



Immingham Green Energy Terminal

TR030008

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9.34 Woodland Compensation Plan (Clean)

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Immingham Green Energy Terminal

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9.34 Woodland Compensation Plan

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Executive Summary

This Woodland Compensation Plan has been prepared in accordance with Woodland Compensation Strategy submitted with the DCO application [TR030008] to set out the measures to be taken to compensate for tree loss from an area protected by a tree preservation order (TPO), associated with the construction of the Immingham Green Energy Terminal (IGET, the Project). Compliance with this plan, and therefore the requisite compensation for the loss of trees and biodiversity, is secured by requirement 11 in Schedule 2 of the Draft Development Consent Order ((TR030008) **[REP5-004]** . This Woodland Compensation Plan is intended to be a certified document and is listed as such in Schedule 15 of the dDCO.

The construction of the landside infrastructure associated with the Terminal, including the jetty access road and pipe-racks, pipelines and associated utilities which link the Terminal to the landside sites, will require the clearance of part of the Long Strip woodland. The Long Strip woodland is a linear band of woodland (2.77 ha) to the east of the Port, bisected by Laporte Road, which lies within ABP ownership and is subject to a tree preservation order. A total of 0.64 ha of woodland (comprising approximately 220 individually surveyed trees) is expected to be removed from the section of the TPO north of Laporte Road.

The compensation for the loss of woodland as set out in this Final Woodland Compensation Plan comprises :

- a. management and enhancement of retained woodland in the north section of Long Strip woodland; and
- b. creation and long-term management of 2.2 ha of replacement woodland in an area of land owned by ABP on the southern edge of the Port of Immingham.

In respect of the replacement woodland, this Plan outlines the approach to establishing, managing and monitoring this woodland over a 25 year period.

In addition to these measures, the Applicant has agreed with North East Lincolnshire Council (NELC) to make a financial contribution towards a new woodland expansion planting scheme at Battery Street Playing Field which is being developed by NELC. The planting will comprise 666 trees including shelter tubes, stakes, ties and staffing resource; replacement of dead trees over three years; spot spraying; and one thinning operation. A total of £18,352.44 will be provided to fund this planting including its maintenance for ten years, and will be secured by a Section 106 agreement entered into with NELC.

1 Introduction

1.1 Background

- 1.1.1 This Woodland Compensation Plan has been prepared on behalf of Associated British Ports (ABP) (the Applicant) to compensate for tree loss from an area protected by a tree preservation order (TPO), associated with the construction of the Immingham Green Energy Terminal (IGET, the Project). Compliance with this Woodland Compensation Plan and therefore the compensation for tree loss is secured by requirement 11 in Schedule 2 of the Draft Development Consent Order (TR030008) **[REP5-004]**.
- 1.1.2 The Project will comprise the construction, operation and maintenance of a multi-user liquid bulk terminal, which would be located on the eastern side of the Port of Immingham (“the Port”), as well as associated development (collectively termed “the Project”). The main element of the associated development comprises the construction and operation of a green hydrogen facility for the production of green hydrogen from imported ammonia on site by Air Products (BR) Ltd (“Air Products”).
- 1.1.3 The Project will be located within the Site Boundary (**Figure 1** in this document) and is the subject of an application for a development consent order (DCO). The Project is described within Chapter 2: The Project (TR030008) **[REP3-022]**. The construction of the Project, and in particular the landside elements of Work No. 1 (which comprises the jetty and associated landside infrastructure (the Terminal), including jetty access ramps and pipeline connections) and Work No. 2 (which comprises the jetty access road and pipe-racks, pipelines and associated utilities to link the Terminal to the landside sites), will require the clearance of part of the Long Strip woodland. The Long Strip wood, which lies within ABP ownership is a linear band of woodland (2.77 ha) to the east of the Port, bisected by Laporte Road.
- 1.1.4 The Long Strip woodland is subject to a Tree Preservation Order (TPO) which applies to the whole woodland, 2.77 ha, including the area on the south side of Laporte Road, which is within the Site Boundary only for the purposes of restricting public access during construction and which is not otherwise directly affected by the proposed works (**Figure 1** in this document). A total of 0.64 ha of Long Strip woodland (comprising approximately 220 individually surveyed trees) is expected to be removed from the section of woodland north of Laporte Road to facilitate the construction of Work No. 1 and Work No. 2 (**Figure 1** in this document), the full details of which are contained within 6.4 Environmental Statement Appendices – Appendix 8.F Arboricultural Impact Assessment (TR030008/APP/6.4) **[APP-185]**.
- 1.1.5 The retained Long Strip woodland north of Laporte Road will be subject to various management interventions to improve its structure and ecological function, which are set out in Section 3 of this document. The measures proposed are also designed to create conditions supporting the development of greater species diversity (see **Figure 1** in this document).

- 1.1.6 The section of Long Strip woodland which lies to the south of Laporte Road is already proposed for enhancements for the adjacent Immingham Eastern Ro-Ro Terminal (IERRT) DCO Scheme, and is therefore excluded from this Woodland Compensation Plan.
- 1.1.7 The loss of an area of woodland from the north section of Long Strip requires measures to be delivered to compensate for the loss of trees and biodiversity. This document has been prepared to set out the approach to the provision of appropriate compensation for that permanent and unavoidable woodland loss and to address Policy 41 (1D) of the North East Lincolnshire Local Plan 2018 (Ref 1-10) and paragraph 5.1.5 of the National Policy Statement for Ports 2012 (Ref 1-3).
- 1.1.8 Consideration was given to the need to compensate for loss of Goat Willow (*Salix caprea*) in the East Site, adjacent to Long Strip woodland. Given the immature nature of this habitat (self-seeding and scrub establishment of the Goat Willow post-2009) and the open nature of the habitat with areas of grassland and scrub, there is no need to compensate for the loss of Goat Willow.
- 1.1.9 This Woodland Compensation Plan is based on discussions between the Applicant and North East Lincolnshire Council (NELC) as the relevant Local Planning Authority. Having considered the original 6.8 Outline Woodland Compensation Strategy (TR030008), NELC recommended that the applicant should further review its compensation strategy and provide further detail. A review of 6.8 Outline Woodland Compensation Strategy (TR030008) has been undertaken by the Applicant which has been informed by input from NELC (**Table 1**). All of this consultation has been taken into account in the development of this Woodland Compensation Plan which then forms the certified document referenced within Requirement 11 of Schedule 2 of the dDCO.

Table 1. Communication with NELC regarding the review of the Outline Woodland Compensation Strategy

Nature of communication	Date	Engagement in communication	Summary outcome of communication
In-person Meeting	11.04.23	NELC: Senior Planning Officer, Tree Officer & Arboricultural Officer ABP: [REDACTED] & [REDACTED]	Meeting was to discuss the potential tree loss within the TPO area of Long Strip Woodland
In-person Meeting	08.08.23	NELC: Senior Planning Officer & Senior Arboricultural Officer ABP: [REDACTED] & [REDACTED] AECOM: [REDACTED]	Meeting was to update on overall woodland impacts including total area of TPO woodland lost & total number of trees lost within the TPO. Progression towards woodland compensation strategy.
In-person Meeting	16.01.24	NELC: Senior Planning Officer, Tree Officer & Ecology Manager	Meeting was to discuss the Outline Woodland Compensation Strategy and

Nature of communication	Date	Engagement in communication	Summary outcome of communication
(included a site visit)		ABP: [REDACTED] & [REDACTED]	run through of justification behind Jetty Access Road routing. Included Site Visit to Manby Road Bund.
Email	24.01.24	NELC: Senior Planning Officer, Tree Officer & Ecology Manager ABP: [REDACTED] & [REDACTED]	Additional questions raised by NELC in relation to Woodland Compensation Strategy.
Email (letter attached)	12.02.24	NELC: Senior Planning Officer, Tree Officer & Ecology Manager ABP: [REDACTED] & [REDACTED]	ABP submitted response to NELC in response to additional questions raised in the email above.
MS Teams Meeting	07.03.24	NELC: Senior Planning Officer & Ecology Manager ABP: [REDACTED] & [REDACTED]	Meeting to update on progression on the Woodland Compensation Strategy,
In-person meeting	08.04.24	NELC: Senior Planning Officer & Tree Officer ABP: [REDACTED] & [REDACTED]	Meeting to discuss further progression on the Woodland Compensation Plan.
Email	08.04.24	NELC: Senior Planning Officer & Tree Officer ABP: [REDACTED] & [REDACTED]	Follow up email received from the NELC Tree Officer with comments on the Woodland Compensation Plan.
MS Teams Meeting	22.04.24	NELC: Senior Planning Officer ABP: [REDACTED] & [REDACTED]	Further meeting with NELC Planning Officer following hearings to discuss the progression of the SoCG.
In-Person Site Meeting	25.04.24	NELC: Senior Planning Officer & Tree Office ABP: [REDACTED] & [REDACTED]	In-person site meeting with NELC Planning Officer & Tree Officer in response to Examining Authority's Written Questions 1 [PD-008] Q1.5.4.6.
Email	09.05.24	NELC: Senior Planning Officer ABP: [REDACTED] & [REDACTED]	Email sent to NELC Planning Officer to discuss progression on SoCG following Deadline 3 submissions.
MS Teams Meeting	21.05.24	NELC: Senior Planning Of & [REDACTED]	Meeting with NELC to discussion progression of SoCG ahead of Deadline 4.
In-Person Meeting	23.05.24	NELC: Senior Planning Officer	Meeting with NELC Planning Officer ahead of Deadline 4 to

Nature of communication	Date	Engagement in communication	Summary outcome of communication
		ABP: [REDACTED] & [REDACTED]	progress remaining amber items on SoCG.
MS Teams Meeting	20.06.24	NELC: Senior Planning Officer ABP: [REDACTED] & [REDACTED]	Meeting with NELC Planning Officer ahead of Deadline 5 to progress remaining amber items on SoCG.
MS Teams Meeting	04.07.24	NELC: Senior Planning Officer ABP: [REDACTED] & [REDACTED]	Meeting with NELC Planning Officer ahead of Deadline 5 to progress remaining amber items on SoCG.

1.1.10 This Woodland Compensation Plan presents:

- a. a summary of baseline conditions within the north section of Long Strip woodland (refer to **Section 2**);
- b. management and enhancement of retained woodland in the north section of Long Strip woodland (refer to **Section 3**);
- c. outline plans for the creation and long-term management of replacement woodland (refer to **Section 4**); and
- d. reporting requirements (refer to **Section 5**).

1.1.11 In addition to these measures, the Applicant has agreed with NELC to make a financial contribution towards a new woodland expansion planting scheme at Battery Street Playing Field which is being developed by NELC. The planting will comprise 666 trees including shelter tubes, stakes, ties and staffing resource; replacement of dead trees over three years; spot spraying; and one thinning operation. A total of £18,352.44 will be provided to fund this planting including its maintenance for a period of ten years, and will be secured by a Section 106 agreement with NELC. An initial draft of the Section 106 agreement was submitted at Deadline 3 [\[REP4-039\]](#) and the final version will be submitted into the Examination once agreed.

2 Long Strip Woodland (Baseline)

2.1 Legal Framework

- 2.1.1 The woodland to be lost is subject to Tree Preservation Order No. 107 made by NELC in 2002, referred to as the TPO. The TPO covers the linear band of woodland spanning Laporte Road which is referred to within the TPO as “Long Wood, Laporte Road, Stallingborough”. A plan of the extent of the TPO is shown in **Figure 3**. The northern section is referenced as ‘W.1’ and the southern section as ‘W.2’. Only the W.1 section will be directly impacted by the Project (referred to as ‘the northern section’).
- 2.1.2 Interrogation of freely available historic maps indicates that “Long Wood” woodland was present on the 1889 Ordnance Survey Map where it was a continuous strip of woodland (Laporte Road not having been constructed at that time). Likewise, the woodland is visible on six inch 1840s -1860s OS mapping, confirming that this area has been wooded from at least the middle of the 19th century.
- 2.1.3 Long Strip woodland is not covered by any statutory or non-statutory nature conservation designations, nor is it listed on the Natural England’s Ancient Woodland Inventory (AWI). It is listed on Natural England’s Priority Habitat Inventory as ‘Deciduous Woodland’. It meets the criteria for ‘Long Established Woodland’, which is woodland that has been present since at least 1893 and in respect of which guidance states that “...*While not ancient, these woodlands are still very important. They have had many decades to develop rich biodiversity and they often contain important old-growth features and deliver a range of ecosystem services.*” (Ref 1-1).
- 2.1.4 Full planning or DCO consent can include exemptions from the need to apply for consent for works to trees protected by a TPO and the need to apply for a Felling Licence with the Forestry Commission (to fell more than 5m³ in any calendar quarter). Outside of these permissions, any felling should be confirmed with NELC and the Forestry Commission as appropriate.

2.2 Habitats

- 2.2.1 An extended Phase 1 Habitat survey of the woodland was undertaken by AECOM in spring 2022, with a further woodland ground flora survey, protected species and terrestrial invertebrate habitat appraisal taking place in spring/summer 2022 and spring/summer 2023. The survey results are presented in 6.4 Environmental Statement Appendices – Appendix 8.B Preliminary Ecological appraisal Report (TR030008/APP) **[APP-181]** and the Phase 1 Habitat map is provided as **Figure 2** in this document. In addition, a tree survey of all trees within the TPO has been undertaken by a qualified arboriculturist, the results of which are presented in 6.4 Environmental Statement Appendices – Appendix 8.F Arboricultural Impact Assessment (TR030008/APP/6.4) **[APP-185]**.
- 2.2.2 The northern section of Long Strip woodland is dominated by a high forest closed canopy of pedunculate oak (*Quercus robur*) and ash (*Fraxinus excelsior*) with

mid-strata and shrub layer development of semi-mature hawthorn (*Crataegus monogyna*), and wych elm (*Ulmus glabra*), with occasional elder (*Sambucus nigra*) within the lower canopy, and a field layer of bramble (*Rubus fruticosus* aggregate) that is dense in parts. At the time of survey, the cover of ground flora was generally sparse due to shading by the dense tree canopy cover, with some stands of common nettle (*Urtica dioica*), cleavers (*Galium aparine*), broad-leaved dock (*Rumex obtusifolius*), wood avens (*Geum urbanum*), cow parsley (*Anthriscus sylvestris*) and ground elder (*Aegopodium podagraria*).

- 2.2.3 There were some areas of new tree planting (still in tree guards) evident as part of relatively recent volunteer activity, although only a few of the specimens appear to have successfully established.
- 2.2.4 All of the woodland within the TPO designation was previously reviewed (approximately 10 years ago) by NELC against the Greater Lincolnshire Nature Partnership's Local Wildlife Site ("LWS") selection guidelines third edition published in 2013 (Ref 1-6) and was found not to meet the LWS site selection criteria. The northern section of woodland was reviewed against the LWS woodland site selection criteria by AECOM, following habitat surveys undertaken in 2022/23 for the Project, and found to again not meet the LWS site selection criteria for woodland habitats. [6.2 Environmental Statement – Chapter 8: Nature Conservation (Terrestrial Ecology) **[APP-050]**.
- 2.2.5 The northern section of Long Strip woodland is publicly accessible; a Public Right of Way (bridleway) runs through the woodland connecting Laporte Road with the bridleway that runs parallel to the estuary along the top of the flood embankment.
- 2.2.6 With the exception of Laporte Road, ecological connectivity will remain strong north and south along Long Strip based on:
- the relatively uniform species composition (trees and ground flora) and structure from southern end to northern tip at the sea wall;
 - three strong north-south features within the northern section of Long Strip woodland along its eastern edge: the ditch running along the length of the eastern edge, a hedgerow immediately adjacent to the ditch and then the bridleway (W.1 in Figure 1), all three of which are continuous and buffering the remaining woodland in W.1 including from Work No. 9 (Temporary Construction Area);
 - the ditch running along the western edge of W.1; and
 - the sheltering effect of W.1 from the prevailing south-westerly winds, in what would be an exposed situation on the edge of the estuary, by an embankment immediately to the west with associated industrial structures.

2.3 Fauna

- 2.3.1 Ecological surveys undertaken for the Project included an appraisal of habitats within the northern section of woodland for their potential to support protected or notable species; a summary of which is provided below:
- No evidence of badger (*Meles meles*) was found within the woodland and the species was concluded absent.

- b. A dry ditch running along the northern boundary of the woodland was found not to include suitable habitat for otter (*Lutra lutra*) and water vole (*Arvicola amphibius*) and no evidence of these species was recorded.
- c. Bat emergence and re-entry surveys completed between July and September 2023 found no evidence of bats roosting within 19 woodland trees which had been previously identified as having moderate-high suitability for roosting bats. Likewise, no evidence of bat foraging was identified within the proximity of the 19 surveyed trees, including one tree which had previously been found to support a bat roost, likely to be common pipistrelle (*Pipistrellus pipistrellus*). A small, transient, local population of common pipistrelle, the only bat observed foraging, was recorded in that part of the Long Strip which will not be impacted. This confirms the conclusion in the Environmental Statement within Chapter 8: Nature Conservation (Terrestrial Ecology) [APP-050], in relation to bats, that the impact of removing trees would be minor adverse and not significant.

2.3.2 The Long Strip woodland provides ecological niches for terrestrial invertebrates although lacks a range of tree age classes and habitat diversity to support any rare or notable assemblages. However, the desk study returned ten recent records of notable species including the white-letter hairstreak butterfly (*Satyrion w-album*), which is a UK Priority Species (Section 41 Species of Principal Importance in the Natural Environment and Rural Communities Act 2006). Elms (*Ulmus* species), the larval foodplant of white-letter hairstreak, are scattered throughout the Long Strip woodland and this butterfly species is noted to be present within the Long Strip woodland north of Laporte Road (Work No. 2) Environmental Statement Chapter 8: Nature Conservation (Terrestrial Ecology) Volume 6 (TR030008) [APP-050].

2.3.3 No evidence of invasive non-native plant species was identified within the woodland, although variegated yellow-archangel (*Lamiastrum galeobdolon* subspecies *argentatum*), a species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is known to be present in the south section of Long Strip woodland (W.2).

3 Management and Enhancement of Retained Woodland

3.1 Purpose and Objectives

- 3.1.1 The purpose of the measures set out in this part of the plan is to improve the structure and function of the woodland which will be retained within the northern section of Long Strip (**Figure 1**), to deliver measurable ecological enhancements through targeted management interventions.
- 3.1.2 This section of the plan sets out how the following objectives in respect of the retained part of the woodland within the northern section will be met:
- diversification of the woodland stand to promote heterogeneity of vertical and horizontal structural development;
 - creation of more ecological niches for terrestrial invertebrates and amphibians;
 - diversification of herbaceous flora;
 - increase in nesting opportunities for breeding birds; and
 - increase in opportunities for roosting bats.

3.2 Management

- 3.2.1 The method by which each of the objectives identified above will be met is set out in **Table 3**, along with seasonal timings as appropriate for each management intervention. A ten-year programme of management is also set out. This management plan complements the programme of woodland enhancement and management of the south section of Long Strip woodland (section W.2 of the TPO) that was developed and agreed with NELC to provide ecological enhancements in connection with the adjacent IERRT scheme. The measures agreed for the IERRT scheme involved removal of localised areas of dense shrub layer to open up the canopy and encourage the natural development of a more diverse woodland ground flora.
- 3.2.2 The UK Forest Standard (Ref 1-4) identifies that woodlands of 10 hectares or more should contain at least 10% open ground, or ground managed for biodiversity as the primary objective. Woodlands smaller than 10 hectares may relax this requirement where adjacent land provides landscape and habitat diversity. Given the retained area of Long Strip woodland and the land surrounding the Scheme, this requirement is fulfilled by adjacent land uses.
- 3.2.3 It is anticipated that management of the retained woodland habitats will commence alongside the DCO construction programme. The commencement of management will be timed (where possible) to follow on from woodland clearance works required for Work No.1 and Work No. 2 so that felled material can be retained and reused within the woodland to create habitat log piles.
- 3.2.4 Prior to commencement of management interventions (as detailed in **Table 4**) and subsequent monitoring works (as detailed in **Table 5**), a pre-enhancement assessment of the woodland will be undertaken in early spring Year 1 to inform

the specifications for the management interventions and to establish a robust baseline against which the progress of the planned management towards the objectives can thereafter be measured. This will include:

- a. woodland ground flora survey and woodland National Vegetation Classification assessment, including detailed mapping of habitats;
- b. survey for evidence of ash dieback disease and action removal of ash trees as appropriate; and
- c. identification and marking up of trees suitable for the installation of bird and bat boxes;
- d. collecting any other relevant information with respect to the management principles.

3.2.5 The following management principles will be adopted:

- a. No mature tree specimens within retained northern section will be felled unless surveys identify a requirement to fell ash trees with ash dieback or removal is required for safety reasons under general management, in which case removal will be agreed with NELC and the Forestry Commission (as appropriate) prior to felling.
- b. Where areas of ash dieback are identified which require tree removal (e.g., ash health classes three and four (Ref 1-15)), understory planting will be undertaken utilising appropriate species.
- c. Clusters of underplanting will be established in areas of lower canopy density, utilising appropriate shade tolerant species, to facilitate diversification of woodland structure.
- d. Density of shrub species will be increased at the woodland edge to reduce any edge effects into the woodland and promote a graded, scalloped woodland edge where feasible.
- e. The provision of coarse woody debris (lying deadwood) and standing deadwood (snags) in the woodland will be increased to the UKFS recommended density of 20m³ per hectare (Ref 1-4).
- f. Diversification of the woodland flora will be achieved through sowing of appropriate herbaceous seed mixtures in prepared seed beds within the woodland, choosing herbaceous flora species based on the woodland stand type and zone.

3.2.6 Compliance with this Woodland Compensation Plan (including completion of the above works) is secured by Requirement 11 included within the draft DCO.

3.3 Species Selection for Planting

3.3.1 The current principal species identified within the Long Strip woodland are formed of native ash and oak species, with associated species in the understory dominated by common hawthorn and occasional elder. Of the lowland zone woodland types, this species mix corresponds to Lowland Mixed Broadleaved woodlands.

- 3.3.2 The National Vegetation Community (NVC) type is not relevant to the wood due to its likely planted origin although long-established (e.g., visible on six inch 1840s -1860s OS mapping), meaning its pattern is likely to represent planting trends of early forestry and not biogeography. However, Long Strip woodland represents shared features of semi-natural W8 and W10 NVC Woodland communities. In the context of species selection for replanting, NVC categorisation may not be appropriate for stand development decisions due to an emphasis on identification of stands via ground vegetation, as herbaceous plants are typically highly sensitive to site variation, with trees considered site insensitive in this context. For example, it is possible for NVC oak-birch woods to show no oak establishment, and beech woods to show less than 4% beech tree canopy dominance (Ref 1-13). As such, NVC identification of the potential semi natural stand type has been discounted for selection of appropriate tree species in this context.
- 3.3.3 Following a review of the British Geological Survey's Geology Viewer (Ref 1-16), the bedrock is identified as Burnham Chalk Formation – chalk with superficial deposits of Tidal Flat Deposits – clay and silt. Cranfield University's Soilscape Viewer (Ref 1-1) was accessed with soils identified as loamy and clayey soils of coastal flats with naturally high groundwater, with a lime rich to moderate pH. Groundwater levels may be altered by adjoining agricultural land uses, although this is unlikely to be significant within the Long Strip woodland. The drainage regime is therefore likely to be poor within the Long Strip woodland.
- 3.3.4 Based on the desk-based study and the regional importance of limewoods to Lincolnshire (the likely most northern range of native lime species in Britain), and with Peterken (Ref 1-13) identifying Stand Types 4A, 4B, 5A and 5B as main components of Lincolnshire Limewoods, the woodland is likely to be suitable for Stand Type lime woodland 4A (Ref 1-13).
- 3.3.5 Principal species within Stand Type 4A are formed of small leaved lime (*Tilia cordata*), ash (*Fraxinus excelsior*), downy birch (*Betula pubescens*) and pedunculate oak (*Quercus robur*); with main associates of hazel (*Corylus avellana*), common hawthorn (*Crataegus monogyna*), goat willow (*Salix caprea*), crab apple (*Malus sylvestris*), aspen (*Populus tremula*) and midland hawthorn (*Crataegus laevigata*).
- 3.3.6 This species mix is considered by Peterken (Ref 1-12) as the most important lowland zone limewood species composition. This species mix is based on 700 sample stands of semi natural woods throughout Britain collected by Peterken (Ref 1-13).
- 3.3.7 Historically, limewoods within Britain have been subject principally to the silviculture regime of coppicing. However, emphasis of future management of this stand type is identified by Peterken (Ref 1-13) as high forest in addition to coppice. The present Long Strip woodland shows no historical evidence of coppice practice and has likely been historically managed as high forest. This correlates with the woodland's likely early plantation forestry practice planted origin. Species selection therefore represents a conversion of the wood from the general Lowland Deciduous wood (previously/historically referred to as ash-oak woodlands) to the specific regional Lincolnshire Limewood Stand Types as identified by Peterken (Ref 1-13).

- 3.3.8 Species selection for gap phase regeneration planting (e.g., areas of ash tree removal due to ash dieback), understory re-initiation and edge planting (e.g., through the use of main associates to increase the woodland edge/ecotone) should therefore predominantly use species from this matrix to preserve locally geographically distinct woodland attributes. Any understory regeneration planting should utilise 50% of the plantable area (Ref 1-9), with densities of between 2 – 3m, matching species to overstory shade conditions, planting trees in ‘clumps’ to mimic natural regeneration patterns. **Table 2** summarises the trees it is proposed for planting in Long Strip woodland.

Table 2: Indicative Tree Planting Mix for Long Strip Woodland

Common Name	Scientific Name	Proportion
Pedunculate oak	<i>Quercus robur</i>	30%
Small leaved lime	<i>Tilia cordata</i>	30%
Field maple	<i>Acer campestre</i>	15%
Hazel	<i>Corylus avellana</i>	10%
Downy birch	<i>Betula pubescens</i>	5%
Common hawthorn	<i>Crataegus monogyna</i>	5%
Spindle	<i>Euonymus europaeus</i>	5%

- 3.3.9 Woodland flora selected for sowing into Long Strip woodland are shown in **Table 3**. Seeds should be sourced from native stock, preferably with a local provenance. Prior to planting or sowing, areas should be selected for species micro-site preferences with areas of dense bramble cleared. Sowing of seeds and planting of bulbs is recommended to take place between September and November.
- 3.3.10 Areas suitable for herbaceous plant establishment will be determined by a walkover during which, the total area available for sowing and or planting will be determined.

Table 3: Herbaceous plants for establishment in field layer in Long Strip woodland.

Common name (<i>Scientific name</i>)	Seed or bulb	Recommended density
Wood Anemone (<i>Anemonoides</i> species)	Bulb	25 – 100 per m ² in naturalistic swathes of variable density, selecting micro-site preferences.

Common name (<i>Scientific name</i>)	Seed or bulb	Recommended density
Native bluebell (<i>Hyacinthoides non-scripta</i>)	Bulb	25 – 100 per m ² in naturalistic swathes of variable density, selecting micro-site preferences.
Wood sedge (<i>Carex sylvatica</i>)	Seed	2 grammes per m ²
Red campion (<i>Silene dioica</i>)	Seed	2 grammes per m ²
Wild garlic (<i>Allium ursinum</i>)	Bulb	25 – 100 per m ² in naturalistic swathes of variable density, selecting micro-site preferences.
Primrose (<i>Primula vulgaris</i>)	Seed	2 grammes per m ²

3.4 Enhancement

3.4.1 In addition to the management interventions set out above, which aim to improve the condition, structure and function of the woodland, the following enhancements will also be delivered:

- a. creation of log pile refuges and brash piles for amphibians and terrestrial invertebrates using material from felled trees;
- b. retention of standing deadwood (snags) to a height of approximately 4m where appropriate;
- c. installation of bird nest boxes on suitable trees to increase nesting opportunities for a range of breeding bird species
- d. installation of bat roost boxes on suitable trees to increase roosting opportunities for species of bats;
- e. use of a combination of temporary fencing and tree and shrub planting to reduce the width of the northern end of the bridleway which remains in the eastern section of Long Strip woodland and has become significantly wider than the other length of the pathway, providing the opportunity to strengthen the remaining belt of woodland;
- f. removal of any fly tipped waste including the remains of a burnt car; and
- g. implementation of signage and interpretation on access paths.

Table 4: Woodland Management Interventions and Proposed Timetable

Management Intervention	Delivery	Comments	Timing	Year 1	Year 2	Year 3	Year 4	Years 5-10
Removal of ash showing evidence of ash dieback disease	Any trees showing evidence of significant ash die-back disease that could pose a danger to people or property will be felled (to be agreed with the NELC Tree Officer prior to felling and trees to be clearly marked on a plan).	<p>Trees will be checked for bat roost potential by an ecologist prior to felling and measures to ensure legislative compliance adopted as necessary (e.g. Natural England license or soft-felling under ecological watching brief).</p> <p>Felled material will be used to create log pile refuges within the woodland.</p> <p>Some standing dead wood may be retained.</p> <p>Where possible, felling will be undertaken outside of the nesting bird season (March to August inclusive), however where this is not possible, all trees will be checked for nesting birds by an ecologist prior to felling and, if present, measures will be taken to ensure legislative compliance.</p> <p>Works must avoid damaging retained trees e.g., by using directional felling, winching or dismantling techniques where appropriate.</p>	May – September	✓	✓	✓	✓	✓

Management Intervention	Delivery	Comments	Timing	Year 1	Year 2	Year 3	Year 4	Years 5-10
Underplanting areas of ash tree removal and areas of low canopy cover	Plant suitable species mixes at densities between 2 – 3m of 50% of the replantable area (Ref 1-9) in areas of ash tree removal.	<p>Trees to be planted within suitable guards to prevent predation.</p> <p>Trees to be checked for establishment, with stakes and protection removed following successful establishment and growth above the browse line.</p> <p>Tree planting to be undertaken in the dormant season (winter).</p> <p>Species selection to be taken from Stand Type as identified within this report.</p>	October – February	✓	✓	✓	✓	✓
Selective removal of encroaching bramble	Localised areas of dense bramble clearance to support objectives for creation of open glades within existing woodland.	<p>Cut in late winter/early spring so berries provide feeding resource for winter birds.</p> <p>If bramble removal will be undertaken in the nesting bird season (March to August inclusive), the bramble will be checked for nesting birds by an ecologist prior to removal and, if present, measures will be taken to ensure legislative compliance.</p>	February - March	✓	x	x	x	x
	Log and brash piles to be created using	Felled material (trees, branches, brash etc.) from tree removal to be used to establish log piles within the woodland.	February - September	✓	x	x	x	x

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Management Intervention	Delivery	Comments	Timing	Year 1	Year 2	Year 3	Year 4	Years 5-10
Creation of log pile refuges and brush piles	material from on-site tree felling.	Target volume of 20m ³ per hectare (Ref 1-4).						
	Increase availability of refuges for terrestrial invertebrates and amphibians	Replenish log piles by adding additional felled material (e.g. trees, shrubs, branches) where it becomes available.	February - September	x	✓	✓	✓	✓
Install 20 No. bird nest boxes	Increase nesting opportunities for breeding birds	Installation in autumn/winter so they are available for use the following spring/summer.	September - October	✓	x	x	x	x
		Maintenance and repair where damage/loss occurs.	October – February	x	✓	✓	✓	✓
Install 20 No. bat roost boxes	Increase roosting opportunities for bats	Installation in autumn/winter so they are available for use the following spring/summer.	September - October	✓	x	x	x	x
		Maintenance and repair where damage/loss occurs.	October – February	x	✓	✓	✓	✓

3.5 Monitoring and Triggers for Remedial Action

- 3.5.1 Long Strip woodland will be subject to a walkover survey in May/June every year throughout the ten-year management plan period to monitor progress against the objectives set out in this document, starting at Year 2 (with Year 1 being the year when the management interventions as set out in **Table 4** commence).
- 3.5.2 A summary of the monitoring that will be undertaken, and the triggers for remedial action, is provided in **Table 5**.

Table 5: Monitoring and Triggers for Remedial Action

Target	Monitoring	Timing	Trigger for Remedial Action	Remedial Action	Year									
					1	2	3	4	5	6	7	8	9	10
Control of non-native invasive flora	Habitat walkover survey	May/June	Presence of invasive non-native species e.g. rhododendron, variegated yellow-archangel and snowberry	Remove invasive species material in September/ October after nesting bird season. Arisings to be removed from site and disposed of appropriately to prevent further spread.	x	✓	x	✓	x	✓	x	✓	x	✓
Removal of waste	Walkover survey	May/June	Evidence of fly tipping	Remove fly tipped rubbish and improve measures such as bollards or dense planting to limit access for vehicles to prevent further fly-tipping	x	✓	x	✓	x	✓	x	✓	x	✓
Monitoring for ash die-back	Habitat walkover survey	May/June	Evidence of ash die-back disease	Removal of trees showing evidence of ash die-back disease with ≥ 50% dead canopy ¹ (ash health class 3 and/or 4 (Ref 1-15)). Trees will be checked for nesting birds by an ecologist prior to felling and, if present, measures will be	x	✓	x	✓	x	✓	x	✓	x	✓

¹ This is to ensure that any trees showing some resistance to ash die-back disease are retained. Removal of diseased specimens will be agreed with NELC prior to felling, and clearly marked on a plan.

Target	Monitoring	Timing	Trigger for Remedial Action	Remedial Action	Year									
					1	2	3	4	5	6	7	8	9	10
				taken to ensure legislative compliance.										
Creation of more ecological niches for terrestrial invertebrates and amphibians	Walkover survey	May/June	Log pile refuges missing/ significantly reduced in size/ damaged	Replacement and, or /addition of material to replenish	x	✓	x	✓	x	✓	x	✓	x	✓
Increase nesting opportunities for breeding birds	Walkover survey	May/June	Missing/ damaged boxes	Replacement/ repair	x	✓	x	✓	x	✓	x	✓	x	✓
			No evidence of uptake by nesting birds	Consider relocation of boxes	x	x	✓	x	x	✓	x	x	x	✓
Increase nesting opportunities for roosting bats	Walkover survey	May/June	Missing/damaged boxes	Replacement/repair	x	✓	x	✓	x	✓	x	✓	x	✓
	Inspection by licensed bat ecologist	October/ November	No evidence of uptake by roosting bats	Consider relocation of boxes	x	x	✓	x	x	✓	x	x	x	✓

4 New Woodland Creation at Manby Road

4.1 Purpose and Objectives

4.1.1 The purpose of the measures set out in this part of the plan is to create woodland habitat that provides appropriate compensation in the medium to long-term for that part of the woodland that is to be removed within Long Strip woodland (0.64 ha) as a result of the construction of the Project.

4.1.2 New woodland habitat will be created in accordance with UK Forestry Standard Requirement 18 (Ref 1-4) which states that “*new forests should be located and designed to maintain or enhance the visual, cultural and ecological value and character of the landscape*”.

4.1.3 This document sets out the following objectives for woodland habitat creation:

- a. creation of woodland within the identified areas of land at the Port of Immingham, within the Applicant’s ownership (see **Figure 1**);
- b. planting of native species of appropriate provenance;
- c. planting whips at an appropriate density to encourage the establishment of a successful woodland canopy;
- d. creating a mosaic of habitat within the woodland including glades of grassland and patches of shrub layer.
- e. providing habitat for a range of insects and other invertebrates including targeted planting of the foodplants of a number of butterfly species.
- f. creation and management to ensure resilience to climate change; and
- g. long-term management and monitoring to ensure successful establishment.

4.1.4 A planting plan will be produced to support this Woodland Compensation Plan and will be provided to NELC for approval in advance of undertaking the planting.

4.2 Location

4.2.1 The proposed location for woodland planting is a large, narrow band of unused land between Manby Road and the freight rail line, on the south side of the Port estate; this land is within the Applicant’s ownership boundary. The land comprises a linear mound of earth rising to approximately 5m above the road level, with a flat level top, and was created in approximately 2009 following the relocation of construction arisings from another area of the Port.

4.2.2 Tall rank neutral grassland dominated by false oat-grass (*Arrhenatherum elatius*) has become established on the mound, along with tall ruderal species such as creeping thistle (*Cirsium arvensis*), rosebay willowherb (*Chamaenerion angustifolium*), oxeye daisy (*Leucanthemum vulgare*) and dense stands of bramble (*Rubus fruticosus* aggregate). Tree planting was undertaken along the northern side of the mound with some planting on the mound itself, the latter taking place shortly after it was created. These trees were intended (once matured) to provide dust suppression from operational areas. The tree planting mix included hawthorn (*Crataegus monogyna*), silver birch (*Betula pendula*),

sycamore (*Acer pseudoplatanus*), pine (a species of *Pinus*) and oak (a species of *Quercus*), some of which have established successfully, and there appears to have been some self-seeded establishment evident in the presence of younger trees and saplings in parts.

- 4.2.3 This area is suitable for woodland planting in order to provide appropriate compensation for woodland lost within Long Strip woodland, on the following basis:
- As the mound was created using excavated soils, and there has already been some successful tree establishment, woodland planting would successfully establish within this area.
 - The total open ground (or unplanted areas) available for woodland planting is approximately 0.765ha, based on a LiDAR (light density and ranging) assessment. This would create a woodland of 0.63ha, a glade (treeless area within the proposed woodland) formed of a circle approximately 20m in diameter and a scrub edge to the high forest planting covering 0.11ha.
 - Target tree density is to be achieved by establishment of 1,600 stems per hectare which may be achieved by planting centres of 2.5m x 2.5m. The total number of trees that may be planted across the high forest woodland planting area is therefore 1,008 trees and 176 trees for the woodland edge/scrub planting.
 - The existing trees/scrub habitat is likely to support nesting birds in the breeding season (March to August); there are no other protected species.
- 4.2.4 The planting mound area has been assessed for available planting space using LiDAR. LiDAR data was sourced from Defra (Open Government Licence). A raster elevation model has been created by subtracting a one metre digital terrain model from a one metre digital surface model. This raster elevation model provides approximate heights of features like trees or buildings. A contour layer was then created to visualise the extents of potential vegetation at 0.5m height intervals, with all features showing heights of 0.5m or less removed.
- 4.2.5 An offset from assumed existing vegetation (canopy edge) of 1.5m has been utilised to reduce the estimated open space available for planting, to reduce inappropriate tree planting close to existing established trees. The open space available for planting (including an offset from existing vegetation) is shown on the Potential Woodland Establishment Area LiDAR Assessment Plan included as **Figure 4**.
- ### 4.3 Habitat Creation
- 4.3.1 A detailed vegetation survey of the existing habitats was undertaken on 21 June 2024 which is an appropriate survey season, and prior to commencement of planting. This survey establishes a robust baseline for the refinement and development of the woodland planting plan including locations for new tree planting to ensure that they are sympathetic to the existing baseline.
- 4.3.2 Due to the likely future spread of ash dieback disease and thus the vulnerability of any specimens of this species, no ash will be included within the planting mix.

- 4.3.3 The Greater Lincolnshire Nature Partnership’s (“GLNP”) tree planting guidance (Ref 1-6) has been examined to enable the principles of planting and a county-specific woodland planting mix to be developed. Greater Lincolnshire has one of the lowest figures for woodland cover in England, and it is estimated that the current distribution is 5,465 ha of lowland mixed deciduous woodland amongst the farmed landscape (Ref 1-8). The GLNP Local Wildlife Site woodland management plan advice states that “*The majority of Greater Lincolnshire’s woodlands are dominated by oak and ash but there is an important small-leaved lime component found in central Lincolnshire, being the northern most native limit for this species*”. Ash has been excluded from the planting mix due to the risk of ash dieback (*Hymenoscyphus fraxineus*) disease.
- 4.3.4 This Woodland Compensation Plan assumes that there will be a 25 year period of management of the developing Manby Road woodland. The timeframes are covered further in **Section 4.11**.
- 4.3.5 The following principles will be adopted from the GLNP’s tree planting guidance:
- a. In habitat creation schemes, use stock of local origin where possible, but consider a proportion of plants from more southerly counties of the UK, to allow for climate change adaptation (see **Section 4.5**).
 - b. In built areas, plant locally native species, but more ornamental species of high biodiversity value may also be included.
 - c. Retain existing/old trees as part of the development where safe and practical.
 - d. Aim to plant a variety of species, varieties and genotypes to provide greater resistance to pests and diseases (see **Section 4.7**).
 - e. In new woodland planting, include at least three canopy species with no one species greater than 35 – 50%.
 - f. Plant species appropriate to the soil type/ texture of the site.
 - g. Maintain biosecurity when purchasing stock (see **Section 4.7**).
 - h. Ensure that suppliers are peat free.
 - i. Apply the UK Forestry Standard for sustainable woodland management.
 - j. constraints associated with this area.
 - k. Thinning will be assessed and undertaken as appropriate.
 - l. The woodland will be assessed cyclically at intervals of 5 to 10 years and any intervention needed will be carried out.
- 4.3.6 Tree planting will also take into account the emerging NELC Tree Strategy, adopted June 2023 (Ref 1-11), which seeks to increase tree cover in North East Lincolnshire to 13% by 2030. The Tree Strategy provides “... a strategic framework for the management of the local tree population to achieve agreed aims and objectives ... [and] helps the council deliver its obligations under the Natural Environment and Rural Communities Act 2006... deliver aims contained in the Government’s 25 year Environment Plan 2018... and to comply with the National Planning Policy Framework”.

- 4.3.7 Tipped rubbish present at the eastern end of the linear mound on the northern edge will be cleared creating further area for woodland creation.
- 4.3.8 Habitat creation includes the incorporation of glades of grassland and patches of shrub layer within the woodland, partly in recognition of the UKFS (Ref 1-4) recommendation which includes 10% of the woodland including open habitats or ground managed for biodiversity as the primary objective. These habitats will provide resources for a range of fauna including birds, small mammals and pollinators. With respect to the latter, the new woodland will support the function of a B-line which passes along this section of the Humber coastline ([B-Lines North England - Buglife](#)).
- 4.3.9 In addition to habitat for pollinators, the woodland creation along Manby Road will include foodplants for the caterpillars of a number of butterfly species ranging from the common to currently rare species (**Table 6**) (Johnson, R. (revised by Smith, C). 2006. The butterflies and moths of Lincolnshire. Lincolnshire Naturalists' Union, Horncastle).
- 4.3.10 These species require more than just the appropriate food plants, e.g. grassy clearings in woodland, tree canopies and sunny banks. Some of these will be created from the outset or already exist, others will develop over time as the habitats mature. There is scope to create connectivity by introducing these foodplants along the woodland belt to provide linkage internally but also more widely, e.g. to Long Strip woodland to the east and Houlton's Covert to the west.
- 4.3.11 Overall, the environmental value including the ecological value of the existing bund and its rank grassland will be increased as described above and through the provision of deadwood, as well as carbon sequestration, nutrient cycling and moderating flow through of drainage e.g., infiltration and interception.

Table 6: Food plants to introduce into the habitat management and creation along the Manby Road woodland and respective butterfly species

Butterfly species	Food plant of caterpillar
Brimstone	Buckthorn
Brown Hairstreak	Blackthorn
Fritillaries	Violets and honeysuckle
Green Hairstreak	Broom, gorse
Holly Blue	Holly, ivy
Purple Hairstreak	Oak
Speckled Wood	Various grasses

Butterfly species	Food plant of caterpillar
Various species, e.g. Red Admiral and Comma	Nettle and thistles
White Admiral Marsh	Honeysuckle
White-letter Hairstreak	Elm

4.4 Tree Planting Site Assessment

- 4.4.1 The Manby Road planting site has been assessed for species suitability based on the current and previous land use, soils, local and regional distribution of woodland types and the potential impact of future climate change.
- 4.4.2 A Site walkover was undertaken on 2 February 2024 and included a soil appraisal in which four soil pits were dug at 50m intervals along the planting bund. The soil was of a uniform structure. The O horizon comprised leaf litter from the dense sward of grass (5 cm), a gradation down into the A horizon with no distinction between Oi and Oa horizons. The A horizon was relatively deep (20-25 cm), dark and comprising a high proportion of humus (likely mull humus regime) creating a loamy texture with depth; and the E horizon contained occasional stones and cobbles within the loam becoming more stoney with depth (>40 cm). There was no evidence of gleying and no signs of compaction (including iron pans or made soil pans).
- 4.4.3 Following a review of the British Geological Survey’s Geology Viewer (Ref 1-16), bedrock is identified as Burnham Chalk Formation – Chalk with superficial deposits of Tidal Flat Deposits - clay and silt. Cranfield University’s Soilscape Viewer (Ref 1-1) was accessed, with soils identified as loamy and clayey soils of coastal flats with naturally high groundwater, with a lime rich to moderate pH. The Site is located on a constructed soil mound and is therefore unlikely to reflect ‘natural’ soil conditions. Despite this, species and stand selection should seek to replicate the likely natural species and stand type of the local edaphic factors.
- 4.4.4 The Site is identified within the Lowland Zone for semi-natural woodland habitats, with principal woodland subtypes being 3) lowland mixed broadleaved woods and 8) Wet woodlands.
- 4.4.5 On analysis of the available data, the planting site is likely to show a free draining, moderate pH, loam soil for tree establishment. Based on such, it is recommended that a Stand Type 4B (subtype a) (Ref 1-13) is used for the planting, matching a suitable ecological species mix to the likely local soil conditions and wider semi natural tree species mixes.
- 4.4.6 Stand Type 4Ba matches the regionally important Lincolnshire Limewoods (Ref 1-13), which form a distinct regional woodland composition character across neutral to mildly calcareous soils, with key woodland ecological importance nationally.

- 4.4.7 Stand Type limewood 4Ba (a lowland maple-ash-lime woods subtype) is selected due to an increased pH median of 7.1 which reflects an increased natural alkalinity in the surrounding soils to the Site as identified in this desk-based study, in addition to the correct soil texture (loam) and drainage regime (freely draining) likely to be experienced on the soil mound. Stand Type 4Ba, identified by Peterken (Ref 1-13) as present within Lincolnshire, is distinguished as a separate Stand Type due to calcicole species and the presence of field maple.
- 4.4.8 Correct identification of appropriate Stand Types suitable to the region (biogeography) is an important factor in preventing homogenisation of Britain's distinct woodland types, distributed by climate, soils and more recently by human intervention (e.g., modern era to the neolithic period).
- 4.4.9 The native ash is one of four principal species in Stand Type 4Ba (the others being pedunculate oak, small leaved lime and field maple) however, ash will not be recommended for planting due to restrictions caused by ash dieback (although some ash may develop via natural regeneration).
- 4.4.10 The proposed tree planting species mix is shown in **Table 7**, with principal species shown with a higher proportion of the mix, and the main associates of the Stand Type shown with reduced percentages.
- 4.4.11 It should be noted that **Table 5** represents successional development, additional tree establishment from pioneer species should be expected (such as rowan *Sorbus aucuparia*) and sycamore (*Acer pseudoplatanus*) which may alter stand dynamics (forest growth based on ecological theory).

Table 7: Indicative Tree Planting Mix for Proposed Manby Road Woodland

Common Name	Scientific Name	Proportion
Pedunculate oak	<i>Quercus robur</i>	30%
Small leaved lime	<i>Tilia cordata</i>	30%
Field maple	<i>Acer campestre</i>	15%
Hazel	<i>Corylus avellana</i>	10%
Downy birch	<i>Betula pubescens</i>	5%
Common hawthorn	<i>Crataegus monogyna</i>	5%
Spindle	<i>Euonymus europaeus</i>	5%

- 4.4.12 In addition to the high forest stand mix as provided above, a belt of small trees/shrubs are to be established at the planting slope base adjacent to Manby Road (as shown on the Potential Woodland Establishment Area LiDAR Assessment Plan included as **Figure 4** and see **Table 8**). Species within this belt are chosen based on the butterfly food plant species list of **Table 6** and data

available on regional semi natural scrub species by Soutar and Peterken (Ref 1-14). This species mix will create an ecotone (edge habitat) to the high forest woodland edge, likely providing significant forage and habitat for a range of fauna and invertebrates.

Table 8: Indicative Shrub Planting Mix for Proposed Manby Road Woodland

Common Name	Scientific Name	Proportion
Buckthorn	<i>Rhamnus cathartica</i>	20%
Blackthorn	<i>Prunus spinosa</i>	20%
Broom	<i>Cytisus scoparius</i>	20%
Gorse	<i>Ulex europaeus</i>	20%
Goat willow	<i>Salix caprea</i>	20%

4.4.13 A glade is to be created within the proposed Manby Road woodland planting area, as shown on the Potential Woodland Establishment Area LiDAR Assessment Plan (included as **Figure 4**). This glade area is adjacent to the existing lay-by on Manby Road (with an indicative path to the glade shown on the Plan). This glade is shown free of tree planting and will require maintenance to prevent natural regeneration of trees.

4.5 Replacement Tree Numbers

4.5.1 The approximate final tree loss from within the Long Strip woodland has been assessed to be a total of approximately 220 No. individually surveyed trees, in addition to a small number of tree groups. The number of replacement trees identified to meet the 2023 NELC Tree Strategy replacement tree guidelines has been calculated as 717 (see **Table 9**). This will be accommodated within the identified off-site tree planting area shown on **Figure 1**). Furthermore, additional tree planting in this area to create native mixed woodland at a planting density of 2.5m x 2.5m will result in a significant uplift in this number. Thinning will be assessed and undertaken as appropriate as set out in this Woodland Compensation Plan. If the planting density of 1,600 trees per hectare is adopted, this would result in 1,184 trees being planted (including the high forest woodland planting of 1,008 trees and shrubs and the scrub woodland edge of 176 trees/shrubs), which is close to double the number of trees required under the NELC policy. The final planting density will be set out in the planting plan confirming the locations/ areas for new trees and ensure a balance between the existing grassland and areas of shrub layer. Regardless, the area identified, 2.2 ha, can clearly accommodate enough trees to meet and significantly exceed the tree replacement numbers stated in the NELC policy for the Proposed Manby Road Woodland.

Table 9: Replacement Tree Numbers for Proposed Manby Road Woodland

Trunk diameter of tree felled (cm)	Number of replacement trees	Number of trees removed from TPO woodland	Number of replacement trees required
<15	1	32	32
15 – 19.9	2	37	74
20 – 20.9	3	56	168
30 – 39.9	4	42	168
40 – 40.9	5	43	215
50 – 50.9	6	10	60
60 – 69.9	7	0	0
70 – 79.9	8	0	0
80+	9	0	0
Total		~220	717

4.6 Climate Change Resilience of Manby Road Woodland Planting

4.6.1 The Site and the recommended planting have been assessed utilising Forest Research’s Ecological Site Classification (ESC) Tool (Ref 1-5). The climate scenario utilised is Medium-High 2080 (A1b/3q0) AWC method; This climate scenario is the reasonable worst case scenario.

4.6.2 On assessment of the tree species against ESC, the Soil Nutrient Regime is identified as carbonated (6) with a subsequent unsuitability criterion flagged against pedunculate oak and downy birch. This is likely due to the presence of increased levels of lime in the soils in the local area (e.g., due to bedrock of Burnham Chalk Formation). However, based on the planting area’s origin (constructed) and the increased pH of the chosen stand type (median of 7.2) against more common forest soils (typically of lower pH), the suitability of pedunculate oak and downy birch in the species mix is acceptable, with the presence of lime in surrounding natural soils highly unlikely to prevent oak and birch development. In addition, successful establishment of birch currently on the mound suggests alkalinity in the Site soils is not a limiting factor (e.g., no chlorosis of established birch noted).

4.6.3 Moisture deficit is flagged as unsuitable for downy birch in the Medium-High 2080 climate scenario. However, the species forms a minor component of the stand and will likely function as a nurse to the slower establishing long-lived broadleaves of the proposed species mix. Natural turnover rates within temperate high forest woodlands may be expected between 100 to 300 years which represents a significantly greater population turnover than that experienced by individual trees, due to the high levels of inter and intra species competition

within woodlands; birch will likely be out-competed (due to shade-tolerance and subsequent relay floristics (i.e., the process of high forest stand development through periods of growth and disturbance, characterised by tree species ecology and environmental adaption) and form a minor subcomponent to the woodland following stem exclusion (and advanced regeneration and all-growth stages).

- 4.6.4 Forestry England has prepared guidance in its 'diverse forests for future climate' note, in response to climate change predictions that summer temperatures could rise by up to 10°C in parts of England by the end of this century, acknowledging that diverse forests are more resilient to climate change (Ref 1-5). For this reason, up to 25% of the tree specimens of provenance from more southern counties in England will be sourced to allow for climate change adaptation. Tree specimens will be sourced from nurseries 2 to 5 degrees latitude south of the planting site (as recommended by Forestry England) as genetic differences may enable them to better cope with a warming climate than specimens of local provenance.

4.7 Disease Resilience

- 4.7.1 The Applicant will commit to sourcing trees from suppliers who are either certified under the Plant Healthy Certification Scheme or who have passed a 'Ready to Plant' assessment provided by Fera Science Ltd. This will ensure that the specimens have met the necessary biosecurity requirements to minimise the risk of introducing pests and diseases.
- 4.7.2 Ash, although common throughout the landscape in the county and a key component of Long Strip woodland, will be excluded from the planting mix due to the risk of vulnerability to ash dieback disease.

4.8 Planting

- 4.8.1 Planting is to be achieved utilising a grid formation. Respacing and thinning works may then be utilised to initiate irregular spacings following stem exclusion and subsequent stand development (e.g., stand initiation, stem exclusion, understory re-initiation and all aged).

4.9 Establishment Maintenance

- 4.9.1 This woodland compensation plan provides the schedule for the establishment and management of the new woodland for the five-year establishment maintenance period (**Tables 4, 5 and 10**).
- 4.9.2 The aim of establishment maintenance over the first five years will be to reduce competition of weeds to establishing trees and to replace any failed trees via checking and recording failed or defective plants (a beat-up survey). Where trees have failed, an assessment will be made of species suitability.
- 4.9.3 Establishment maintenance will be based on the following principles and outline prescriptions:
- Maintain a 1m weed-free tindiometer circle around trees and shrubs through mechanical control.
 - Remove litter, rubbish, and debris from planted areas throughout the year.

- c. Re-firm soil around plants where necessary and check stakes and ties in spring and autumn and after strong wind events.
- d. Undertake an annual beat-up survey in September annually.
- e. Undertake a beat-up survey during the summer to identify any dead plants. Replace failed or defective plants with matching species of the same size during the next planting season after failure, following assessment of the cause of failure (species may require changing where species selection is the cause of mortality).

4.10 Management Principles

4.10.1 The longer term management of the establishing new woodland, over the 5-25 year period, will focus on the following interventions:

- a. All woodland and shrub planting plots will undergo an annual condition assessment and an appropriate programme of works developed to address changes in condition and site requirements.
- b. From year five onwards, guards, ties and stakes will be removed from plants.
- c. When the trees have reached an average height of between 6 to 10 m, respacing will be undertaken.
- d. Arisings from thinning or other woodland management functions will be retained on-site in the form of dedicated brush and wood piles or windrows, for the benefit for fungi, lichen and invertebrates. A target density per hectare of 20m³ for coarse woody debris is recommended with deadwood grouped rather than evenly distributed.

4.11 Timescales

4.11.1 An outline timetable for the planting works is set out in **Table 10**: This details the survey work and the compensatory planting at Manby Road that are intended to be undertaken in advance of the Order being made by the Secretary of State (shown as **Y0** in the **Table 10**) as well as those activities that will be undertaken after the Order is made.

Table 10: Woodland Creation Timetable

Task	Comments	Timing	Y0	Y1	Y2	Y3	Y4 - Y25
Habitat and protected species survey	Phase 1 Habitat Survey of area to identify baseline conditions and any evidence of protected species. Existing areas of vegetation will be mapped for retention.	June/ July	✓	-	-	-	-
Topographical survey	Survey of mound area to inform woodland planting plan.	Any	✓	-	-	-	-

Task	Comments	Timing	Y0	Y1	Y2	Y3	Y4 - Y25
Arboricultural survey	Survey of all existing trees within proposed planting area to identify which (if any) require removal due to evidence of damage/disease/decay.	Any	✓	-	-	-	-
Finalise woodland planting plan	Confirm location, number and specimens to be planted. Woodland Planting Plan to be finalised in consultation with relevant stakeholders and approved by NELC.	Any	✓	-	-	-	-
Tree planting	Tree planting season is November to March.	November	✓	-	-	-	-
Monitoring of tree planting during establishment	Quarterly inspection checks to monitor establishment and remove failed specimens for first five years of establishment.	Quarterly	-	✓	✓	✓	✓ (to Y8)
	Replacement of dead, dying or diseased specimens within first five years.	November	-	-	-	✓	✓ (to Y8)
	Annual checks to monitor establishment and remove failed specimens.	September	-	-	-	-	✓ (Y9 – Y25)
Woodland management	Where possible, management will be undertaken outside of the nesting bird season (March to August inclusive), however where this is not possible, all trees will be checked for nesting birds by an ecologist prior to works and, if present, measures will be taken to ensure legislative compliance.	September - March	-	-	✓	✓	✓

5 Reporting

- 5.1.1 A Manby Road woodland monitoring report will be prepared every two years for the period of the woodland compensation plan with separate sections for management and enhancement of retained woodland and new woodland creation as follows:
- a. Section 1: Report on Management and Enhancement of Retained Woodland such that reports will:
 - i. be prepared in Y2, Y4, Y6, Y8 and Y10;
 - ii. include dates, scope and results of monitoring surveys of the retained/enhanced woodland in the north section of Long Strip woodland;
 - iii. include management interventions undertaken (listed in 3);
 - iv. include evaluation of progress towards achieving the targets within Long Strip Woodland for habitats and species listed in 4;
 - v. include details of remedial action undertaken (if any); and
 - vi. include recommendations for following years in terms of alterations to type or frequency of management required to meet targets.
 - b. Section 2: Report on New Woodland Creation such that reports will:
 - i. be prepared in Y2, Y4, Y6, Y8, Y10, Y12, Y14, Y16, Y18, Y20, Y22 with a final report in Y25;
 - ii. include dates and results of inspection surveys of newly planted trees and confirmation of any replacement specimens for dead, dying or diseased trees in Y2 – Y8;
 - iii. include dates and results of inspection surveys of newly planted trees in Y8 – Y25; and
 - iv. include management interventions undertaken as the trees become established.

6 Roles and Responsibilities

- 6.1.1 The management of retained Long Strip woodland and new Manby Road woodland creation is the responsibility of ABP, who will appoint a suitably qualified landscape maintenance contractor to undertake the work.
- 6.1.2 The monitoring of the habitats in the woodland retained within Long Strip and new woodland creation at Manby Road, and the preparation and submission of the monitoring reports is the responsibility of ABP, who will appoint a suitably qualified ecologist to undertake the work.
- 6.1.3 If any mature trees require felling within the retained woodland in Long Strip woodland (e.g. ash showing signs of ash die-back disease with >50 % dead canopy), any necessary consent for works to trees within the TPO will be obtained from NELC prior to works commencing.
- 6.1.4 Planning permission or DCO consent can include exemptions from the need to apply for consent for works to trees protected by a TPO and the need to apply for a Felling Licence with the Forestry Commission (to fell more than 5m³ in any calendar quarter). Outside of these permissions, any felling should be confirmed with NELC and the Forestry Commission as appropriate.

7 References

- Ref 1-1 Department for Environmental, Food and Rural Affairs. (2022). Keepers of time: ancient and native woodland and trees policy in England. Policy paper 27 May 2022Ref 1
- Ref 1-2 Cranfield University (2024). Land Information System - Soilscales soil types viewer.
- Ref 1-3 Department for Transport (2012). National Policy Statement for Ports.
- Ref 1-4 Forestry Commission (2023). The UK Forestry Standard. The government's approach to sustainable forestry. Fifth Edition. Forestry Commission, Edinburgh.
- Ref 1-5 Forestry England (n.d.). Diverse forests in a changing climate. Forest Research (2024). Ecological Site Classification (4).
- Ref 1-6 Greater Lincolnshire Nature Partnership (2013). Local Wildlife Site Guidelines for Greater Lincolnshire. 3rd Edition.
- Ref 1-7 Greater Lincolnshire Nature Partnership (2021). Nature strategy: Guidance for tree planting.
- Ref 1-8 Greater Lincolnshire Nature Partnership (no date). Lowland mixed deciduous woodland. A guide to management.
- Ref 1-9 Kerr, G. and Haufe, J. (2016). Successful Underplanting. Silvicultural Guide.
- Ref 1-10 North East Lincolnshire Council (2018) Local Plan 2013 to 2032 (Adopted 2018).
- Ref 1-11 North East Lincolnshire Council and EQUANS (June 2023) *North East Lincolnshire Tree Strategy*
- Ref 1-12 Peterken, G. (2023). Trees and Woodlands. Bloomsbury Wildlife, London. First Edition.
- Ref 1-13 Peterken, G (1993). Woodland Conservation and Management. Chapman and Hall, London. Second edition.
- Ref 1-14 Soutar, R., G. and Peterken, G. (1989). Regional Lists of Native Trees and Shrubs for use in afforestation schemes. Arboricultural Journal. 13, pp. 33-43.
- Ref 1-15 Stokes. J., and Jones, G. (2019). Ash Dieback: An Action Plan Toolkit. Tree Council, London.
- Ref 1-16 The British Geological Survey (2024). BGS Geology Viewer.

Figure 1: Location of Woodland Enhancements and New Woodland Creation

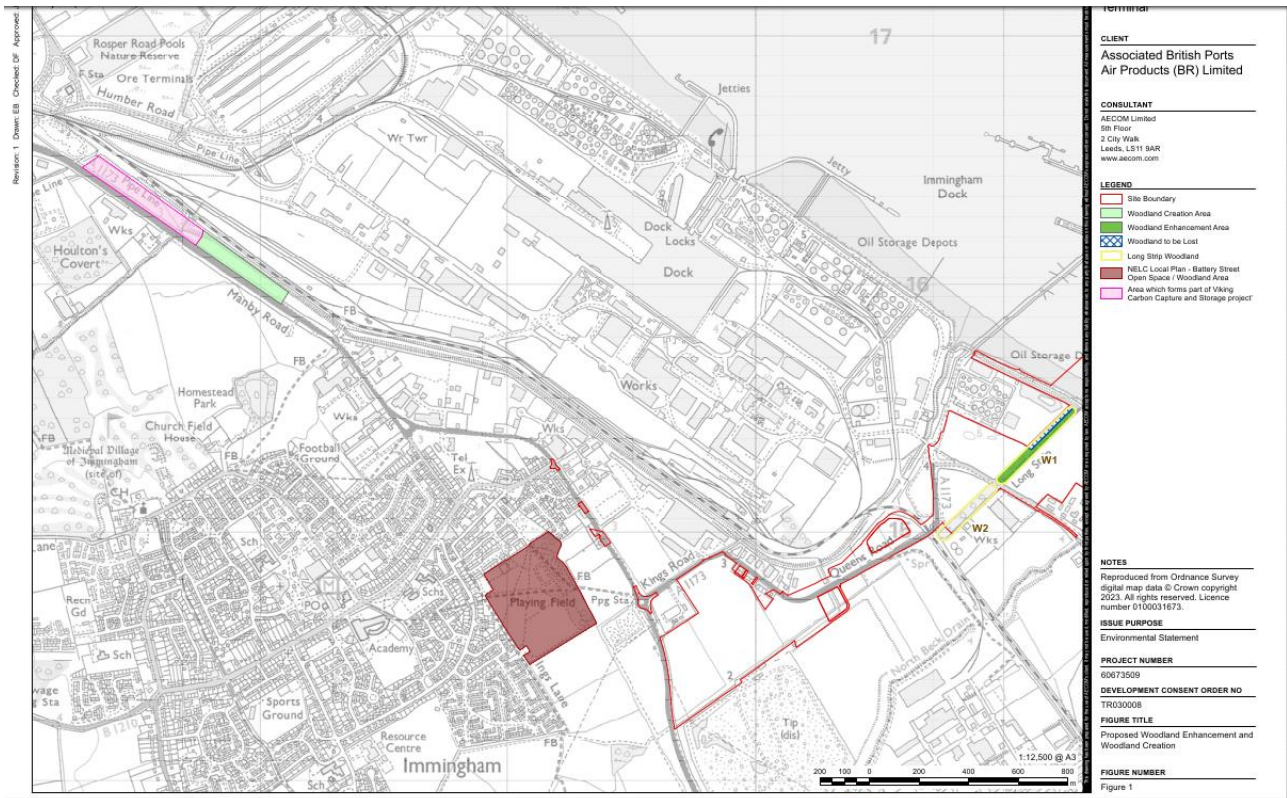


Figure 2: Phase 1 Habitat Survey Plan (Long Strip)

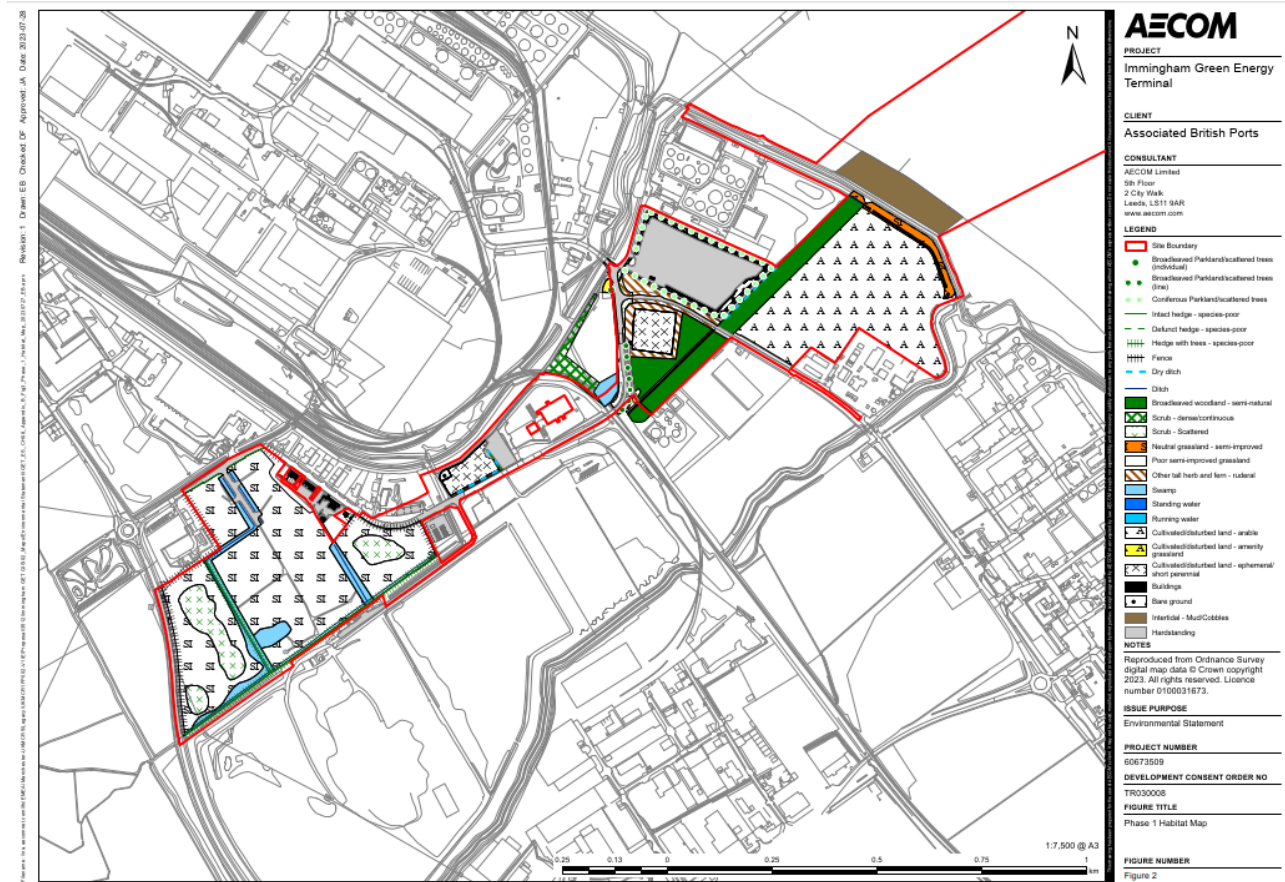


Figure 3: Tree Preservation Order Plan

Plan extracted from TPO document

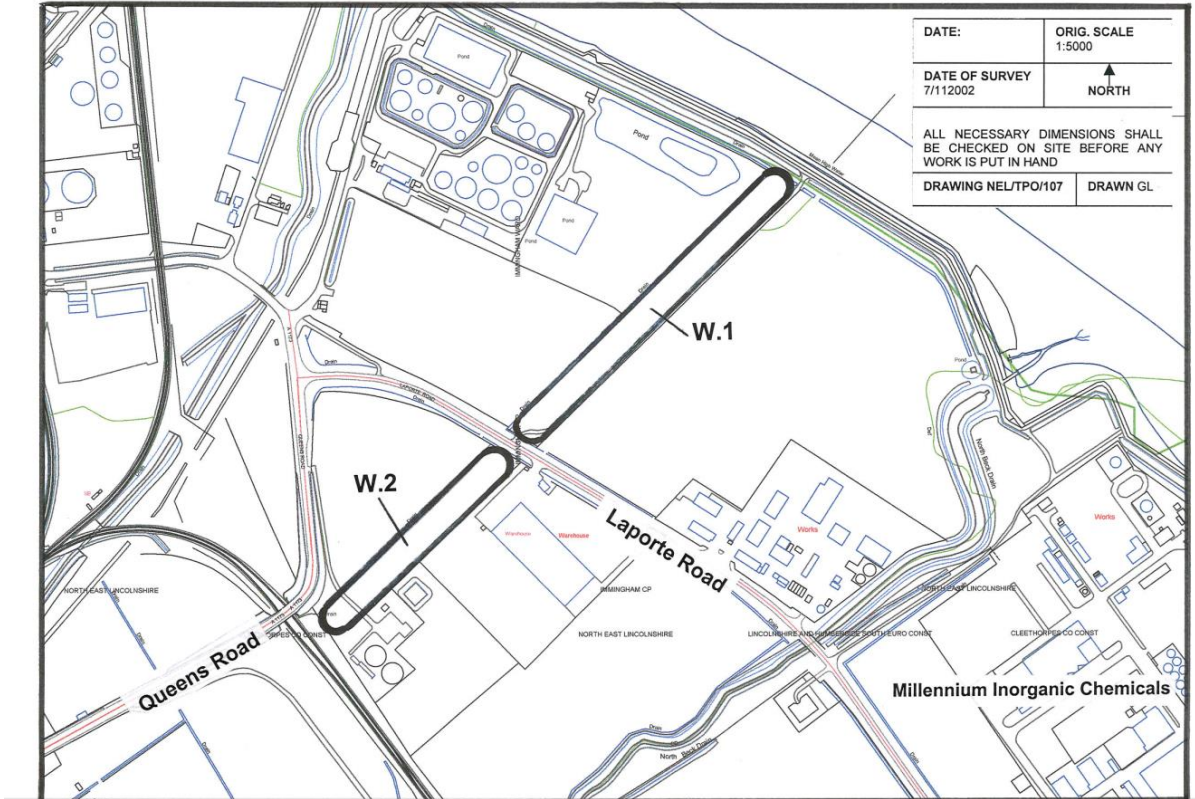


Figure 4: Woodland Establishment Area LiDAR Assessment

