



# **Norwich Western Link**

## **Chapter 6: Outline Air Quality Compensation Strategy**

Author: WSP

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## Executive Summary

This Outline Air Quality Compensation Strategy has been prepared to accompany the Norwich Western Link (NWL) hereafter referred to as the Proposed Scheme, planning application for a new link road scheme to the west of Norwich. The Applicant will continue to liaise with the County Planning Authority (CPA) to prepare a Final Air Quality Compensation Strategy that will be secured pursuant to an appropriately worded planning condition, should the CPA grant planning permission for the Proposed Scheme. The Final Compensation Strategy will detail which measures have been identified within the Red Line Boundary (RLB) and are therefore implementable and proportional to the impacts attributed to the final detailed design of the Proposed Scheme.

This document outlines the compensation for the degradation of irreplaceable habitats, County Wildlife Sites (CWS) and a Roadside Nature Reserve (RNR) due to predicted changes in air quality as a result of the Proposed Scheme. In doing so, this document aims to fulfil the requirements of Paragraph 186 (A) and (C) of the National Planning Policy Framework (NPPF) (**Ref 1**) and DM6 of the Norwich Local Plan (**Ref 1**). Please refer to Section 1.2.2 detailing the specific policies in which NCC commit too as part of this scheme.

The impacts that this document seeks to compensate for are summarised in **Section 2** and reported in full within the **Appendix 10.34: Air Quality Ecological Impact Assessment** (Document Reference: 3.10.34). This Outline Compensation Strategy should be read in conjunction with these documents.

To compensate for the aforementioned impacts, this document will adhere to the compensation hierarchy outlined below:



Stage 1: The measures outlined are enacted improving the condition of five biodiversity features, which include existing veteran trees and four County Wildlife Sites (CWS);

Stage 2: Alternative offsite areas would be sought, and appropriate compensation measures proposed; and

Stage 3: If the measures outlined in Stage 1 are not considered suitable and no alternative sites can be identified, a fund would be allocated to deliver the required compensation for the impacts of the Proposed Scheme.

Due to the availability of land within the Red Line Boundary, Stage 1 of the hierarchy has been identified as the preferred strategy resulting in five biodiversity features being the subject of this strategy. All of the degraded irreplaceable habitats, CWS and RNR impacted by the Proposed Scheme will be compensated by the measures to improve the five biodiversity features located within the RLB. The improvement measures for the following biodiversity features are outlined within **Sections 4 and 5**:

- Unaffected veteran trees;
- Primrose Grove CWS;
- Wensum Pastures at Morton Hall CWS;
- Broom and Spring Hills CWS; and
- Land adjacent to Foxburrow Plantation CWS.

Improvement measures include an agriculture exclusion zone to be established and fencing erected to define a physical boundary. Improvements to the soil quality within the Root Protection Area (RPA) could include:

- Control of undesirable plant species to minimise competition and potentially remove nutrient nitrogen;
- Appropriate application of mulches or soil aeration in areas of compaction; and



- Establishment of shelter belts or extended field margins to exclude agricultural activities from locations supporting veteran trees.

Furthermore, improvements to existing veteran trees could be made through management of adjacent trees for conservation purposes.

In addition to presenting the measures to compensate for the deterioration of irreplaceable habitats, CWS and a RNR, this document summarises the net increases in habitat types associated with the construction of the Proposed Scheme as reported in **Appendix 10.33: Biodiversity Net Gain Assessment** (Document Reference: 3.10.33). This information is reported within **Section 6**.



## Glossary of Abbreviations and Defined Terms

The definition of key terms used in this report are provided below.

Term	Definition
Ancient Woodland (AW)	Any wooded area that has been continuously wooded since 1600 AD.
Arboriculturist	A person who has, through relevant education, training, or experience, gained expertise in the field of trees in relation to construction.
Area for temporary use during construction	Temporary construction & storage areas. Areas for temporary use during construction such as works compounds, storage sites, welfare facilities as illustrated in Environmental Statement - Chapter 3: Description of the Scheme, Appendix 3, Figure 3.1 (Document Reference 3.03.03).
CWS	County Wildlife Site.
Habitat	The environment in which populations or individual species live or grow.
Irreplaceable habitat	Irreplaceable habitat are habitats that if destroyed, would be difficult to restore, recreate or replace, due to their age, species diversity and rarity. Further details on irreplaceable habitats can be found in the Biodiversity Gain Requirements (Irreplaceable habitat) Regulations 2024 (Ref 3).



<b>Term</b>	<b>Definition</b>
National Planning Policy Framework (NPPF)	Produced by Department for Levelling Up, Housing and Communities (DLUHC) in updated in 2023. The revised NPPF sets out the Government’s planning policies for England and how these should be applied.
NH <sub>3</sub>	Ammonia.
N deposition	Nitrogen deposition.
NO <sub>x</sub>	Nitrous Oxides.
Red Line Boundary	The Red Line Boundary incorporates the Site Boundary, the Essential Environmental Mitigation, and No Work Zones not within the Site Boundary, as shown on the ‘Red Line Boundary Plan’ (Document reference: 2.02.00).
Root Protection Area	Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree’s vitality.
‘the Applicant’	Norfolk County Council as the promoter of the Proposed Scheme.
‘the Proposed Scheme’	This is a proposed new highway to link the A1270 Broadland Northway, from its junction with the A1067 Fakenham Road (to the north) to the A47 trunk road near Honingham (to the south).
Veteran Tree	A tree that has the biological or aesthetic characteristics of an ancient tree but is not ancient in years compared with others of the same species.



# 1 Introduction

## 1.1 Proposed Scheme Description

1.1.1 The Proposed Scheme consists of the construction, operation, and maintenance of an approximately 6 kilometre (km) long dual-carriageway road connecting the A1067 Fakenham Road and the A47, with a dualled section of the A1067 to the existing A1270 roundabout.

## 1.2 Purpose of the Outline Air Quality Compensation Strategy

1.2.1 Environmental Statement Chapter 10: Biodiversity - **Appendix 10.34**: Air Quality Ecological Impact Assessment (Document Reference: 3.10.34) assessed designated habitats within 200m of the Affected Road Network. Of the 44 Sites scoped into the assessment, the Proposed Scheme is predicted to result in the degradation of seven ecological features and 16 ancient and / or veteran trees (referred to as 'veteran trees' within this document) due to changes in air quality as a result of the operation of the Proposed Scheme.

1.2.2 This document has been prepared by the Applicant further to paragraph 186 (A) and (C) of the National Planning Policy Framework (NPPF) states (**Ref 1**), When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

and

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons, and a suitable compensation strategy exists; and





In addition, there is the DM6 of the Norwich Local Plan (**Ref 2**) which follows the principles set out in national guidance and supplements Policy 1 of the joint core strategy to ensure the protection, management, and enhancement of the city's valued natural environmental assets.

e) The purpose of this document is so that air quality impacts on certain ecological sensitive receptors cannot be avoided or mitigated but it is proposed that these are compensated for by measures proposed in this strategy.

- 1.2.3 This Outline Compensation Strategy does not identify the 'wholly exceptional reasons' that are present as these are detailed within the **Planning Statement** (Document Reference: 1.01.00) and **Transport Assessment** (Document Reference: 4.01.00).
- 1.2.4 In response to these policy imperatives, this document aims to identify suitable measures at five biodiversity features, which include existing veteran trees and four CWSs, to compensate for the air quality impacts on irreplaceable habitats, CWSs and a RNR as a result of the Proposed Scheme.
- 1.2.5 Details of the air quality impacts are reported in Environmental Statement Chapter 10: Biodiversity - **Appendix 10.34: Air Quality Ecological Impact Assessment** (Document Reference: 3.10.34). **Tables 2-1 to 2-3** provide a summary of these impacts.
- 1.2.6 To provide compensation, this strategy has incorporated the use of the three-tier compensation hierarchy outlined below:
- Stage 1: The measures outlined in **Sections 4 to 5** are enacted improving the condition of five biodiversity features, including existing veteran trees and four CWS, within the Red Line Boundary (RLB);
- Stage 2: Alternative offsite areas would be sought, and appropriate compensation measures proposed; and



Stage 3: If the measures outlined in Stage 1 (**Sections 4 to 5**) are not considered suitable and no alternative sites can be identified, a fund would be allocated to deliver the required compensation for the impacts of the Proposed Scheme.

- 1.2.7 It has been determined that to compensate for the air quality impacts outlined within **Section 2**, Stage 1 of the hierarchy will be applied for the Proposed Scheme.
- 1.2.8 The intention of the Outline Compensation Strategy is to outline actionable compensation measures that are achievable and measurable, working to ensure the best outcome for irreplaceable habitats and CWS. These will take the form of environmental enhancement measures on features that in some cases may be separate, to where the impact occurs. The most suitable habitats identified for enhancement within **Sections 4 to 5** which will be used to compensate for the impacts outlined in **Section 2**, were considered based on the practicalities of implementing such measures within the RLB (adhering to Stage 1 of the hierarchy).
- 1.2.9 HPI were not considered as a separate feature for this report as it is considered that CWS would constitute a representative amount of the HPI within the ARN. Furthermore, it was considered that a suitable assessment could not be made of HPI considering that little publicly accessible information is available with regards to HPI condition. Within 200m of the ARN, 2,103ha of HPI was identified, comprising 63.69% deciduous woodland. The Sites considered within the ARN cover 39.82% of all the HPI.

The Final Air Quality Compensation Strategy will set out final details of the proposals. This will include confirming if Stages 2 or 3 have needed to be invoked, and how their delivery will be secured. This will be secured by a planning condition.



## 2 Impacts on irreplaceable habitats and CWSs

2.1.1 Irreplaceable habitats (veteran trees and ancient woodland), CWSs and a RNR that would potentially be degraded due to changes in air quality as a result of the Proposed Scheme are outlined in **Tables 2-1 to 2-3**. **Tables 2-1 to 2-3** provide a summary of air quality impacts reported in **Appendix 10.34** (Document Reference: 3.10.34) for Ammonia (NH<sub>3</sub>) and Nitrogen Deposition (N-Deposition). Figure C 1 and Figure C 2 in **Appendix 10.34 – Sub Appendix C: Maximum Effect of Air Quality Changes** (Document Reference: 3.10.34c) outline the locations of impacted veteran trees and ecological features, reported with **Tables 2-1 to 2-3** below.

**Table 2-1 Veteran trees potentially subject to adverse significant effects**

Feature	Impact
T13 (T277*), T12 (T278*), T11 (T279*), T3 (T268*), T10 (T281*), T24 (T105*), T23 (T45*), T16 (T99*), T19 (T74*) and T9 (T295*)  *Veteran tree reference numbers provided within <b>Appendix 10.35</b> .	NH3 (moderate adverse – 2029 and 2044)
T26 (T152*), T25 (T113*), T18 (T72*), T17 (T96*), T6 (T160*) and T21 (T34*)  *Veteran tree reference numbers provided within <b>Appendix 10.35</b> .	NH3 (moderate adverse – 2044 only)



**Table 2-2 Nationally important areas potentially subject to adverse significant effects**

<b>Feature</b>	<b>Impact</b>	<b>Predicted area impacted (ha)</b>
Primrose Grove Ancient Woodland	N- deposition (moderate adverse – 2029 and 2044)  NH3 (large adverse – 2029 and 2044)	14.79

**Table 2-3 County Wildlife Sites and Roadside Nature Reserve potentially subject to adverse significant effects**

<b>Feature</b>	<b>Impact</b>	<b>Predicted area impacted (ha)</b>
Primrose Grove CWS	NH3 (moderate adverse – 2029 and 2044)	28.12
Broom and Spring Hills CWS	NH3 (moderate adverse -2029 and 2044)	9.34
Land Adjoining Foxburrow Plantation CWS	N-dep (moderate adverse – 2029)  NH3 (moderate adverse – 2029 and 2044)	7.5
River Wensum Pastures CWS	N-deposition (moderate adverse - 2029 and 2044)  NH3 (moderate adverse - 2029 and 2044)  NOx (moderate adverse – 2044)	36.49



Feature	Impact	Predicted area impacted (ha)
Wensum Pastures at Morton Hall CWS	NH <sub>3</sub> (moderate adverse – 2029 and 2044)	28.92
Fakenham Road RNR	N-deposition (moderate adverse – 2029 and 2044)  NH <sub>3</sub> (moderate adverse – 2029 and 2044)	0.01

2.1.2 All of the aforementioned veteran trees and features would be compensated for within the impacted area or adjacent areas contained within the RLB. The five biodiversity features to be improved as part of this outline compensation strategy are summarised below:

- Unaffected Veteran trees;
- Primrose Grove CWS;
- Wensum Pastures at Morton Hall CWS;
- Broom and Spring Hills CWS; and
- Land adjacent to Foxburrow plantation CWS.

2.1.3 In addition to the impacts reported above, **Appendix 10.34** reports operational beneficial effects that are expected within Opening Year 2029 and Design Year 2044.



- 2.1.4 Within Opening Year 2029, 17 designated habitats and / or areas of ecological importance were identified where N deposition will reduce by more than 1% change of the critical load due to the Proposed Scheme. 21 designated habitats and / or areas of ecological importance were identified where NH<sub>3</sub> will reduce by more than 1% change of the critical level. 17 designated habitats and / or areas of ecological importance were identified where NO<sub>x</sub> will reduce by more than 1% change of the critical level due to the Proposed Scheme. It is considered that all designated habitats and / or areas of ecological importance reported would experience neutral to slight beneficial effects during Opening Year 2029.
- 2.1.5 Within Design Year 2044, 20 designated habitats and / or areas of ecological importance were predicted have a decrease in N deposition that exceeds 1% of the critical load due to the Proposed Scheme. 22 designated habitats and / or areas of ecological importance were predicted to have a decrease in NH<sub>3</sub> that exceeds 1% of the critical level due to the Proposed Scheme. 15 designated habitats and / or areas of ecological importance were predicted to have a decrease in NO<sub>x</sub> that exceeds 1% of the critical level due to the Proposed Scheme. It is considered that all designated habitats and / or areas of ecological importance reported would experience a neutral to slight beneficial effect during Design Year 2044.



### 3 Stage 1: Onsite Compensation measures

- 3.1.1 **Sections 4 to 5** outline the potential improvement measures for the five biodiversity features (veteran trees and four CWSs) located within the RLB, adhering to Stage 1 of the compensation hierarchy. The location of these biodiversity features are shown on **Figure 1: Outline Air Quality Compensation**. In addition to the five biodiversity features, **Figure 1** includes a further 17ha of woodland and scrub creation and 9.33ha of grassland creation, designated for bat / tree loss compensation and barn owl compensation, respectively. In addition to the aforementioned compensation, the design of **Essential Environmental Mitigation Plan** (Document reference: 2.11.00) includes the planting of hoary mullein within the 0.1148ha of Fakenham Road RNR that is to be retained, and 0.031ha of new planting.
- 3.1.2 The creation of habitat and the improvement measures outlined within this strategy will contribute to compensating for the air quality impacts defined in **Tables 2-1 to 2-3**, in addition to being beneficial for bat species. Further information on bat compensation can be found within **Environmental Statement Chapter 11: Bats** (Document Reference: 3.11.00).
- 3.1.3 The compensation measures proposed, informed by habitat condition assessments, have prioritised features receiving the lowest scores where possible. Targeting the features receiving the lowest scores will aim to improve the condition of the biodiversity features towards their target conditions of 'Good,' outlined within **Table 5-3**. A silviculture specialist will be consulted as part of informing the Final Air Quality Compensation Strategy, confirming that the measures are suitable for improving the corresponding habitat.



3.1.4 Once the compensation measures have been assessed for their viability, and confirmed through the Final Air Quality Compensation Strategy, all proposed enhancements including an appropriate monitoring strategy will be set out in the Landscape and Ecological Management Plan (LEMP). This would outline the period anticipated for the beneficial effects of any compensation to be evident, plus the monitoring schedule for any habitats required to effectively manage any compensation instigated. Triggers for management will be set to ensure enhancement measures are effective and will establish.





## 4 Veteran trees

### 4.1 Present condition

4.1.1 Of the 73 veteran trees assessed within the Appendix 10.34, the 16 trees listed within Table 2-1 were concluded to have moderate significant effects through degradation as a result of air quality impacts. The location of these 16 trees are shown in Figure C 2, Appendix 10.34c (Document Reference: 3.10.34c).

### 4.2 Outline Compensation Strategy

4.2.1 Discussions with a silviculture specialists will seek to identify where enhanced buffering could be established around the veteran trees that are located within the RLB, to reduce the nitrogen input that they are exposed to from agricultural activities and possibly from the Proposed Scheme.

4.2.2 The feasibility will be dependent on the location of the individual veteran tree and will need to be considered on a bespoke basis depending upon the surrounding land usage. To ensure an agriculture exclusion zone is established, fencing could be erected to define a physical boundary. Improvements to the soil quality within the RPA could include:

- Control of undesirable plant species to minimise competition and potentially remove nutrient nitrogen;
- Appropriate application of mulches or soil aeration in areas of compaction; and
- Establishment of shelter belts or extended field margins to exclude agricultural activities from locations supporting veteran trees.

4.2.3 Furthermore, improvements to existing veteran trees could be made through management of adjacent trees for conservation purposes, this would be undertaken by an approved arboricultural specialist. These activities could include:



- Halo pruning to reduce competition to the veteran tree; and
- Phased crown reduction or remedial pruning of veteran trees to reduce mechanical canopy loads and prolong tree lifespan e.g., restoration cutting of lapsed pollards.

4.2.4 Where measures to undertake the activities mentioned in **paragraph 4.2.3** have been identified, pruning would be managed by an approved arboricultural specialist.

4.2.5 Where trees are to be pruned or removed, the arisings could be appropriately retained in situ as standing deadwood or stumps. Where retained arisings cannot remain in situ, arisings could be appropriately sited nearby as habitat features in as large as practicable components, log piles or attached vertically to retained trees.



## 5 County Wildlife Sites

### 5.1 Primrose Grove CWS

Present condition

- 5.1.1 Primrose Grove CWS encompasses Primrose Grove Ancient woodland, extending towards the south and into the Northern Woodlands (including Rose Carr). The habitat condition assessment (**Ref 3**) (refer to **Appendix 10.33: Biodiversity Net Gain Technical Report** (Document Reference: 3.10.33)) conducted at Primrose Grove Ancient Woodland, a component of the Primrose Grove CWS, evaluated the condition of the site using a number of individual criteria scores relative to the present habitat types. Each of the criteria were scored by a pass or fail based on the habitats ability to achieve the assessment criteria. The scores were then used to calculate an overall condition assessment of good, moderate, or poor.

Primrose Grove

- 5.1.2 Primrose Grove CWS is located south-west of the River Wensum and north of Ringland Lane. The woodland contains an area designated as Plantation on Ancient Woodland Site (PAWS) which is excluded from the habitat condition assessment due to access not being permitted. The eastern extent of the woodland contains a large block of mature mixed woodland, with oak *Quercus robur*, beech *Fagus sylvatica*, sweet chestnut *Castanea sativa*, hazel *Corylus avellana*, and silver birch *Betula pendula*. Coniferous trees were also present and primarily comprised Scots pine *Pinus sylvestris*, with Corsican pine *Pinus nigra* and larch *Larix decidua* accompanying. Ground flora was varied throughout this section of woodland, with nettle *Urtica dioica* and bramble *Rubus fruticosus* agg. dominant in areas with locally abundant bracken *Pteridium aquilinum*. Other species occasionally present within the ground flora includes primrose *Primula vulgaris*, cleavers *Galium aparine*, bluebell *Hyacinthoides non-scripta*, and ground ivy *Glechoma hederacea* amongst others. Shaded sections of the woodland comprised predominantly bare ground. The condition of this section of the woodland was **Moderate**.



## Rose Carr

- 5.1.3 Rose Carr, an area of connected woodland habitat within Primrose Grove CWS, is located between Ringland Lane and the River Wensum. The site has been identified as containing two habitat types, broadleaved plantation woodland and lowland mixed deciduous woodland. The broadleaved plantation woodland consists of rows of planted semi-mature sycamore *Acer pseudoplatanus* trees, with species poor ground flora comprising patches of bramble and nettle, with frequent bare ground.
- 5.1.4 The canopy of the lowland deciduous woodland consists of mature oak and beech, with semi-mature sycamore and ash. Along the northern eastern boundary several semi mature / mature hybrid black poplar trees *Populus x canadensis* are present. To the east the understory is populated by nettle, with central areas of bare ground. Occasional patches of dog's mercury *Mercurialis perennis*, ivy *Hedera helix* and ground ivy *Glechoma hederaceae* are present. A pond is present within the northern area of this woodland, with the surroundings dominated by reed *Phragmites australis* with the occasional goat willow *Salix caprea* and alder *Alnus glutinosa*. The northern section is wetter displaying characteristics of alder carr woodland.
- 5.1.5 The condition of Rose Carr was **Moderate**.

### Outline Compensation Strategy

- 5.1.6 This Outline Compensation Strategy focuses on management measures for Primrose Grove CWS to promote improvement of the natural habitats condition, of which the Primrose Ancient Woodland is a part of. As Primrose Grove Ancient Woodland is located outside of the RLB, this Compensation Strategy will seek to compensate for air quality impacts within the connected habitat of the rest of the CWS. Further details of measures for enhancement at Primrose Grove CWS are provided in **Table 5-3**; these have been categorised by priority, where 'High Priority' relates to a woodland condition criteria currently scoring 1 and where 'Moderate Priority' currently scores 2. The measures are to be enacted with the aim of improving the current condition of **Moderate**, to the target condition of **Good**.



### Primrose Grove

- 5.1.7 Measures to improve Primrose Grove would aim to increase the diversity of the canopy cover, through the removal of coniferous species not native to the locality such as Scots pine, larch and Corsican pine and the planting of native species, such as oak, hazel, silver birch, beech, and field maple *Acer campestre*. Removing these species will allow the native deciduous tree species to increase their distribution, improving the quality of the habitat.
- 5.1.8 The removal of coniferous species also provides the opportunity for the creation of glades and rides within the woodland. The creation of open areas, coupled with canopy thinning provides varying light levels, promoting a diverse understory ground flora. The implementation of deer fencing could further improve the understorey by reducing browsing pressure, allowing for natural tree regeneration and an increased diversity of understorey plants. The placing of log piles will be considered where suitable arisings are available to increase the retention of deadwood.
- 5.1.9 No veteran trees were identified across this section of Primrose Grove; therefore, the site may benefit from the veteranisation of a selection of trees. Trees can be ‘veteranised’ to artificially create features that mimic natural damage caused by, for example, lightning strikes, branch failure and woodpecker holes. The trees would be selected based on a detailed appraisal by suitably experienced and qualified arborist.

### Rose Carr

- 5.1.10 Measures for improving Rose Carr would target the area of broadleaved plantation, within this section of Primrose Grove CWS, with the aim to improve the habitat to the quality of the lowland deciduous woodland. This area would benefit from the removal of sycamore, combined with areas of planting with species consistent with lowland deciduous woodland, such as oak, hazel, beech, and field maple. Where saplings are planted, targeted removal of brambles and nettles should be undertaken to control competition. Specific areas where sycamores are removed should also be left open, decreasing



levels of shade within the woodland. By increasing the light levels reaching the understory in certain locations, this would promote diversity in the species present.

## 5.2 Wensum Pastures at Morton Hall CWS

5.2.1 Wensum Pastures at Morton Hall CWS is located between Ringland Lane and Fakenham Road, west of the River Wensum. This habitat was recorded as Coastal and Floodplain Grazing Marsh (CFGM) which, rather than a discrete habitat, is a mosaic of grassland habitat types within a floodplain that are grazed and seasonally inundated.

5.2.2 The habitat condition assessment (**Ref 3**) (refer to **Appendix 10.33** (Document Reference: 3.10.33)) conducted of Wensum Pastures at Morton Hall, evaluated the condition of the site using a number of individual criteria scores relative to the present habitat types. Each of the criteria were scored by a pass or fail based on the habitats ability to achieve the assessment criteria. The scores were then used to calculate an overall condition assessment of good, moderate, or poor.

5.2.3 The western extent of Wensum Pastures at Morton Hall CWS has been identified as neutral grassland, dominated by creeping buttercup *Ranunculus repens*, abundant perennial rye grass *Lolium perenne*, timothy grass *Phleum pratense*, crested dog tail *Cynosurus cristatus*, creeping thistle *Cirsium arvense*, red fescue *Festuca rubra*, frequent dandelion *Taraxacum agg.* and the occasional common mouse ear *Cerastium fontanum*, hard rush *Juncus inflexus* and nettle.



- 5.2.4 The central and eastern sections of the site are identified as Modified grassland, dominated by perennial rye grass with abundant creeping thistle and spear thistle *Cirsium vulgare*, frequent cock's-foot *Dactylis glomerata* and occasional dandelion, curled dock *Rumex crispus*, hard rush and doves foot cranesbill *Geranium molle*.
- 5.2.5 The southern section of Wensum Pastures at Morton Hall CWS contains two distinct habitat types, neutral grassland, and modified grassland. The neutral grassland comprises abundant tufted hairgrass *Deschampsia cespitosa*, perennial rye grass, creeping buttercup, nettle, Yorkshire fog *Holcus lanatus*, timothy grass and frequent red fescue and dock. Similarly, the modified grassland is dominated by perennial rye grass with frequent creeping thistle, nettle, and dock, with the occasional timothy grass, red fescue, creeping buttercup, common mouse ear and chickweed *Stellaria media*.
- 5.2.6 The condition of the Wensum Pastures at Morton Hall CWS was **Moderate**.
- Outline Compensation Strategy
- 5.2.7 This Outline Compensation Strategy focuses on management measures for Wensum Pastures at Morton Hall CWS, these measures are to be enacted with the aim of improving the current condition of **Moderate**, to the target condition of **Good**.
- 5.2.8 Measures to improve Wensum Pasture at Morton Hall CWS would focus on reducing the grazing pressure caused by cattle. This would include the implementation of a grassland management regime, focussed on reducing the grazing pressure and promoting the natural regeneration of the habitat. An appropriate management plan (LEMP) would be produced, providing mutually beneficial improvements for both the landowners operation and to biodiversity within Wensum Pastures at Morton Hall CWS. The management plan could be coupled with the seeding of wildflowers, sedges, and other indicator species to improve species diversity within the habitat. The LEMP would set out proposals for monitoring the condition of landscape and habitat creation areas, to assess how these develop post- construction. As the River Wensum



Pastures CWS is located outside of the RLB, the Compensation Strategy for that site will seek to compensate for air quality impacts through the improvements to the connected habitat of Wensum Pastures at Morton Hall CWS.

### 5.3 Broom & Spring Hills CWS

Present condition

5.3.1 Broom & Spring Hills CWS is located between Ringland Lane and the River Wensum. The site has been identified as containing two distinct types of woodland, Broadleaved mixed and yew and also lowland mixed deciduous. A description for this habitat is available in **Appendix 31: UKHab Report 2022** (Document Reference: 3.10.31).

5.3.2 The habitat condition assessment (**Ref 3**) conducted at Broom & Spring Hills CWS evaluated the condition of the sites using a number of individual criteria scores relative to the present habitat types. Each of the criteria were scored by a pass or fail based on the habitat's ability to achieve the assessment criteria. The scores were then used to calculate an overall condition assessment of good, moderate, or poor. The overall score allocated to this section of the site is **Moderate**.

Outline Compensation Strategy

5.3.3 This Outline Compensation Strategy focuses on management measures for Broom & Spring Hills CWS, these measures are to be enacted with the aim of improving the current condition of **Moderate**, to the target condition of **Good**.

5.3.4 Measures for improving Broom & Spring Hills CWS would focus on naturalising the woodland through the removal of Scots pine and the planting of native species such as oak, hazel, beech, and field maple. The implementation of deer fencing combined with the removal of Scots pine would aim to promote the natural regeneration of the habitat's understory. If there are no indicators of natural regeneration after two years, planting of appropriate native species would be considered.





5.3.5 No veteran trees were identified across Broom & Spring Hills therefore the site may benefit from the veteranisation of a selection of trees. Trees can be ‘veteranised’ to artificially create features that mimic natural damage caused by, for example, lightning strikes, branch failure and woodpecker holes. The trees would be selected based on a detailed appraisal by suitably experienced and qualified arborist.

#### 5.4 Land adjacent to Foxburrow plantation CWS

##### Present condition

5.4.1 This area is located to the south of Foxburrow plantation and to the east of the B1535. It is dominated by purple moor grass and rush pasture habitat, with wet woodland to the west and east. A habitat description for this area is available in **Appendix 10.31** (Document Reference: 3.10.31).

5.4.2 The habitat condition assessment (**Ref 3**) conducted at the Land adjacent to Foxburrow plantation CWS, evaluated the condition of the sites using a number of individual criteria scores relative to the present habitat types. Each of the criteria were scored by a pass or fail based on the habitats ability to achieve the assessment criteria. The scores were then used to calculate an overall condition assessment of good, moderate, or poor. The overall score allocated to this section of the site is **Moderate**.

##### Outline Compensation Strategy

5.4.3 This Outline Compensation Strategy focuses on management measures for the land adjacent to Foxburrow plantation CWS, these measures are to be enacted with the aim of improving the current condition of **Moderate**, to the target condition of **Good**.



5.4.4 Improvements to the site would include the implementation of a grassland management regime, focussed on reducing the grazing pressure and promoting the natural regeneration of the habitat. An appropriate management plan would be implemented to provide beneficial improvements to biodiversity within the Land adjacent to Foxburrow plantation. To reduce scrub encroachment on the purple moor grass and rush pasture habitat, bracken, gorse *Ulex europea* and bramble would be maintained along the boundaries of the site.

## 5.5 Summary

5.5.1 The proposed compensation measures identified for the assessed CWS to reach their target conditions are detailed within **Table 5-3**. The features highlighted by the habitat condition assessment as having the lowest scores, have been designated as having the highest priority.

**Table 5-1 Compensation measures for reaching target conditions of County Wildlife Sites**

<b>Measures</b>	<b>Primrose Grove (CWS)</b>	<b>Wensum Pastures at Morton Hall (CWS)</b>	<b>Broom &amp; Spring Hills (CWS)</b>	<b>Land adjacent to Foxburrow Plantation (CWS)</b>
High priority	Increasing the age distribution of native trees, cover (% area) and diversity of native tree species, regeneration of trees and also tree veteranisation.	<p>Reducing the grazing pressure caused by cattle and promoting the natural regeneration of the habitat through the implementation of a grassland management regime.</p> <p>An appropriate management plan would be produced following discussion with the landowner to find mutually beneficial improvements to both their operation and biodiversity within Wensum Pastures at Morton Hall.</p> <p>The management plan could be coupled with the seeding of wildflowers, sedges, and other indicator species to improve species diversity within the habitat.</p> <p>Reduce the influence of artificial drainage features, improve local water quality within the watercourses that feed the coastal and floodplain grazing marsh habitat.</p>	Compensation measures would be focussed on the veteranisation of trees.	<p>Reduce the cover of scrub and ensure scrub does not exceed 5% of the land area within the habitat.</p> <p>The other criterion failed pertains to the excessive cover of plant species which are indicative of nutrient enrichment.</p> <p>In the case of purple moor grass and rush pasture habitat, the value to wildlife in these pastures depends on their careful management and the right level of grazing (neither too heavy nor too light). Light early summer grazing by traditional breeds of cattle is usually ideal. As a general guide, a variable height, with the shorter patches usually no less than 5 cm, should be the aim.</p>

<b>Measures</b>	<b>Primrose Grove (CWS)</b>	<b>Wensum Pastures at Morton Hall (CWS)</b>	<b>Broom &amp; Spring Hills (CWS)</b>	<b>Land adjacent to Foxburrow Plantation (CWS)</b>
Moderate priority	Reducing browsing pressure by deer, increase abundance / retention of deadwood.	Not Applicable	Reducing browsing pressure by deer to aid natural tree regeneration, increasing variation in canopy structure through selective thinning in areas would aid the diversity of ground flora.	Not Applicable
Current Condition (Poor/Moderate/Good)	Moderate	Moderate	Moderate	Moderate
Target condition (Poor/Moderate/Good)	Good	Good	Good	Good



## 6 Additional measures

### 6.1 Onsite planting

- 6.1.1 This document has been specifically prepared to set out the outline compensation measures for the deterioration of irreplaceable habitats, CWS and a RNR as a result of changes to air quality as a result of the Proposed Scheme. In addition to this outline air quality compensation strategy, the Proposed Scheme will also provide additional mitigation, as reported in the ES, comprising onsite planting for other habitat types, in order to meet (amongst other things) BNG objectives. This additional mitigation is referenced within this Strategy to ensure more than standard enhancement and compensation allowance has been considered for this Proposed Scheme.
- 6.1.2 Habitats removed, proposed and overall net increase and decrease for each habitat type associated with the construction of the Proposed Scheme is reported in **Appendix 10.33** (Document Reference: 3.10.33). Habitats proposed can be seen on the **Landscaping Design Plans** (Reference 2.07.00) and the **Essential Environmental Mitigation Plan** (Reference 2.11.00).
- 6.1.3 The Proposed Scheme would result in an overall increase in wetland reedbeds by 0.16 hectares (ha), mixed scrub by 7.39ha, native hedgerow with trees by 1.49km and native species rich hedgerow by 5.26km. Furthermore, significant increases in grassland – other neutral grassland and woodland and forest – lowland mixed deciduous woodland are proposed, resulting in increases of 58.23ha and 27.19ha, respectively.



## 6.2 Veteran trees

- 6.2.1 Additional compensation measures have been identified for the direct loss for seven veteran trees reported in **Chapter 10: Biodiversity** (Document Reference: 3.10.00). This includes the retention of felled material as monoliths and deadwood habitat, and new woodland planting, including enhancement of connectivity, and enhancement to existing woodland (see **Appendix 10.33**).
- 6.2.2 The loss of high-quality arboricultural features also cannot be mitigated in the short-term, however, the area of proposed mitigation planting exceeds the area of A category trees at a ratio of 3:1, and mitigation proposals will include tree planting that ultimately will increase canopy cover. There will therefore be a long-term increase in the quantity of overall trees by number and area. The new woodland planting will compensate for these losses and provide diversity to the age structure of arboricultural features in the medium to long-term.



## **7 Conclusion**

- 7.1.1 The Outline Air Quality Compensation Strategy encompasses survey information available to date and takes into consideration the measures proposed within this strategy which includes the maximum area of land available for compensation within the RLB.
- 7.1.2 The Applicant will continue to liaise with the CPA and Natural England to prepare a Final Compensation Strategy pursuant to an appropriately worded planning condition should the CPA grant planning permission for the Proposed Scheme. The Final Compensation Strategy will detail which measures have been agreed with the RLB and are therefore implementable and proportional to the impacts attributed to the final detailed design of the Proposed Scheme, and if not deliverable, explain the proposals for Stage 2 and if necessary, Stage 3.



## 8 References

- Ref 1** - Department for Levelling Up, Housing & Communities (2023). National Planning Policy Framework. Available online at: [Department for Levelling Up - National Planning Policy Framework](#) [Accessed 3rd August 2023].
- Ref 2** - Norwich City Council (2024). DM6 Protecting and enhancing the natural environment Available online at: [Norwich City Council - DM6 Protecting and enhancing the natural environment](#) [Accessed 22nd February 2024].
- Ref 3** - Natural England (2023). Biodiversity Metric 3.1 – Habitat Condition Assessment Sheets with Instructions. Available at: [ARCHIVE SITE for the Biodiversity Metric 2.0, 3.0, 3.1 and the beta test version of the Small Sites Metric \(naturalengland.org.uk\)](#) [Accessed 04 July 2023].