- 3.7. Wet and dry heath is found in the vicinity of all three proposed policies/allocations and extends across much of the European site. It is a fragile habitat, vulnerable to changes in the local surface or sub-surface hydrological regime. It is anticipated that construction of the proposed development, across all three allocations would be prolonged, extending over several years and would comprise substantial earthworks, the installation of drains and the storage of fuel and other potential contaminants, all with the potential to adversely affect the local hydrological regime.
- 3.8. Whilst it is not suggested that impacts from construction will adversely affect the entire site, it is possible that changes to drainage patterns could extend across significant areas of the SAC. This would conflict with the conservation objective for Strensall Common to '*maintain ... the extent and distribution ... the structure and function ... and the supporting processes ... of the qualifying natural habitats ...*'

Therefore, there is a risk that the proposals contained within Policy SS19/ST35, E18 and H59 could undermine the conservation objectives of the heathland features of Strensall Common SAC and that a likely significant effect cannot be ruled out (alone). Consequently, the policies must be screened in (Category I) and an appropriate assessment is required.

Potential Effect – Mobile Species

European sites	Feature
Lower Derwent Valley	Breeding and non-breeding birds, and otter
River Derwent	Otter, bullhead and lamprey
Humber Estuary	Lamprey, grey seals and both breeding and non-breeding birds

Context

- 3.9. Mobile Species are defined here as those that utilise ('functionally-linked') land or water beyond the European site boundary for some part of their life-cycle be it seasonally, diurnally or even intermittently. Consequently, they are vulnerable to a range of both localised and strategic effects away from protected areas. Therefore, in the case of fish and otter, effects on water quality and resources will have to be considered both up and downstream, and, in terms of bird populations, attention will have to be paid to land-take or disturbance on potentially wide areas of land.
- 3.10. Table 3 shows that a number of mobile species across three European sites (the Humber Estuary, River Derwent and Lower Derwent Valley) could be affected and potentially, a considerable number of policies/allocations could be affected. All the potential European sites selected identify 'disturbance' as a key pressure or threat in the relevant SIP (Appendix A).
- 3.11. The individual features are considered in turn by site. Inevitably, because of some shared features, this introduces some repetition.

Screening opinions

- 3.12. Effects on mobile species are only likely to be significant where development is located in relatively close proximity to a European site or to land or water that is in hydraulic continuity to the site.

Humber Estuary

- 3.13. Given the absence of proposed development in close proximity to the estuary or known, functionally-linked land, **it is considered highly unlikely that any proposals in the Plan could undermine the conservation objectives of the breeding and non-breeding bird populations of the Humber Estuary SPA and so likely significant effects (alone) can be screened out (Category G).**
- 3.14. Similarly, and simply because of the distance between the Plan area and seal haul-out areas, **it is considered highly unlikely that any proposals in the Plan could undermine the conservation objectives of the grey seal populations of the Humber Estuary SAC and so likely significant effects (alone) can be screened out (Category G).**
- 3.15. Furthermore, with the lack of proposals in the Plan for the creation of physical or other obstructions in watercourses, **it is considered highly unlikely that any proposals in the Plan could undermine the conservation objectives of the lamprey and bullhead populations of the Humber Estuary SAC (or River Derwent SAC) and so likely significant effects (alone) can be screened out (Category G).**

River Derwent

- 3.16. Otters are associated with waterways throughout the district and, in common with experiences across much of lowland England, populations have been steadily increasing as water quality, in

particular, has improved. Otters are typically nocturnal and elusive and although they will range widely in the rivers and adjacent riparian habitats to forage, holts are typically established away from human influence. As no allocations promote obstructions in the rivers and all are situated far from water courses, no significant effects are anticipated.

- 3.17. Consequently, **it is considered highly unlikely that any proposals in the Plan could undermine the conservation objectives of the otter populations of the River Derwent (or Lower Derwent Valley SAC) SAC and so likely significant effects (alone) can be screened out (Category G).**
- 3.18. Given the absence of proposals for the creation of physical or other obstructions in watercourses, **it is considered highly unlikely that any proposals in the Plan could undermine the conservation objectives of the lamprey and bullhead populations of the River Derwent (or Humber Estuary) SAC and so likely significant effects (alone) can be screened out (Category G).**

Lower Derwent Valley

- 3.19. As with otters associated with the River Derwent (above), **it is considered highly unlikely that any proposals in the Plan could undermine the conservation objectives of the otter populations of the Lower Derwent Valley SAC (and River Derwent SAC) and so likely significant effects (alone) can be screened out (Category G).**
- 3.20. The Lower Derwent Valley supports diverse, fragile breeding and non-breeding bird populations throughout the year, both within the SPA and on functionally-linked land beyond. All are equally vulnerable to disturbance from public pressure which could result in their disturbance or displacement.
- 3.21. However, only one policy is considered to affect the location of mobile species on functionally-linked land, the proposal for a new garden village at Elvington (SS13/ST15 – Land West of Elvington Lane). Evidence drawn from ecological reports prepared²³²⁴ by two landowners associated with this proposal has confirmed the presence of significant numbers of non-breeding golden plover and lapwing associated with the Lower Derwent Valley SPA utilise land in and around this major new settlement.
- 3.22. The policy wording provides comprehensive mitigation measures including the establishment of extensive areas of wet grassland which would represent ideal habitat for mobile species. However, the policy wording does not make it clear whether this is provided within the allocation boundary or as off-site mitigation. Consequently, there can be no confidence that the demands of the policy wording can be met and harm cannot be ruled out.
- 3.23. This would conflict with the conservation objective for the Lower Derwent Valley SPA to ‘ensure that the integrity of the site is maintained by ...*maintaining ... the extent and distribution ... the structure and function ... and the supporting processes on which the habitats of the qualifying features rely .. and the distribution of the qualifying features*’
- 3.24. Therefore, **there is a risk that the proposals contained within Policy SS13/ST15 could undermine the conservation objectives for the Lower Derwent Valley SPA and that a likely significant effect cannot be ruled out (alone). Consequently, the policy must be screened in (Category I) and an appropriate assessment is required.**

²³ Elvington Bird Surveys 2015, (report 2016), Wold Ecology Ltd

²⁴ Langwith Farm Wintering Bird Surveys 2017-18 (unpublished report 2018) MAB Environment and Ecology Ltd

- 3.25. It should be noted that this evaluation is only concerned with direct effects from new development. Indirect effects resulting from an increased number of visitors to the site or land nearby are considered immediately below.

Potential Effects – Recreation

European Sites	Feature
Humber Estuary	Breeding and non-breeding birds
Lower Derwent Valley	All habitats and species
River Derwent	All habitats and species
Skipwith Common	Wet and Dry heath
Strensall Common	Wet and Dry heath

Context

- 3.26. For those European sites around York, adverse ecological effects from recreational pressure are largely limited to walking (frequently with dogs).
- 3.27. The most popular destinations can draw in visitors in great numbers from considerable distances and lead to erosion and disturbance. Less popular sites, or those with fewer facilities, have a smaller catchment, fewer visitors and the issue is typically less problematic. Alternatively, sites managed specifically to encourage large numbers of visitors can tolerate these pressures without causing significant harm.
- 3.28. Excessive recreational pressure typically leads to the disturbance of qualifying species, and a reduction in habitat quality/extent from trampling. It can be particularly problematic on land with open or unauthorised access where desire lines can be created and so compromise site management.
- 3.29. In addition, dogs can not only cause localised eutrophication but can also disturb grazing stock, reducing the effectiveness of site management and a decline in the condition of features not normally considered vulnerable.
- 3.30. Distance or accessibility remain key factors and in general, where modest residential allocations are situated over 5km from a vulnerable European site, then LSE (alone) can often (but not always) be ruled out. Of course, each site is different and other key factors will include the fragility of the feature, size of the development, the accessibility of alternative destinations, the availability of footpaths, public transport and so on
- 3.31. Of note, all purely employment allocations (except E18 which is situated immediately adjacent to Strensall Common SAC) are excluded from consideration in this category; given the reduced opportunities for workers to visit European sites nearby during the working day, any adverse impacts can be screened out, alone.
- 3.32. Table 3 shows that a number of features across five European sites (the Humber Estuary, River Derwent, Lower Derwent Valley and both Skipwith and Strensall Commons) and consequently, numerous policies/allocations could be affected. All the potential European sites selected identify 'disturbance/public access' as a key pressure or threat in the relevant SIP (Appendix A).
- 3.33. As with 'mobile species' previously, this evaluation is presented by European site to provide clarity albeit with some repetition.

Screening Opinions

Humber Estuary

- 3.34. Given the absence of proposed development nearby, limited access to the foreshore, compounded by private ownership of much of the functionally-linked land **it is considered highly unlikely that any proposals in the Plan could undermine the conservation objectives of any of the features of the Humber Estuary SPA and SAC and so likely significant effects alone can be screened out (Category G)**; a visitor survey in 2012²⁵ suggested that the median distance travelled by visitors (by car) was just 4.4km.

Lower Derwent Valley

- 3.35. Otters are found in and along the banks of the Lower Derwent Valley (and River Derwent). The evaluation of this issue is similar to that provided for 'mobile species' above. They are clearly associated with waterways throughout the district and populations have been steadily increasing as water quality, in particular, has improved. Otters are typically nocturnal and elusive and although they will range widely in the rivers and adjacent riparian habitats to forage, holts are typically established away from human influence. Given that access to the riverside is effectively (although not entirely) restricted by management measures and private ownership, adverse effects can be ruled out.
- 3.36. Consequently, **it is considered highly unlikely that any proposals in the Plan could undermine the conservation objectives of the otter populations of the Lower Derwent Valley (or River Derwent) SAC and so likely significant effects (alone) can be screened out (Category G)**.
- 3.37. Such mitigating factors do not apply to the bird communities and habitats of the Lower Derwent Valley. This comprises diverse, fragile breeding and non-breeding bird populations throughout the year, both within the SPA and on functionally-linked land beyond which are vulnerable to disturbance and displacement (and predation by domestic cats). In addition, the terrestrial habitats, especially the grassland communities, are all equally vulnerable to trampling, erosion and the disturbance of stock.
- 3.38. Whilst access to much of the SPA is managed and/or restricted, it is not completely controlled. Furthermore, whilst the majority of functionally-linked land is found on private land, access here can also not be fully managed and some trespass occurs. Consequently, given the location of the proposed large garden village at Elvington (Policy SS13 (ST15)) within a few kilometres of the European site, and the more modest SS18/ST33 within 2km, harmful effects cannot be ruled out if recreational pressure is to increase considerably.
- 3.39. This would conflict with the conservation objective for the Lower Derwent Valley SPA to '*ensure that the integrity of the site is maintained by ...maintaining ... the extent and distribution ... the structure and function ... and the supporting processes on which the habitats of the qualifying features rely .. the population ... and the distribution of the qualifying features*'
- 3.40. Consequently, **it is considered that there is a risk that the proposals contained within Policies SS13/ST15 and SS18/ST33 could undermine the conservation objectives for the Lower Derwent Valley European site and that a likely significant effect cannot be ruled out (alone). Consequently, the policy must be screened in (Category I) and an appropriate assessment is required.**

- 3.41. It should be noted that despite its proximity to the Lower Derwent Valley, H39 is screened out of the need for further assessment due to the lack of local access other than to a small section of the riverbank where harmful effects are highly unlikely.

River Derwent

- 3.42. Both lamprey and bullhead populations, and floating vegetation communities can be considered immune to recreational pressure due to their relative inaccessibility. Otters are also considered to avoid harm for the same reasons as expressed above for the Lower Derwent Valley. Therefore, **it is considered highly unlikely that any proposals in the Plan could undermine the conservation objectives of the River Derwent SAC and so likely significant effects (alone) can be screened out (Category G).**
- 3.43. As with the Lower Derwent Valley immediately above, H39 is screened out of the need for further assessment due to the lack of local access allied with the intrinsic resilience of aquatic features to recreational pressure.

Skipwith Common

- 3.44. The dry and wet heathland communities of Skipwith Common SAC are vulnerable to recreational pressure. It is a popular site for (dog) walking with the small, local community but limited places to park currently appear to deter larger numbers from further afield. The site is carefully managed as a National Nature Reserve by Natural England and a mosaic of fenced grazing compartments effectively delineate a network of footpaths which largely prevent the damaging trampling of fragile habitats (although some erosion and widening of paths is evident). That said, even dogs on leads can have the subtle effect of driving grazing stock into cover reducing the effectiveness of the essential grazing management. These issues can only be expected to increase if the local population grows considerably.
- 3.45. However, there are no proposals for development of any scale in close proximity with SS18/ST33 being 10km distant, and both ST36 and the garden village at Elvington (SS13/ST15) over 15km away by road.
- 3.46. Therefore, **it is considered highly unlikely that any proposals in the Plan could undermine the conservation objectives of the wet heath and dry heath at Skipton Common SAC and so likely significant effects (alone) can be screened out (Category G).**

Strensall Common

- 3.47. Strensall Common supports similar habitats to Skipwith Common and currently experiences similar issues. This large heathland attracts more visitors although access is heavily influenced by a network of footpaths, limited car parking and active management of parts by the Yorkshire Wildlife Trust; regular closure of large parts of the Common by the MOD to allow for firing practice on the adjacent ranges also reduces public pressure. However, the wet and dry heathland communities which represent a threatened habitat with a restricted distribution in the UK and beyond remain particularly vulnerable to increases in public pressure.
- 3.48. The Council proposes development at three locations immediately adjacent or in close proximity to the Strensall Common European site (Policies SS19/ST35, E18 and H59). Together these comprise the development of 545 dwellings (500 under SS19/ST35 and 45 under H59) and a 4ha employment area.
- 3.49. However, a number of mitigation measures are embedded in Policy SS19/ST35 that require any development to produce a visitor management strategy, informed by a range of visitor and ecological surveys, to deliver effective, deliverable, mitigation measures prior to any consent. In addition, development must provide extensive open space within the development, including a new

area of strategic open space (OS12) and restrict direct access to the Common. Whilst these measures can therefore be expected to successfully restrict use of the European site for recreation by new residents of SS19/ST35 they will do little to influence the behaviour of those new residents that do visit the European site.

- 3.50. No such mitigation is proposed in the policy wording or explanatory text for neither the specific allocations (E18 and H59), nor their over-arching policies (EC1 and H1). Whilst the impact from both can be considered to be less than that provided by SS19/ST35, a function of scale and in terms of E18 its employment use, unrestricted access from both these allocations will still provide a threat.
- 3.51. Together, all three policies have considerable potential to increase public pressure on Strensall Common prompting further trampling, erosion and disturbance of stock. Consequently, the impact of these policies could conflict with the conservation objective for Strensall Common to '*maintain ... the extent and distribution ... the structure and function ... and the supporting processes ... of the qualifying natural habitats ...*'
- 3.52. Therefore, given the uncertainty surrounding Policies SS19, E18 and H59 **there is a risk that the proposals could undermine the conservation objectives for Strensall Common SAC and that a likely significant effect cannot be ruled out (alone). Consequently, the policy must be screened in (Category I) and an appropriate assessment is required.**
- 3.53. All other policies and/or allocations were screened out of the HRA in terms of this potential effect.

Potential Effects – Air Pollution

European sites	Feature
Lower Derwent Valley	All habitats
River Derwent	Floating vegetation dominated by water crowfoot
Skipwith Common	Wet and dry heath
Strensall Common	Wet and dry heath

Context

- 3.54. Development is typically associated with increased traffic and emissions which can increase the airborne concentration of nitrogen oxides (NO_x) and the rate of nitrogen deposition from the atmosphere. Impacts are assessed by calculating the relative contribution of the Plan in relation to the relevant *critical level* for NO_x and the *critical loads* for nitrogen deposition.
- 3.55. Both NO_x and nitrogen deposition have been associated with impacts on vegetation even though levels fall quickly in the first few metres from a road before gradually levelling out until, beyond 200m, it becomes difficult to distinguish from background levels. In other words, impacts at 10m, 50m or 200m can be very different from that at the roadside. Consequently, only those European sites found within 200m of a road are assessed.
- 3.56. The long-term environmental standard or critical level for NO_x is 30 $\mu\text{g m}^{-3}$. It is a precautionary threshold below which there is confidence that adverse effects on vegetation will not arise. The critical loads for nitrogen deposition are specific to each individual feature. These are presented as a range of values and, as a precautionary approach, only the lower values are used as these will exaggerate any negative outcomes.
- 3.57. The contribution made by traffic flows associated with the Plan is termed the 'Process Contribution' (PC) and is used to calculate the total 'Predicted Environmental Concentration' (PEC) which equates to the combination of the PC with the existing baseline concentration.

- 3.58. Defra and Environment Agency online guidance states that emissions can be considered to be insignificant where the PC in terms of both critical levels and critical loads, is less than 1% of the long term environmental standard and if the PEC is less than 70% of the long-term environmental standard. However, building on recent case law in Sussex²⁶, this must be considered in combination, typically with other policies in the Plan and with those in neighbouring authorities. As a consequence, all air quality data took account of local, regional and national trends and evidence.
- 3.59. Consequently, the additional contributions that might arise from increased traffic are only likely to be significant where the European site lies within 200m of a road, is known to be sensitive to such effects and where the appropriate critical loads and levels are either exceeded or approaching exceedance.
- 3.60. However, this is not a simple mathematical relationship. Account must be taken of the type of habitats (some are more resilient than others) and the distribution of the designated features – not all are distributed evenly across all sites. Furthermore, roadside communities are often highly modified from roadworks, informal footpaths, boundary features, salt spreading in winter and the need for roadside management such as the regular cutting of vegetation. This means that the conservation objectives of a European site may not apply to land in close proximity to a road where the greatest impact from vehicle emissions is likely to be experienced, and where there is little realistic prospect of successfully restoring the site to a favourable condition.
- 3.61. It should also be noted that employment allocations have the potential to generate specific, point-sourced emissions that may or may not adversely affect European sites. As no information is provided on the latter, it is assumed that for this stage in the assessment process, that no such processes are proposed allowing this assessment to focus solely on road traffic emissions.
- 3.62. Reflecting these and other issues, Natural England's SIPs (Appendix 1A) only identified air pollution as a key pressure or threat for Skipwith Common and Strensall Common.

Screening opinion

- 3.63. The site assessments below rely heavily on information drawn from the Air Pollution Information System (APIS)²⁷ and the Air Quality Assessment: Air Quality Modelling Assessment (Waterman Infrastructure & Environment Ltd, April 2018) which draws on data from across the City of York and also takes account of data from neighbouring authorities so providing the in combination assessment required. As before, each site is taken in turn.

River Derwent

- 3.64. The Air Quality Report suggests a mean NO_x concentration of 16.26 $\mu\text{g m}^{-3}$ in 2015, falling over the Plan period to 10.40 $\mu\text{g m}^{-3}$. Despite being a mean value, it can be safely assumed that concentrations of NO_x are currently below the annual Critical Level of 30 $\mu\text{g m}^{-3}$ across the entire European site and are expected to fall further.
- 3.65. Further analysis at various crossing points along the river where emissions from road traffic would be at their highest showed that in terms of NO_x concentrations, PC and PEC contributions would equate to 4.6% and 39.3% of the long-term environmental standard. Whilst the latter suggests an insignificant outcome, falling well below 70%, the former exceeds the 1% threshold.
- 3.66. The single, most vulnerable feature, the floating vegetation community does not, unusually, benefit from a defined critical load making similar analysis impossible. Although data is presented for the

²⁶ This table is taken from the Handbook albeit with changes to the number and titles of Columns appropriate to this HRA.

²⁷ Water Resource Management Plan 2014 Strategic Environmental Assessment Post Adoption Statement, Cascade/ Yorkshire Water

SSSI communities, these are not directly comparable to the European site feature and so are not relied upon heavily here.

- 3.67. However, important evidence can be drawn from the ecological characteristics of the river. APIS data for the River Derwent suggests that only 6% of overall nitrogen deposition is caused by local road traffic. Although an approximation and often an underestimate, this strongly suggests the contribution from road traffic will be minor with other sources, with livestock, for example, contributing an order of magnitude more. Furthermore, although the site is very long, roads of any magnitude within 200m of the river (such as the A1079) are few and far between and largely restricted to occasional river crossings (which typically lie on the Council boundary) at Stamford Bridge, Kexby, Elvington and Bubwith.

The River Derwent already carries a high nitrogen load, a consequence largely of the erosion and transport of soil particles within the system from the extensive, rural catchment. Like most meso/eutrophic systems, it is phosphate limited. When combined, these two factors alone make it highly resilient to what are relatively low increases in deposition from road traffic. Consequently, the potential for harmful effects is low, with negligible contributions provided by road traffic at only a handful or point-based locations.

- 3.68. Furthermore, this has to be assessed in the context that overall, despite the projected increases in traffic the electrification of vehicles and improved efficiency of conventional engines will lead to the overall contribution from road traffic being less at the end of the Plan period than at the start. In effect, the Plan doesn't meaningfully increase nitrogen deposition, it simply slows down the rate of improvement.
- 3.69. Given these factors, **in terms of air pollution, it is considered highly unlikely that any proposals in the Plan that would increase the volume of road traffic and air pollution could undermine the conservation objectives of the floating vegetation community of the River Derwent SAC and so likely significant effects (alone and in combination) can be screened out (Category H).**

Lower Derwent Valley SPA and SAC

- 3.70. The Air Quality Report suggests a mean NO_x concentration of $17.18 \mu\text{g}/\text{m}^3$ in 2015, falling over the Plan period to $11.00 \mu\text{g}/\text{m}^3$. Despite being a mean value, it can be safely assumed that concentrations of NO_x are currently below the annual Critical Level of $30 \mu\text{g}/\text{m}^3$ across the entire European site and are expected to fall further.
- 3.71. Evaluating nitrogen deposition against these critical loads, the Air Quality report predicts that nitrogen deposition will fall over the Plan period from $17.36 \text{ kgNha}^{-1}\text{yr}^{-1}$ to $11.31 \text{ kgNha}^{-1}\text{yr}^{-1}$ reflecting wider, anticipated improvements in air quality despite an increased contribution from development promoted by the Plan. Despite being a mean figure, it is reasonable to assume that nitrogen deposition levels across the Lower Derwent Valley also fall below the minimum critical loads of $20\text{-}30 \text{ kgNha}^{-1}\text{yr}^{-1}$ both now and in the future. Therefore, in terms of nitrogen deposition, the effect of the Plan is considered to be insignificant.
- 3.72. Further analysis showed that in terms of NO_x concentrations, PC and PEC contributions would equate to 0.1% and 36.8% of the long-term environmental standard. Both fall well below the 1% and 70% thresholds strongly suggesting an insignificant outcome.
- 3.73. The critical loads identified for the habitat of the qualifying breeding and wintering birds struggle to relate to the habitats at the SPA as they tend to describe the more typically associated upland and coastal communities of these species. We consider that use of these would lead to a flawed outcome and they have been put to one side. However, by adopting figures for the low altitude hay meadows of the Lower Derwent Valley SAC, critical loads of $20\text{-}30 \text{ kgNha}^{-1}\text{yr}^{-1}$ are found and are

utilised. Critical loads are not available for the alder woodland feature.

- 3.74. Therefore, in terms of nitrogen deposition, this suggested that PC and PEC contributions would equate to 0% and 56% of the lowest critical load. Again, both fall well below the 1% and 70% standards and also strongly suggest an insignificant outcome.
- 3.75. As the European site occupies the same geography to the River Derwent, this outcome is heavily influenced by the lack of major roads nearby. Although the site extends over a large area (1092ha), roads of any magnitude within 200m of the river are few and far between; these comprise a 500m stretch of the A163 that runs alongside the hay meadows just to the west of the river crossing at Bubwith, and two locations found south-east of Wheldrake and in the centre of Thorganby where relatively discrete parcels of land lie within 50m of Church Lane.

Given the low PC and PEC values, no transects were carried out for these specific locations. These meadows are considered sensitive to nitrogen deposition and in order to maintain floristic diversity of the SAC feature and to provide the vegetative structure to support the breeding and wintering birds of the SPA, the use of nitrogen-based inorganic fertiliser is not allowed. Yet, further evidence can be drawn from the ecological characteristics of the valley.

- 3.76. Almost the entire European site is subject to regular, annual flooding. Not only will periodic flooding contribute far greater amounts of nitrogen to the grassland and other habitats than air pollution but it is regarded as an integral component of the (semi-) natural system. Recent events suggest that flooding is affecting more land and is becoming more frequent and prolonged.
- 3.77. Furthermore, APIS data for the Lower Derwent Valley that suggests only 4% of overall nitrogen deposition is caused by local road traffic. Although an approximation and often an underestimate, this strongly suggests the contribution from road traffic will be minor with other sources, such as livestock farming contributing an order of magnitude more.

When the impact of flooding is considered alongside these low values, harmful effects on the habitats of the European site from road traffic can be discounted.

- 3.78. Given these factors, **it is considered highly unlikely that any proposals in the Plan that would increase the volume of road traffic and air pollution could undermine the conservation objectives (alone and in combination) of the habitats of the Lower Derwent Valley European site and so likely significant effects can be screened out (Category H).**

Skipwith Common

- 3.79. The (minimum) critical load for nitrogen deposition at Skipwith Common (10-20 kgNha⁻¹yr⁻¹) is already and clearly exceeded with an average rate of 19.2 kgNha⁻¹yr⁻¹ which almost exceeds the maximum critical load.
- 3.80. APIS data for Skipwith Common suggests that 10% of overall nitrogen deposition is caused by local road traffic. Although an approximation and often an underestimate, this strongly suggests the contribution from road traffic will be minor with other sources, such as livestock contributing three times as much. This site was not assessed by the air quality study.
- 3.81. The site extends to almost 300ha across a rural landscape. It is, however, bordered by a minor road to the east and is even bisected by another (although the latter is impassable to most vehicles and so is disregarded by this HRA).
- 3.82. However, the eastern boundary of the site is dominated by a dense scrub and woodland easily extending beyond 20m width at its narrowest point. This is not representative of the designated heathland habitats and also provides an effective barrier to the widespread dispersal of airborne nitrogen.

- 3.83. Although not assessed by the Air Quality report, it is reasonable to presume that that despite the projected increases in traffic across the authority area, the electrification of vehicles and improved efficiency of conventional engines will lead to the overall contribution from road traffic being less at the end of the Plan period than at the start. In effect, the Plan doesn't meaningfully increase nitrogen deposition, it simply slows down the rate of improvement.
- 3.84. Given these factors, **it is considered highly unlikely that any proposals in the Plan could undermine the conservation objectives (alone and in combination) of the features of Skipwith Common SAC and so likely significant effects can be screened out (Category H).**

Strensall Common

- 3.85. The Council proposes development at three locations immediately adjacent or in close proximity to Strensall Common European site (Policies SS19/ST35, E18 and H59). Together these comprise development of 545 dwellings and a 4ha employment area. They will all contribute to higher traffic flows in the area as will other allocations across the city and, potentially, beyond.
- 3.86. The Air Quality report suggests a mean NO_x concentration of 13.13 $\mu\text{g}\text{m}^{-3}$ in 2015, falling over the Plan period to 8.40 $\mu\text{g}\text{m}^{-3}$. This means that concentrations of NO_x are currently below the annual Critical Level of 30 $\mu\text{g}\text{m}^{-3}$ across the entire European site and are expected to fall further. Therefore, in terms of NO_x the effect of the Plan is considered to be insignificant.
- 3.87. Further analysis showed that in terms of NO_x concentrations, PC and PEC contributions would equate to 6.5% and 34.5% of the long-term environmental standard. Whilst the latter suggests an insignificant outcome, falling well below 70%, the former clearly exceeds the 1% threshold.
- 3.88. In terms of nitrogen deposition, the report suggested that PC and PEC contributions would equate to 2.8% and 157% of the lowest critical load. This time, both clearly exceed the 1% and 70% standards.
- 3.89. Given the level of exceedance, a likely significant effect cannot be ruled out and **there is a risk that emissions from road traffic associated with Policies SS19/ST35, E18 and H59 could undermine the conservation objectives for Strensall Common SAC and that a likely significant effect cannot be ruled out (alone and in combination). Consequently, the policies must be screened in (Category I) and an appropriate assessment is required.**

Summary of the Screening Exercise

- 3.90. In terms of impact type, the outcomes of this stage of the formal screening assessment are brought together in Table 5 whilst Table 6 presents the same outputs but in terms of category.

Table 5: Summary of the Formal Screening of the Policies and Allocations by Potential Effect

Potential effects	Outcome of screening assessment
2 Aquatic Environment	<p>Likely significant effects cannot be ruled out on the aquatic environment of Strensall Common with regard to Policies SS19/ST35, E18 and H59 alone (Category I). An appropriate assessment is required.</p> <p>No other effects on the aquatic environment are anticipated and all other remaining policies have been screened out</p> <p>The outcome of the screening of each, individual allocation, is presented in Appendix B and summarised in Table 6 below.</p>

Potential effects	Outcome of screening assessment
5 Mobile species	<p>Likely significant effects can be ruled out in terms of all mobile species on the Humber Estuary alone (Category G). There are no residual effects and no need for an in combination assessment).</p> <p>Likely significant effects can be ruled out in terms of all mobile species on the River Derwent alone (Category G). There are no residual effects and no need for an in combination assessment.</p> <p>Likely significant effects can be ruled out in terms of otters on the Lower Derwent Valley alone (Category G). There are no residual effects and no need for an in combination assessment.</p> <p>Likely significant effects <u>cannot</u> be ruled out from Policy SS13/ST15 in terms of breeding and non-breeding birds on the Lower Derwent Valley alone (Category I). An appropriate assessment is required.</p> <p>No other effects are anticipated on mobile species and all other remaining policies have been screened out</p> <p>The outcome of the screening of each, individual allocation, is presented in Appendix B and summarised in Table 6 below.</p>
6 Recreation	<p>Likely significant effects can be ruled out in terms of the impact of recreational I pressure on the Humber Estuary alone. There are no residual effects and no need for an in combination assessment (Category G)</p> <p>Likely significant effects can be ruled out in terms of the impact of recreational pressure on otters of the Lower Derwent Valley alone (Category G). There are no residual effects and no need for an in combination assessment.</p> <p>Likely significant effects <u>cannot</u> be ruled out from Policy SS13/ST15 and Policies SS18/ST33 in terms of the impact of recreational pressure on the breeding and non-breeding birds of the Lower Derwent Valley alone (Category I). An appropriate assessment is required.</p> <p>Likely significant effects can be ruled out in terms of the impact of recreational pressure on all features of the River Derwent alone (Category G). There are no residual effects and no need for an in combination assessment.</p> <p>Likely significant effects can be ruled out in terms of the impact of recreational pressure on all features on Skipwith Common alone (Category G). There are no residual effects and no need for an in combination assessment.</p> <p>Likely significant effects <u>cannot</u> be ruled out Policies SS19, E18 and H59 in terms of the impact of recreational pressure on all the features on Strensall Common alone Category I). An appropriate assessment is required.</p> <p>No other effects from increases in recreational pressure are anticipated and all other remaining policies have been screened out</p> <p>The outcome of the screening of each, individual allocation, is presented in Appendix B and summarised in Table 6 below.</p>
7d Air pollution	<p>Likely significant effects can be ruled out in terms of the impact of air pollution on all features of the River Derwent alone and in combination (Category H). There are no residual effects and no need for an in combination assessment.</p> <p>Likely significant effects can be ruled out in terms of all the impact of air pollution on features of the Lower Derwent Valley alone and in combination (Category H). There are no residual effects and no need for an in combination assessment.</p> <p>Likely significant effects can be ruled out in terms of the impact of air pollution on all features of Skipwith Common alone and in combination (Category H). There are no residual effects and no need for an in combination assessment.</p> <p>Likely significant effects <u>cannot</u> be ruled out in terms of the impact of air pollution on all features of Strensall Common alone and in combination (Category I).An appropriate assessment is required.</p> <p>No other effects from changes in air pollution are anticipated and all other remaining policies have been screened out</p> <p>The outcome of the screening of each, individual allocation, is presented in Appendix B and summarised in Table 6 below.</p>

3.91. Note, that to avoid confusion between housing policies and allocations which share the same names, eg H3, actual allocations have been renamed with an '(A)' eg H3(A) and housing policies with a '(P)' eg H3(P). This nomenclature is followed throughout the rest of this HRA where a potential for misunderstanding arises. Also, for brevity, closely related 'SS' and 'ST' policies/allocations are only identified by the 'SS' policy number but only in the following tables.

Table 6: Summary of the Formal Preliminary Screening of the Policies and Allocations by Category

Screening outcome	Policies
A	DP1
General statement of policy	SS2
Screened out	ED1
B	DP2, DP3, DP4, SS1
General criteria for testing acceptability of proposals	EC1, EC2
Screened out	R1, R2, R3, R4 H1(P), H2(P), H3(P), H4(P), H8(P), H9(P), H10(P) HW1, HW2, HW3, HW4, HW5, HW7 ED6, ED8 D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12, D13, D14 GI7, GB1, GB2, GB3 CC1, CC2, CC3, ENV3, ENV4, ENV5 T1, T7, T8 DM1
C	WM1, WM2
Proposal referred to but not proposed by the Plan	T2
Screened out	
D	GI1, GI2, GI3, GI4, GI5, GI6
Environmental protection policy	OS1, OS2, OS5, OS6, OS7, OS8, OS9, OS10, OS11, OS12
Screened out	ENV1, ENV2
G	SS3, SS4, SS5, SS6, SS7, SS8, SS9, SS10, SS11, SS12, SS14, SS15, SS16, SS17, SS20, SS21, SS22, SS23, SS24
No conceivable effect on a European site	EC3, EC4, EC5
Screened out	E8, E9, E10, E11, E16 H5(P), H6(P), H7(P) H1a(A), H2b(A), H3(A), H5(A), H6(A), H7(A), H8(A), H10(A), H20(A), H22(A), H23(A), H29(A), H31(A), H38(A), H39(A), H46(A), H52(A), H53(A), H55(A), H56(A), H58(A), SH1 HW6 ED2, ED3, ED4, ED5, ED7 GB4, T3, T4, T5, T6, T9 C1
I	SS13, SS18, SS19
Likely significant effect alone cannot be ruled out	E18
Screened in	H59(A)

Screening outcome	Policies
J Likely significant effect in combination cannot be ruled out Screened in	None

- 3.92. It should be noted that some policies will be screened out for certain potential effects and screened in for others. Where this happens, the Policy is categorised according to the most important outcome. Policy SS19/ST35 is a good example. It is screened out (G) in terms of impacts on mobile species but screened in in terms of air pollution (I). Therefore, it is identified in Table 6 and Appendix B as Category 'I'.

Screening Conclusions and Next Steps

- 3.93. This exercise found that it was not possible to screen out likely significant effects alone (Category I) for Policies SS13/ST15, SS18/ST33, SS19/ST35, E18 and H59 for a range of possible but credible impacts regarding air pollution, mobile species and recreational pressure affecting two European sites: the Lower Derwent Valley and Strensall Common. These are summarised below.

Summary of screening exercise

Policy	Likely significant effect
SS13/ST15	Effects on bird communities at Elvington garden village on land that is functionally-linked at to the Lower Derwent Valley SPA cannot be ruled out alone; an appropriate assessment is required.
SS13/ST15	Effects from recreational pressure on the bird communities of the Lower Derwent Valley SPA cannot be ruled out alone; an appropriate assessment is required.
SS18/ST33	Effects from recreational pressure on the bird communities of the Lower Derwent Valley SPA cannot be ruled out alone; an appropriate assessment is required.
SS19/ST35, E18, H59	Effects from recreational pressure on the dry and wet heathland communities at Strensall Common SPA cannot be ruled out alone; an appropriate assessment is required.
SS19/ST35, E18, H59	Effects on the aquatic environment from built development at Strensall Common SPA cannot be ruled out alone; an appropriate assessment is required.
SS19/ST35, E18, H59	Effects from air pollution on the dry and wet heathland at Strensall Common SPA cannot be ruled out alone; an appropriate assessment is required.

- 3.94. All other policies and allocations were screened out of further scrutiny within the HRA.
- 3.95. An appropriate assessment is now required that will assess whether it can be ascertained that an adverse effect on the integrity of the European sites can be ruled out. Drawing on the recent People Over Wind ruling, this will explore if the addition of mitigation measures can avoid a negative outcome.

4. Appropriate Assessment and Integrity Test

- 4.1. The initial screening assessment has identified that likely significant effects cannot be ruled out alone for Policies SS13/ST15, SS18/ST33 for their potential effect on the Lower Derwent Valley, and Policies SS19/ST35, E18 and H59 in terms of their potential effect on Strensall Common.
- 4.2. The role of the appropriate assessment is to identify whether it can be ascertained that it '*will not adversely affect the integrity of the European site*'. In line with the recent People Over Wind ruling it will also explore if mitigation can be applied that would allow a positive conclusion to be drawn.
- 4.3. The Handbook addresses the reduced level of detail in a plan as opposed to a project when carrying out the appropriate assessment and 'integrity test'. In F.10.1 it states:

Because the integrity test incorporates the application of the precautionary principle as a matter of law, and because plan assessments are, by their nature, less precise than project assessments, it is important for the assessment process to eliminate the prospect of adverse effects on site integrity in so far as that is possible at the level of specificity inherent in the nature and purpose of the particular plan.

- 4.4. It goes onto suggest possible mitigation measures that could be applied which are taken into account when each potential adverse effect is considered by site below.

Strensall Common

European site	Potentially vulnerable features identified during screening
Strensall Common	Wet and dry heath

- 4.5. The screening exercise has concluded that a likely significant effect cannot be ruled out alone for three policies: SS19/ST35, H59 and E18. This is because of concern that:
 - Works associated with construction would cause changes to the hydrological regime or aquatic environment of the Common that could harm the wet and dry heath communities;
 - The increase in recreational pressure would lead to trampling, erosion and eutrophication of the fragile heathland communities and interfere with the management of the site by the disturbance of grazing stock; and
 - Increased road traffic pollution would lead to eutrophication of the dry and wet heathland communities.
- 4.6. All three allocations lie immediately adjacent to the European Site; SS19/ST35 provides for 500 new dwellings, H59 for 45 and E18 allows for a 4ha employment area. Each of the three potential effects are taken in turn below:

Aquatic environment

- 4.7. The screening exercise concluded that significant effects on the aquatic environment from built development at Strensall Common SPA cannot be ruled out alone.
- 4.8. The HRA prepared by Amec Foster Wheeler^{28, 29} for the landowner, evaluated all three allocations. It concluded that (further to site-specific assessment) none would be likely to result in a significant effect on the SAC given the ability to design and employ a range of standard mitigation measures.

²⁸ Amec Foster Wheeler Environment & Infrastructure Limited. December 2017. DIO York Sites: Queen Elizabeth Barracks (QEB). Information to support a Habitats Regulations Assessment.

²⁹ Amec Foster Wheeler Environment & Infrastructure Limited. December 2017. DIO York Sites: Towthorpe Lines. Information to support a Habitats Regulations Assessment.

These included the incorporation of Sustainable Drainage Systems (SUDS) for the management of surface water, use of silt fencing to trap sediment, and the adoption of best practice measures for pollution management embedded within a Construction Management Plan (CEMP).

- 4.9. The need for these and a number of other mitigation measures are embedded in Policy SS19 that require hydrological and related studies to be completed and used to inform the development of effective, deliverable, mitigation measures prior to any consent.
- 4.10. It should be noted here that Amec's shadow HRA was completed before the People Over Wind ruling. Consequently, it relates to the use of mitigation at the screening stage not the appropriate assessment.
- 4.11. Whilst mindful of the different tests employed at these two stages, it is considered that there is no reason to disagree with this conclusion and consequently, the potential threat is removed. There is, however, no such requirement that relates directly to Policies E18 and H59. Despite this, as the recommendations made in the Amec shadow HRA simply require the implementation of standard evaluation and construction techniques which are commonplace in such situations, it is considered reasonable to expect that the same measures will be employed as a matter of course when development proposals are submitted for E18 and H59.
- 4.12. Consequently, it is concluded that **the Council can ascertain that Policies SS19/ST35, E18 and H59 will have no adverse effect on the integrity of Strensall Common European site in terms of impacts on the aquatic environment. There would be no residual effects and no need for an in combination assessment.**

Recreational pressure

- 4.13. The screening exercise concluded that significant effects from recreational pressure on the dry and wet heathland communities at Strensall Common SPA cannot be ruled out alone.
- 4.14. Comprehensive mitigation is already embedded within Policy SS19/ST35 which provides for extensive open space within the allocation and restricts direct access to the Common for new residents. This is expected to successfully reduce but not prevent the frequency of visits to the Common and so cannot be relied upon entirely to safeguard the European site. Furthermore, no effective measures are proposed that will address the behaviour of visitors (and their dogs) when on the Common. Policies H59 and E18 face no restrictions although their impact is considered to be of a much smaller scale.
- 4.15. Drawing on experience from other heathlands across England facing similar threats, it is considered that this would be most effectively addressed by the establishment of a permanent, suitably-staffed wardening service that could focus on the management of people to ensure good behaviours are adopted. Whilst the specific wording is a matter for the Council, it is suggested that the addition of text which achieved the following purpose, added to sub-section (ii) of SS19/ST35, would allow this potential threat to be removed:
- 4.16. **'the introduction of an efficient wardening service that could supplement the work of existing landholders (including the MOD and Yorkshire Wildlife Trust) across the entire Common to present a physical presence on site and encourage good behaviours by the public.'**
- 4.17. This could be supplemented by the addition of the following text to the explanatory text:
'A recreational strategy physical presence on site could promote good behaviours by visitors, encouraging use of existing paths and ensuring dogs are properly controlled. The necessary costs would best be secured by an appropriate levy or similar on each development.'

- 4.18. Allocations E18 and H59 do not benefit from the mitigation measures already embedded in SS19/ST35. Given the employment function of the latter this is not considered to be an issue. Similarly, the relatively small allocation of 45 houses at H59 will have use of the new open space immediately adjacent to the development. Furthermore, a wardening service will not discriminate between visitors to the Common and can be expected to promote the same good behaviours amongst residents from H59 as SS19/ST35. Therefore it is considered that the adoption of the suggested amendments to the policy wording and explanatory text above would remove any potential threat from increased residential pressure from all three policies/allocations.
- 4.19. Consequently, if the proposed amendments are adopted, it is concluded that **the Council can ascertain that Policies SS19/ST35, E18 and H59 will have no adverse effect on the integrity of Strensall Common European site in terms of recreational pressure. There would be no residual effects and no need for an in combination assessment.**

Air pollution

- 4.20. The screening exercise concluded that significant effects from air pollution on the dry and wet heathland at Strensall Common SPA cannot be ruled out alone.
- 4.21. The Air Quality report predicts that nitrogen deposition will fall over the Plan period from 24.08 kgNha⁻¹yr⁻¹ to 15.41 kgNha⁻¹yr⁻¹ reflecting wider, anticipated improvements in air quality despite an increased contribution from development promoted by the Plan. However, this shows that both existing and predicted nitrogen deposition at Strensall Common clearly exceed the minimum critical loads of 10-20 kgNha⁻¹yr⁻¹.
- 4.22. Drawing on screening opinion, the Air Quality report showed that in terms of NO_x concentrations, PC and PEC contributions would equate to 6.5% and 34.5% of the long-term environmental standard. Whilst the latter suggests an insignificant outcome, falling well below 70%, the former clearly exceeds the 1% threshold.
- 4.23. In terms of nitrogen deposition, the report suggested that PC and PEC contributions would equate to 2.8% and 157% of the lowest critical load. This time, both clearly exceed the 1% and 70% standards.
- 4.24. Detailed APIS data for Strensall Common suggests that only 8% of overall nitrogen deposition is caused by local road traffic. Although an approximation and often an underestimate, this strongly suggests the contribution from road traffic will be relatively minor with other sources, such as livestock contributing nearly half (47%) of the total contribution.
- 4.25. Along Towthorpe Moor Lane, road traffic is predicted to decline³⁰ in real terms across the Plan period so resulting in a corresponding reduction in nitrogen deposition. Furthermore, the SAC boundary here is dominated by extensive scrub and bracken extending several metres into the European site. These are not representative of the designated heathland habitats and also provide an effective barrier to the widespread dispersal of airborne nitrogen. Consequently, harmful effects on Strensall Common from traffic along this road can be discounted.
- 4.26. Such mitigating factors do not apply to the north along Lords Moor Lane/York Lane that bisects the site in the north. Here, the road runs (for around 1.5km) through open heathland with wet and dry heath present beyond a few metres distance of the kerbside. Traffic levels are predicted to increase throughout the Plan period. Although traffic and therefore air quality data meets the needs of the recent Wealden decision to take account of in combination traffic from York and neighbouring authorities this means it doesn't currently identify what contribution the three local

allocations make to this. For the purpose of this HRA it is assumed, with some confidence that its location ensures that SS19/ST35, E18 and H59 will contribute by far the vast majority of traffic along Lords Moor Lane/York Lane. None of the HRA of the neighbouring authorities' local plans identified any impact on Strensall Common either from air pollution or any other factor so reducing the possibility of any in combination effects.

- 4.27. Given the expected increases in traffic, and the open heathland it crosses harmful effects on the vegetation in closest proximity the road cannot be ruled out. However, these roadside communities like most others are considerably modified by the effects of road maintenance, salt-spreading, pollution, ditches, eutrophication from horses and litter, and erosion/compaction from vehicles. Beyond this strip, which at Strensall frequently extends from the kerb for an estimated 2-5 metres along both sides of the carriageway, the more characteristic heathland communities gradually regain dominance. Despite this, Natural England has assessed heathland here to be in favourable or recovering condition, which can suggest enhanced resilience.
- 4.28. Transects carried out for the Air Quality report identify that roadside nitrogen deposition increases at the kerbside by 2.8% of the PC declining to 1% at 10m suggesting that nitrogen deposition quickly returns to near-background levels. Levels fall to zero somewhere between 50 and 100m from the kerb. However, PEC never appears to fall below 150% anywhere across the site.
- 4.29. It is important to realise that exceeding a 1% threshold does not indicate harm but rather a figure below which the change in concentration or deposition cannot be described as negligible. However, a PEC of 150% is more than double the equivalent threshold and a PC of 2.8% (measured at the kerbside) almost three times the PC threshold. Yet, the overall concentration of NO_x of 13.13 $\mu\text{g}\text{m}^{-3}$ in 2015, falling over the Plan period to 8.40 $\mu\text{g}\text{m}^{-3}$. is well below the critical level of 30 $\mu\text{g}\text{m}^{-3}$; it represents a set of contrasting data.
- 4.30. It should be remembered that the 70% threshold also does not equate to harm as any value less than 100% of the critical level or load suggests harm should not arise. Indeed, levels below 70% are relatively rare anywhere in the UK. This situation focuses attention back onto the critical loads
- 4.31. If it is accepted that the 1% increase in PC nitrogen deposition is an almost imperceptible increase over background levels, then rates above this are restricted to a strip 10m wide, on each side of the carriageway for a 1500m stretch of the European site where vegetation could be measurably affected. It should be noted that models seem to suggest that traffic levels decline significantly part-way along Lords Moor Lane/York Lane but this is discounted as what appears to be erroneous data. Together, this scenario suggests a total area potentially affected along Lords Moor Lane/York Lane would be limited to 3.0ha or 0.53% of the area of the European site.
- 4.32. Given the modified nature of kerbside vegetation, this is considered to be a maximum figure. It could be suggested that any harm is also reversible as deposition continues to decline. However, this is not expected to result in rapid improvement as existing elevated levels of soil nitrogen will persist for many years and other adverse factors, listed above, are not expected to diminish.
- 4.33. Furthermore, the data and opinion has to be considered in the context that overall, despite the projected increases in traffic the electrification of vehicles and improved efficiency of conventional engines will lead to the overall contribution from road traffic being less at the end of the Plan period than at the start. In effect, the Plan doesn't meaningfully increase nitrogen deposition, it simply slows down the rate of improvement.
- 4.34. Given the size of the European site, the modest area that could potentially be affected allied with the active management of the site for nature conservation and its favourable or recovering condition and, not least, that air quality is predicted to be better at the end of the Plan period than today it is concluded that an adverse effect on the integrity of the site can be ruled out.

- 4.35. Consequently, it is concluded **that the Council can ascertain that Policies SS19/ST35, E18 and H59 will have no adverse effect on the integrity of Strensall Common European site in terms of the impact of air pollution. There would be no residual effects, and no need for an in combination assessment.**

Lower Derwent Valley

European site	Potentially vulnerable features identified during screening
Lower Derwent Valley	Breeding and non-breeding bird populations

- 4.36. The screening assessment has concluded that a likely significant effect cannot be ruled out alone for two policies SS13/ST15 and SS18/ST33. This is because of concern that:

- There is doubt surrounding the deliverability of mitigation for Elvington Garden Village within the footprint of the existing allocation;
- Increased recreational pressure from Elvington Garden Village will lead to disturbance of breeding and non-breeding bird populations of the Lower Derwent Valley;
- Increased recreational pressure from Policy SS18/ST33 will lead to disturbance of breeding and non-breeding bird populations of the Lower Derwent Valley

- 4.37. Two proposals are relevant, the 147 homes provided for by SS18/ST33 in Wheldrake and the garden village of SS13/ST15 at Elvington.

Recreational pressure - SS18/ST33

- 4.38. This policy encourages the construction of 147 new dwellings within just 2km of the SPA including 'Bank Island', the most important site for breeding birds across the entire European site. Given that the SPA would be perhaps be one of the most obvious destinations for outdoor recreation, the impact of increased public pressure (frequently allied with dog walking) and predation pressure from cats ensured that LSE alone cannot be ruled out.
- 4.39. Policy SS18/ST33 already provides some mitigation by ensuring that any new development must accord with principle (iv) to '*undertake a comprehensive evidence based approach in relation to biodiversity to address potential impacts of recreational disturbance on the Lower Derwent Valley Special Protection Area (SPA)/Ramsar/SSSI*'. However, this fails to adequately describe a desired outcome and cannot be relied on to provide adequate mitigation.
- 4.40. Given the careful management of recreational pressure at the Lower Derwent Valley including footpaths, hides and wardening, it is considered that a modest revision to section (iv) of the Policy SS18/ST33 by incorporation of the following wording or similar would be sufficient to effectively remove the potential threat and avoid an adverse effect on the integrity of the European site alone.
- 'This will require the developer to publicise and facilitate the use of other, less sensitive countryside destinations nearby (e.g. Wheldrake Woods) and provide educational material to new homeowners to promote good behaviours when visiting the European site. The former could be supported by enhancing the local footpath network and improving signage.'***
- 4.41. Consequently, if the proposed amendment is adopted it is concluded that **the Council can ascertain that Policies SS18/ST33 will have no adverse effect on the integrity of the Lower Derwent Valley European site in terms of the disturbance of bird populations. There would be no residual effects and no need for an in combination assessment.**

Recreational pressure and mobile species - SS13/ST15

- 4.42. Policy SS13/ST15 encourages the development of 3,399 dwellings and around 2,200 units in a new garden village near Elvington. It lies just a few kilometres to the west of the Lower Derwent Valley on land that is functionally-linked to the bird populations of the European site. Furthermore, the Lower Derwent Valley will provide an attractive countryside destination for new residents which could provide a threat to various features of the European site.
- 4.43. Comprehensive requirements for mitigation are already embedded in the existing policy that anticipates the establishment of extensive areas of wet grassland and public open space. Together, these would provide enhanced areas of functionally-linked land for bird populations from the European site and provide alternative countryside recreational opportunities for new residents. Unfortunately, there are insufficient opportunities within SS13/ST15 to deliver all aspects of the built development alongside the measures to provide public open space and ecological mitigation.
- 4.44. The opportunity to implement these mitigation measures is provided by Policy/Allocation OS10 which is situated immediately adjacent to the west of SS13/ST15. The purpose of OS10 is described as the provision of ‘*significant areas of open space ... in connection with a strategic site*’ designed to ‘*mitigate ... for ecological impacts*’ and, as a ‘*New Area for Nature Conservation on land to the South of the A64 in association with ST15*’. However, there is no formal policy mechanism in SS13/ST15 that ensures both it and OS10 must be pursued together to secure sustainable development.
- 4.45. To provide certainty that the embedded mitigation and open space requirements described in Policy SS13/ST15 can be delivered, it is recommended that the Plan is modified to provide a formal link in policy terms with OS10. This will enable delivery of the ecological mitigation whilst public open space can be secured within the footprint of SS13/ST15.
- 4.46. This can be delivered by deleting the phrase ‘**(as shown on the proposals map)**’ in sub-section (iv) and amending sub-section (vi) to read as follows: ‘Incorporation of a new nature conservation area (as shown on the proposals map **as allocation OS10 and included within Policy G16 New Open Space Provision**)...

Should this or similar wording be added to Policy SS13/ST15 **it is concluded that the Council can ascertain that Policies SS18/ST33 will have no adverse effect on the integrity of the Lower Derwent Valley European site in terms of the disturbance of bird populations. There would be no residual effects and no need for an in combination assessment.**

Appropriate Assessment Summary

- 4.47. The outcomes of the appropriate assessment are summarised in Table 7 below.

Table 7: Summary of the Appropriate Assessment

Issue	Recommended mitigation	Outcome
Aquatic Environment Strensall Common Policies SS19, E18 and H59	None required	Existing policies sufficient to avoid an adverse effect on the integrity of the site. There are no residual effects and no need for an in combination assessment

Issue	Recommended mitigation	Outcome
Recreational pressure Strensall Common Policies SS19, E18 and H59	Amend wording of Policy SS19/ST35 to identify need for a funded wardening service and amend Policy GI2, H59 and E18 to secure protection of European sites	Mitigation sufficient to change conclusion: LSE alone can now be ruled out There are no residual effects and no need for an in combination assessment
Air pollution Strensall Common Policies SS19, E18 and H59	None required.	Existing policies sufficient to avoid an adverse effect on the integrity of the site. There are no residual effects and no need for an in combination assessment.
Recreational pressure Lower Derwent Valley Policies SS18/ST33	Add requirements for the provision of educational material and improve accessibility of alternative countryside destinations nearby	Mitigation sufficient to avoid an adverse effect on the integrity of the site. There are no residual effects and no need for an in combination assessment.
Recreational pressure Lower Derwent Valley Policies SS13/ST15	Add requirements to link Policies SS19/ST35 with OS10 to provide capacity for ecological mitigation to be delivered	Mitigation sufficient to avoid an adverse effect on the integrity of the site. There are no residual effects and no need for an in combination assessment.
Mobile species Lower Derwent Valley Policy SS13/ST15	Add requirements to link Policies SS19/ST35 with OS10 to provide capacity for ecological mitigation to be delivered	Mitigation sufficient to avoid an adverse effect on the integrity of the site. There are no residual effects and no need for an in combination assessment.

4.48. Table 7 shows that upon further scrutiny and the adoption of mitigation, the Council would be able to ascertain no adverse effect on the integrity of the European sites.

5. Overall Conclusion and Formal Record of the HRA

- 5.1. 163 policies and allocations were screened; the individual outcomes of the first exercise without the benefit of mitigation can be found in Tables 5 & 6, and in Appendix B.
- 5.2. Overall, this HRA found that likely significant effects could be ruled out alone for 158 policies and allocations which could therefore be excluded from any further scrutiny. However, likely significant effects could not be ruled out alone for elements of five policies: SS13, SS18, SS19, E18 and H59.
- 5.3. In terms of Policies SS19, E18 and H59, likely significant effects could not be ruled out because of anticipated increases in recreational pressure, changes to the hydrological regime and the effect of air pollution on the adjacent Strensall Common SAC.
- 5.4. Similarly, likely significant effects could not be ruled out alone for Policies SS18/ST33 because of anticipated increases in recreational pressure on the Lower Derwent Valley nearby.
- 5.5. Finally, likely significant effects could not be ruled out alone for Policy SS13/ST15 for two reasons: again because of anticipated increases in recreational pressure but also for impacts on the bird communities of the Lower Derwent Valley that also utilised land beyond the European site boundary.
- 5.6. Accordingly, an appropriate assessment was required. Taking account of recent changes in case law, mitigation was only evaluated at this stage in the HRA.
- 5.7. Upon further scrutiny it was found that the Council could ascertain that there would be no adverse effect on the integrity of the Strensall Common in terms of air pollution and effects on the aquatic environment without the need for further mitigation. However, the adoption of mitigation measures, delivered by changes to policy wording was found necessary to allow the Council to draw the same conclusion. There were no residual effects and no need for an in-combination assessment.
- 5.8. Should these mitigation measures be adopted **the Council would be able to conclude that the Plan will have no adverse effect on the integrity of any European sites.**

Formal HRA Record

The City of York Local Plan was considered in light of the assessment requirements of Regulation 63 of the Conservation of Habitats and Species Regulations 2017 by the City of York Council which is the competent authority responsible for adopting the plan and any assessment of it required by the Regulations. Having carried out a 'screening' assessment of the plan and an appropriate assessment, the competent authority has concluded that they can ascertain that the Local Plan will have no adverse effect on the integrity of any European sites.

APPENDICES

A. Conservation objectives and Site Improvement Plans for European sites

Lower Derwent Valley SPA	
Conservation objectives ³¹	<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;</p> <ul style="list-style-type: none"> • The extent and distribution of the habitats of the qualifying features; • The structure and function of the habitats of the qualifying features; • The supporting processes on which the habitats of the qualifying features rely; • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.
Lower Derwent Valley SAC	
Conservation objectives ³²	<p>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;</p> <ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats and habitats of qualifying species; • 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.
SIP pressures and threats (SPA and SAC) ³³	<ul style="list-style-type: none"> • Hydrological changes; • Drainage; • Public access/Disturbance; • Invasive species; • Undergrazing; • Inappropriate scrub control; • Air pollution: impact of atmospheric nitrogen deposition.
River Derwent SAC	
Conservation objectives ³⁴	<p>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;</p> <ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats and habitats of qualifying species; • The structure and function (including typical species) of qualifying natural

³¹ Amec Foster Wheeler Environment & Infrastructure Limited. December 2017. DIO York Sites: Queen Elizabeth Barracks (QEB). Information to support a Habitats Regulations Assessment.

³¹ Amec Foster Wheeler Environment & Infrastructure Limited. December 2017. DIO York Sites: Towthorpe Lines. Information to support a Habitats Regulations Assessment.

³¹ European Site Conservation Objectives for Lower Derwent Valley SPA, Natural England, 30 June 2014 (Version 2)

³² European Site Conservation Objectives for Lower Derwent Valley SAC, Natural England (undated)

³³ Lower Derwent Valley Site Improvement Plan, Natural England, v1.0, 6 October 2014

³⁴ European Site Conservation Objectives for River Derwent Valley SAC, Natural England, 30 June 2014 (Version 2)

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	<p>habitat;</p> <ul style="list-style-type: none"> • 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.
SIP pressures & threats	<ul style="list-style-type: none"> • Physical modification; • Water pollution; • Invasive species; • Change in land management; • Water abstraction.
Skipwith Common SAC	
Conservation objectives ³⁵	<p>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;</p> <ul style="list-style-type: none"> • The extent and distribution of the qualifying natural habitats; • The structure and function (including typical species) of the qualifying natural habitats and, • The supporting processes on which the qualifying natural habitats rely.
SIP pressures & threats ³⁶	<ul style="list-style-type: none"> • Public access/Disturbance; • Inappropriate scrub control; • Drainage; • Air pollution: impact of atmospheric nitrogen deposition.
Strensall Common SAC	
Conservation objectives ³⁷	<p>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;</p> <ul style="list-style-type: none"> • The extent and distribution of the qualifying natural habitats; • The structure and function (including typical species) of the qualifying natural habitats and, • The supporting processes on which the qualifying natural habitats rely.
SIP pressures & threats ³⁸	<ul style="list-style-type: none"> • Public access/Disturbance; • Inappropriate scrub control; • Air pollution: impact of atmospheric nitrogen deposition.
Humber Estuary SPA	
Conservation objectives ³⁹	<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;</p> <ul style="list-style-type: none"> • The extent and distribution of the habitats of the qualifying features; • The structure and function of the habitats of the qualifying features;

³⁵ European Site Conservation Objectives for Skipwith Common SAC, Natural England, 30 June 2014 (Version 2)

³⁶ Skipwith Common Site Improvement Plan, Natural England, v1.0, 18 December 2014

³⁷ European Site Conservation Objectives for Skipwith Common SAC, Natural England, 30 June 2014 (Version 2)

³⁸ Skipwith Common Site Improvement Plan, Natural England, v1.0, 18 December 2014

³⁹ European Site Conservation Objectives for the Humber Estuary SPA, Natural England, 30 June 2014 (Version 3)

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- The supporting processes on which the habitats of the qualifying features rely;
- The population of each of the qualifying features; and,
- The distribution of the qualifying features within the site.

Humber Estuary SAC

Conservation objectives⁴⁰

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;
- 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 habitats of qualifying species rely;
- The populations of qualifying species; and,
- The distribution of qualifying species within the site.

SIP pressures⁴¹

- Water pollution;
 - Coastal squeeze;
 - Changes in species distributions;
 - Undergrazing;
 - Invasive species;
 - Natural changes to site conditions;
 - Public access/Disturbance;
 - Fisheries: Fish stocking;
 - Fisheries: Commercial marine and estuarine (P);
 - Fisheries: Commercial marine and estuarine (T);
 - Direct and take from development;
 - Air pollution: impact of atmospheric nitrogen deposition;
 - Shooting/scaring;
 - Direct impact from third party;
 - Inappropriate scrub control;
 - Fisheries: Commercial marine and estuarine (T);
 - Direct and take from development;
 - Air pollution: impact of atmospheric nitrogen deposition;
 - Shooting/scaring;
 - Direct impact from third party;
 - Inappropriate scrub control.
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⁴⁰ European Site Conservation Objectives for the Humber Estuary SAC, Natural England, 31 March 2014 (Version 2)

⁴¹ Humber Estuary Site Improvement Plan, Natural England, v1.1, 8 July 2015

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B. Record of preliminary screening of proposed policies prior to mitigation

Policy	Rationale	Screening outcome
DP1 York Sub Area	This policy represents a vision or aspirations for the City. It does not directly lead to development and so can have no effects on European sites.	A – Screened out
DP2 Sustainable Development	This policy draws on the NPPF to describe the presumption in favour of sustainable development before identifying broad principles for development. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
DP3 Sustainable communities	This policy identifies broad social criteria for evaluating development proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
DP4 Approach to Development management	This policy again refers to the presumption in favour of sustainable development before identifying tests for proposals that apply if the proposals lie outside the Plan. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
SS1 Delivering Sustainable Growth	This policy identifies high level housing and employment targets but does not identify development sites, instead identifying broad principles for development. It does not directly lead development and so can have no effects on European sites. Individual housing and employment allocations are considered in under their specific, respective policies.	B – Screened out
SS2 Green Belt	This policy identifies the extent and role of the Green Belt without adding criteria for development proposals. It does not directly lead to development and so can have no effects on European sites.	A – Screened out
SS3 York City Centre	This policy makes provision for development within York City Centre (ST5, ST20, and ST32) which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by Policy GI2 (vii). No other impacts are anticipated.	G – Screened out
SS4 York Central	This policy makes provision for development within York Central (ST5) which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by Policy GI2 (vii). No other impacts are anticipated.	G – Screened out
SS5 Castle Gateway	This policy makes provision for development within York Central (ST20) at Castle Gateway which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by Policy GI2 (vii). No other impacts are anticipated.	G - Screened out
SS6 British Sugar/Manor	This policy makes provision for development of this urban site (ST1) at British Sugar/Manor School which is situated far from the nearest European site. At such distances localised	G - Screened out

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Policy	Rationale	Screening outcome
School	effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by Policy GI2 (vii). No other impacts are anticipated.	
SS7 Civil Service Sports Ground	This policy makes provision for development of this urban site (ST2) at the Civil Service Sports Ground which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by Policy GI2 (vii). No other impacts are anticipated.	G - Screened out
SS8 Land adjacent to Hull Road	This policy makes provision for development of this urban extension site (ST4) on Land adjacent to Hull Road which is situated over 10km by road from the most convenient access point to the nearest European site, the Lower Derwent Valley. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by Policy GI2 (vii). No other impacts are anticipated.	G – Screened out
SS9 East of Metcalfe Lane	This policy makes provision for the development of this garden village (ST7) on Land East of Metcalfe Lane which is situated over 15km by road from the most convenient access point to the nearest European site, the Lower Derwent Valley. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by Policy GI2 (vii). No other impacts are anticipated.	G – Screened out
SS10 Land North of Monks Cross	This policy makes provision for the development of this urban extension site (ST8) on Land North of Monks Cross which is situated less than 5km by road from the most convenient access point to the nearest European site, Strensall Common. At such distances localised effects associated with the proximity of development (ie recreational pressure) are possible but avoided by the greenspace required as part of this allocation. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by Policy GI2 (vii). No other impacts are anticipated.	G – Screened out
SS11 Land North of Haxby	This policy makes provision for the development of this urban extension site (ST9) on Land North of Haxby which is situated less than 5km by road from the most convenient access point to the nearest European site, Strensall Common. At such distances localised effects associated with the proximity of development (ie recreational pressure) are possible but avoided by the greenspace required as part of this allocation. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
SS12 Land West of Wigginton Road	This policy makes provision for the development of this garden village (ST14) on Land West of Wigginton Road which is situated approximately 7km by road from the most convenient access point to the nearest European site,	G – Screened out

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Policy	Rationale	Screening outcome
	<p>Strensall Common. At such distances localised effects associated with the proximity of development (ie recreational pressure) are possible but avoided by the greenspace required as part of this allocation. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by Policy GI2 (vii).</p> <p>No other impacts are anticipated.</p>	
SS13 Land West of Elvington Lane	<p>This policy makes provision for the development of this new settlement (ST15) on Land West of Elvington Lane which is situated approximately 7km by road from the most convenient access point to the nearest European site, the Lower Derwent Valley SPA. At such distances localised effects associated with the proximity of development (ie recreational pressure) cannot be ruled out.</p> <p>However, this development is believed to directly affect large numbers (perhaps up to 5%) of the non-breeding golden plover and lapwing populations of the SPA which utilise 'functionally-linked' land far beyond the boundaries of the designated site. Again, harmful effects cannot be ruled out.</p> <p>Comprehensive mitigation measures are embedded in SS13/ST15 and the adjacent Policy OS10 which is proposed to deliver the mitigation measures. However, the Plan fails to adequately ensure that both policies must be implemented together to deliver the necessary ecological safeguards. Consequently, LSE alone cannot be ruled out.</p> <p>In contrast, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p>	I – Screened in LSE alone
SS14 Terry's Extension Sites	<p>This policy makes provision for the development of this urban development site (ST16) at Terry's Extension Sites which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p> <p>No other impacts are anticipated.</p>	G – Screened out
SS15 Nestle South	<p>This policy makes provision for the development of this urban development site (ST17) at Nestle South which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out policy GI2 (vii).</p> <p>No other impacts are anticipated.</p>	G - Screened out
SS16 Land at Tadcaster Road, Copmanthorpe	<p>This policy makes provision for the development of this urban extension site (ST31) on Land at Tadcaster Road, Copmanthorpe which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p> <p>No other impacts are anticipated.</p>	G – Screened out
SS17 Hungate	<p>This policy makes provision for the development of this urban development site (ST32) at Hungate which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out policy GI2 (vii).</p>	G – Screened out

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Policy	Rationale	Screening outcome
	No other impacts are anticipated.	
SS18 Station Yard Wheldrake	<p>This policy makes provision for the development of this village extension site (ST33) at Station Yard Wheldrake which is situated just 2km from the most convenient access point to the nearest European site, the Lower Derwent Valley.</p> <p>At such distance, prior to mitigation LSE alone from recreational pressure cannot be ruled out. Modest mitigation is provided for in the policy but it is vague and ineffective. Although the LDV is well managed and can be resilient to recreational pressure, LSE cannot be ruled out at this stage.</p> <p>In contrast strategic issues, such as the disposal of wastewater are effectively screened out by Policy GI2 (vii).</p>	I – Screened in LSE alone
SS19 Queen Elizabeth Barracks, Strensall	<p>This policy makes provision for the development of Queen Elizabeth Barracks (ST35) which is situated adjacent to Strensall Common.</p> <p>At such close proximity, recreational pressure is will represent a threat but whilst comprehensive mitigation is embedded in Policy SS19/ST35 to restrict access to the Common it does little to influence behaviours within the European site. Consequently, LSE alone from recreational pressure cannot be ruled out.</p> <p>Harmful effects from changes to the hydrological regime and increases in road traffic emissions have been screened out.</p> <p>Strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p>	I – Screened in LSE alone
SS20 Imphal Barracks, Fulford Road	<p>This policy makes provision for the development of Imphal Barracks in York (ST36) at Imphal Barracks, Fulford Road which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p> <p>No other impacts are anticipated.</p>	G – Screened out
SS21 Land South of Airfield Business Park, Elvington	<p>This policy makes provision for the establishment of this business park (ST26) on Land South of the Airfield Business Park, Elvington which is situated approximately 7km by road from the most convenient access point to the nearest European site, the Lower Derwent Valley. At such distances localised effects associated with the proximity of development (ie recreational pressure) are possible but avoided by the business use of the site which will ensure that both the modest workforce will have limited opportunities to visit the European site. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p> <p>No other impacts are anticipated.</p>	G – Screened out
SS22 University of York Expansion	<p>This policy makes provision for the expansion of the University (ST27) which is situated around 13km by road from the most convenient access point to the nearest European site, the Lower Derwent Valley. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p> <p>No other impacts are anticipated.</p>	G – Screened out

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Policy	Rationale	Screening outcome
SS23 Land at Northminster Business Park	This policy makes provision for the establishment of this business park (ST19) on Land at Northminster Business Park which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
SS24 Whitehall Grange, Wiggington Road	This policy makes provision for the establishment of this business park (ST37) at Whitehall Grange, Wiggington Road which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
EC1 Provision of Employment land	This policy brings together a range of employment allocations together providing a brief description. Given the lack of detail this policy cannot directly lead to development and so can have no effect on European sites. The individual allocations ST5, ST19, ST26, ST27 & ST37 are evaluated under the relevant Spatial Strategy (SS) Policy above, whilst E8, E9, E10, E11, E16 & E18 are evaluated in turn below.	B – Screened out
E8	This policy makes provision for light industrial development and research within Wheldrake (E8) which is situated only around 2km from a convenient access point to the Lower Derwent Valley. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
E9	This policy makes provision for light industrial development and research within Elvington (E9) which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
E10	This policy makes provision for light industrial development within Dunnington (E10) which is situated far from the nearest, European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
E11	This policy makes provision for light industrial development and research within Monks Cross (E11) which is situated several kilometres from the nearest European site. At such distances localised effects associated with the workforce from the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out

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Policy	Rationale	Screening outcome
E16	<p>This policy makes provision for light industrial development near Monks Cross (E11) which is situated several kilometres from the nearest European site. At such distances localised effects associated with the workforce from the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p> <p>No other impacts are anticipated.</p>	G – Screened out
E18	<p>This policy makes provision for unspecified employment development adjacent to Strensall Common SAC (E18).</p> <p>At such distance, especially as no meaningful avoidance or mitigation measures are put forward in the site policy or over-arching policy (H1), LSE alone from recreational pressure cannot be ruled out.</p> <p>In contrast, strategic issues, such as the disposal of wastewater are effectively screened out policy GI2 (vii).</p>	I – Screened in LSE alone
EC2 Loss of employment land	<p>This policy aims to safeguard employment land before identifying criteria to evaluate development proposals. It does not directly lead to development and so can have no effects on European sites.</p>	B – Screened out
EC3 Business within Residential Areas	<p>This policy encourages development in unknown locations. The scale and nature of this type of development make it highly unlikely that direct impacts on European sites would result and strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p> <p>No other impacts are anticipated.</p>	G – Screened out
EC4 Tourism	<p>This policy encourages development in unknown locations. The scale and nature of this type of development make it highly unlikely that direct impacts on European sites would result and strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p> <p>No other impacts are anticipated.</p>	G – Screened out
EC5 Rural economy	<p>This policy encourages development in unknown locations. The scale and nature of this type of development make it highly unlikely that direct impacts on European sites would result and strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p> <p>No other impacts are anticipated.</p>	G – Screened out
R1 Retail hierarchy	<p>This policy seeks to safeguard retail provision in the city centre before identifying criteria to evaluate development proposals. It does not directly lead to development and so can have no effects on European sites.</p>	B – Screened out
R2 District and Local Centres and Neighbourhood Parades	<p>This policy seeks to safeguard retail provision in the local centres before identifying criteria to evaluate development proposals. It does not directly lead to development and so can have no effects on European sites.</p>	B – Screened out
R3 York City Centre Retail	<p>This policy seeks to support retail provision in the city centre before identifying criteria to evaluate development proposals. It does not directly lead to development and so can have no effects on European sites.</p>	B – Screened out
R4 Out of Centre	<p>This policy seeks to influence out of town retail provision by identifying criteria to evaluate development proposals. It</p>	B – Screened out

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Policy	Rationale	Screening outcome
Retail	does not directly lead to development and so can have no effects on European sites.	
H1(P) Housing Allocations	<p>This policy simply makes provision for the development of a number of housing allocations. Given the lack of detail this policy cannot directly lead to development and so can have no effect on European sites. The individual housing allocations: H1(P1), H1(P2), H3, H5, H6, H7, H8, H10, H20, H22, H23, H29, H31, H38, H39, H46, H52, H53, H55, H56, H58, H59 are dealt with individually below.</p> <p>The individual strategic housing allocations ST1, 2, 4, 5, 7, 8, 9, 14, 15, 16, 17, 31, 32, 33, 35 & 36 are considered under their associated spatial strategy (SS) policies above.</p>	B – Screened out
H1 (Phase 1) (A)	<p>This policy makes provision for the development within York (H1 Phase 1) at the former Gas Works site at Heworth Green which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p> <p>No other impacts are anticipated.</p>	G – Screened out
H1 (Phase 2) (A)	<p>This policy makes provision for the development within York (H1 Phase 2) at the former Gas Works site at Heworth Green which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p> <p>No other impacts are anticipated.</p>	G – Screened out
H3(A)	<p>This policy makes provision for the development (H3) at Burnholme School which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p> <p>No other impacts are anticipated.</p>	G – Screened out
H5(A)	<p>This policy makes provision for the development (H5) at Lowfield School which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p> <p>No other impacts are anticipated.</p>	G – Screened out
H6(A)	<p>This policy makes provision for the development (H6) at The Square on Tadcaster Road which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p> <p>No other impacts are anticipated.</p>	G – Screened out
H7(A)	<p>This policy makes provision for the development (H7) at Bootham Crescent which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p>	G – Screened out

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Policy	Rationale	Screening outcome
	No other impacts are anticipated.	
H8(A)	This policy makes provision for the development (H8) at Askham Bar Park and Ride which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
H10(A)	This policy makes provision for the development (H10) at The Barbican which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
H20(A)	This policy makes provision for the development (H20) at the Former Oakhaven EPH which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
H22(A)	This policy makes provision for the development (H22) at the Former Heworth Lighthouse which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
H23(A)	This policy makes provision for the development (H23) at the Former Grove House EPH which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
H29(A)	This policy makes provision for the development (H29) at Land at Moor Lane, Copmanthorpe which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
H31(A)	This policy makes provision for the development (H29) at Eastfield Lane, Dunnington which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
H38(A)	This policy makes provision for the development (H29) at Rufforth Primary School which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely.	G – Screened out

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Policy	Rationale	Screening outcome
	<p>Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.</p>	
H39(A)	<p>This policy makes provision for the development (H39) North of Church Lane, Elvington which is situated just a few hundred meters from the River Derwent and Lower Derwent Valley European sites, albeit over 5km from the most convenient access point at Wheldrake.</p> <p>Given the lack of access locally, the proximity of the allocation is considered to be largely irrelevant. Even where access can be gained, the European site is largely confined to the channel and regarded as resilient to public pressure.</p> <p>In terms of the more distant access at Wheldrake, at such distances, localised effects associated with the proximity of development are possible but unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p>	G – Screened out
H46(A)	<p>This policy makes provision for the development (H46) at New Earswick which is situated just over 5km by road from the most convenient access point to Strensall Common. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.</p>	G – Screened out
H52(A)	<p>This policy makes provision for the development (H52) at Willow House EPH which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.</p>	G – Screened out
H53(A)	<p>This policy makes provision for the development (H53) at Knapton Village which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.</p>	G – Screened out
H55(A)	<p>This policy makes provision for the development (H55) on Land at Layerthorpe which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.</p>	G – Screened out
H56(A)	<p>This policy makes provision for the development (H56) on Land at Hull Road which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.</p>	G – Screened out
H58(A)	<p>This policy makes provision for the development (H29) at Clifton Without Primary School which is situated far from the</p>	G – Screened out

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Policy	Rationale	Screening outcome
	<p>nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.</p>	
H59(A)	<p>This policy makes provision for the development (H59) at Queen Elizabeth Barracks at Strensall which is situated adjacent to Strensall Common European site.</p> <p>At such distance, especially as no meaningful avoidance or mitigation measures are put forward in the site policy or overarching policy (H1), LSE alone from recreational pressure cannot be ruled out.</p> <p>In contrast, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).</p>	I – Screened in LSE alone
H2(P) Density of Residential Development	This policy seeks to influence the density of housing by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
H3(P) Balancing the Housing Market	This policy seeks to balance the housing market by identifying criteria to influence the housing mix. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
H4(P) Promoting Self-build and Custom House Building	This policy seeks to influence the types and design of housing by identifying criteria to encourage self-build proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
H5(P) Gypsies & Travellers	This policy encourages development in unknown locations. The scale and nature of this type of development make it highly unlikely that direct impacts on European sites would result and strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
H6(P) Travelling Showpeople	This policy encourages development in unknown locations. The scale and nature of this type of development make it highly unlikely that direct impacts on European sites would result and strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
H7(P) Student Housing	<p>This policy encourages development in unknown locations. The scale and nature of this type of development make it highly unlikely that direct impacts on European sites would result and strategic issues, such as the disposal of wastewater are effectively screened out policy GI2 (vii). No other impacts are anticipated.</p> <p>The named allocation, SH1, is evaluated as a single allocation elsewhere in this table.</p>	G – Screened out
SH1 Student housing	This policy makes provision for the development of student housing at Heweth Croft (SH1) which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of	G – Screened out

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Policy	Rationale	Screening outcome
	wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	
H8(P) Houses in Multiple Occupation	This policy seeks to influence the occupancy of student housing by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
H9(P) Older Persons Specialist Housing	This policy seeks to influence the provision of specialist housing for older persons by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
H10(P) Affordable housing	This policy seeks to influence the provision of affordable housing for older persons by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
HW1 Community facilities	This policy seeks to secure the retention of existing community facilities by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
HW2 New community facilities	This policy seeks to influence the provision of new community facilities by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
HW3 Built sport facilities	This policy seeks to influence the availability of sports facilities by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
HW4 Childcare provision	This policy seeks to influence the availability of childcare provision by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
HW5 Healthcare services	This policy seeks to influence the availability of healthcare services by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
HW6 Emergency Services	This policy seeks to influence the provision of a handful of modest buildings in existing allocations to provide parking facilities for vehicles of the emergency services. Although it does promote development, it is inconceivable that this would result in harmful impacts on European sites.	G – Screened out
HW7 Healthy places	This policy seeks to influence the adoption of healthy places by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
ED1 York University	This policy represents a vision or aspirations for the University. It does not directly lead to development and so can have no effects on European sites.	A – Screened out
ED2 Campus West	This policy makes provision for the expansion of Campus West which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii).	G – Screened out

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Policy	Rationale	Screening outcome
	No other impacts are anticipated.	
ED3 Campus East	This policy makes provision for the expansion of Campus East which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
ED4 York St John University Lord Mayor's Walk Campus	This policy makes provision for the expansion of York St John University Lord Mayor's Walk Campus which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
ED5 York St John University Further Expansion	This policy makes provision for the further expansion of York St John University which is situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
ED6 Preschool, Primary and Secondary Education	This policy seeks to influence the provision of pre-, primary and secondary schools by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
ED7 York and Askham Bryan Colleges	This policy makes provision for the further expansion of York College and Askham Bryan Colleges which are situated far from the nearest European site. At such distances localised effects associated with the proximity of development are unlikely. Furthermore, strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G – Screened out
ED8 Access to facilities on education sites	This policy seeks to influence the provision for community access to sport and cultural facilities on educational sites by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
D1 Placemaking	This policy seeks to improve poor urban and natural environments by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
D2 Landscape and Setting	This policy seeks to promote appreciation of the wider landscape character in design by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
D3 Cultural provision	This policy seeks to promote York's cultural character by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
D4	This policy seeks to promote development that enhances the special character of the area by identifying criteria to	B – Screened out

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Policy	Rationale	Screening outcome
Conservation areas	evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	
D5 Listed buildings	This policy seeks to promote development that preserves the significance and heritage values of buildings by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
D6 Archaeology	This policy seeks to influence development that affects archaeological features by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
D7 Non-designated Heritage Assets	This policy seeks to influence development that affects non-designated heritage assets by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
D8 Historic Parks and Gardens	This policy seeks to influence development that affects historic parks and gardens by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
D9 Historic Environment Record	This policy seeks to ensure that the historic record remains accurate and available by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
D10 City walls	This policy seeks to conserve and enhance the value of the City Walls by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
D11 Alterations to Existing buildings	This policy seeks to promote high quality design for proposals affecting listed buildings by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
D12 Shopfronts	This policy seeks to influence the design of shopfronts by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
D13 Advertisements	This policy seeks to influence the display of advertisements by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
D14 Shutters	This policy seeks to influence the use of security shutters by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
G11 Green infrastructure	This policy seeks to conserve and enhance the natural environment. It provides environmental benefits and will not result in any adverse effects on European sites.	D – Screened out
G12 Biodiversity	This policy also seeks to conserve and enhance York's biodiversity resource. It provides environmental benefits and will not result in any adverse effects.	D – Screened out
G13 Green infrastructure network	This policy also seeks to conserve and enhance York's green infrastructure. It provides environmental benefits and will not result in any adverse effects on European sites.	D – Screened out

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Policy	Rationale	Screening outcome
GI4 Trees and hedgerows	This policy also seeks to conserve and enhance York's trees and hedgerows. It provides environmental benefits and will not result in any adverse effects on European sites.	D – Screened out
GI5 Open space and playing fields	This policy seeks to protect existing open space of recreational or environmental importance. It provides environmental benefits and will not result in any adverse effects on European sites.	D – Screened out
GI6 New open space provision	This policy seeks to safeguard protected areas for nature conservation and secure the establishment of new open space for both recreational and environmental reasons. It provides environmental benefits and will not result in any adverse effects on European sites	D – Screened out
OS1	This policy seeks to provide new open space for recreation and amenity. It provides environmental benefits and will not result in any adverse effects on European sites.	D – Screened out
OS2	This policy seeks to provide new open space for recreation and amenity. It provides environmental benefits and will not result in any adverse effects on European sites.	D – Screened out
OS5	This policy seeks to provide new open space for recreation and amenity. It provides environmental benefits and will not result in any adverse effects on European sites.	D – Screened out
OS6	This policy seeks to provide new open space for recreation and amenity. It provides environmental benefits and will not result in any adverse effects on European sites.	D – Screened out
OS7	This policy seeks to provide new open space for recreation and amenity. It provides environmental benefits and will not result in any adverse effects on European sites.	D – Screened out
OS8	This policy seeks to provide new open space for recreation and amenity. It provides environmental benefits and will not result in any adverse effects on European sites.	D – Screened out
OS9	This policy seeks to provide new open space for recreation and amenity. It provides environmental benefits and will not result in any adverse effects on European sites.	D – Screened out
OS10	This policy seeks to secure new open space to provide mitigation for the adjacent SS13/ST15. The proposed establishment of wet grassland for breeding and non-breeding birds can only benefit the nearby LDV European site.	D – Screened out
OS11	This policy seeks to provide new open space for recreation and amenity. It provides environmental benefits and will not result in any adverse effects on European sites.	D – Screened out
OS12	This policy seeks to secure new open space adjacent to H59. By providing additional space for recreation it can only benefit the adjacent Strensall Common SAC by reducing recreational pressure.	D – Screened out
GI7 Burial and Memorial Grounds	This policy seeks to establish new open space for recreational and environmental purposes including the provision of mitigation for certain developments. It does not directly lead to development but does provide the mechanism for avoiding harm on European sites.	B – Screened out
GB1 Development in	This policy seeks to influence new development in the Green Belt by identifying criteria to evaluate proposals. It does not	B – Screened out

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Policy	Rationale	Screening outcome
the Green belt	directly lead to development and so can have no effects on European sites.	
GB2 Development in Settlements within the Green Belt	This policy seeks to influence new development in settlements 'washed-over' by the Green Belt by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
GB3 Re-use of buildings	This policy seeks to influence the reuse of existing buildings within the Green Belt by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
GB4 Exception sites for Affordable Housing in the Green Belt	This policy encourages development in unknown locations. The scale and nature of this type of development make it highly unlikely that direct impacts on European sites would result and strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vii). No other impacts are anticipated.	G - Screened out
CC1 Renewable and Low Carbon Energy Generation and Storage	This policy seeks to influence the reduction in carbon emissions from new development alongside renewable power generation by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
CC2 Sustainable design and Construction of New Development	This policy seeks to promote a reduction in carbon emissions and the adoption of climate change adaptation techniques in new development by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
CC3 District Heating and Combined Heat and Power	This policy seeks to promote more sustainable heating and power sources in new development by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
ENV1 Air Quality	This policy seeks to safeguard human health but will also protect biodiversity and will not result in any adverse effects on European sites.	D – Screened out
ENV2 Environmental Quality	This policy seeks to influence a wide range of environmental pollutants but will also protect biodiversity and will not result in any adverse effects on European sites.	D – Screened out
ENV 3 Land Contamination	This policy seeks to reduce the environmental effects of contaminated land by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
ENV4 Flood Risk	This policy seeks to reduce the level of risk associated with floods by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
ENV5 Sustainable Drainage	This policy seeks to reduce excessive surface water drainage from new developments by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
WM1	This policy refers to measures contained within and to be	C – Screened out

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Policy	Rationale	Screening outcome
Sustainable Waste Management	delivered by the Minerals and Waste joint Plan established by the Council along with North Yorkshire County Council.	
WM2 Sustainable Minerals Management	This policy refers to measures contained within and to be delivered by the Minerals and Waste joint Plan established by the Council along with North Yorkshire County Council.	C – Screened out
T1 Sustainable Access	This policy seeks to promote sustainable travel by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
T2 Strategic Public Transport Improvements	This policy refers to measures contained within and to be delivered by the Local Transport Plan but also promotes local infrastructure improvements. None threaten European sites.	C – Screened out
T3 York Station and Associated Facilities	This policy promotes development in and around York Station but it is inconceivable that this would result in any adverse impacts on European sites.	G – Screened out
T4 Strategic Highway Network Improvements	This policy promotes local infrastructure improvements across the City including the junction of Strensall Road and the A1237. However, this lies far distant from the SAC and it is inconceivable that this would result in any adverse impacts on European sites.	G – Screened out
T5 Strategic Cycle and Pedestrian Networks	This policy promotes improvements to the cycling and pedestrian network. However, it is inconceivable that this would result in any adverse impacts on European sites.	G – Screened out
T6 Development at or Near Public Transport Corridors and Interchanges	This policy encourages development in unknown locations. The scale and nature of this type of development make it highly unlikely that direct impacts on European sites would result and strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vi). No other impacts are anticipated.	G – Screened out
T7 Minimising and Accommodating Generated Trips	This policy seeks to reduce traffic and promote sustainable travel by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
T8 Demand Management	This policy seeks to reduce traffic and promote sustainable travel by identifying criteria to evaluate proposals. It does not directly lead to development and so can have no effects on European sites.	B – Screened out
T9 Alternative Fuels and Freight Centres	This policy encourages development in unknown locations. The scale and nature of this type of development make it highly unlikely that direct impacts on European sites would result and strategic issues, such as the disposal of wastewater are effectively screened out by policy GI2 (vi). No other impacts are anticipated.	G – Screened out
C1 – Communications Infrastructure	This policy encourages communications infrastructure but it is inconceivable this will adversely affect European sites.	G – Screened out
DM1 –	This policy seeks to ensure the provision of appropriate	B – Screened out

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Policy	Rationale	Screening outcome
Infrastructure and Developer Contributions	infrastructure alongside new development. It does not directly lead to development and so can have no effects on European sites.	

Appendices



C. Proposed mitigation measures

Appendices

HRA of City of York Local Plan
Project Number: WIE13194-102
Document Reference: WIE13194-102-1-2-BF

Additional text is represented with an underline and deleted text is struck through.

Policy SS13: Land West of Elvington Lane

The development of Land West of Elvington Lane (ST15) supports the Local Plan vision in delivering a new sustainable garden village for York. It will deliver approximately 3,339 dwellings, around 2,200 units of which will be delivered within the plan period. In addition to complying with the policies within this Local Plan, the site must be masterplanned and delivered in accordance with the following key principles.

- i. Create a new 'garden' village that reflects the existing urban form of York as a compact city surrounded by villages.
- ii. Deliver a sustainable housing mix in accordance with the Council's most up to date Strategic Housing Market Assessment and affordable housing policy.
- iii. Be of a high design standard to reflect the existing settlement form of villages around the main urban area of York in-keeping with the existing urban form. The south eastern and south western boundaries of the site are less well contained than to the north so it will be important for the site to establish its own landscape setting.
- iv. Create new open space (~~as shown on the proposals map~~) within the site to maintain views of the Minster and existing woodland.
- v. Impacts on biodiversity within the site and zone of influence will be addressed by following the mitigation hierarchy with the overall aim to prevent harm to existing biodiversity assets, delivering no net loss for biodiversity and maximise further benefits for biodiversity. Where required compensatory measures should take full account of the extent and quality of the asset being lost or damaged and equivalent or enhanced habitats should be provided.
- vi. Follow a mitigation hierarchy to first seek to avoid impacts, then to mitigate unavoidable impacts or compensate unavoidable residual impacts on Heslington Tillmire SSSI and the Lower Derwent Valley SPA/Ramsar through the:
 - incorporation of a new nature conservation area (as shown on the proposals map as allocation OS10 and included within Policy GI6) including a buffer of wetland habitats, a barrier to the movement of people and domestic pets on to the SSSI and deliver further benefits for biodiversity. A buffer of at least 400m from the SSSI will be required in order to adequately mitigate impacts unless evidence demonstrates otherwise; and
 - provision of an detailed site wide recreation and access strategy to minimise indirect recreational disturbance resulting from development and complement the wetland habitat buffer area which will be retained and monitored in perpetuity. A full understanding of the proposed recreational routes is required at an early stage.
- vii. Deliver ecological mitigation and compensation measures 5 years prior to commencement of any development. They must be supported by a long term management plan, and be retained and monitored in perpetuity.

- viii. Protect the character, setting and enjoyment of Minster Way.
- ix. Provide an appropriate range of shops, services and facilities including social infrastructure such as health, social, leisure, cultural and community uses to meet the needs of future residents, made early in the scheme's phasing in order to allow the establishment of a new sustainable community. This should be principally focused around a new local centre.
- x. Deliver new on-site education provision to meet nursery, primary and potentially secondary demand, to be assessed based on generated need. New nursery, primary and potentially secondary provision will be required to serve the earliest phases of development.
- xi. Demonstrate that all transport issues have been addressed, in consultation with the Council and Highways England as necessary, to ensure sustainable transport provision at the site is achievable. The impacts of the site individually and cumulatively with site's ST7, ST8, ST9, ST14, ST27, ST35 and ST36 should be addressed.
- xii. Ensure provision of necessary transport infrastructure to access the site with primary access via the A64 (as shown on the proposals map) and a potential secondary access via Elvington Lane. The capacity of the local highway network including Elvington Lane and junctions is limited.
- xiii. Retain Common Lane/Long Lane/Langwith Stray as cycle/pedestrian routes only to ensure protection of the character of Heslington Village. These routes are very lightly trafficked roads, and could provide pleasant cycle and pedestrian routes from the site to Heslington. It is essential that there is no vehicular transport access to Heslington village along these routes to ensure the setting of Heslington village is maintained.
- xiv. Explore the potential for local bridleways (e.g. Fordlands Road/ Forest Lane) running through or near the site to be used as cycle routes.
- xv. Provide dedicated secure access for existing local residents and landowners to be agreed with the community of Heslington. Appropriate solutions would need to ensure access is preserved for existing residents and landowners developed in consultation with the community of Heslington.
- xvi. Deliver high quality, frequent and accessible public transport services through the whole site which provide links to new community facilities, as well as to York city centre and other appropriate service hubs, including University of York. A public transport hub at the local centre should provide appropriate local interchange and waiting facilities for new residents. It is envisaged such measures will enable upwards of 15% of trips to be undertaken using public transport.
- xvii. Optimise pedestrian and cycle integration, connection and accessibility in and out of the site and connectivity to the city and surrounding area creating well-connected internal streets and walkable neighbourhoods, to encourage the maximum take-up of these more 'active' forms of transport (walking and cycling).
- xviii. Exploit synergies with the proposed university expansion in terms of site servicing including transport, energy and waste.

Policy SS18: Station Yard, Wheldrake

Station Yard, Wheldrake (ST33) will deliver approximately 147 dwellings at this village extension development site. In addition to complying with the policies within this Local Plan, the site must be delivered in accordance with the following key principles.

- i. Deliver a sustainable housing mix in accordance with the Council's most up to date Strategic Housing Market Assessment and affordable housing policy, addressing local need for smaller family homes and bungalows/sheltered housing.
- ii. Be of a high design standard to which will provide an appropriate new extension to Wheldrake whilst maintaining the character of the village.
- iii. Conserve and enhance the special character and/or appearance of the adjacent Wheldrake Conservation Area.
- iv. Undertake a comprehensive evidence based approach in relation to biodiversity to address potential impacts of recreational disturbance on the Lower Derwent Valley Special Protection Area (SPA)/Ramsar/SSSI. **This will require the developer to publicise and facilitate the use of other, less sensitive countryside destinations nearby (e.g. Wheldrake Woods) and provide educational material to new homeowners to promote good behaviours when visiting the European site. The former could be supported by enhancing the local footpath network and improving signage**
- v. Establish a landscape setting, given the open fields to the south of the site.
- vi. Create new local facilities as required to meet the needs of future occupiers of the development.
- vii. Provide on-site open space to provide additional amenity green space and children's play facilities for the village.
- viii. Provide required financial contributions to existing nursery, primary and secondary facilities to enable the expansion to accommodate demand arising from the development.
- ix. Optimise pedestrian and cycle integration, connection and accessibility in and out of the site and connectivity to the city and surrounding area creating well-connected internal streets and walkable neighbourhoods, to encourage the maximum take-up of these more 'active' forms of transport (walking and cycling).
- x. Undertake a noise assessment to inform the development, this may result in a reduction in the developable area should a buffer to the existing industrial area be required.

Policy SS19: Queen Elizabeth Barracks, Strensall

Following the Defence Infrastructure Organisation's disposal of the site by 2021, Queen Elizabeth Barracks (ST35) will deliver 500 dwellings at this rural development site. Development is anticipated to commence in 2023. In addition to complying with the policies within this Local Plan, the site must be delivered in accordance with the following key principles.

- i. The mitigation hierarchy should be followed to ensure no net loss of biodiversity; where possible development should deliver biodiversity gain. Development will only be allowed where it can be demonstrated that it will not have an adverse impact, alone or in combination, upon the integrity of Strensall Common SAC and SSSI.
- ii. Take full account of the extent and quality of ecological interest on Strensall Common through the preparation of a comprehensive evidence base to support the required Habitat Regulations Assessment and other assessments to be able to fully understand and avoid, mitigate or compensate impacts. To help deliver this, a detailed Visitor Impact Mitigation Strategy must be prepared, which will be informed by comprehensive and repeatable visitor surveys (to be repeated as necessary). The Strategy will identify effective measures which will encourage both the use of alternative sites instead of Strensall Common and less damaging visitor behaviour on the Common. This will include (but not be limited to) the following measures:
 - Within the site divert new users away from the SAC by:
 - Providing natural green space within the site boundary attractive to a range of users, particularly dog walkers;
 - The provision of a circular walk within the site;
 - Ensuring no access throughout the life of the development either by vehicle, cycle or foot to adjoining land on the north, south and eastern site boundary, and
 - Providing publicity, education and awareness to support these aims
 - On Strensall Common ensure suitable behaviour by visitors by:
 - Implementing actions to manage recreational pressure at points of arrival, by type of activity and location of activity on site;
 - Ongoing monitoring that will specifically lead to the implementation of prompt remedial measures such as the closure of access points etc if adverse effects are identified, **and**
 - Publicity, education and awareness **and**
 - **• The introduction of an efficient wardening service that could supplement the work of existing landholders across the entire common to present a physical presence on site and encourage good behaviours by the public.**

- iii. Ensure all ecological avoidance, mitigation and compensation measures are fully operational and functioning prior to commencement of any development. Measures must be supported by a long term management plan which includes ongoing monitoring and remedial measures.
- iv. Deliver a sustainable housing mix in accordance with the Council's most up to date Strategic Housing Market Assessment.
- v. The development of this area must be informed by an assessment of architectural interest of the site and its buildings. Those buildings which are considered to be of historic interest should be retained and reused.
- vi. Be of a high design standard, ensuring the development has a distinct identity from Strensall village and not be just a continuation of the existing development. The site should have its own identity and character that in its layout and spaces, reflects the site's long use as a barracks, its landscape context, and the natural site assets.
- vii. Retain all identified good quality trees, with appropriate distance to tree canopy, unless they pose an unreasonable restriction on development and their contribution to the public amenity and amenity of the development is very limited, and their loss is outweighed by the benefits and mitigation provided by the development.
- viii. Undertake an archaeological evaluation consisting of geophysical survey and excavation of trenches to identify the presence and assess the significances of archaeological deposits.
- ix. Prepare a Flood Risk Assessment and full drainage strategy. The strategy should be developed in conjunction with the Council and required statutory bodies and should ensure that the development will not exacerbate any existing issues with surface water and drainage. Hydrological studies that explore surface and sub-surface characteristics of the local hydrological regime would be required to identify the impact on the wet heath communities of Strensall Common SAC/SSSI and identify mitigation measures where required. Any hydrology plan/study also needs to consider impacts on water logged archaeological deposits.
- x. Increase the area and quality of open space within any proposed development beyond that found at present in order to reduce the impact of recreational pressure on Strensall Common SSSI/SAC'.
- xi. Create new local facilities as required to meet the needs of future occupiers of the development.
- xii. Deliver sufficient education provision, including a new primary school, to meet the demand arising from the development. Further detailed assessments and associated viability work will be required.
- xiii. Demonstrate that all transport issues have been addressed, in consultation with the Council and Highways England as necessary, to ensure sustainable transport provision at the site is achievable. The impacts of the site individually and cumulatively with sites ST7, ST8, ST9, ST14 and ST15 should be addressed.

- xiv. Give further consideration to road safety at the Strensall Road/Towthorpe Moor Lane, in addition to the use of Towthorpe Moor Lane by through traffic. If identified as necessary, mitigation to Strensall Road/Towthorpe Moor Lane junction will be required.
- xv. Optimise pedestrian and cycle integration, connection and accessibility in and out of the site and connectivity to the city and surrounding area creating well-connected internal streets and walkable neighbourhoods, to encourage the maximum take-up of these more 'active' forms of transport (walking and cycling). Cycle paths will need to be provided along the site frontages connecting into the site and also focus upon the route into the village and local facilities.
- xvi. Undertake detailed noise and contamination assessments, including detailed assessment of the current and future use of the military training area adjacent to the site.

SS19 Explanatory text update:

- 3.84 The location of this site adjacent to Strensall Common SAC means that a comprehensive evidence base to understand the potential impacts on biodiversity from further development is required. Strensall Common is designated for its heathland habitats but also has biodiversity value above its listed features in the SSSI/SAC designations that will need to be fully considered. Although the common is already under intense recreational pressure, there are birds of conservation concern amongst other species and habitats which could be harmed by the intensification of disturbance. In addition, the heathland habitat is vulnerable to changes in the hydrological regime and air quality which needs to be explored in detail. The mitigation hierarchy should be used to identify the measures required to first avoid impacts, then to mitigate unavoidable impacts or compensate for any unavoidable residual impacts, and be implemented in the masterplanning approach. A recreational strategy and physical presence on site with the use of a warden could promote good behaviours by visitors, encouraging use of existing paths and ensuring dogs are properly controlled. The necessary costs for this would best be secured by an appropriate levy or similar on each development. Potential access points into the planned development also need to consider impacts on Strensall Common.

Policy EC1: Provision of Employment Land

Provision for a range of employment uses during the plan period will be made on the following strategic sites (those over 5ha):

Site	Floorspace	Suitable Employment Uses
ST5: York Central	100,000sqm	B1a
ST19: Land at Northminster Business Park (15ha)	49,500sqm	B1c, B2 and B8. May also be suitable for an element of B1a.
ST27: University of York Expansion (21.5ha)	Campus East and ST27 will across both sites deliver up to 25ha of B1b knowledge based businesses including research led science park uses identified in the existing planning permission for Campus East.	
ST26: Land South of Airfield Business Park, Elvington (7.6ha)	25,080sqm	B1b, B1c, B2 and B8.
ST37: Whitehall Grange, Wigginton Road (10.1ha)	33,330sqm	B8

York City Centre will remain the focus for main town centre uses (unless identified above). Proposals for main town centre uses for non city centre locations will only be considered acceptable where it can be demonstrated that they would not have a detrimental impact on the city centre's vitality and viability and the sustainable transport principles of the Plan can be met.

Provision for a range of employment uses during the plan period will be made on the following other sites:

Site	Floorspace	Suitable Employment Uses
E8: Wheldrake Industrial Estate (0.45ha)	1,485sqm	B1b, B1c, B2 and B8.
E9: Elvington Industrial Estate (1ha)	3,300sqm	B1b, B1c, B2 and B8.
E10: Chessingham Park, Dunnington (0.24ha)	792sqm	B1c, B2 and B8.
E11: Annamine Nurseries. Jockey Lane (1ha)	3,300sqm	B1a, B1c, B2 and B8.
E16: Poppleton Garden Centre (2.8ha)	9,240sqm	B1c, B2 and B8. May also be suitable for an element of B1a.
E18: Towthorpe Lines, Strensall (4ha)*	13,200sqm	B1c, B2 and B8 uses.

*** Policy SS19 points i. – ii. apply to this allocation in relation to assessing and mitigating impacts on Strensall Common SAC and must also take account of Policy GI2.**

Policy H1: Housing Allocations

In order to meet the housing requirement set out in Policy SS1 the following sites, as shown on the proposals map and set out in the schedule below are proposed for residential development.

Planning applications for housing submitted for these allocations will be permitted if in accordance with the phasing indicated. An application on an allocated site in advance of its phasing will be approved if:

- the allocation's early release does not prejudice the delivery of other allocated sites phased in an earlier time period;
- the release of the site is required now to maintain a five year supply of deliverable sites; and
- the infrastructure requirements of the development can be satisfactorily addressed.

Where developers are seeking revisions to existing planning permissions and associated conditions and S106 agreements, changes in market conditions will be taken into account

Where sites contain existing openspace this will be an important consideration in the development of the site and the open space needs of the area will need to be fully assessed.

This policy applies to all the sites listed in the Table 5.1 overleaf:

Table 5.1: Housing Allocations

Allocation Reference	Site Name	Site Size (ha)	Estimated Yield (Dwellings)	Estimated Phasing
H1	Former Gas Works, 24 Heworth Green (Phase 1)	2.87	271	Short to Medium Term (Years 1 - 10)
H1	Former Gas works, 24 Heworth Green (Phase 2)	0.67	65	Medium Term (Years 6-10)
H3**	Burnholme School	1.90	72	Short Term (Years 1 - 5)
H5**	Lowfield School	3.64	162	Short to Medium term (Years 1 - 10)
H6	Land R/O The Square Tadcaster Road	1.53	0*	Short to Medium Term (Years 1 - 10)
H7**	Bootham Crescent	1.72	86	Short to

Allocation Reference	Site Name	Site Size (ha)	Estimated Yield (Dwellings)	Estimated Phasing
				Medium Term (Years 1 - 10)
H8	Askham Bar Park & Ride	1.57	60	Short Term (Years 1 - 5)
H10	The Barbican	0.96	187	Short to Medium Term (Years 1 - 10)
H20	Former Oakhaven EPH	0.33	56	Short Term (Years 1 - 5)
H22	Former Heworth Lighthouse	0.29	15	Short Term (Years 1 - 5)
H23	Former Grove House EPH	0.25	11	Short Term (Years 1 - 5)
H29	Land at Moor Lane Copmanthorpe	2.65	88	Short Term (Years 1 - 5)
H31	Eastfield Lane Dunnington	2.51	76	Short Term (Years 1 - 5)
H38	Land RO Rufforth Primary School Rufforth	0.99	33	Short Term (Years 1 - 5)
H39	North of Church Lane Elvington	0.92	32	Short Term (Years 1 - 5)
H46**	Land to North of Willow Bank and East of Haxby Road, New Earswick	2.74	104	Short Term (Years 1 - 5)
H52	Willow House EPH, Long Close Lane	0.20	15	Short Term (Years 1 - 5)
H53	Land at Knapton Village	0.33	4	Short Term (Years 1 - 5)
H55	Land at Layerthorpe	0.20	20	Short Term (Years 1 - 5)
H56**	Land at Hull Road	4.00	70	Short Term (Years 1 - 5)
H58	Clifton Without Primary School	0.70	25	Short Term (Years 1 - 5)
H59**/***	Queen Elizabeth Barracks – Howard Road, Strensall	1.34	45	Medium to Long Term (Years 6 - 15)
ST1**	British Sugar/Manor School	46.3	1,200	Lifetime of the Plan (Years 1-16)
ST2	Civil Service Sports Ground Millfield Lane	10.40	266	Short to Medium Term (Years 1 - 10)

Allocation Reference	Site Name	Site Size (ha)	Estimated Yield (Dwellings)	Estimated Phasing
ST4	Land Adjacent to Hull Road	7.54	211	Short to Medium Term (Years 1 - 10)
ST5	York Central	35.0	1,700	Lifetime of the Plan and Post Plan period (Years 1-21)
ST7	Land East of Metcalfe Lane	34.5	845	Lifetime of the Plan (Years 1 - 16)
ST8	Land North of Monks Cross	39.5	968	Lifetime of the Plan (Years 1 - 16)
ST9	Land North of Haxby	35.0	735	Lifetime of the Plan (Years 1 - 16)
ST14	Land West of Wigginton Road	55.0	1,348	Lifetime of the Plan and Post Plan period (Years 1 - 21)
ST15	Land West of Elvington Lane	159.0	3,339	Lifetime of the Plan and Post Plan period (Years 1 - 21)
ST16	Terry's Extension Site – Terry's Clock Tower (Phase 1)	2.18	22	Short Term (Years 1-5)
ST16	Terry's Extension Site – Terry's Car Park (Phase 2)		33	Short to Medium Term (Years 1 – 10)
ST16	Terry's Extension Site – Land to rear of Terry's Factory (Phase 3)		56	Short to Medium Term (Years 1 – 10)
ST17	Nestle South (Phase 1)	2.35	263	Short to Medium Term (Years 1 - 10)
ST17	Nestle South (Phase 2)	4.70	600	Medium to Long Term (Years 6 – 15)
ST31	Land at Tadcaster Road, Copmanthorpe	8.10	158	Short to Medium Term (Years 1-10)
ST32	Hungate (Phases 5+)	2.17	328	Short to

Allocation Reference	Site Name	Site Size (ha)	Estimated Yield (Dwellings)	Estimated Phasing
				Medium Term (Years 1-10)
ST33	Station Yard, Wheldrake	6.0	147	Short to Medium Term (Years 1-10)
ST35**	Queen Elizabeth Barracks, Strensall	28.8	500	Medium to Long Term (Years 6-15)
ST36**	Imphal Barracks, Fulford Road	18.0	769	Post Plan period (Years 16-21)

*Allocated for specialist housing (Use Class C3b¹) for residential extra care facilities in association with the Wilberforce Trust.

** Sites that contain existing open space

***** Policy SS19 points i. – ii. apply to this allocation in relation to assessing and mitigating impacts on Strensall Common SAC and must also take account of Policy GI2.**

¹ C3(b): up to six people living together as a single household and receiving care e.g. supported housing schemes such as those for people with learning disabilities or mental health problems. The Town and Country Planning (Use Classes) Order 1987 (as amended)



D. Air Quality Assessment



Air Quality Assessment

Air Quality Modelling Assessment

April 2018

Waterman Infrastructure & Environment Limited

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Comments

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Appendices

Appendix A Air Quality Assessment Detailed Methodology

1. Introduction

- 1.1. The City of York Council (CYC) is developing its Local Plan. This will deliver the strategic vision and objectives in York over a 20-year period described in the Pre-Publication Draft Local Plan (Regulation 18) Consultation document¹. When adopted, the Local Plan will influence all future development within the City Council's boundaries. Atmospheric emissions from additional vehicles because of the Local Plan have the potential to impact on ecological sites within York
- 1.2. The purpose of this air quality assessment is to predict the potential effect of the Local Plan on local air quality specifically in relation to ecological sites. The most significant pollutant associated with road traffic emissions in relation to ecological sites is Nitrogen Dioxide (NO_x) and Nitrogen Deposition. Therefore, this assessment focuses on these pollutant.
- 1.3. The results of the air quality modelling are presented in this report and are compared to the relevant Critical Level for NO_x and the Critical Load for Nitrogen Deposition (defined in Chapter 2: Air Quality Legislation and Planning Policy) for each ecological designated site. The results are considered against the relevant screening criteria, where these results cannot be screened as being insignificant, further consideration of the significance in relation to the relevant ecological sites is provided in the Habitats Regulations Assessment (HRA).
- 1.4. Section 2 of this air quality assessment gives a summary of legislation, planning policy and guidance relevant to air quality. Section 3 provides details of the assessment methodology and Section 4 sets out the baseline conditions. The results of the assessments are presented in Section 5. A summary of the findings and conclusions of the assessment is given in Section 6. The air quality assessment is supported by: **Appendix A: Air Quality Assessment Detailed Methodology**.

¹ https://www.york.gov.uk/downloads/download/4036/pre-publication_draft_local_plan_reg_18_consultation

2. Air Quality Legislation and Planning Policy

Legislation

European Union Framework Directive

- 2.1. Air pollutants at high concentrations can give rise to adverse impacts on the health of humans and ecosystems. European Union (EU) legislation on air quality forms the basis for national UK legislation and policy on air quality.
- 2.2. The European Union Framework Directive 2008/50/EC² on ambient air quality assessment and management came into force in May 2008 and was implemented by Member States, including the UK, by June 2010. The Directive aims to protect human health and the environment by avoiding, reducing or preventing harmful concentrations of air pollutants.

Air Quality Standards Regulations

- 2.3. The Air Quality Standards Regulations 2010³ implement Limit Values prescribed by the Directive 2008/50/EC. The Limit Values are legally binding and the Secretary of State, on behalf of the UK Government, is responsible for their implementation.

The UK Air Quality Strategy

- 2.4. The Environment Act 1995⁴ required the preparation of a national air quality strategy setting health-based air quality objectives for specified pollutants and outlining measures to be taken by local authorities in relation to meeting these (the Local Air Quality Management (LAQM) regime).
- 2.5. The current UK Air Quality Strategy (UK AQS) was published in 2007⁵ and sets out air quality objectives for local authorities to meet when undertaking their LAQM duties. Objectives in the UK AQS are in some cases more onerous than the Limit Values set out within the relevant EU Directives and the Air Quality Standards Regulations 2010. In addition, objectives have been established for a wider range of pollutants.
- 2.6. Currently it is a Local Authority's responsibility to determine the effect of a development against the UK AQS objectives.

Critical Level

- 2.7. Critical Levels relate to effects on plant physiology, growth and vitality, and are expressed as atmospheric concentrations over an averaging time and are defined by the UN ECE⁶ as:
“concentrations of pollutants in the atmosphere above which direct adverse effects on receptors, such as human beings, plants, ecosystems or materials, may occur according to present knowledge”.
- 2.8. The critical levels for NO_x are set by in the EU Ambient Air Quality Directive and transposed into law by the Air Quality Standards Regulations. The Critical Levels for NO_x relevant to this assessment are summarised in Table 1 below.

² European Council Directive 2008/50/EC of 21 May 2008 on ambient air quality and cleaner air for Europe

³ Defra, 2010, 'The Air Quality Standards Regulations'

⁴ Office of the Deputy Prime Minister (ODPM), 1995, 'The Environment Act 1995'

⁵ Defra, 2007, 'The Air Quality Strategy for England, Scotland, Wales & Northern Ireland'

⁶ <http://www.unece.org/env/lrtap/WorkingGroups/wge/definitions.htm>

Table 1: Summary of Relevant Critical Level for Ecological Sites

Pollutant	Critical Level	Averaging Period
Nitrogen Oxides (NO _x)	30µg/m ³	Annual Mean
	75µg/ m ³	24 Hour Mean

- 2.9. Several studies^{7,8} have indicated that the 'UN/ECE Working Group on Effects strongly recommended the use of the annual mean value, as the long-term effects of NO_x are thought to be more significant than the short-term effects'. Therefore, this assessment only considers the annual mean NO_x concentration.

Critical Loads

- 2.10. A Critical Load is defined by the Air Pollution Information System (APIS)⁹ as:

"A quantitative estimate of exposure to deposition of one or more pollutants, below which significant harmful effects on sensitive elements of the environment do not occur, according to present knowledge. The exceedance of a critical load is defined as the atmospheric deposition of the pollutant above the critical load."

- 2.11. When pollutant loads (or concentrations) exceed the Critical Load, it is considered that there is a risk of harmful effects. The excess over the critical load is termed the exceedance. A larger exceedance is often considered to represent a greater risk of damage.
- 2.12. Maps of Critical Loads and their exceedances are used to show the potential extent of pollution damage and aid in developing strategies for reducing pollution. Decreasing deposition below the Critical Load is seen as means for preventing the risk of damage. However, even a decrease in the exceedance may infer that less damage will occur.
- 2.13. Critical Loads have been designated within the UK based on the sensitivity of the receiving habitat and have been reviewed for this assessment. Further information on the Critical Loads considered in this air quality assessment are discussed below (under the heading Background Concentrations).

⁷ Sutton et al. (2013), The European Nitrogen Assessment: Sources, Effects and Policy Perspectives. Page 414. Cambridge University Press. 664pp. ISBN-10:1107006120

⁸ June 2011. Manual on Methodologies and Criteria for Modelling and Mapping Critical Loads & Levels and Air Pollution Effects, Risks and Trends. Chapter 3: Mapping Critical Levels for Vegetation

⁹ <http://www.apis.ac.uk/>

3. Assessment Methodology and Significance

Assessment Methodology

- 3.1. This air quality assessment was undertaken using a variety of information and procedures as follows:
- a review of the APIS website¹⁰ to identify the baseline conditions within the relevant ecological sites and those habitats sensitive to changes in NO_x and nitrogen deposition;
 - application of the ADMS-Roads dispersion model to predict the Process Contribution (PC) from the traffic flows associated within the Local Plan (details of the dispersion modelling are presented in Appendix A);
 - the calculation of the total Predicted Environmental Concentration (PEC) which includes the PC combined with the existing baseline concentration;
 - comparison of the predicted air pollutant concentrations with the relevant Critical Level and Critical Load; and
 - determination of the likely significant effects of the Local Plan on air quality within the ecological sites using the Defra and Environment Agency online guidance document¹¹.

Model Verification

- 3.2. Model verification is the process of comparing monitored and modelled pollutant concentrations and, if necessary, adjusting the modelled results to reflect actual measured concentrations, to improve the accuracy of the modelling results. The model has been verified by comparing the predicted annual mean NO₂ concentrations for the baseline year of 2016, with results from the CYC monitoring locations. The verification and adjustment process is described in detail in **Appendix A**.

Atmospheric Chemistry

Nitrogen Deposition

- 3.3. Nitrogen deposition rates were calculated using the conversion factors provided within the EA AQTAG¹² document.
- 3.4. Predicted pollutant concentrations were multiplied by the relevant deposition velocity and conversion factor to calculate the dry deposition flux. The conversion factors used for the determination of nitrogen deposition are presented within Table 2.

¹⁰ <http://www.apis.ac.uk/>

¹¹ Defra and Environment Agency (2016) Guidance: 'Air emissions risk assessment for your environmental permit' <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit> last updated 2 August 2016

¹² Environment Agency (2006), Technical Guidance on Detailed Modelling approach for an Appropriate Assessment for Emissions to Air AQTAG 06

Table 2: Conversion Factors to Determine Dry Deposition

Pollutant	Deposition Velocity (m/s)	Conversion Factor ($\mu\text{g}/\text{m}^2/\text{s}$ to $\text{kg}/\text{ha}/\text{yr}$ of pollutant species)
NO _x	0.0015	96

- 3.5. The PC and PEC proportion of the Critical Level or Critical Load were then calculated using the critical loads as presented on the APIS website¹³ and presented in the subheading Baseline Critical Loads below.

Sensitive Receptors

- 3.6. Tailpipe emissions from the additional vehicles as a result of the Local Plan have the potential to impact on ecological sites within York. The study was completed using the APIS website to identify habitats that may be sensitive to changes in NO_x as well as Nitrogen Deposition. A summary of those habitats is provided in Table 3.
- 3.7. Results have been modelled along a transect at intervals of 1-5m; 10m; 15m; 20m; 25m; 50m; 100m; and 150m intervals from the roadside, additionally concentrations were modelled as a grid with a resolution of 20m across each of the ecological sites. **Figures 1 - 7** show the locations of the transects within each of the ecological sites.

¹³ www.apis.ac.uk

Table 3: Habitat Description

Site	
Strensall Common	<ul style="list-style-type: none"> • Dwarf shrub heath (<i>Calluna vulgaris</i> - <i>Deschampsia flexuosa</i> heath) & (<i>Erica tetralix</i> - <i>Sphagnum compactum</i> wet heath); • Fen, marsh and swamp (<i>Molinia caerulea</i> - <i>Potentilla erecta</i> mire) • Northern wet heath: <i>Erica tetralix</i> dominated wet heath • European dry heaths (H4030)
Clifton Ings	<ul style="list-style-type: none"> • Neutral grassland (<i>Alopecurus pratensis</i> - <i>Sanguisorba officinalis</i> grassland), (<i>Cynosurus cristatus</i> - <i>Caltha palustris</i> grassland)
Fulford Ings	<ul style="list-style-type: none"> • Neutral grassland (<i>Alopecurus pratensis</i> - <i>Sanguisorba officinalis</i> grassland) • Fen, marsh and swamp (<i>Juncus subnodulosus</i> - <i>Cirsium palustre</i> fen meadow)
Askham Bog	<ul style="list-style-type: none"> • Broad-leaved, mixed and yew woodland (<i>Alnus glutinosa</i> - <i>Urtica dioica</i> woodland); <i>Quercus robur</i> - <i>Pteridium aquilinum</i> - <i>Rubus fruticosus</i> woodland) • Fen, marsh and swamp (<i>Juncus effusus</i> / <i>acutiflorus</i> - <i>Galium palustre</i> rush pasture) • Fen, marsh and swamp (<i>Juncus subnodulosus</i> - <i>Cirsium palustre</i> fen meadow)
Church Ings	<ul style="list-style-type: none"> • Neutral grassland (<i>Alopecurus pratensis</i> - <i>Sanguisorba officinalis</i> grassland)
Acaster South Ings	<ul style="list-style-type: none"> • Neutral grassland (<i>Alopecurus pratensis</i> - <i>Sanguisorba officinalis</i> grassland)
River Derwent	<ul style="list-style-type: none"> • Fen, marsh and swamp (<i>Carex echinata</i> - <i>Sphagnum recurvum</i> (<i>fallax</i> / <i>auriculatum</i> (<i>denticulatum</i>)) mire) • Fen, marsh and swamp (<i>Juncus effusus</i> / <i>acutiflorus</i> - <i>Galium palustre</i> rush pasture) • Fen, marsh and swamp (<i>Filipendula ulmaria</i> - <i>Angelica sylvestris</i> mire) • Broad-leaved, mixed and yew woodland (<i>Salix cinerea</i> - <i>Galium palustre</i> woodland) (<i>Alnus glutinosa</i> - <i>Fraxinus excelsior</i> - <i>Lysimachia nemorum</i> woodland)
Lower Derwent	<ul style="list-style-type: none"> • Acid grassland (<i>Festuca ovina</i> - <i>Agrostis capillaris</i> - <i>Galium saxatile</i> lowland acid grassland (U4a)) • Neutral grassland (<i>Cynosurus cristatus</i> - <i>Centaurea nigra</i> grassland)

Note: Habitat descriptions taken from APIS website

Assessment Criteria

- 3.8. The Defra and Environment Agency online guidance¹¹ states that the PC can be considered insignificant if:
- the short-term PC is less than 10% of the short-term environmental standard (Critical Level for NOx or Critical Load for nitrogen deposition); and
 - the long-term PC is less than 1% of the long-term environmental standard.
- 3.9. If these criteria are exceeded the following guidance is provided on when further consideration of potential impacts may be useful:
- the short-term PC is less than 20% of the short-term environmental standard minus twice the long-term background concentration; and
 - the long-term PEC is less than 70% of the long-term environmental standard.
- 3.10. If these criteria are achieved, then predicted impacts are insignificant. Where these criteria are not achieved the results have been passed to the project ecologist for further consideration.

4. Baseline Conditions

City of York Review and Assessment

- 4.1. CYC completed a First Stage Review and Assessment of air quality in December 1998¹⁴. This determined that the AQS objectives for CO, Benzene (C₆H₆), 1,3 butadiene (C₄H₆), and lead (Pb) were not at risk of being exceeded. However, it also concluded that further stages of review and assessment were required for NO₂, SO₂ and PM₁₀.
- 4.2. A Second and Third Stage Review and Assessment of air quality was undertaken in February 2000¹⁵. This report concluded that the air quality objectives for SO₂ and PM₁₀ would be met. The report also predicted breaches of the annual average NO₂ objective at five locations around the inner ring road.
- 4.3. Therefore, CYC declared an AQMA at these five locations around the inner ring road, for the annual mean NO₂ AQS objective in January 2002, this AQMA was subsequently amended in 2012 to include the 1-hour mean NO₂ AQS objective as several properties within the AQMA. An AQMA was also declared in 2010 for the annual mean NO₂ objective for an area along Fulford Road, Main Street and Selby Road.
- 4.4. CYC undertook an Updating and Screening Assessment (USA) in 2015¹⁶ and an Annual Status Report in 2017¹⁷, the findings of both confirmed that 1,3 butadiene, CO, Pb, Benzene and SO₂ still met the objective levels and therefore did not require a Detailed Assessment. While there had been a slight increase in concentrations in 2016 compared with 2015 there was evidence of a steady downward trend in nitrogen dioxide concentrations within York over the last 7 years.
- 4.5. Air quality modelling work undertaken by CYC indicates that with the proposed third Air Quality Action Plan (AQAP3) measures in place, the air quality objectives for NO₂ will be met across York by 2021.

City of York Air Quality Monitoring Data

- 4.6. CYC currently undertakes monitoring at nine locations within the City of York using automatic monitors. Of these nine locations, eight of the locations monitor NO₂, four monitor PM₁₀ and three monitors PM_{2.5}. NO₂ was also measured at 234 locations using diffusion tubes.
- 4.7. The results for the Fulford Road monitoring location classified as a roadside location, are presented in **Table 4** below for 2016 and 2017. Fulford Road monitoring location is presented as it is located approximately 0.5km from the Fulford Ings ecological site.

Table 4: Measured Concentrations at the Fulford Road Roadside Automatic Monitor

Pollutant	2016	2017
NO _x	59	55
NO ₂	25	23

- 4.8. The monitoring results in **Table 4** indicate that the annual mean NO_x objective of 30µg/m³ (for ecological sites) was exceeded in 2016 and 2017. The results for the nearest nitrogen diffusion tube roadside locations to the selected ecological sites are presented in **Table 5**.

¹⁴ City of York Council (1998) First Stage Review and Assessment of Air Quality

¹⁵ City of York Council (2000) Second and Third Stage Review and Assessment

¹⁶ City of York Council, Updating and Screening Assessment for City of York Council, April 2015.

¹⁷ City of York Council, 2017 Air Quality Annual Status Report, June 2017.

Table 5: Measured Concentrations at the City of York Diffusion Tubes

Site ID	Name	Distance to nearest ecological Site	2013	2014	2015	2016
47	Strensall Road	4.3km Strensall Common	28.2	28.0	27.6	28.3
A12	7 Clifton Green (Lamppost)	1.0km Clifton Ings	30.7	33.8	28.7	29.0
A96	Ousecliffe Gardens (signpost, outside 31 Water End)	0.9km Clifton Ings	31.5	34.4	28.4	31.7
C29	34 Selby Road (Lamppost)	0.7km Fulford Ings	30.2	33.5	28.8	30.0
C30	2 Selby Road (Lamppost)	0.7km Fulford Ings	34.0	35.2	29.3	30.8
C34	103 Main St	0.3km Fulford Ings	26.6	28.6	23.7	25.2
C36	50 Main St	0.3km Fulford Ings	26.9	30.8	29.7	28.5
C38	8 Main St (Lamppost)	0.3km Fulford Ings	30.7	30.8	28.2	28.1
C39	18 Main St	0.4km Fulford Ings	31.5	35.3	35.1	32.6
C58	4 Main St (Drainpipe)	0.4km Fulford Ings	36.3	39.5	36.8	35.5
95a/b/c	Fulford AQS	0.5km Fulford Ings	25.2	26.0	24.7	23.7
C43/43a/44	39 Fulford (Lamppost)	0.5km Fulford Ings	29.4	31.1	28.0	29.4

- 4.9. The monitoring results in **Table 5** indicate that the annual mean NO₂ objective of 40µg/m³ has been met at all monitoring locations between 2013 and 2016.

Background Concentrations

- 4.10. The ADMS Roads model has been used to model pollutant concentrations at the ecological receptors. To estimate the total concentrations due to the contribution of any other nearby sources of pollution, background pollutant concentrations need to be added to the modelled concentrations.
- 4.11. Current NO_x and nitrogen deposition concentrations within the ecological sites have been taken from the APIS website. The website presents a range of concentrations for each ecological site, **Table 6** presents the maximum NO_x and Nitrogen Deposition concentrations from the APIS website for each ecological site which have been used in the assessment. The year 2033 is presented as this is the final year which the Local Plan covers.

Table 6: APIS Background Concentrations ($\mu\text{g}/\text{m}^3$)

Site		NOx ($\mu\text{g}/\text{m}^3$)		Nitrogen Deposition (KgN ha/yr)	
		2015	2033	2015	2033
Strensall Common	<ul style="list-style-type: none"> Dwarf shrub heath (<i>Calluna vulgaris</i> - <i>Deschampsia flexuosa</i> heath) & (<i>Erica tetralix</i> - <i>Sphagnum compactum</i> wet heath) Fen, marsh and swamp (<i>Molinia caerulea</i> - <i>Potentilla erecta</i> mire) Northern wet heath: <i>Erica tetralix</i> dominated wet heath European dry heaths (H4030) 	13.13	8.40	24.08	15.41
Clifton Ings	<ul style="list-style-type: none"> Neutral grassland (<i>Alopecurus pratensis</i> - <i>Sanguisorba officinalis</i> grassland), (<i>Cynosurus cristatus</i> - <i>Caltha palustris</i> grassland) 	26.65	17.06	21.84	13.98
Fulford Ings	<ul style="list-style-type: none"> Neutral grassland (<i>Alopecurus pratensis</i> - <i>Sanguisorba officinalis</i> grassland) Fen, marsh and swamp (<i>Juncus subnodulosus</i> - <i>Cirsium palustre</i> fen meadow) 	19.69	12.60	21.14	13.53
Askham Bog	<ul style="list-style-type: none"> Broad-leaved, mixed and yew woodland (<i>Alnus glutinosa</i> - <i>Urtica dioica</i> woodland); <i>Quercus robur</i> - <i>Pteridium aquilinum</i> - <i>Rubus fruticosus</i> woodland) Fen, marsh and swamp (<i>Juncus effusus</i> / <i>acutiflorus</i> - <i>Galium palustre</i> rush pasture) Fen, marsh and swamp (<i>Juncus subnodulosus</i> - <i>Cirsium palustre</i> fen meadow) 	22.02	14.09	34.58	22.13
Church Ings	<ul style="list-style-type: none"> Neutral grassland (<i>Alopecurus pratensis</i> - <i>Sanguisorba officinalis</i> grassland) 	15.26	9.77	20.58	13.17
Acaster South Ings	<ul style="list-style-type: none"> Neutral grassland (<i>Alopecurus pratensis</i> - <i>Sanguisorba officinalis</i> grassland) 	14.78	9.46	18.90	12.10
River Derwent	<ul style="list-style-type: none"> Fen, marsh and swamp (<i>Carex echinata</i> - <i>Sphagnum recurvum</i> (fallax) / <i>auriculatum</i> (denticulatum) mire) Fen, marsh and swamp (<i>Juncus effusus</i> / <i>acutiflorus</i> - <i>Galium palustre</i> rush pasture) Fen, marsh and swamp (<i>Filipendula ulmaria</i> - <i>Angelica sylvestris</i> mire) Broad-leaved, mixed and yew woodland (<i>Salix cinerea</i> - <i>Galium palustre</i> woodland) (<i>Alnus glutinosa</i> - <i>Fraxinus excelsior</i> - <i>Lysimachia nemorum</i> woodland) Water courses of plain to montane levels with the <i>Ranuncion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation (H3260) <i>Petromyzon marinus</i> - Sea lamprey (S1095) <i>Lampetra fluviatilis</i> - River lamprey (S1099) <i>Cottus gobio</i> - Bullhead (S1163) <i>Lutra lutra</i> - Otter (S1355) 	16.26	10.40	14.56	9.32

Lower Derwent	• Acid grassland (<i>Festuca ovina</i> - <i>Agrostis capillaris</i> - <i>Galium saxatile</i> lowland acid grassland (U4a))				
	• Neutral grassland (<i>Cynosurus cristatus</i> - <i>Centaurea nigra</i> grassland)				
	• Lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>) (H6510)				
	• Lutra lutra - Otter (S1355)				
	• <i>Anas penelope</i> (Western Siberia/North-western/North-eastern Europe) - Eurasian wigeon (A050)	17.18	11.00	17.36	11.11
	• <i>Anas crecca</i> (North-western Europe) - Eurasian teal (A052)				
	• <i>Anas clypeata</i> (North-western/Central Europe) - Northern shoveler (A056)				
	• <i>Pluvialis apricaria</i> [North-western Europe - breeding] - European golden plover (A140)				
	• <i>Philomachus pugnax</i> (Western Africa - wintering) - Ruff (A151)				
	• <i>Cygnus columbianus bewickii</i> (Western Siberia/North-eastern & North-western Europe) - Tundra swan (A037)				

Note: As per the DMRB guidance the APIS background concentrations have been reduced by 2% per year to estimate concentrations for the assessment year

Baseline Critical Loads

Nitrogen Deposition

- 4.12. The critical loads for nitrogen deposition for each of the ecological sites to be considered have been taken from APIS and are presented in **Table 7**. The 2033 deposition rates from **Table 6** are presented to represent the current levels experienced within the ecological sites so a comparison with the Critical Loads can be made and identify if the Critical Loads within the ecological site are likely to be exceeded.

Table 7: Critical Loads for Nitrogen Deposition (2033)

Habitat		Critical Load (kgN/ha/yr)		Nitrogen Deposition (kgN ha/yr)	Headroom (kgN/ha/yr)	
		Low Limit	High Limit		Low Limit	High Limit
Strensall Common	Dwarf Shrub Heath / Northern Wet Heath / European Dry Heaths	10	20	15.41	-5.41	4.59
	Fen, Marsh and Swamp	15	25	15.41	-0.41	9.59
Clifton Ings	Neutral Grassland	20	30	13.98	6.02	16.02
Fulford Ings	Neutral grassland	20	30	13.53	6.47	16.47
	Fen, Marsh and Swamp	15	30	13.53	1.47	16.47
Askham Bog	Broad-leaved, Mixed and Yew Woodland	10	20	22.13	-12.13	-2.13
	Fen, Marsh and Swamp	15	25	22.13	-7.13	2.87
	Fen, Marsh and Swamp	15	30	22.13	-7.13	12.87
Church Ings	Neutral Grassland	20	30	13.17	6.83	16.83
Acaster South Ings	Neutral Grassland	20	30	12.10	7.90	17.90
River Derwent	Fen, Marsh and Swamp	10	15	9.32	0.68	5.68
	Fen, Marsh and Swamp	15	25	9.32	5.68	15.68
	Fen, Marsh and Swamp / Broad-leaved, Mixed and Yew Woodland	15	30	9.32	5.68	20.68
Lower Derwent	Acid Grassland	10	15	11.11	-1.11	3.89
	Neutral Grassland / Lowland Hay Meadows	20	30	11.11	8.89	18.89

- 4.13. As shown in **Table 7**, the current Critical Loads in 2033 for the Lower Limits are exceeded at the Strensall Common and Askham Bog and Church Ings ecological sites. The lower level is also exceeded for the Acid Grassland habitat at the Lower Derwent ecological site. The Higher Limit is also exceeded for the Broad-leaved, mixed and yew woodland habitat at the Askham Bog ecological site all other Higher Limits for the remaining habitats and sites are met.

5. Air Quality Assessment

Annual Mean NO_x

- 5.1. The modelling results for the maximum predicted annual mean NO_x concentration at the ecological receptors due to traffic emissions are summarised in **Table 8**. **Figure 8** shows the location of the maximum predicted concentration within each of the ecological sites.

Table 8: Maximum Predicted Annual Mean NO_x Concentrations

Receptor	Grid Reference of Receptor	Predicted Annual Mean NO _x Concentration (µg/m ³)		Proportion of Critical Level (%)	
		PC	PEC	PC	PEC
Strensall Common	463590, 460035	1.95	10.35	6.5	34.5
Clifton Ings	458510, 452590	0.14	17.20	0.5	57.3
Fulford Ings	461087, 448678	3.46	16.06	11.5	53.5
Askham Bog	456840, 447700	0.53	14.62	1.8	48.7
Church Ings	459465, 445780	0.02	9.79	0.1	32.6
Acaster South Ings	459360, 444360	0.01	9.47	0.0	31.6
River Derwent	470500, 451120	1.39	11.79	4.6	39.3
Lower Derwent	470480, 446350	0.03	11.03	0.1	36.8

- 5.2. As shown in **Table 8** predicted NO_x concentrations are below the annual mean Critical Level of 30µg/m³ at all ecological receptor locations. The PC is below the criteria for insignificant impacts at the Clifton Ings, Church Ings, Acaster South Ings and Lower Derwent ecological sites, the PEC is also below the criteria for insignificant impacts at the Strensall Common, Fulford Ings, Askham Bog and River Derwent ecological sites, as such the predicted effects on annual mean NO_x concentrations are considered insignificant.

Nitrogen Deposition

- 5.3. The results of the maximum nitrogen deposition modelling are summarised in **Table 9**.

Table 9: Maximum Predicted Nitrogen Deposition

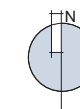
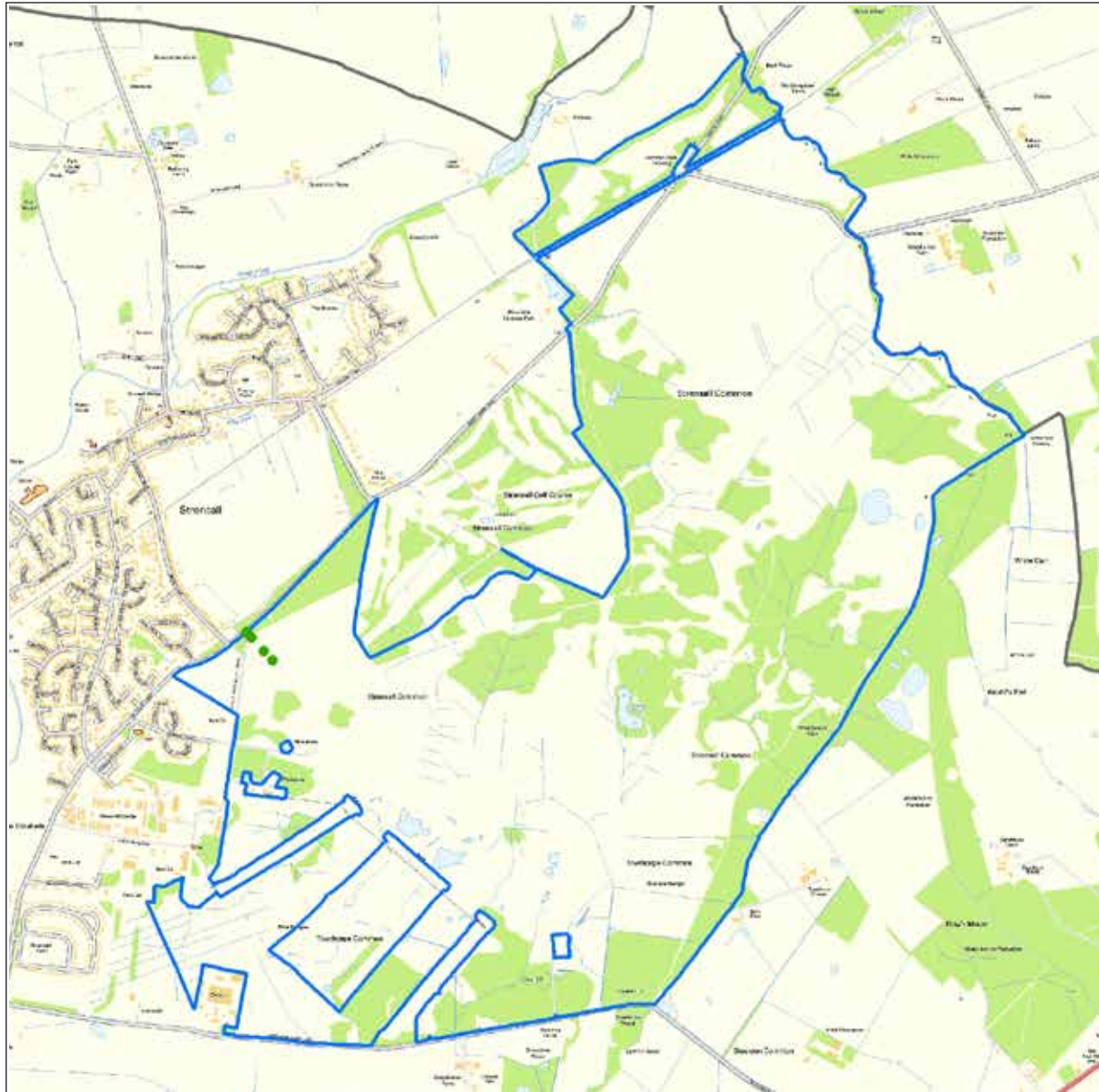
Receptor		Process Contribution (kgN/ha/yr)		Proportion of Critical Load (%)			
				PC		PEC	
		PC	PEC	Low	High	Low	High
Strensall Common	Dwarf shrub heath	0.28	15.69	2.8	1.4	157	78
	Northern wet heath						
	European dry heaths (H4030)						
	Fen, marsh and swamp	0.28	15.69	1.9	1.1	105	63
Clifton Ings	Neutral Grassland	0.02	14.00	0.1	0.1	70	47
Fulford Ings	Neutral grassland	0.50	14.03	2.5	1.7	70	47
	Fen, marsh and swamp	0.50	14.03	3.3	1.7	94	47
Askham Bog	Broad-leaved, mixed and yew woodland	0.08	22.21	0.8	0.4	222	111
	Fen, marsh and swamp	0.08	22.21	0.5	0.3	148	89
	Fen, marsh and swamp	0.08	22.21	0.5	0.3	148	74
Church Ings	Neutral grassland	0.002	13.17	0.0	0.0	66	44
Acaster South Ings	Neutral grassland	0.001	12.10	0.0	0.0	61	40
River Derwent	Fen, marsh and swamp	0.20	9.52	2.0	1.3	95	63
	Fen, marsh and swamp	0.20	9.52	1.3	0.8	63	38
	Fen, marsh and swamp / Broad-leaved, mixed and yew woodland	0.20	9.52	1.3	0.7	63	32
Lower Derwent	Acid Grassland	0.004	11.11	0.0	0.0	111	74
	Neutral Grassland	0.004	11.11	0.0	0.0	56	37

- 5.4. As shown in **Table 9**, the maximum PCs are below the criteria for insignificant impacts considering both the low and high Critical Loads at the Clifton Ings, Askham Bog, Church Ings, Acaster South Ings, and Lower Derwent ecological sites, it is considered the impact is **insignificant** at these ecological sites. The maximum PEC is below the criteria for insignificant impacts, considering the high Critical Load, for the Fen, Marsh and Swamp habitat at the Strensall Common ecological site, the Fulford Ings ecological site, and the River Derwent ecological site, it is considered the impact is **insignificant** at these ecological sites.
- 5.5. The PC and PEC for the Dwarf shrub heath at the Strensall Common ecological site is above the criteria for insignificant impacts and can therefore not be screened out at this stage, further consideration to the significance of impacts at this site is considered further in the HRA.

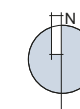
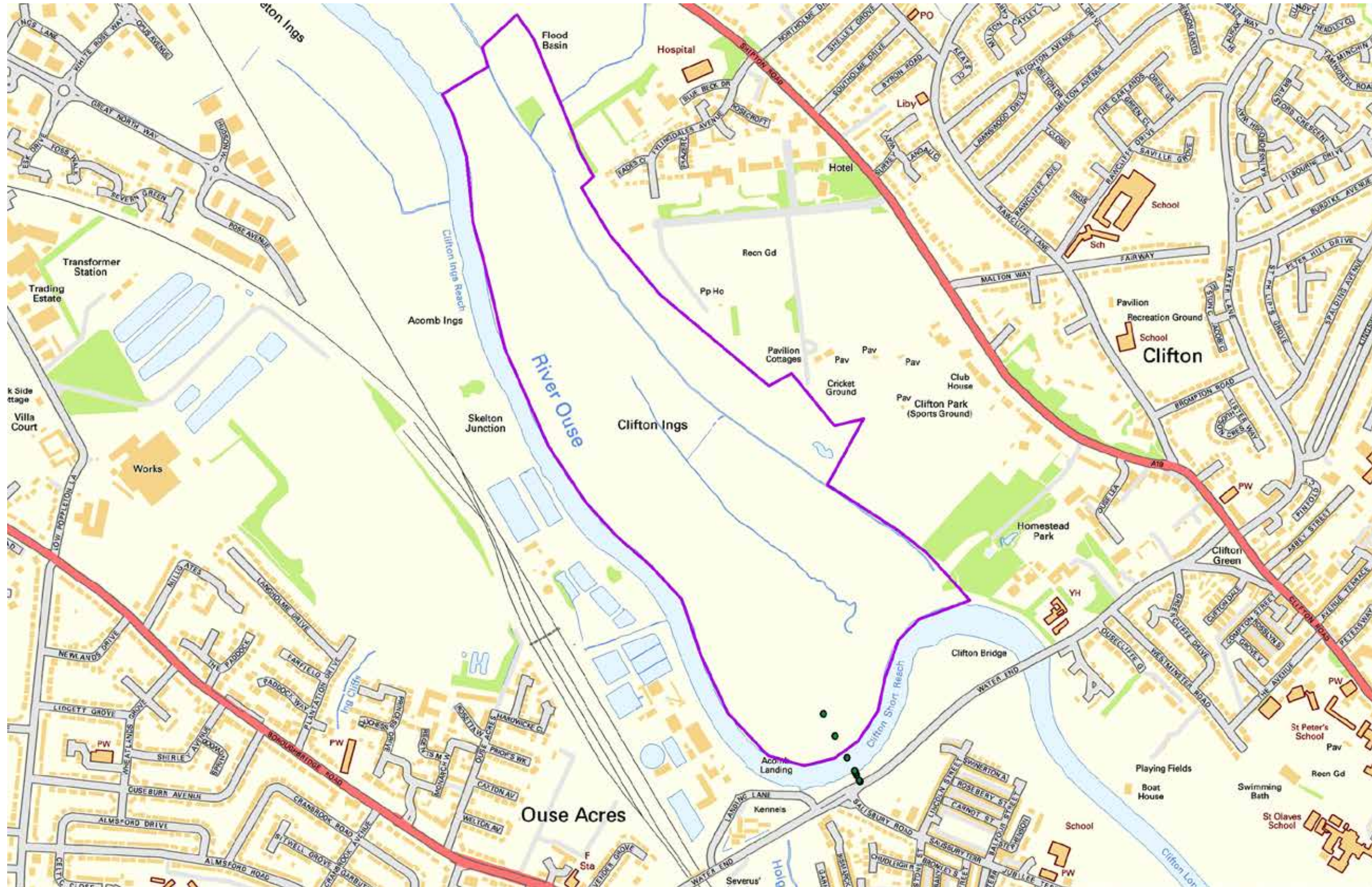
6. Summary and Conclusions

6.1. Overall the assessment has identified that following the adoption of the Local Plan:

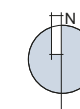
- the predicted effects on annual mean NO_x concentrations are considered insignificant at all ecological sites;
- the predicted effects on nitrogen deposition is insignificant at most ecological sites, however the impacts at the Dwarf shrub heath at the Strensall Common ecological site cannot be screened out at this stage. Therefore, further consideration to the significance of impacts at this site is considered within the HRA.



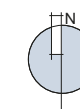
Project Details	WIE13194-103: York Air Quality Assessment
Figure Title	Figure 1: Strensall Common Transect Location
Figure Ref	WIE13194-103_GR_AQ_1A
Date	April 2018
File Location	\\s-incs\wiel\projects\wie13194\103\graphics\laq\issued figures



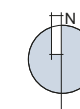
Project Details	WIE13194-103: York Air Quality Assessment
Figure Title	Figure 2: Clifton Ings Transect Location
Figure Ref	WIE13194-103_GR_AQ_2A
Date	April 2018
File Location	\\s-inc\wiel\projects\wie13194\103\graphics\laq\issued figures



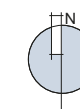
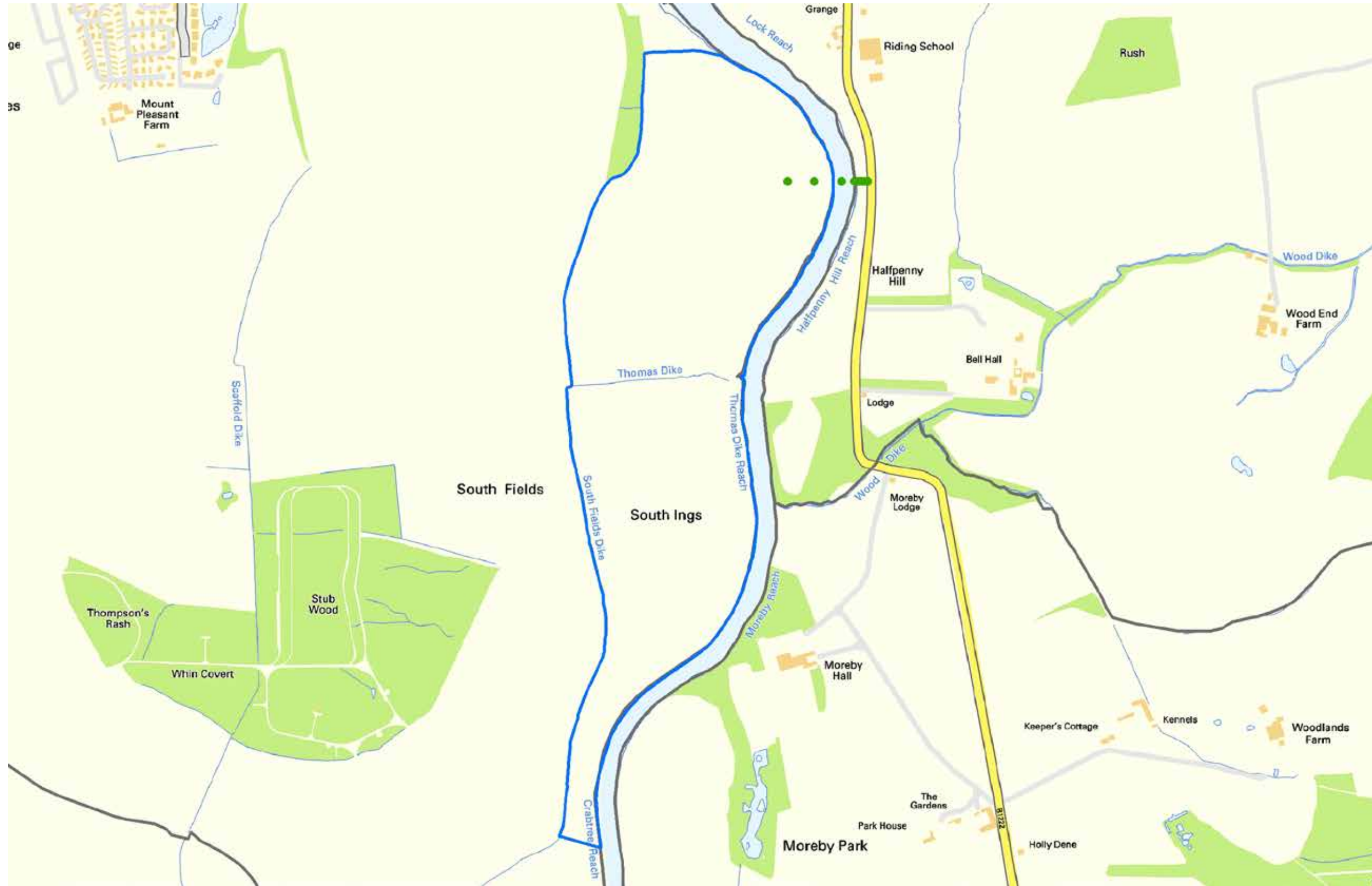
Project Details	WIE13194-103: York Air Quality Assessment
Figure Title	Figure 3: Fulford Ings Transect Location
Figure Ref	WIE13194-103_GR_AQ_3A
Date	April 2018
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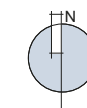
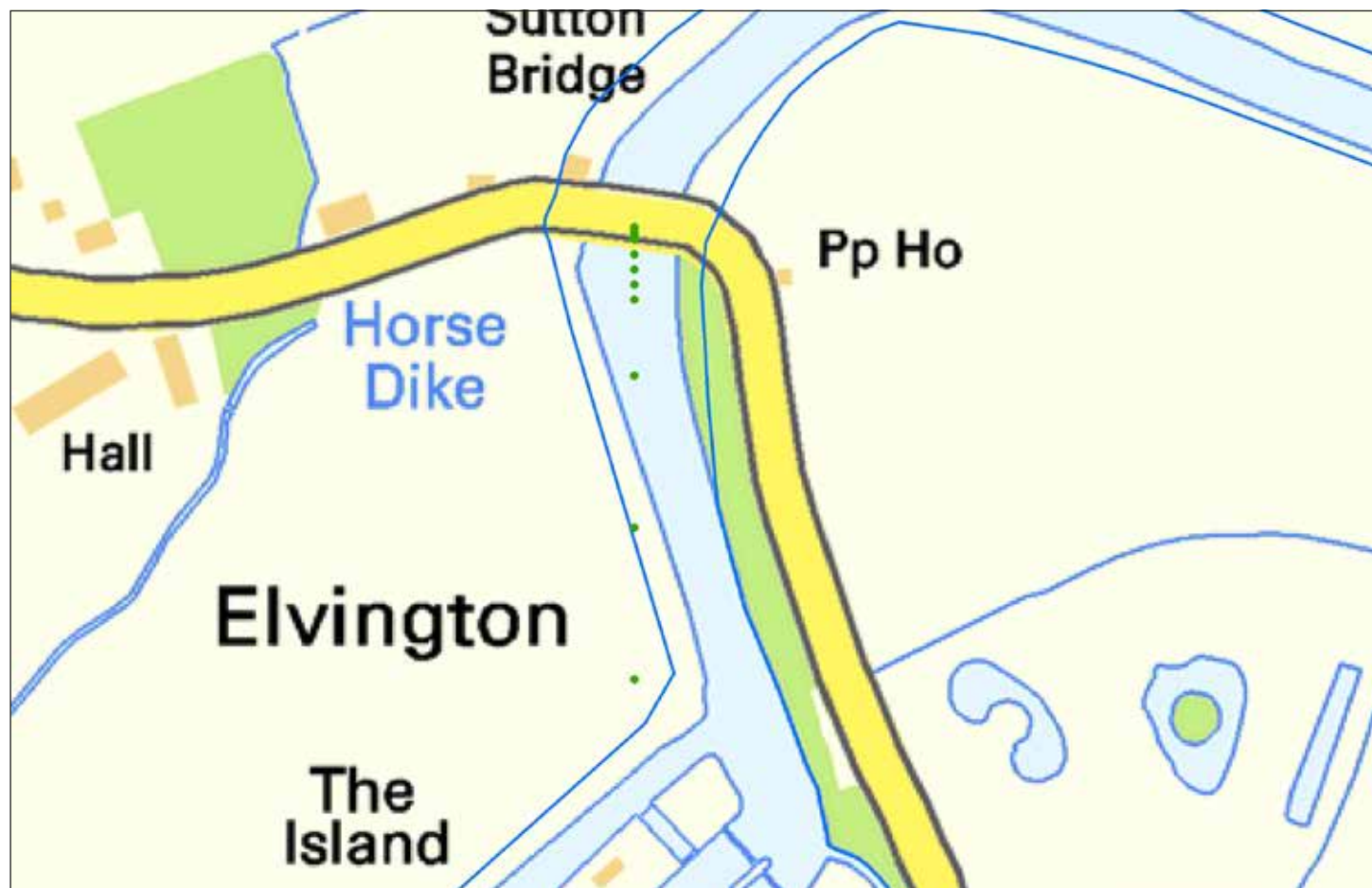
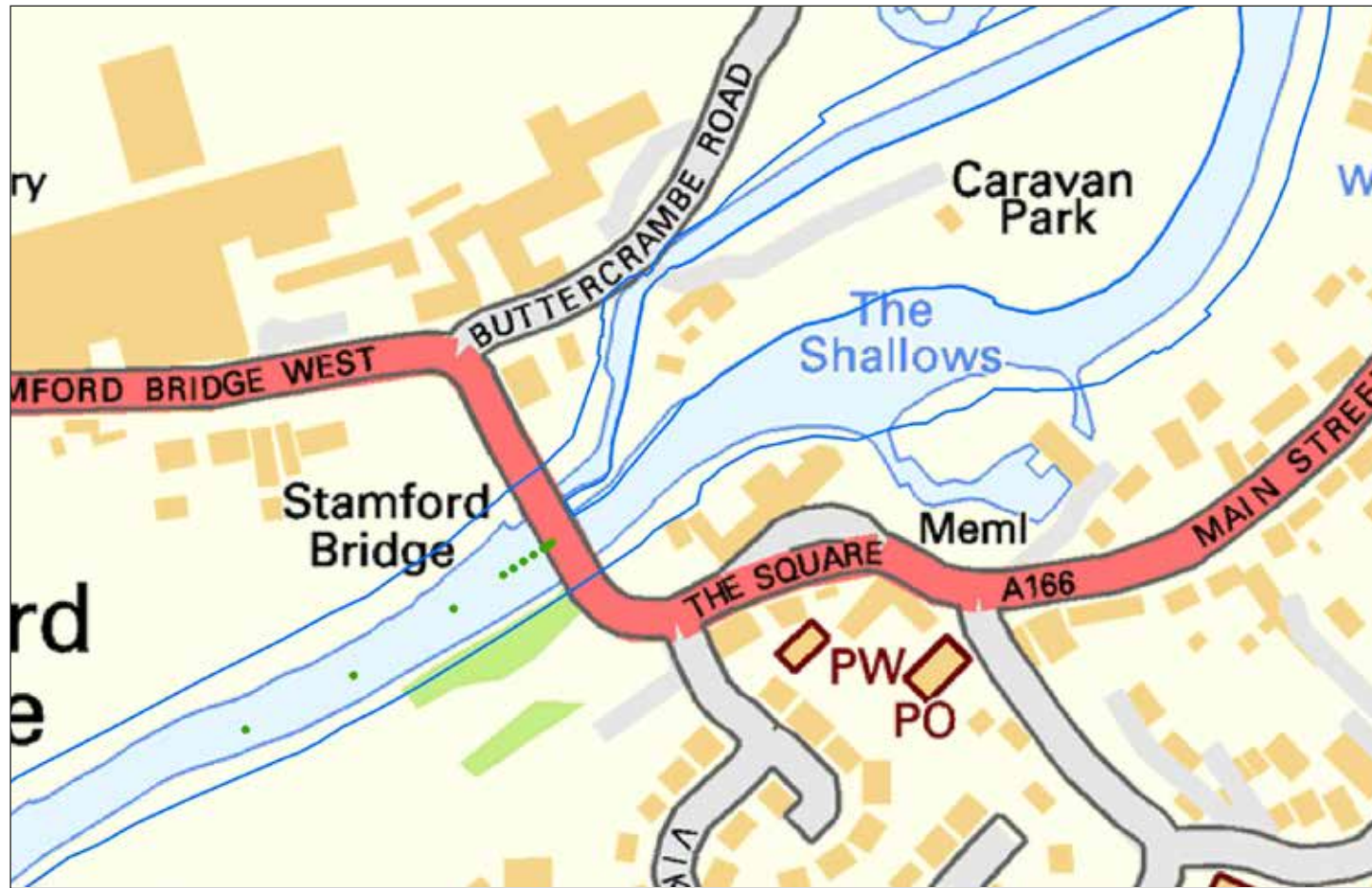
Project Details	WIE13194-103: York Air Quality Assessment
Figure Title	Figure 4: Askham Bog Transect Location
Figure Ref	WIE13194-103_GR_AQ_4A
Date	April 2018
File Location	\\s-incs\wie\projects\wie13194\103\graphics\laq\issued figures



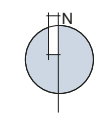
Project Details	WIE13194-103: York Air Quality Assessment
Figure Title	Figure 5: Church Transect Location
Figure Ref	WIE13194-103_GR_AQ_5A
Date	April 2018
File Location	\\s-incs\wie\projects\wie13194\103\graphics\laq\issued figures



Project Details	WIE13194-103: York Air Quality Assessment
Figure Title	Figure 6: Acaster South Ings Transect Location
Figure Ref	WIE13194-103_GR_AQ_6A
Date	April 2018
File Location	\\s-incs\wiel\projects\wie13194\103\graphics\laq\issued figures



Project Details	WIE13194-103: York Air Quality Assessment
Figure Title	Figure 7: River Derwent Transect Locations
Figure Ref	WIE13194-103_GR_AQ_7A
Date	April 2018
File Location	\\s-incs\wiel\projects\wie13194\103\graphics\laq\issued figures



Project Details	WIE13194-103: York Air Quality Assessment
Figure Title	Figure 8: Maximum Concentration Locations
Figure Ref	WIE13194-103_GR_AQ_8A
Date	April 2018
File Location	\\s:\Incs\wiel\projects\wie13194\103\graphics\laq\issued figures



APPENDICES

Appendix A

Air Quality Assessment Detailed Methodology

Appendix A: Air Quality Assessment Detailed Methodology

- 1.1 This appendix presents the technical information and data upon which the air quality assessment is based.

ADMS-Roads

- 1.2 In urban areas, pollutant concentrations are primarily determined by the balance between pollutant emissions that increase concentrations, and the ability of the atmosphere to reduce and remove pollutants by dispersion, advection, reaction and deposition. An atmospheric dispersion model is used as a practical way to simulate these complex processes; which requires a range of input data, which can include pollutant emissions rates, meteorological data and local topographical information.
- 1.3 The potential effects of the Development on local air quality was assessed using the advanced atmospheric dispersion model ADMS-Roads, taking into account the contribution of emissions from forecast road-traffic on the local road network by the completion year (taken to be 2033).
- 1.4 The ADMS-Roads model is a comprehensive tool for investigating air pollution in relation to road networks. On review of the Site, and its surroundings, ADMS-Roads was considered appropriate for the assessment of the potential long and short-term effects of the Development on air quality. The model uses advanced algorithms for the height-dependence of wind speed, turbulence and stability to produce improved predictions of air pollutant concentrations. It can predict long-term and short-term concentrations, including percentile concentrations.
- 1.5 ADMS-Roads model is a formally validated model, developed in the United Kingdom (UK) by CERC (Cambridge Environmental Research Consultants). This includes comparisons with data from the UK's air quality Automatic Urban and Rural Network (AURN) and specific verification exercises using standard field, laboratory and numerical data sets. CERC is also involved in European programmes on model harmonisation and their models were compared favourably against other E.U and U.S. EPA systems. Further information in relation to this is available from the CERC website at www.cerc.co.uk.

Traffic Data

- 1.6 Traffic flow data comprising Annual Average Daily Traffic (AADT) flows, traffic composition (% Heavy-Duty Vehicles (HDVs)) were used in the model as provided by City of York Council for the surrounding road network.
- 1.7 The City of York Transport Model has been developed using the Cube modelling platform. The Cube Platform uses Cube software to calculate the existing and future year travel demand (i.e. trip generation, distribution and mode choice), Cube Voyager is used to model the PT network (Bus and Rail), and the highway network is modelled in SATURN. The model is a WebTag compliant multimodal variable demand model.
- 1.8 The Model area is divided up into zones for the purposes of loading demand onto the network. In total, 352 zones have been defined, as follows:
- 223 zones in the simulation network representing York city centre and the area outside York city centre
 - 36 zones in a buffer network representing Yorkshire and the Humber Region
 - 4 buffer zones representing the rest of the UK outside of the Yorkshire and Humber Region

- 1.9 For the zones in the simulation area representing York city centre and the area outside York city centre bespoke trip generation (and mode share) rates were generated for each Local Plan allocation based on its location within 9 broader zoning areas. These trips were loaded onto the network from within its respective modelling zone. For trips originating outside of the of the simulation area , existing trip rates were 'growthed' using TEMPRO Growth factors. Trips were then assigned on the network using SATURN to calculate forecast future year traffic information such as vehicle flows and journey times, on the modelled highway network.
- 1.10 As the SATURN model is an assignment model, flows on individual links can go down if an alternative route becomes quicker due to highway improvements downstream (such as the A1237 junction improvements, for example). Another circumstance whereby flows on a link can reduce is if it becomes difficult to exit the link at some point downstream, due to increases in traffic on opposing turns, for example. Links with low traffic volumes, for example, Flaxton Road or Towthorpe Moor Lane, are generally more sensitive to these effects.
- 1.11 The transport modelling typically provided forecast future year traffic information (in this case for 2032/33) in the am and pm peak periods, whereas air quality modelling requires daily traffic flow information. However, conversion factors can be used to provide a useful estimate of the annual average daily flows (AADFs). These conversion factors are based on average flows as measured by automatic traffic counters.
- 1.12 To ensure the in-combination effect of neighboring authorities has been assessed, local traffic growth factors were applied to the future year flows to consider traffic growth and cumulative developments in the area. **Table A1** presents the traffic data used within the Air Quality Assessment.

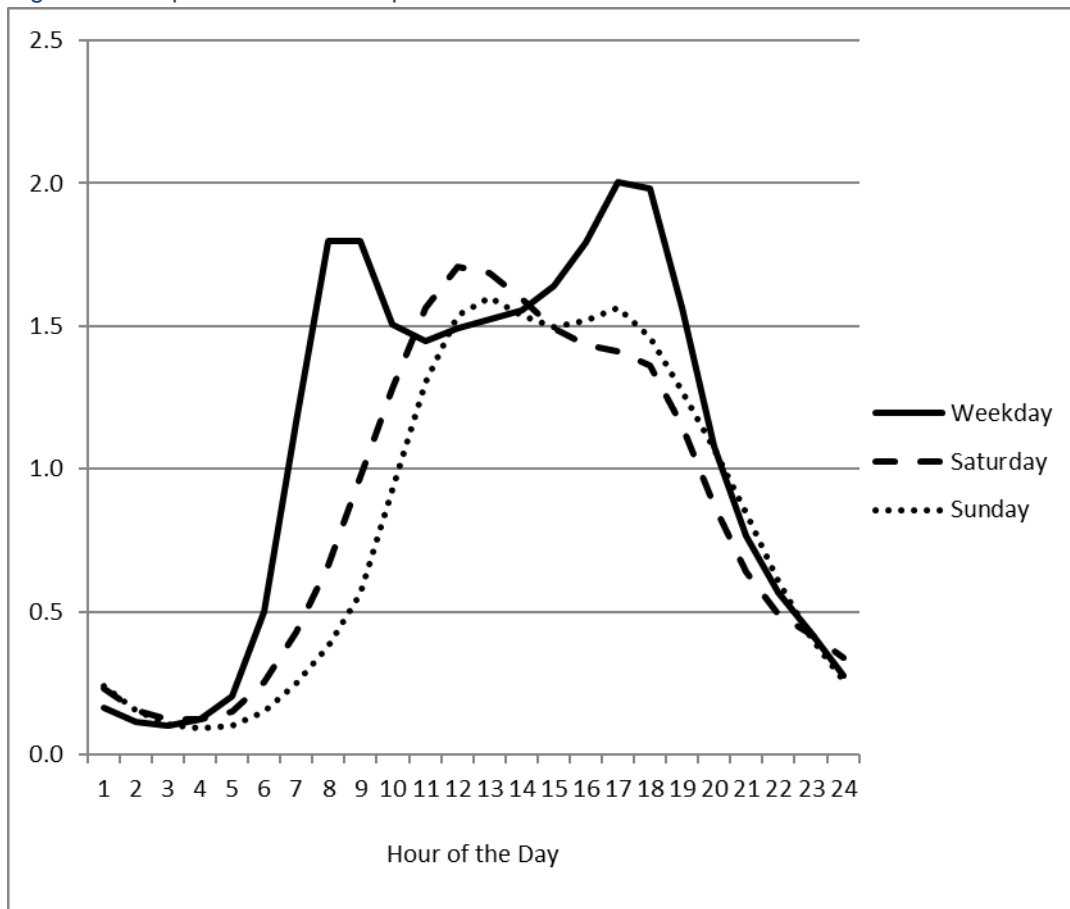
Table A1: 24-hour AADT Data Used within the Assessment

Ecological Site	Link Name	Speed (kph)	Base 2016		Without 2033		With 2033	
			AADT	%HDV	AADT	%HDV	AADT	%HDV
Strensall Common	Strensall Road	46	11,709	6.0	12,786	6.0	14,353	6.0
	Flaxton Road	62	1,925	6.0	2,102	6.0	3,416	6.0
	A1237	45	27,378	4.0	29,897	4.0	40,267	4.0
Clifton Ings	Water End	37	18,839	6.0	18,839	6.0	19,823	6.0
Fulford Ings	Radway Green Road	44	17,544	6.0	19,965	6.0	22,429	6.0
Askham Bog	A64	98	53,662	6.0	61,067	6.0	64,015	6.0
	Tadcaster Road	62	9,133	6.0	10,393	6.0	10,501	6.0
Acaster South Ings	B1222	67	2734	6.0	2,734	6.0	2,709	6.0
Church Ings	B1222	67	2734	6.0	2,734	6.0	2,709	6.0
River Derwent	A166	59	11,573	5.6	12,927	5.6	12,746	5.6
	A1079	61	16,655	7.4	18,604	7.4	19,527	7.4
Lower Derwent	B1228	53	4,641	7.1	5,184	7.1	5,606	7.1

Diurnal Profile

- 1.13 The ADMS-Roads model uses an hourly traffic flow based on the daily (AADT) flows. Traffic flows follow a diurnal variation throughout the day and week. Therefore, a diurnal profile was used in the model to replicate how the average hourly traffic flow would vary throughout the day and the week. This was based on data collated by Waterman from the Department for Transport (DfT) statistics Table TRA0307: 'Traffic Distribution by Time of Day on all roads in Great Britain', 2016¹, which was used to be consistent with the traffic data used. **Figure A1** presents the diurnal variation in traffic flows which has been used within the model.

Figure A1: Department for Transport Diurnal Traffic Variation



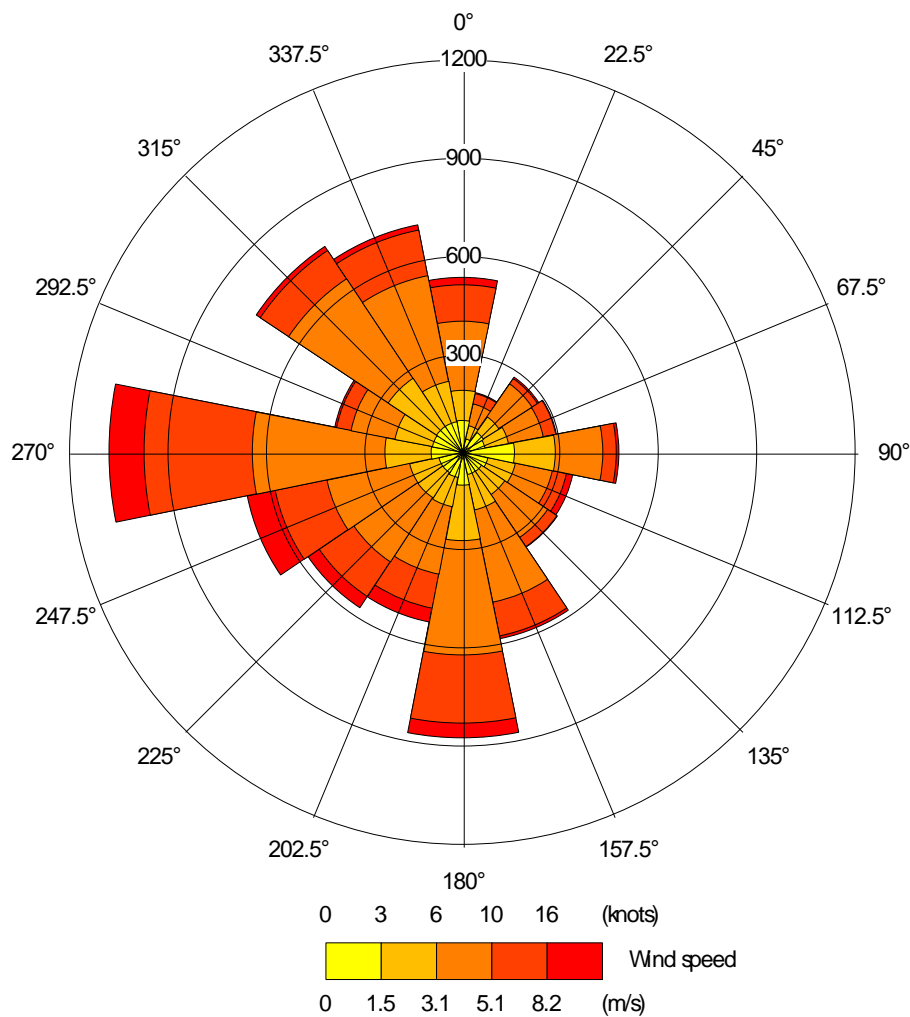
Meteorological Data

- 1.14 Local meteorological conditions strongly influence the dispersal of pollutants. Key meteorological data for dispersion modelling include hourly sequential data including wind direction, wind speed, temperature, precipitation and the extent of cloud cover for each hour of a given year. As a minimum ADMS-Roads requires wind speed, wind direction, and cloud cover.
- 1.15 Meteorological data to input into the model were obtained from the Linton on Ouse Airport Meteorological Station, which is the closest to the Site and considered to be the most representative. The 2016 data were used to be consistent with the base traffic year and model

¹ Department for Transport (DfT) Statistics, www.dft.gov.uk/statistics/series/traffic

verification year. It was also used for the 2033 scenario for the air quality assessment. **Figure A2** presents the wind-rose for the meteorological data.

Figure A2: 2016 Wind Rose for the Linton on Ouse Airport Meteorological Site



1.16 Most dispersion models do not use meteorological data if they relate to calm winds conditions, as dispersion of air pollutants is more difficult to calculate in these circumstances. ADMS-Roads treats calm wind conditions by setting the minimum wind speed to 0.75 m/s. It is recommended in LAQM.TG(16) that the meteorological data file be tested within a dispersion model and the relevant output log file checked, to confirm the number of missing hours and calm hours that cannot be used by the dispersion model. This is important when considering predictions of high percentiles and the number of exceedances. LAQM.TG(16) recommends that meteorological data should only be used if the percentage of usable hours is greater than 85%. 2016 meteorological data from Linton on Ouse Airport includes 8,660 lines of usable hourly data out of the total 8,784 for the year, i.e. 98.6% of usable data. This is above the 85% threshold, and is therefore adequate for the dispersion modelling.

- 1.17 A value of 0.2 was used for the Linton on Ouse Airport Meteorological Station, which is representative of agricultural areas and is considered appropriate following a review of the local area surrounding the Meteorological Station.

Model Data Processing

- 1.18 There are a number of other parameters that are used within the ADMS-Roads model which are described for completeness and transparency:
- The model requires a surface roughness value to be inputted.
 - A value of 0.5 was used for the Site, which is representative of parkland and open suburbia;
 - A value of 0.2 was used for the Linton on Ouse Airport Meteorological Station, which is representative of agricultural areas; and
 - The model requires the Monin-Obukhov length (a measure of the stability of the atmosphere) to be inputted. A value of 30m (representative of large towns) was used for the modelling; and

Model Verification

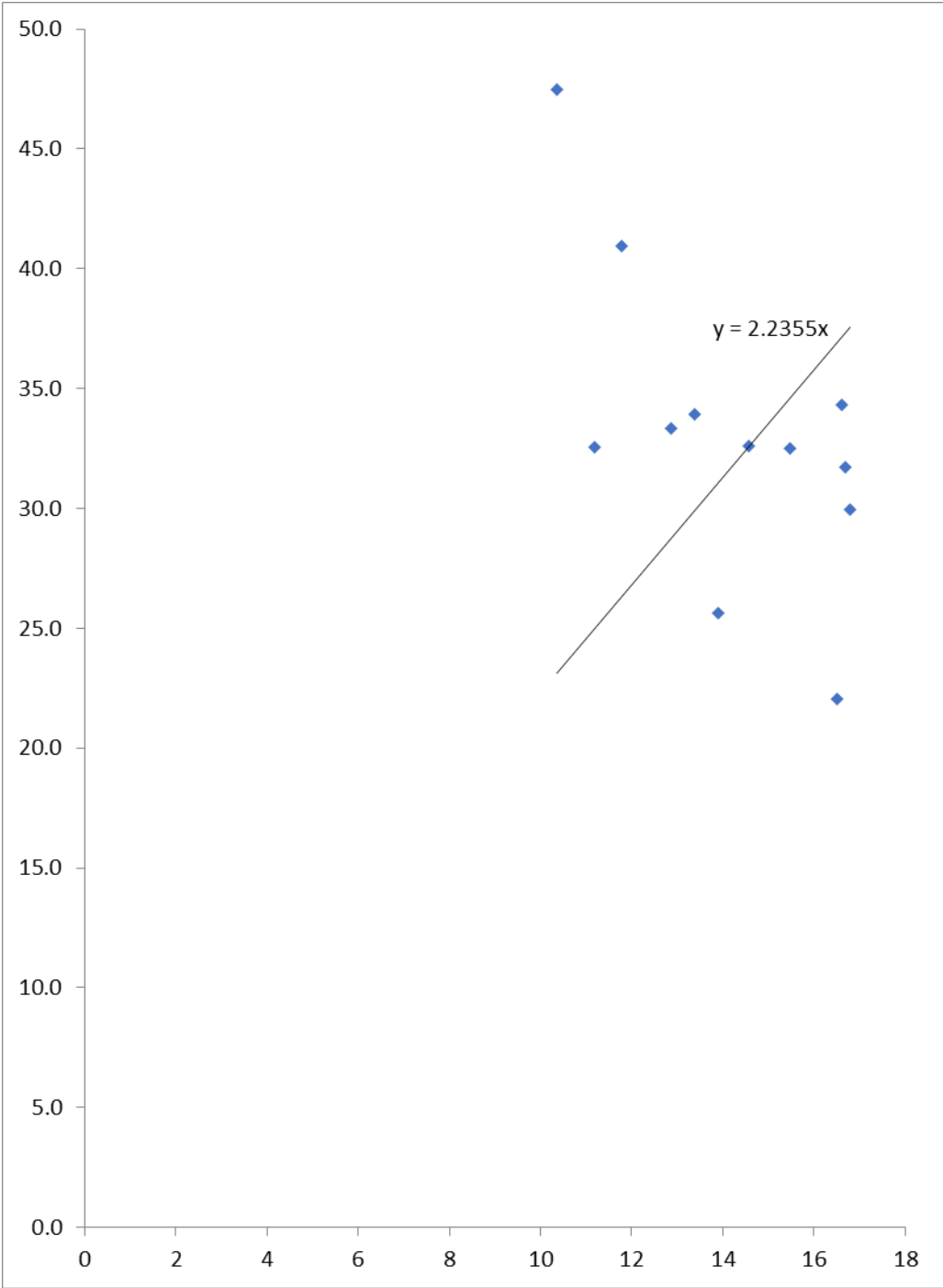
- 1.19 Model verification is the process of comparing monitored and modelled pollutant concentrations for the same year, at the same locations, and adjusting modelled concentrations if necessary to be consistent with monitoring data. This increases the robustness of modelling results.
- 1.20 Discrepancies between modelled and measured concentrations can arise for a number of reasons, for example:
- Traffic data uncertainties;
 - Background concentration estimates;
 - Meteorological data uncertainties;
 - Sources not explicitly included within the model (e.g. car parks and bus stops);
 - Overall model limitations (e.g. treatment of roughness and meteorological data, treatment of speeds); and
 - Uncertainty in monitoring data, particularly diffusion tubes.
- 1.21 Box 7.15 in LAQM.TG(16) indicates a method based on comparison of the road NO_x contributions and calculating an adjustment factor. This requires the roadside NO_x contribution to be calculated. In addition, monitored NO_x concentrations are required, which were calculated from the annual mean NO₂ concentration at the diffusion tube site using the NO_x to NO₂ spreadsheet calculator as described above. The steps involved in the adjustment process are presented in **Table A2**.

Table A2: Model Verification Result for Adjustment NO_x Emissions (µg/m³)

Site ID	Monitored NO ₂	Monitored NO _x	Monitored Road NO ₂	Monitored Road NO _x	Modelled Road NO _x	Ratio of Monitored Road Contribution NO _x /Modelled Road Contribution NO _x
47	28.3	48.7	16.9	33.3	12.9	2.6
A12	29.0	52.5	16.7	30.0	16.8	1.8
A96	31.7	54.2	16.2	32.5	15.5	2.1
C29	30.0	51.2	16.4	32.6	14.6	2.2
C30	30.8	52.9	17.2	34.3	16.6	2.1
C34	25.2	41.9	13.2	25.6	13.9	1.8
C36	28.5	48.9	16.5	32.6	11.2	2.9
C38	28.1	48.0	16.1	31.7	16.7	1.9
C39	32.6	57.7	20.3	41.0	11.8	3.5
C58	35.5	64.2	23.2	47.5	10.4	4.6
95a/b/c	23.7	38.7	11.4	22.0	16.5	1.3
C43/43a/44	29.4	50.7	17.1	34.0	13.4	2.5

- 1.22 Figure A3 shows the mathematical relationship between modelled and monitored roadside NO_x (i.e. total NO_x minus background NO_x) in a scatter graph (data taken from Table A2), with a trendline passing through zero and its derived equation.

Figure A3: Unadjusted Modelled versus Monitored Annual Mean Roadside NO_x at the Monitoring Sites (µg/m³)



1.23 Consequently, in **Table A11** the adjustment factor (2.2355) has been applied to the modelled NO_x Roadside concentrations.

Table A3: Model Verification Result for Adjustment NO_x Emissions (µg/m³)

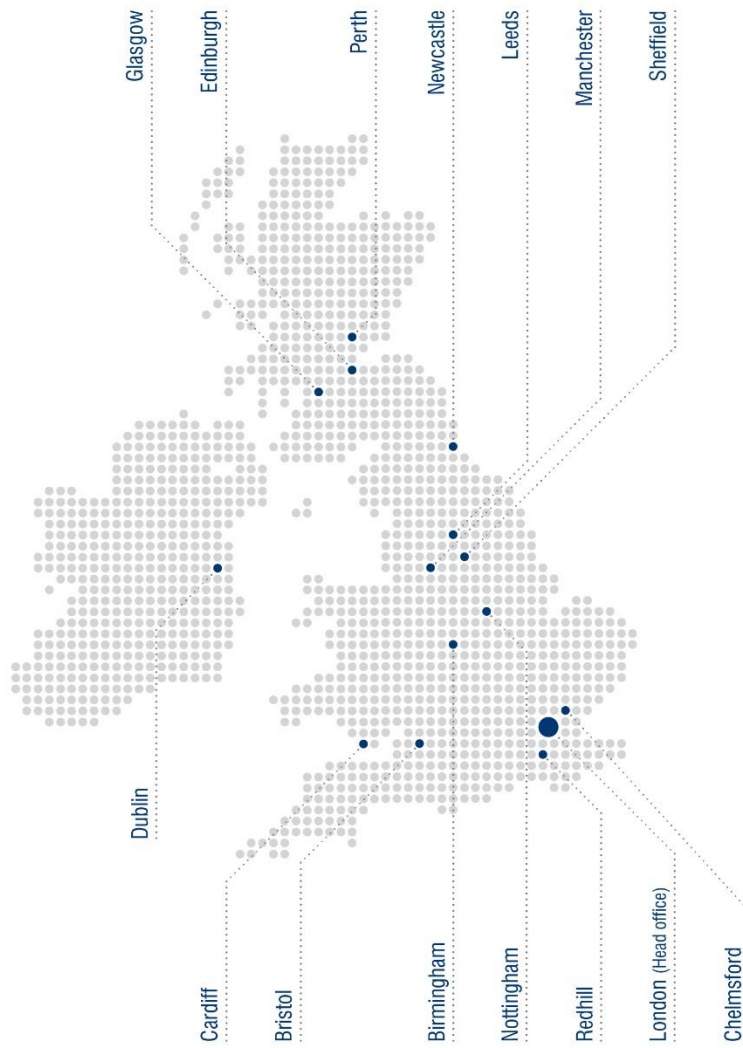
Site ID	Adjusted Modelled Road NO _x	Adjusted Modelled Total NO _x	Modelled Total NO ₂	Monitored Total NO ₂	% Difference
47	26.6	42.1	25.1	28.3	-11.2
A12	34.8	53.9	31.2	29.0	7.7
A96	32.1	53.8	31.5	31.7	-0.6
C29	30.2	48.8	28.9	30.0	-3.8
C30	37.1	55.7	32.1	30.8	4.2
C34	28.8	45.1	26.7	25.2	6.0
C36	23.2	39.5	24.0	28.5	-15.8
C38	34.5	50.8	29.4	28.1	4.7
C39	24.4	41.1	24.9	32.6	-23.7
C58	21.4	38.1	23.4	35.5	-34.1
95a/b/c	34.2	50.9	29.5	23.7	24.5
C43/43a/44	27.7	44.4	26.5	29.4	-10.0

- 1.24 Based on the results from **Table A3**, the NO_x adjustment process was applied to all roadside NO_x modelling for 2016 and 2033 ‘without’ and ‘with’ the Plan in place, at the specific receptor locations assessed.

Verification Summary

- 1.25 Any atmospheric dispersion model study will always have a degree of inaccuracy due to a variety of factors. These include uncertainties in traffic emissions data, the differences between available meteorological data and the specific microclimate at each receptor location, and simplifications made in the model algorithms that describe the atmospheric dispersion and chemical processes. There will also be uncertainty in the comparison of predicted concentrations with monitored data, given the potential for errors and uncertainty in sampling methodology (technique, location, handling, and analysis) as well as processing of any monitoring data.
- 1.26 Whilst systematic under or over prediction can be taken in to account through the model verification / adjustment process, random errors will inevitably occur and a level of uncertainty will still exist in corrected / adjusted data.
- 1.27 Model uncertainties arise because of limited scientific knowledge, limited ability to assess the uncertainty of model inputs, for example, emissions from vehicles, poor understanding of the interaction between model and / or emissions inventory parameters, sampling and measurement error associated with monitoring sites and whether the model itself completely describes all the necessary atmospheric processes.
- 1.28 Overall, it is concluded that with the adjustment factors applied to the ADMS-Roads model, it is performing well and modelled results are considered to be suitable to determine the potential effects of the Development on local air quality.

UK and Ireland Office Locations



UK and Ireland Office Locations

