Frodsham Solar

BNG Report

April 2026

Cubico
SUSTAINABLE INVESTMENTS

PINS Ref: EN010153
Document Ref: EN010153/DR/7.12
Planning Act 2008; and Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations Regulation 5(2)(q)

Revision P03

Frodsham Solar

on behalf of Axis PED

EN010153/DR/7.12: Biodiversity Net Gain Report

avian ecology

Document Control				
Project Name:	Frodsham Solar			
Project Number:	AxisL-043-3114			
Report Title	Technical Appendix 7.6: Biodiversity Net Gain Report			
Issue	**Date**	**Notes**	**Prepared**	**Reviewed**
V1		Draft (for client comment)	C. Scott *MRes ACIEEM*	
V2	14/05/2025	Update following Client comment and amendments to Order Limits	B. Gray *BSc (Hons) MCIEEM*	H. Fearn *MSc MCIEEM*
V3	27/02/2026	Updates in response to relevant and written representations	J. Stevens *BSc (Hons)*	B. Gray *BSc (Hons) MCIEEM*
V4	21/04/2026	Updated for D6	J. Stevens *BSc (Hons)*	

CONTENTS

TABLES

FIGURES

ANNEXES

1. INTRODUCTION

1.1 Background and Scope

1.1.1 This Technical Appendix has been prepared to accompany the Development Consent Order (DCO) Application for Frodsham Solar, and has been prepared with reference to Environmental Statement (ES) **Chapter 7: Terrestrial Ecology**.

1.1.2 This report shows how the DEFRA Statutory Biodiversity Metric, provided as **Annex 1**, has been utilised in order to calculate the number of biodiversity units that the Site represents at baseline, and how this is predicted to change under the proposed landscape plan, **ES Vol 3 Figure 2-3:** (a-e) Illustrative Environmental Masterplan [EN010153/DR/6.3].

1.2 Site Overview

1.2.1 The Proposed Development comprises a new solar energy generating station and an associated on-site Battery Energy Storage System (BESS) on land at Frodsham Marsh, Frodsham, Cheshire West and Chester ('the Site'). **ES Vol 1 Chapter 1**: Introduction [EN010153/DR/6.1] and **ES Vol 1 Chapter 2**: The Proposed Development [EN010153/DR/6.1] provide a detailed description of the Site and the Proposed Development.

1.2.2 For the avoidance of doubt, the following areas are defined, as shown in **ES Vol 3 Figure 1-2**:

- the 'Solar Array Development Area (SADA)' comprising the area that would include solar photovoltaic (PV) modules and support frames, internal access tracks, cabling, inverters, transformers, the solar array substation (known as the 'Frodsham Solar Substation) and the BESS;
- the 'Non-Breeding Bird Mitigation Area (NBBMA)' comprising land primarily within Cell 3, which currently forms part of the Frodsham Wind Farm mitigation. This area of land would be used as a mitigation area for the anticipated displacement of wetland birds associated with the Mersey Estuary;
- the 'SPEN/National Grid Substation and Access' comprising the existing SPEN/National Grid Substation and access road;
- the 'Skylark Mitigation Area' comprising land where neutral grassland would be created during the operational lifetime of the Proposed Development for the benefit of skylarks;
- the 'Main Site Access with Private Wire Connection' comprising the access road with Protos private wire connection to the west of the SADA; and,
- the 'Main Site Access without Private Wire Connection' comprising the access road without private wire connection to the west of the SADA.

1.2.3 The Site encompasses all of the above areas, and totals approximately 336 ha.

1.2.4 The Site overlaps with Mersey Estuary SSSI. Two internationally designated sites, Mersey Estuary Special Protection Area (SPA) and Mersey Estuary Ramsar, are located 115 m northwest of the Site.

The NBBMA will provide a mitigation area for the anticipated displacement, due to the Proposed Development, of wetland birds associated with the Mersey Estuary.

1.2.5 Three Local Wildlife Sites (LWS) overlap with the Site. The Frodsham, Helsby and Ince Marshes LWS extends across the majority of the SADA, the whole of the Skylark Mitigation Area, and sections of the Main Access Route. Frodsham Field Studies Centre LWS overlaps with the SPEN/National Grid Substation, whereas Easton Clifton Tip LWS overlaps with the access track to the SPEN/National Grid Substation.

1.3 BNG Statement

1.3.1 The Proposed Development is not subject to statutory BNG requirements. The Government's target date for the application of mandatory BNG to DCOs for NSIPs is November 2025[1], at which point DCO applications would be required to demonstrate a quantifiable BNG of at least 10 % under the Environment Act 2021 . However, the Proposed Development has committed to delivering a measurable increase in both habitat and hedgerow units (a minimum increase of 10 % in habitat and hedgerow units and no net loss in watercourse units).

1.3.2 A BNG assessment has been undertaken utilising DEFRA's Statutory Biodiversity Metric Calculator[2], to provide evidence of achievable on-site increase in habitat, hedgerow and watercourse units associated with the Proposed Development.

1.3.3 This document (and accompanying Biodiversity Metric Spreadsheet) outlines the pre-development and project post-development biodiversity value. The BNG assessment has been largely based on **ES Volume 3 Figure 2-3 Illustrative Environmental Masterplan**. **Figures 2 to 5** show additional details of the proposed post-development proposals for the Site, as follows:

- **Figure 1 (a-e): Habitat Plan:** shows the baseline habitats
- **Figure 2 Proposed Retained Habitats:** shows the area habitats to be retained;
- **Figure 3 - Proposed Lost Habitats**: shows the area habitats to be lost;
- **Figure 4 - Proposed Post-Development Created Habitats**: shows the post-development area habitats to be created;
- **Figure 5 - Proposed Hedge Plan**: shows the hedgerows to be retained, lost and created;
- **Figure 6 - Proposed Watercourse Plan**: shows the watercourses to be retained, lost and created; and,
- **Figure 7:** Modular River Physical Survey Location Plan.

[1] https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-nsip-reforms-action-plan/nationally-significant-infrastructure-action-plan-for-reforms-to-the-planning-process [Last Accessed: 20/03/2025].
[2] https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides [Last Accessed: 20/03/2025].

1.3.4 There has been no known degradation of the Site, and as such baseline habitats are taken to be those recorded during baseline habitat surveys.

1.3.5 No irreplaceable habitats are present within the Site.

1.3.6 As described above, the NBBMA will provide mitigation for impacts upon the Mersey Estuary. SSSI, SPA and Ramsar. In accordance with DEFRA Guidance 'What you can count towards a development's biodiversity net gain' (DEFRA, 2023[3]), mitigation or compensation to a special area of conservation, special protection area, or protected species can only count 'in part' towards BNG. For mitigation and compensation actions, at least 10% of the developer's biodiversity units must come from additional activities other than mitigation and compensation. As such, at least 10% of the Proposed Development's habitat, hedgerow and watercourse units must come from habitat/hedgerow creation/enhancement measures which are located outside of the NBBMA. However, as detailed above the Proposed Development is not subject to statutory BNG requirements.

1.4 Legislative and Planning Framework

1.4.1 Biodiversity Net Gain is a government strategy which requires developers to include habitat creation and enhancement in plans for new building and infrastructure projects. In order to demonstrate BNG, developments must be designed to increase the level of biodiversity compared to what existed pre-development; in most cases by creating and enhancing natural features within the boundary of the specific development, or else by contributing to the creation and management of biodiversity areas locally or nationally. The application must show how habitats can be created or enhanced so that there will be an overall unit value of ≥10% than the value calculated from the ecological baseline surveys (pre-development).

1.4.2 As stated above, although the Proposed Development is not subject to statutory BNG requirements, the Proposed Development has committed to delivering a measurable increase in both habitat and hedgerow units. In order to demonstrate a measurable increase in both habitat and hedgerow units, DEFRA's Statutory Biodiversity Metric ('the Metric') has been used to calculate numerical values (units) for defined habitat, hedgerow and watercourse features. The metric utilises a range of factors to calculate these values; the area measured in hectares, the distinctiveness of the habitat (intrinsic value and rarity), the condition (quality), and strategic significance (ecological value based on location).[4]

1.4.3 In order to claim a biodiversity net gain, as detailed within The Statutory Biodiversity Metric User Guide (DEFRA, 2024)[5], a new development must adhere to certain rules which relate to the use of the Metric, as detailed within **Table 1.1**. The trading rules in the Metric set out requirements for the type

[3] DEFRA (2023). What you can count towards a development's biodiversity net gain. Available at: https://www.gov.uk/guidance/what-you-can-count-towards-a-developments-biodiversity-net-gain-bng [Last Accessed 21/03/2025].

[4] DEFRA (2023). Calculate biodiversity value using the biodiversity metric. Available at: https://www.gov.uk/guidance/biodiversity-metric-calculate-the-biodiversity-net-gain-of-a-project-or-development [Last Accessed: 20/03/2025].

[5] DEFRA (2024). The Statutory Biodiversity Metric User Guide. Available at: https://assets.publishing.service.gov.uk/media/669e45fba3c2a28abb50d426/The_Statutory_Biodiversity_Metric_-_User_Guide__23.07.24_.pdf [Last Accessed: 20/03/2025].

of new habitat which is acceptable as compensation for the loss of another habitat; broadly, habitats must be replaced like-for-like or better.

Table 1.1: Biodiversity metric rules (from the Metric User Guide)

Rule	Detail
Rule 1	The trading rules of this biodiversity metric must be followed.
Rule 2	Biodiversity unit outputs, for each type of unit, must not be summed, traded, or converted between types. The requirement to deliver at least a 10% net gain applies to each type of unit.
Rule 3	To accurately apply the biodiversity metric formula, you must use the statutory biodiversity metric calculation tool or small sites biodiversity metric tool (SSM) for small sites.
Rule 4	In exceptional ecological circumstances, deviation from this biodiversity metric methodology may be permitted by the relevant planning authority.

2 METHODOLOGY

2.1 Habitat Survey and Condition Assessment

2.1.1 Habitat data collected from the extended habitat survey (gathered using the UK Habitat Classification (UKHab)[6]; see **Appendix 7.1: Habitats and Vegetation Baseline Report** for further details), was used to assign a habitat type to each habitat parcel within the Metric. Where no direct habitat translation between UKHab and the Metric exists, professional judgement was used.

2.1.2 An assessment of habitat condition was undertaken by A. Hulme BSc (Hons) between February 2023 and September 2024. Habitats were assessed in accordance with the relevant habitat condition criteria for the specific habitat type contained within condition assessment criteria[7] published alongside the Metric.

2.1.3 Proposed landscaping detailed within **Figure 2-3 Illustrative Environmental Masterplan** has been directly assigned a UKHab category, with reference to the UKHab resources and using professional judgement. The target condition of these habitats was assigned based on the likely achievable condition of the proposed habitat type, taking into account local conditions (e.g., soil nutrient levels) and proposed management. An Outline Landscape and Ecological Management Plan [EN010153/DR/7.13] has been prepared to support the application, and this sets out how the habitats within the site would be created, managed and monitored to deliver the target conditions.

Limitations

2.1.4 Following guidance within the Metric User Guide, a precautionary approach was taken to assessing baseline conditions, whereby any condition criteria that could not be measured (e.g., due to the time of year or recent mowing) were assumed to have been passed.

2.1.5 Access to the Skylark Mitigation Area was limited to public right of ways located within and surrounding this area. As such, the habitats within this area were surveyed from available vantage points. Habitats within this area comprise modified grassland and associated neutral grassland field margins, together with boundary ditches; the modified grassland is of low ecological value. Furthermore, the Skylark Mitigation Area would not be directly impacted by the Proposed Development, with the exception of the creation of neutral grassland, as such, this is not considered a significant limitation to the assessment.

2.1.6 Habitat condition assessments were undertaken between February 2023 and September 2024. Where condition assessments were undertaken outside of the optimal botanical survey window a precautionary approach to assessment was applied.

[6] www.ukhab.org

[7] DEFRA (2024). Statutory Biodiversity Metric Condition Assessments. Available at: https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides?fbclid=IwAR3t_S8djN97HZzsb8H9ISdfVqDiUZJcSR7pp4Kz5zHRFK5KWoLjPBlmRcw [Last Accessed 21/03/2025].

2.2 The Modular River Physical Module Survey

2.2.1 A Modular River Physical (MoRPh) survey was undertaken of The Manchester Ship Canal, River Weaver, Hoolpool Gutter and an unnamed tributary to the River Weaver (see **Figure 7:** Modular River Physical Survey Location Plan). Watercourses scoped in to MoRPh survey were broadly assigned based on Ordnance Survey (OS) Open River datasets in combination with professional judgement following the definitions within Table 10 and Table 11 of the Metric User Guide. Only watercourses included within the OS Open Rivers dataset or otherwise considered to meet the definition of either priority habitat watercourse, other rivers and streams, or canals were scoped in to the MoRPh assessment.

2.2.2 The MoRPh survey[8] is a hydro-morphological assessment method that includes many of the Environment Agency's River Habitat Survey's[9] components and so provides compatible information. However, it provides a number of modifications and additions that allow it to deliver a more detailed local picture of a river and its margins than the River Habitat Survey method.

2.2.3 The MoRPh survey was undertaken on the 20th and 21st January 2025 by K. Love MSc and A. Hulme BSc (Hons), and also on 24th September by K. Love MSc. Both surveyors are certified to undertake Modular River Survey River Condition Assessments and to interpret River Corridor Assessment Indicators and Scores for baseline and post-intervention River Metric scenarios.

2.2.4 During a MoRPh survey, information is gathered from three river units of different sizes (module, sub-reach, reach) based upon both primary field survey and secondary sources, e.g., map data. Module (MoRPh) and sub-reach (MultiMoRPh) surveys are conducted in the field using the MoRPh survey method, focusing on a single river channel and its immediate margins. The length of the MoRPh module is approximately double the width of the river channel up to a maximum 40 m length. The survey module extends 10 m back from the bank tops on both sides of the river to characterise the riparian zone.

2.2.5 For the purpose of surveying the Site, the MultiMoRPh5 methodology was chosen, this methodology allows entire reaches to be surveyed using sub-reaches covering a minimum of 20% of the reach's total length, effectively balancing local sub-reach MoRPh detail with overall reach coverage. The MultiMoRPh5 survey locations are shown in **Figure 7:** Modular River Physical Survey Location Plan**.** Watercourses assessed as being culverts or ditches are not subject to MoRPh survey. Watercourses within the Proposed Development subject to MoRPh survey were determined on the basis of being a river or canal, as per the guidance on watercourse type within the Metric User Guide.

2.2.6 On completion of the survey, all information was entered into the Cartographer online platform10, which determined the river type, and provided indicators of the condition of the sub-reach and an overall condition score for the MoRPh5 sub-reach surveyed.

2.2.7 In order to appropriately assess the post-works impacts of the Proposed Development (positive or negative) upon riverine habitats where impacts would occur to the watercourse (e.g. areas requiring new or updated vehicular crossing points and areas of proposed river corridor habitat enhancements),

[8] https://modularriversurvey.org/wp-content/uploads/MoRPh-Manual-ver-14_Oct22.pdf [Last Accessed 21/03/2025].
[9] http://www.riverhabitatsurvey.org/ [Accessed 20/03/2025].
[10] https://cartographer.io/ [Accessed 06/08/2024].

these changes were modelled as a scenario within the Cartographer platform and the condition forecasted input to the Metric.

Limitations

2.2.8 As detailed in The MoRPh Survey Technical Reference Manual (2022)[11], MoRPh surveys can be undertaken at any time of year, although they are best completed between May and September inclusive when aquatic vegetation is clearly apparent. As detailed in 'A Guide to Assessing River Condition' (Gurnell *et al.,* 2024[12]), if surveys have to be conducted in Winter, observations of remnant and decaying vegetation from the previous summer should be used to estimate the potential presence and likely typical abundance (during the late spring - early summer) of short and tall herbs/grasses on the bank top and bank face, and aquatic vegetation morphotypes along the water-channel margin and on the river bed. As the surveys were undertaken during the winter, observations of remnant and decaying vegetation from the previous summer were taken into consideration during the survey.

2.3 Biodiversity Metric

2.3.1 A BNG Assessment has been undertaken using DEFRA's Statutory Biodiversity Metric[2]. The Metric provides a way of measuring and accounting for changes in the biodiversity value of a site by using habitats as a proxy for biodiversity.

2.3.2 The BNG assessment has been undertaken by C. Scott *MRes ACIEEM* and J. Stevens BSc (Hons), suitably experienced ecologists with experience utilising biodiversity metrics.

2.3.3 The Metric takes into account a range of factors when calculating the value of a habitat (measured as biodiversity units), including the habitats area/length (measured in hectares/km), it's distinctiveness (its intrinsic value and rarity), condition (the quality of the habitat being assessed), and strategic significance (how ecologically valuable is the location). The distinctiveness of a habitat is pre-set within the Metric and cannot be changed.

2.3.4 For created habitats additional risk multipliers are assigned to account for the difficulty of creating a particular habitat type, time required to achieve the target condition, and where habitat creation is off site, spatial risk.

2.3.5 Units for area habitats (e.g., fields), hedgerows and ditches are accounted for separately in the Metric. Units are not directly interchangeable between habitat types.

2.3.6 Habitat areas were calculated using GIS software.

2.3.7 Where the value of habitats following works is greater than those at the baseline, a net gain will be predicted, or a net loss predicted where the post-works habitat value is lower than the baseline. In addition, the Metric promotes a 'no down-trading' policy within the Metric, whereby habitat loss must

[11] The Modular River Survey (2022). The MoRPh Survey Technical Reference Manual 2022 version V14.

[12] A. M. Gurnell, J. England, S. J. Scott and L. J. Shuker (2024). A Guide to Assessing River Condition. Part of the Rivers and Streams Component of the Biodiversity Metric Watercourse Module for calculating Biodiversity Net Gain.

be compensated by habitat of the same value or higher; loss of high distinctiveness habitats such as lowland meadow and broad-leaved woodland must be compensated for on a like-for-like basis.

Strategic Significance

2.3.8 The Cheshire and Warrington Local Nature Recovery Strategy[13] (LNRS) has been published in November 2025, and as such strategic significance has been assigned following Table 7 of the Metric User Guide. High strategic significance is applied only to post development habitats, delivering measures mapped within the LNRS, or unmapped measures listed within LNRS Appendix 7 that apply across the LNRS area.

2.3.9 Where a LNRS is published, baseline habitats cannot be assigned a strategic significance value above low.

Limitations

2.3.10 It should be noted that the Metric uses habitats as a proxy for biodiversity and calculates only the relative biodiversity value of a site, and therefore cannot quantify impacts absolutely. The Metric accounts only for direct impacts to habitats, and as such cannot fully quantify all negative or positive impacts resulting from a development.

2.3.11 For ease of reference and tracking changes, all versions of the metric (i.e., individual metrics for the full Order Limits, the NBBMA and the SADA) maintain the same row numbering with rows not required input as area '0'.

Assumptions

2.3.12 Key assumptions made in the undertaking of these calculations are as follows:

- All habitats within Cell 3 of the NBBMA will be temporarily removed then re-instated as part of the Proposed Development, other than areas of retained grassland forming cell edges and retained pond P39. As such, these are input to the metric as 'lost'.
- Land within Cell 2 of the NBBMA will be retained.
- Existing track is treated as a retained habitat type. Due to different mapping software used between the project design team (using Computer Automated Design (CAD) and ecologists (using QGIS to map habitats) mapped retained track sometimes overlaps adjacent habitats exaggerating loss of these overlapping habitats.
- Habitats within the 'Retained biodiversity area' will be retained, enhanced or lost according to the below rules:
    - Enhanced where it is other neutral grassland in poor condition, bramble scrub or mixed scrub in poor condition. Enhancement must be within the same habitat type to a maximum of moderate condition; or,

[13] https://cheshirelnp.co.uk/local-nature-recovery-strategy/

- Retained where it is a medium distinctiveness habitat type or one of the above in moderate or good condition. Any other type is classed as lost;
- Lost where it does not meet either above rules and recreated as other neutral grassland.

- Where a proposed habitat type overlays an existing one of the same type it has been input as retained (e.g., some proposed reedbed overlays existing reedbed, in which case the current area of reedbed is retained and omitted from habitat creation); and,
- Other neutral grassland within post-development habitat type 'solar area' is retained on the basis that given this habitat is present at baseline suitable soil conditions and seedbank are known to be present. A 5% loss has been calculated and taken into account in the Metric for infrastructure.

3 BASELINE

3.1 Baseline BNG Assessment

3.1.1 Full results of the BNG Assessment can be seen in the Metric spreadsheet for the application, submitted as a separate document (**Annex 1**). Baseline condition data for each habitat parcel is provided as **Annex 2** with labels equating to those used within the Metric spreadsheet**.**

Summary of BNG Unit Baseline

3.1.2 Baseline habitats within the Site generate a total of 1457.21 habitat units (330.85 units from the NBBMA and 1126.368 units from the remainder of the Site). Baseline hedgerow units generate a total of 47.18 hedgerow units (0.71 units from the NBBMA and 46.47 units from the remainder of the Site). Watercourse units generate a baseline of 113.60 watercourse units (13.64 units from the NBBMA and 99.95 units from the remainder of the Site).

3.1.3 A breakdown of the individual habitats present, including their condition, is summarised in the corresponding shapefiles (provided separately). Baseline habitats are shown in **Figures 1 (a-e).**

5 POST DEVELOPMENT

5.1 Post-development BNG Assessment

5.1.1 Full results of the BNG assessment are detailed within **Annex 1: Statutory Biodiversity Metric Calculation Tool**, provided as a separate document.

Post-works BNG Summary

5.1.2 In the undertaking of the BNG assessment it has been assumed that 5% of habitat within the solar fenceline would be lost to built development, such as panel framework. This is in line with established industry practice[14] and has been taken into account within the Metric.

5.1.3 The development footprint results in the loss of 168.72 ha of habitats, equating to 546.38 habitat units (247.42 units from the NBBMA and 298.97 units from the remainder of the Site). The development footprint results in a loss of 0.18 km of hedgerows, equating to 1.30 hedgerow units (0.04 units from the NBBMA and 1.26 units from the remainder of the Site. The development footprint results in a loss of 0.16 km of watercourse, equating to 0.68 watercourse units (all 0.68 units from the remainder of the Site).

5.1.4 Created habitats generate a total of 874.52 habitat units (359.18 units from the NBBMA and 523.23 from the remainder of the Site). Enhanced habitats generate a total of 60.59 habitat units (all 60.59 units from the remainder of the Site).

5.1.5 Created hedgerows generate a total of 43.25 hedgerow units (all 43.25 units from the remainder of the Site).

5.1.6 Created watercourses generate a total of 0.95 watercourse units (all 0.95 units from the remainder of the Site). Enhanced watercourses generate a total of 72.47 watercourse units (8.22 units from the NBBMA and 64.25units from the remainder of the Site). Although D57 will be removed during habitat creation works within the NBBMA, the ditch will be reinstated within two years of initial removal, and is anticipated to achieve baseline condition, furthermore, following its reinstatement and due to the proposed habitat management measures to be implemented, the condition of this ditch is expected to be enhanced (from poor to moderate). As such, and in accordance with The Statutory Biodiversity Metric User Guide (DEFRA, 2024), this ditch has been assigned as being enhanced within the Metric, with a one-year delay in starting the habitat enhancement. A series of ditches will also be enhanced through the reduction in riparian zone encroachment. These ditches are shown on **Figure 6** and identified on the corresponding shapefiles (provided separately).

5.1.7 A breakdown of the habitats proposed to be created and enhanced, including their target condition is summarised in **Tables 5.1 to 5.3** below. Target conditions have been determined with reference to the proposed habitat creation and management measures within the Outline Landscape and Ecological Management Plan (oLEMP) **[EN010153/DR/7.13]**

[14] https://bsg-ecology.com/how-should-habitats-below-solar-panels-be-classified-within-the-statutory-biodiversity-metric/

5.1.8 Post-development scenario is shown on **Figure 2-3 Illustrative Environmental Masterplan** and also **Figures 2 to 6.**

Strategic Significance

5.1.9 Hedgerows within much of the Site are considered to align with mapped measure W4.2 where this is action is mapped within the draft Order Limits, however as poor condition is targeted and following a precautionary approach such habitats have not been assigned 'high' strategic significance.

5.1.10 All other habitats have been assigned 'low' strategic significance as they are not considered to contribute towards mapped measures within the LNRS.

Table 5.1: Summary of Post Development Objectives – Habitats

Landscape Habitat Type	BNG Habitat Type	Condition Sheet	Target Condition	Targeted Criteria	Time to Target Condition (Years)
Habitat Creation					
Proposed native woodland	Other woodland; broadleaved	Woodland	Poor	N/A – poor condition targeted	5
Proposed native woodland	Lowland mixed deciduous woodland	Woodland	Poor	N/A – poor condition targeted	10
Neutral grassland (NBBMA)	Other neutral grassland	Grassland (Medium, high and very high distinctiveness)	Moderate	A, B, C, D	5
Marshy grassland (NBBMA)					
Retained neutral grassland/grazing within solar array security fence line[15]					
Skylark Mitigation Area			Good	A, B, C, D, E, F	10
Retained neutral grassland/grazing within solar array security fence line[16]	Modified grassland	Grassland (Low distinctiveness)	Good	A, B, C, E, F, G	7
			Moderate	C, E, F, G	4

[15] 'Retained neutral grassland/grazing within solar array security fence line; Other neutral grassland' comprises areas which have been identified as other neutral grassland during baseline surveys, and will be retained as such during the construction and operation of the Proposed Development.

[16] 'Retained neutral grassland/grazing within solar array security fence line: Modified grassland' comprises areas where grassland would be created within the Solar Array Development Area during habitat creation.

Landscape Habitat Type	BNG Habitat Type	Condition Sheet	Target Condition	Targeted Criteria	Time to Target Condition (Years)
Habitat Creation					
Reedbed	Reedbeds	Wetland	Moderate	B, C, D, E, F, I	7
Proposed native scrub (new and enhanced)	Mixed scrub	Scrub	Moderate	A, B, C, D	10
Proposed water storage area	Ponds (non-priority habitat)	Pond	Moderate	A, B C, F, G, H, I or A, C, F, G, H, I	3
Proposed scrape					
Proposed waterbodies					

Table 5.2: Summary of Post Development Objectives – Hedgerows

Landscape Habitat Type	BNG Habitat Type	Condition Sheet	Target Condition	Targeted Criteria	Time to Target Condition (Years)
Hedgerow Creation					
Proposed native hedgerow	Native hedgerow (species rich)	Hedgerow	Moderate	A1, A2, B1, B2, C2, D1, D2	5
Proposed native hedgerow (maintained at a low height)	Native hedgerow (species rich)	Hedgerow	Poor	B1, B2, C2, D1, D2	5
Proposed native trees and shrubs	Native hedgerow with trees (species rich)	Hedgerow	Poor	A1, A2, C2, D1, D2, E2	10

Table 5.3: Summary of Post Development Objectives – Watercourses

Landscape Habitat Type	BNG Habitat Type	Condition Sheet	Target Condition	Targeted Criteria	Time to Target Condition (Years)
Watercourse Creation					
Proposed ditch	Ditches	Ditch	Poor	N/A – poor condition targeted	1
Watercourse Enhancement					
Existing drainage ditch (NBBMA) (enhanced)	Ditches	Ditch	Moderate	A, B, C, D, E, F, G	n/a

6 DISCUSSION

6.1 Overview

6.1.1 The Proposed Development will generate a net change of +353.35 (24.25 %) habitat units, +41.95 (88.92 %) hedgerow units and +12.74 (11.21%) watercourse units. A summary of the biodiversity net gain interventions across each distinctiveness and habitat type is provided as **Table 6.1**

6.1.2 Measures relating to the creation, management and monitoring of habitats created and enhanced, as well as other biodiversity enhancement measures, are set out within the **Outline Landscape and Ecological Management Plan (oLEMP) [EN010153/DR/7.7].**

6.1.3 Overall, it is considered that the increase in units generated as part of the Proposed Development are proportionate to the levels of impact, with the Proposed Development providing other qualitative measures to enhance biodiversity, as outlined in **Chapter 7: Ecology** and **Chapter 8: Ornithology**.

Table 6.1: Summary of Area and Unit Change for each Habitat Type within the draft Order Limits

Distinctiveness	Group	Habitat Description	Existing area baseline (ha)	Existing units baseline	Area post development (ha)	Units post development	Area change (ha)	Net unit change
High	Wetland	Reedbeds	14.83	184.13	15.34	173.19	0.51	-10.95
	Woodland	Lowland mixed deciduous woodland	0.17	1.04	0.17	1.04	0.00	0.00
		Wet woodland	0.21	2.53	0.21	2.53	0.00	0.00
Medium	Grassland	Other neutral grassland	196.21	980.42	192.38	1119.14	-3.82	138.72
	Scrub	Bramble scrub	1.87	7.49	0.01	0.03	-1.86	-7.46
		Gorse scrub	0.15	0.59	0.15	0.59	0.00	0.00
		Hawthorn scrub	0.00	0.02	0.00	0.02	0.00	0.00
		Mixed scrub	4.01	32.04	4.93	38.71	0.92	6.67
		Willow scrub	0.20	1.20	0.01	0.05	-0.19	-1.16
	Lakes	Ponds (non-priority habitat)	7.98	59.13	10.46	77.39	2.48	18.25
	Woodland	Other woodland; broadleaved	0.68	2.82	2.70	9.44	2.02	6.62
Low	Cropland	Cereal crops	8.58	17.16	0.00	0.00	-8.58	-17.16
		Non-cereal crops	28.75	57.50	0.00	0.00	-28.75	-57.50
	Grassland	Modified grassland	54.91	109.83	82.85	386.67	27.94	276.85
	Sparsely vegetated land	Ruderal/Ephemeral	0.50	1.00	0.75	1.46	0.26	0.46
	Urban	Vegetated garden	0.15	0.31	0.15	0.30	0.00	0.00
Very Low	Urban	Artificial unvegetated, unsealed surface	8.49	0.00	5.45	0.00	-3.04	0.00
		Built linear features	1.40	0.00	1.20	0.00	-0.20	0.00
		Developed land; sealed surface	7.67	0.00	20.01	0.00	12.34	0.00
N/A	Watercourse footprint	Watercourse footprint	0.86	0.00	0.86	0.00	0.00	0.00

6.2 Other Mitigation and Compensation Measures

6.2.1 In line with guidance for statutory biodiversity gains (which do not apply to this development) habitat creation required as mitigation or compensation for other species can only be counted towards a position of no net loss (i.e., 0%)[17]. At least 10% of gains must come from actions additional to measures that would have been required under existing commitments.

6.2.2 **Tables 6.2** and **6.3** provide a breakdown of the proportion of units that will be created from the NBBMA versus the remainder of the Site.

Table 6.2: Breakdown of Baseline, Post Intervention and Net Change of Units for the Site, NBBMA and Site Excluding NBBMA

Location	Stage	Habitat Units	Hedgerow Units	Watercourse Units
Site	Baseline	1,457.21	47.18	113.60
	Post Intervention	1,810.56	89.13	126.34
	Net Change	353.35	41.95	12.74
	% change	**+24.25%**	**+88.92%**	**+11.21%**
NBBMA	Baseline	398.4	0.71	13.64
	Post Intervention	510.20	0.67	18.62
	Net Change	111.76	-0.04	4.97
	% change	**+28.05%**	**-5.62%**	**+36.44%**
Site Excluding NBBMA	Baseline	1,058.77	46.47	99.95
	Post Intervention	1,308.21	88.46	107.72
	Net Change	249.43	41.99	7.77
	% change	**23.56%**	**+90.37%**	**+7.77%**

Table 6.3: Breakdown demonstrate least 10% of biodiversity units.

Feature/Question	Habitats	Hedgerow	Watercourse Units
Site Baseline Units	1,457.21Units	47.18 Units	113.60 Units
10% of the Site's Baseline Units	145.72	4.72	11.36
Net Change in the Proposed Development's units located outside the NBBMA?	249.43units	41.99units	7.77 units

[17] https://www.gov.uk/guidance/what-you-can-count-towards-a-developments-biodiversity-net-gain-bng [Accessed 20/02/2026]

Is 10% of the Proposed Development's units come from measures located outside the NBBMA?	Yes	Yes	No

6.2.3 When taking into account the NBBMA and the remainder of the Site the Proposed Development achieves at least 10% increase in biodiversity units (habitats, hedgerows and watercourses). When excluding the NBBMA 10% is not achieved, however a measurable increase in biodiversity units (habitats and hedgerows) are recorded and the project design commitments (a minimum increase of 10 % in habitat and hedgerow units and no net loss in watercourse units) are met.

6.3 Trading Rules

6.3.1 There is a deficit of -10.95 units in reedbed habitat type required to achieve trading rules, which is a high distinctiveness habitat requiring the same habitat type to offset losses. **Annex 3** discusses the baseline classification of reedbed.

6.3.2 There is a deficit of -2.23 units of scrub broad habitat type required to achieve trading rules, which is a medium distinctiveness habitat requiring the same broad habitat type to offset losses.

6.3.3 Trading rules are met for all other habitat types.

6.4 Metric 'Rule 4'

6.4.1 An explanatory note regarding the application of Rule 4 to the Proposed Development is provided as **Annex 4**, however key points are summarised below.

6.4.2 The Statutory Biodiversity Metric User Guide Table 2 Biodiversity metric rules 'Rule 4' states that 'In exceptional ecological circumstances, deviation from this biodiversity metric methodology may be permitted by the relevant planning authority'. In this case the relevant planning authority would be the Secretary of State. The Metric User guide provides further guidance on the application of Rule 4, which states 'If you meet the requirements to use Rule 4 it can be implemented through…deviations from the biodiversity metric trading rules'.

6.4.3 Natural England have recently published a recent blog post (dated 7th January 2026, included in **Annex 4**) outlining a case study implementing Rule 4. Natural England's note sets out a Rule 4 example which is directly comparable to the Proposed Development in the following ways:

- Natural England consider their case study example to represent a landscape scale gain;
- The Proposed Development is approximately 100ha larger than the case study site, and so must also be considered as a gain of landscape scale;
- The Natural England case study includes the loss of a habitat of high distinctiveness (in that case open mosaic habitat), which is not replaced directly. Instead scrub and grassland is delivered as this is considered to be the most ecologically valuable approach for the location. This demonstrates that there is scope for loss of habitats of high distinctiveness under Rule 4. The Proposed Development includes loss of reedbed, also a habitat categorised as of high distinctiveness.

- Design of habitats to be provided as part of the Proposed Development has been informed by the site location, adjacent to the Mersey and corresponding non-breeding bird populations (which are of international importance). Like the Natural England example, habitats have been designed to benefit species valuable to the location.

6.4.4 The NBBMA is required to mitigate for loss of potential functionally linked land associated with the Mersey Estuary Special Protection Area (SPA) with the NBBMA to be managed by a suitably experienced conservation organisation for forty years. The Applicant considers this a unique opportunity that represents exceptional circumstances.

6.4.5 In the absence of a statutory requirement to deliver biodiversity net gains for Nationally Significant Infrastructure Projects, it is not requested to formally apply Rule 4 however the Applicant considers that Rule 4 could be applied to the Proposed Development were BNG a mandatory requirement and that therefore a metric-compliant biodiversity net gain would be achieved by the Proposed Development.

Figures

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_UKhabs_v1.qgz

Order Limits

Map Page

Map 1

Map 2

Map 3

Map 4

N

0 500 1,000 1,500 2,000 2,500 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007

axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 1

Figure Title

Baseline Habitat - Overview

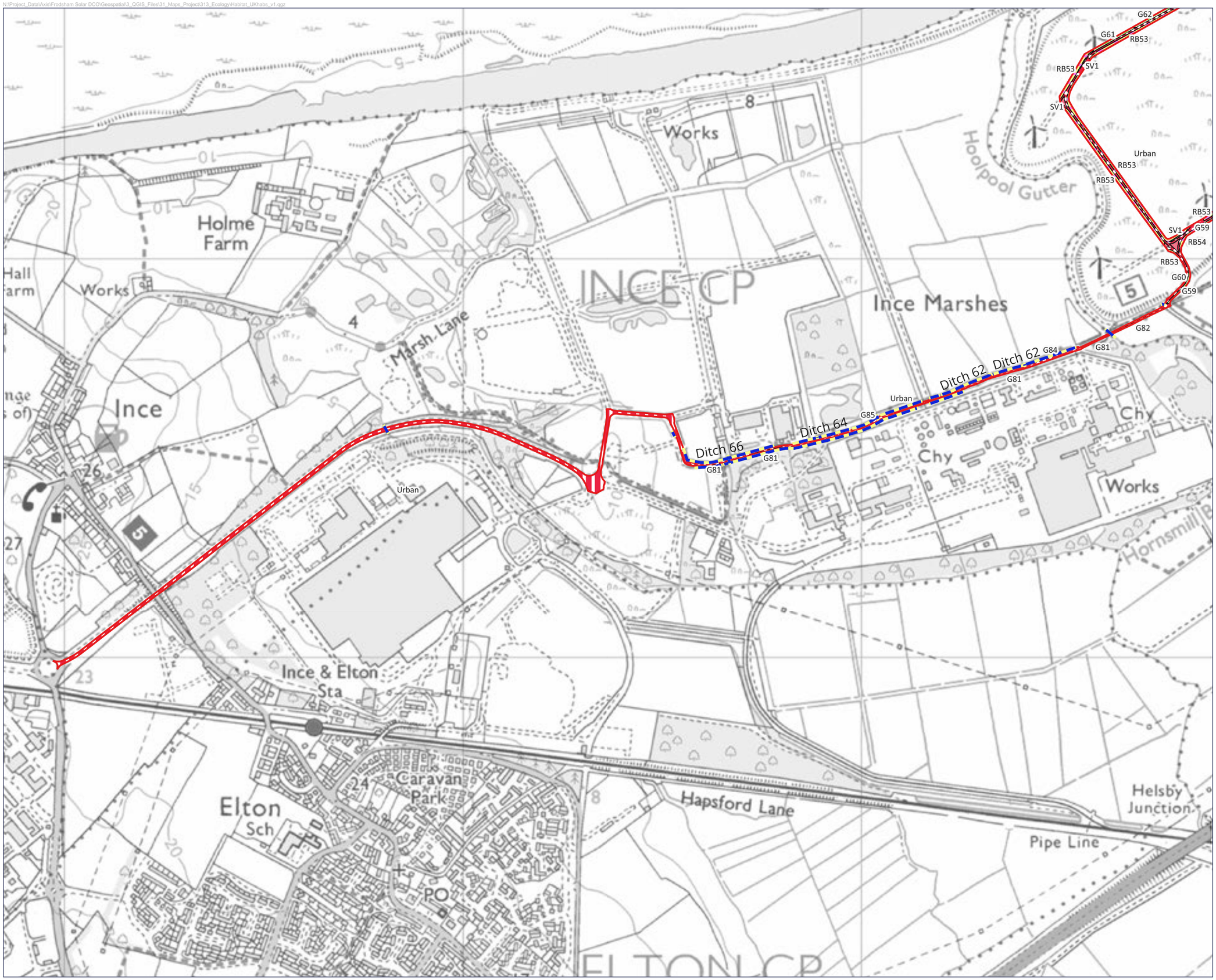
Scale

1:25000@A3

Date

24/02/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_UKhabs_v1.qgz



© Crown copyright and database rights 2024 Ordnance Survey 0100031673

N

0 180 360 540 720 890 m

Order Limits

UK Habitat Classification

- f2e - Reedbeds
- g3c - Other neutral grassland
- h3f - Hawthorn scrub
- u1b - Developed land
- u1c - Artificial unvegetated, unsealed surface
- u1f - Sparsely vegetated urban land
- r1 - Standing open water and canals

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 1

Figure Title

Baseline Habitat - Map 1

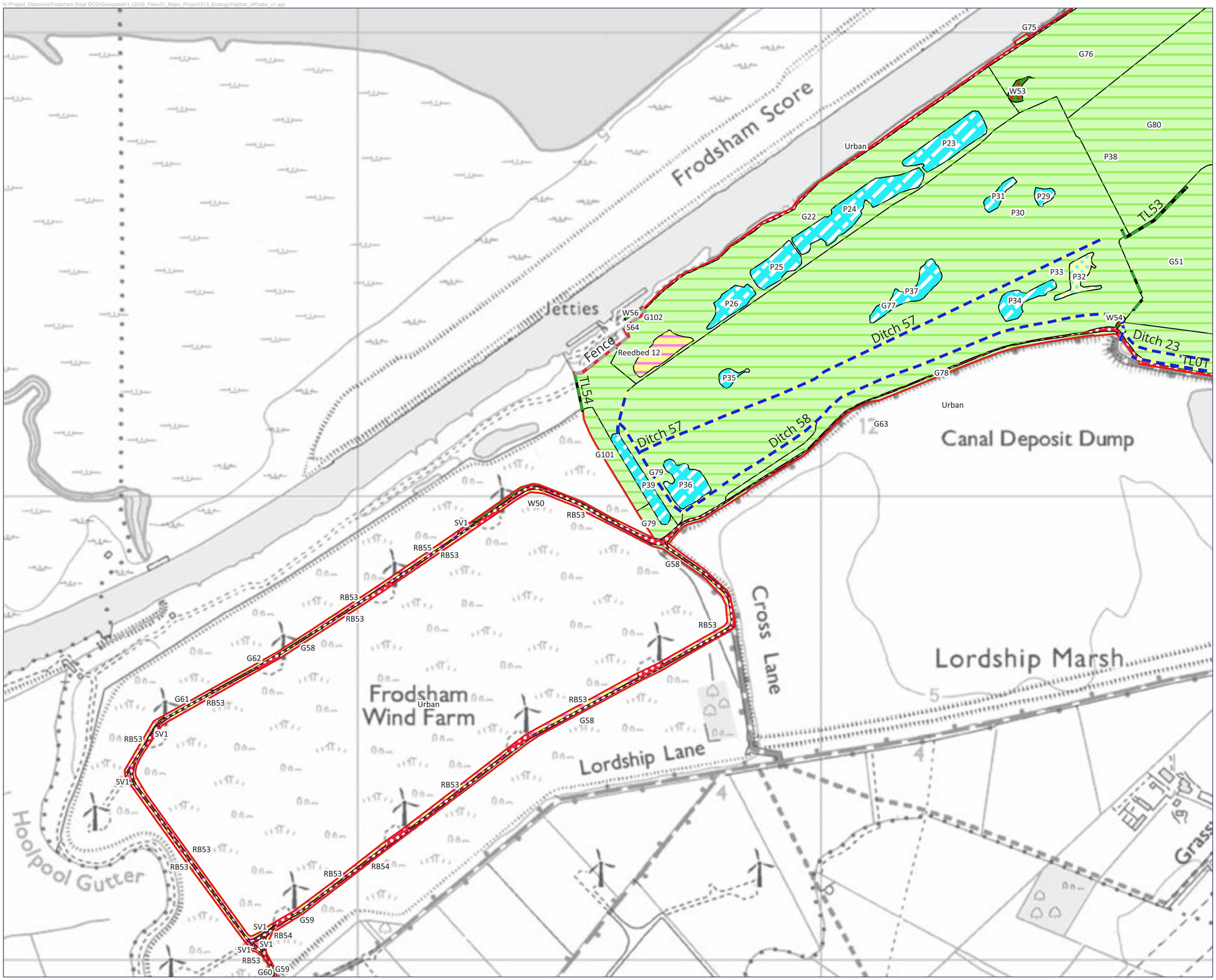
Scale

1:8944@A3

Date

24/02/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_UKhabs_v1.qgz



Order Limits

UK Habitat Classification

- f2e - Reedbeds
- g3c - Other neutral grassland
- h3h - Mixed scrub
- r1f6 - Other temporary ponds and scrapes
- r1g - Other standing water
- u1c - Artificial unvegetated, unsealed surface
- u1f - Sparsely vegetated urban land
- w1d - Wet woodland
- w1g - Other broadleaved woodland
- r1 - Standing open water and canals
- u1e - Built linear features
- w1g - Other broadleaved woodland

N

0 150 310 460 620 770 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 1

Figure Title

Baseline Habitat - Map 2

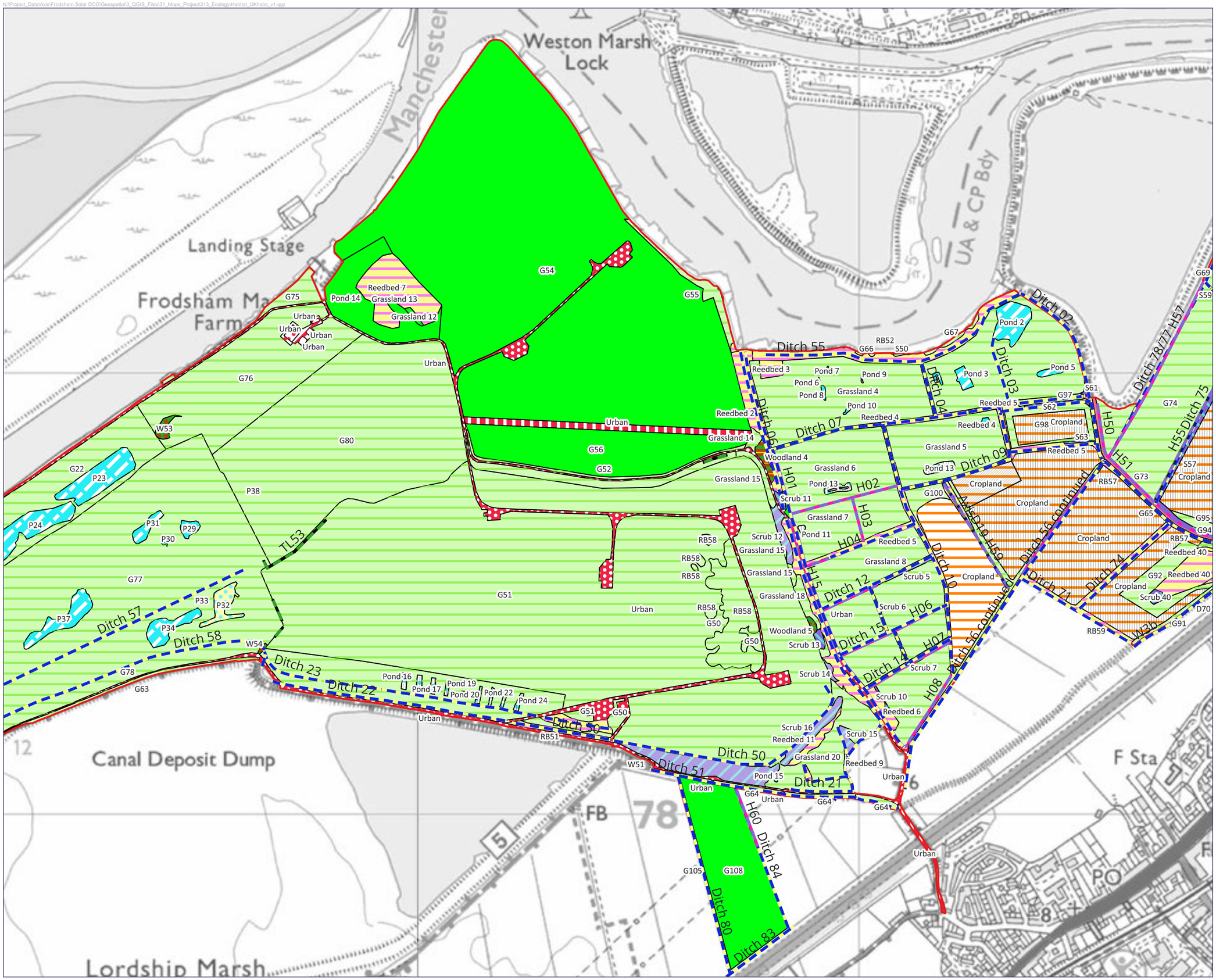
Scale

1:7691@A3

Date

24/02/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_UKhabs_v1.qgz



N

0 160 320 490 650 810 m

Order Limits

UK Habitat Classification

- c1c - Cereal crops
- c1c6 - Arable fields with wild bird mix
- c1c7 - Other cereal crops
- f2e - Reedbeds
- g3c - Other neutral grassland
- g4 - Modified grassland
- h3d - Bramble scrub
- h3h - Mixed scrub
- h3j - Willow scrub
- r1e - Canals
- r1f - Temporary waterbodies
- r1f6 - Other temporary ponds and scrapes
- r1g - Other standing water
- u1 - Built
- u1b - Developed land
- u1b5 - Buildings
- u1b6 - Other developed land
- u1c - Artificial unvegetated, unsealed surface
- u1f - Sparsely vegetated urban land
- w1f7 - Other Lowland mixed deciduous woodland
- w1g - Other broadleaved woodland
- h2a5 - Species
- h2a6 - Other native hedgerows
- r1 - Standing open water and canals
- w1g - Other broadleaved woodland

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 1

Figure Title

Baseline Habitat - Map 3

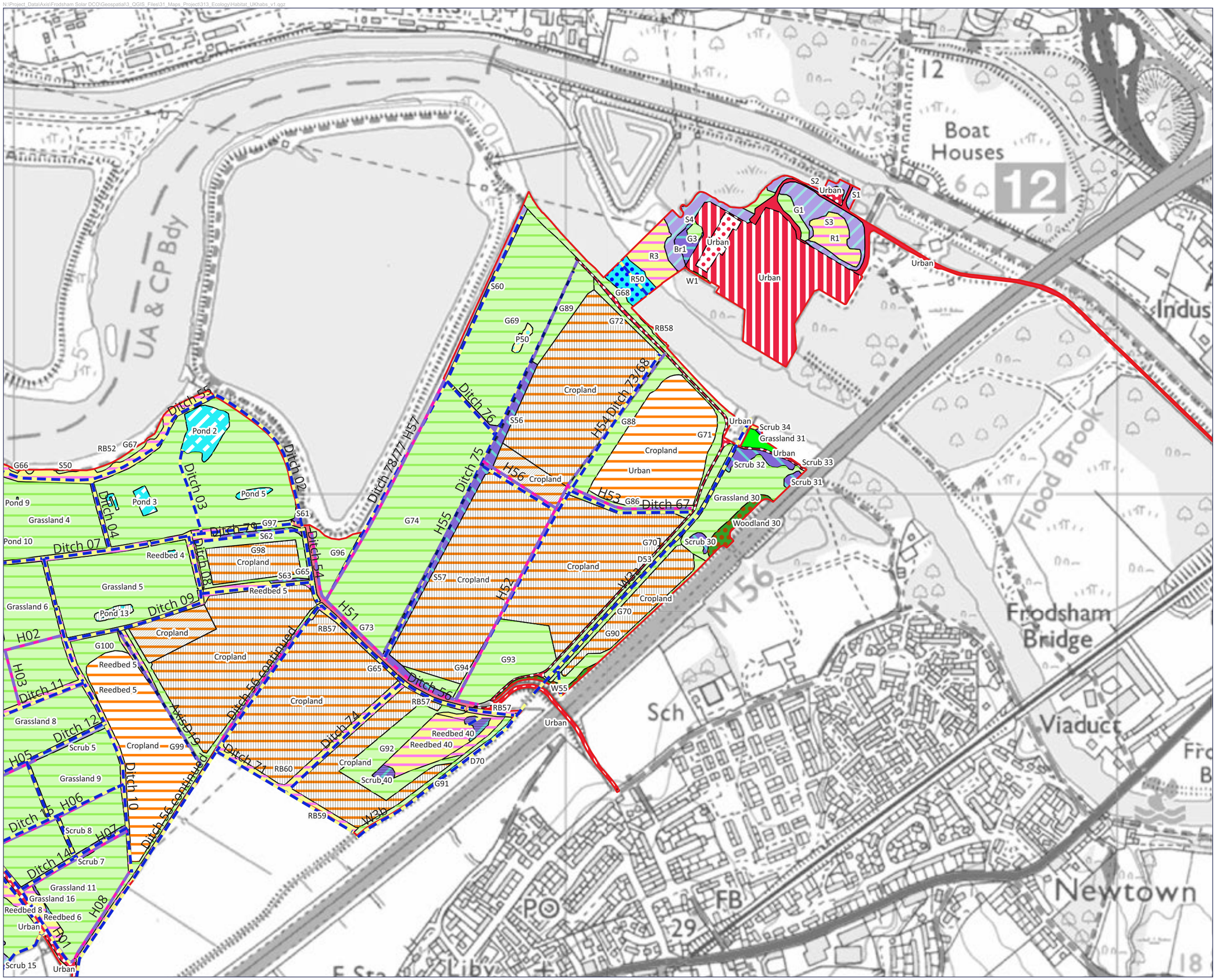
Scale

1:8083@A3

Date

24/02/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_UKhabs_v1.qgz



N

0 130 260 390 520 650 m

Order Limits

UK Habitat Classification

- c1c - Cereal crops
- c1c6 - Arable fields with wild bird mix
- c1c7 - Other cereal crops
- f2e - Reedbeds
- g3c - Other neutral grassland
- g4 - Modified grassland
- h3d - Bramble scrub
- h3e - Gorse scrub
- h3h - Mixed scrub
- h3j - Willow scrub
- r1e - Canals
- r1f - Temporary waterbodies
- r1f6 - Other temporary ponds and scrapes
- r1g - Other standing water
- r2b - Other rivers and streams
- u1 - Built
- u1b - Developed land
- u1b5 - Buildings
- u1b6 - Other developed land
- u1c - Artificial unvegetated, unsealed surface
- u1e - Built linear features
- u1f - Sparsely vegetated urban land
- w1f7 - Other Lowland mixed deciduous woodland
- w1g - Other broadleaved woodland
- h2a5 - Species
- h2a6 - Other native hedgerows
- r1 - Standing open water and canals

Cubico

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 1

Figure Title

Baseline Habitat - Map 4

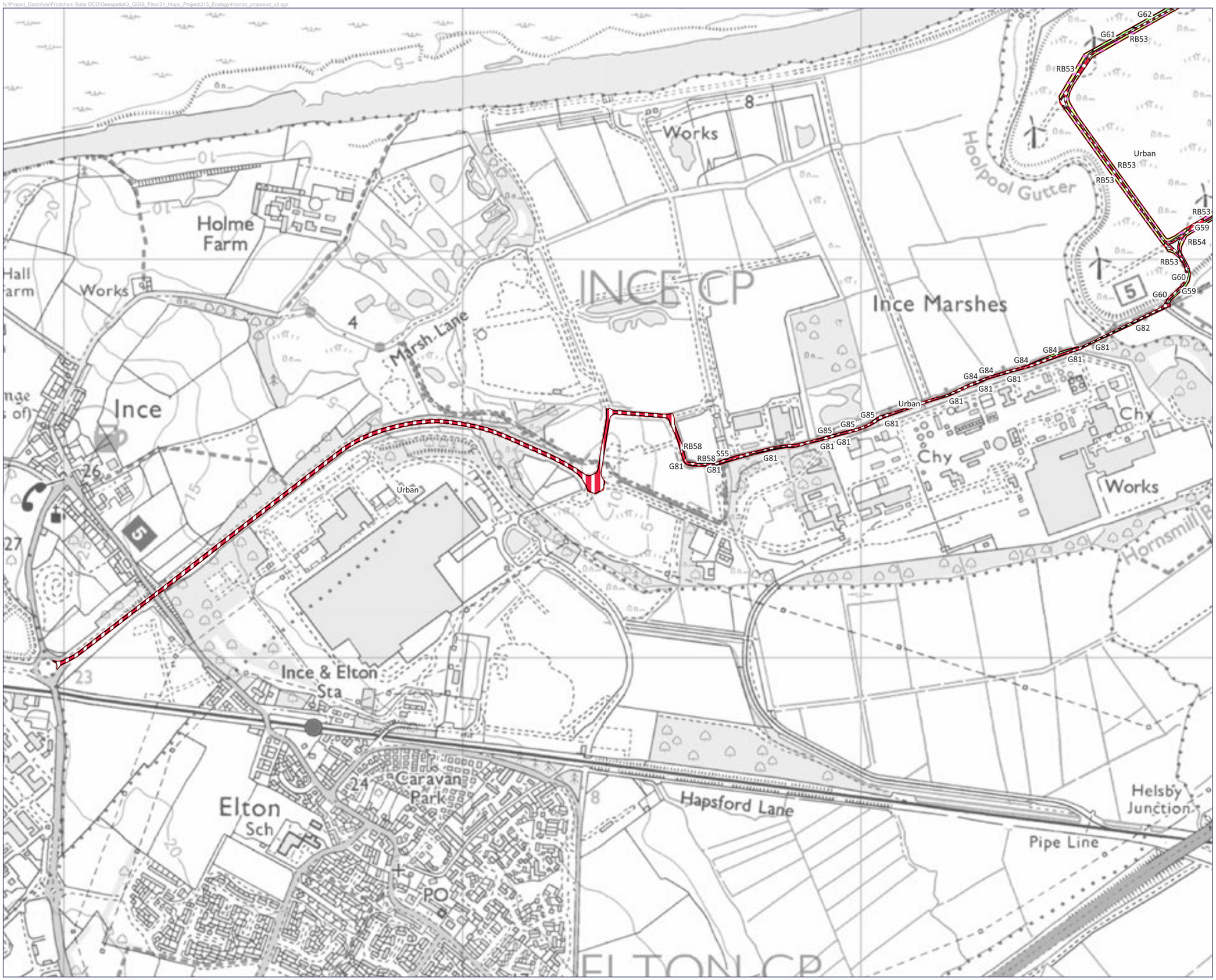
Scale

1:6463@A3

Date

24/02/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v3.qgz



Order Limits

UK Habitat Classification

- f2e - Reedbeds
- g3c - Other neutral grassland
- h3f - Hawthorn scrub
- u1b - Developed land
- u1c - Artificial unvegetated, unsealed surface

N

0 180 360 540 720 890 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 2

Figure Title

Proposed Retained Habitats - Map 1

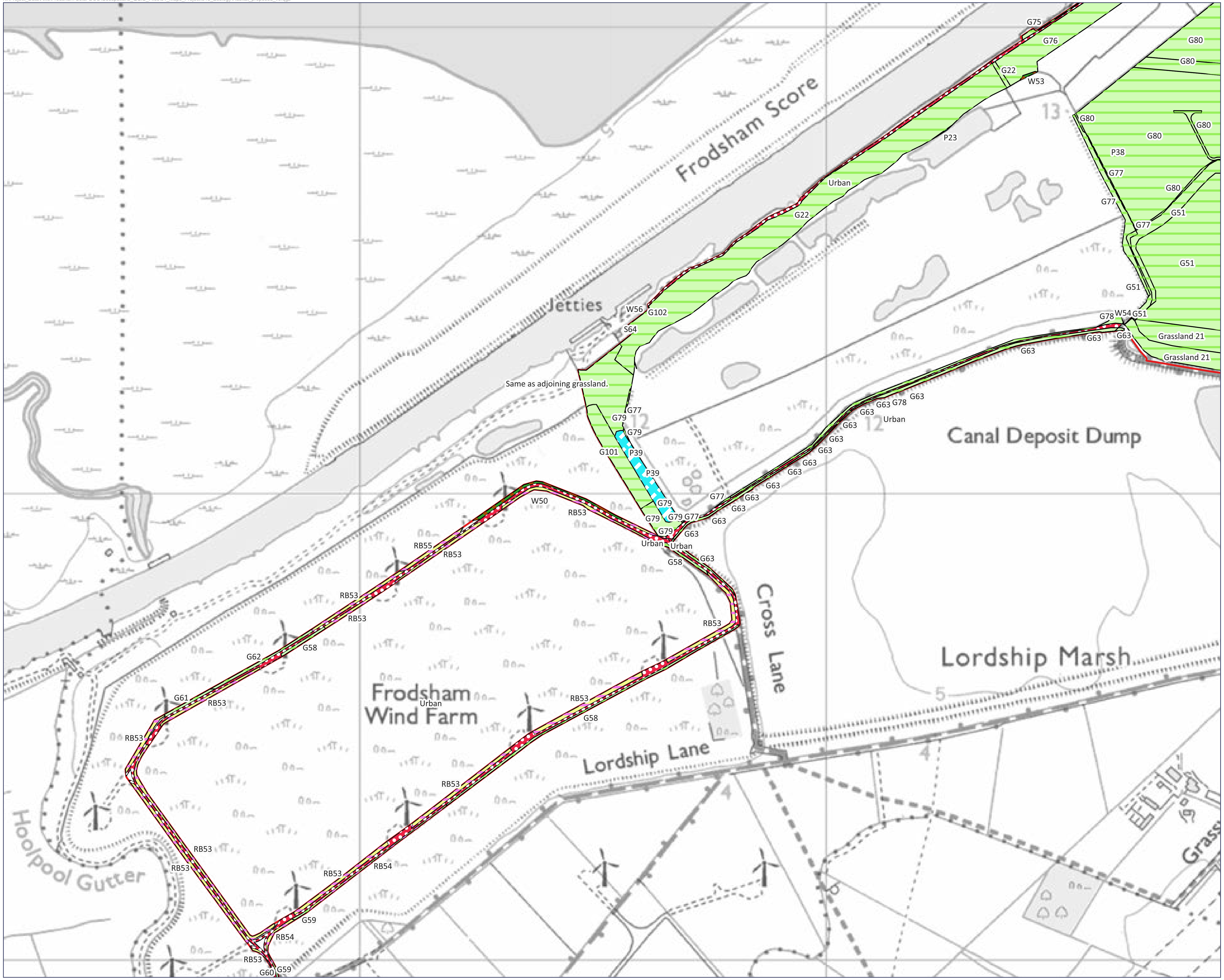
Scale

1:8944@A3

Date

21/04/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v3.qgz



Order Limits

UK Habitat Classification

- f2e - Reedbeds
- g3c - Other neutral grassland
- h3h - Mixed scrub
- r1g - Other standing water
- u1c - Artificial unvegetated, unsealed surface
- w1d - Wet woodland
- w1g - Other broadleaved woodland

N

0 150 310 460 620 770 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 2

Figure Title

Proposed Retained Habitats - Map 2

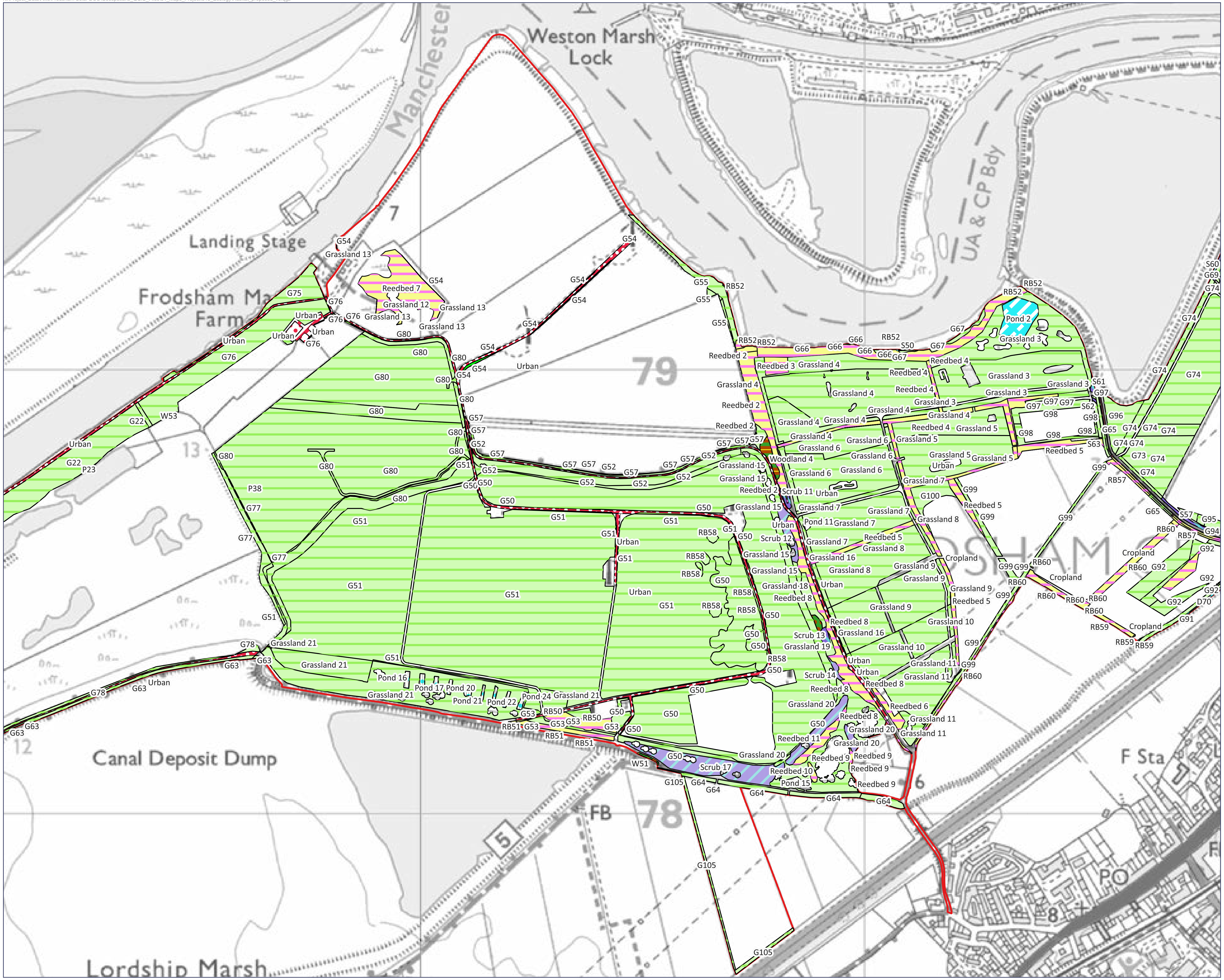
Scale

1:7691@A3

Date

21/04/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v3.qgz



Order Limits

UK Habitat Classification

- c1c - Cereal crops
- c1c7 - Other cereal crops
- f2e - Reedbeds
- g3c - Other neutral grassland
- g4 - Modified grassland
- h3d - Bramble scrub
- h3h - Mixed scrub
- r1f - Temporary waterbodies
- r1g - Other standing water
- u1 - Built
- u1b5 - Buildings
- u1c - Artificial unvegetated, unsealed surface
- u1f - Sparsely vegetated urban land
- w1f7 - Other Lowland mixed deciduous woodland
- w1g - Other broadleaved woodland

Cubico Sustainable Investments

0344 8700 007

axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 2

Figure Title

Proposed Retained Habitats - Map 3

Scale

1:8083@A3

Date

21/04/2026

N

0 160 320 490 650 810 m

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v3.qgz

Order Limits

UK Habitat Classification

- c1c - Cereal crops
- c1c7 - Other cereal crops
- f2e - Reedbeds
- g3c - Other neutral grassland
- h3d - Bramble scrub
- h3e - Gorse scrub
- h3h - Mixed scrub
- h3j - Willow scrub
- r1e - Canals
- r1g - Other standing water
- r2b - Other rivers and streams
- u1b - Developed land
- u1b5 - Buildings
- u1c - Artificial unvegetated, unsealed surface
- u1e - Built linear features
- u1f - Sparsely vegetated urban land
- w1f7 - Other Lowland mixed deciduous woodland
- w1g - Other broadleaved woodland

N

0 130 260 390 520 650 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 2

Figure Title

Proposed Retained Habitats - Map 4

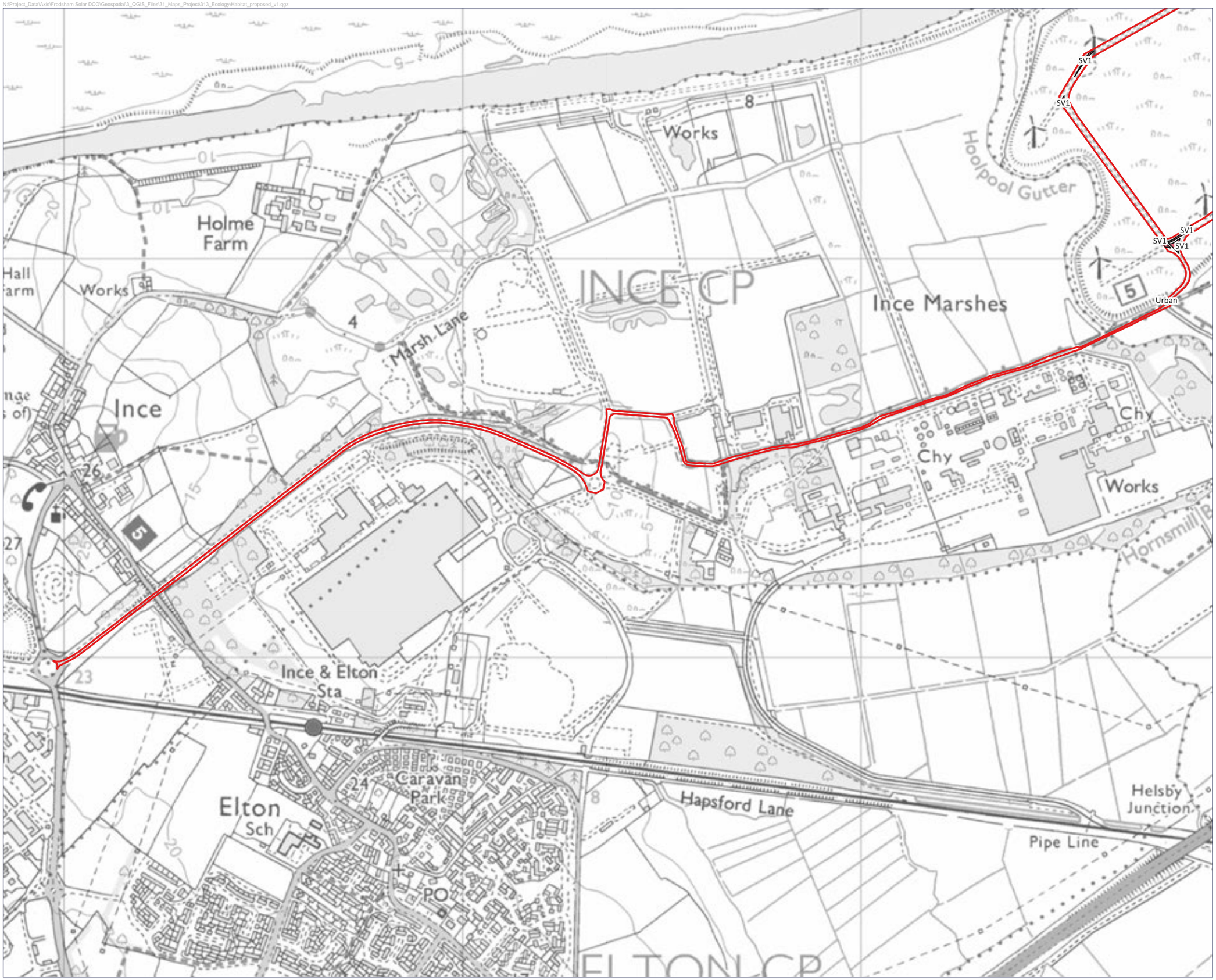
Scale

1:6463@A3

Date

21/04/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v1.qgz



Order Limits

UK Habitat Classification

- u1c - Artificial unvegetated, unsealed surface
- u1f - Sparsely vegetated urban land

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 3

Figure Title

Proposed Lost Habitats - Map 1

Scale

1:8944@A3

Date

24/02/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v3.qgz

Order Limits

UK Habitat Classification

- f2e - Reedbeds
- g3c - Other neutral grassland
- r1f6 - Other temporary ponds and scrapes
- r1g - Other standing water
- u1c - Artificial unvegetated, unsealed surface
- u1f - Sparsely vegetated urban land
- w1g - Other broadleaved woodland

N

0 150 310 460 620 770 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 3

Figure Title

Proposed Lost Habitats - Map 2

Scale

1:7691@A3

Date

21/04/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v3.qgz

Order Limits

UK Habitat Classification

- c1c - Cereal crops
- c1c6 - Arable fields with wild bird mix
- c1c7 - Other cereal crops
- f2e - Reedbeds
- g3c - Other neutral grassland
- g4 - Modified grassland
- h3d - Bramble scrub
- h3h - Mixed scrub
- r1f - Temporary waterbodies
- r1f6 - Other temporary ponds and scrapes
- r1g - Other standing water
- u1 - Built
- u1b - Developed land
- u1b5 - Buildings
- u1b6 - Other developed land
- u1c - Artificial unvegetated, unsealed surface
- u1f - Sparsely vegetated urban land
- w1g - Other broadleaved woodland

N

0 160 320 490 650 810 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 3

Figure Title

Proposed Lost Habitats - Map 3

Scale

1:8083@A3

Date

21/04/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v1.qgz

Order Limits

UK Habitat Classification

- c1c - Cereal crops
- c1c6 - Arable fields with wild bird mix
- c1c7 - Other cereal crops
- f2e - Reedbeds
- g3c - Other neutral grassland
- g4 - Modified grassland
- h3d - Bramble scrub
- h3h - Mixed scrub
- h3j - Willow scrub
- r1f - Temporary waterbodies
- r1f6 - Other temporary ponds and scrapes
- r1g - Other standing water
- u1 - Built
- u1b - Developed land
- u1b6 - Other developed land
- u1c - Artificial unvegetated, unsealed surface
- u1f - Sparsely vegetated urban land
- w1g - Other broadleaved woodland

N

0 130 260 390 520 650 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk
axis

Project

FRODSHAM SOLAR

Figure Number

Figure 3

Figure Title

Proposed Lost Habitats - Map 4

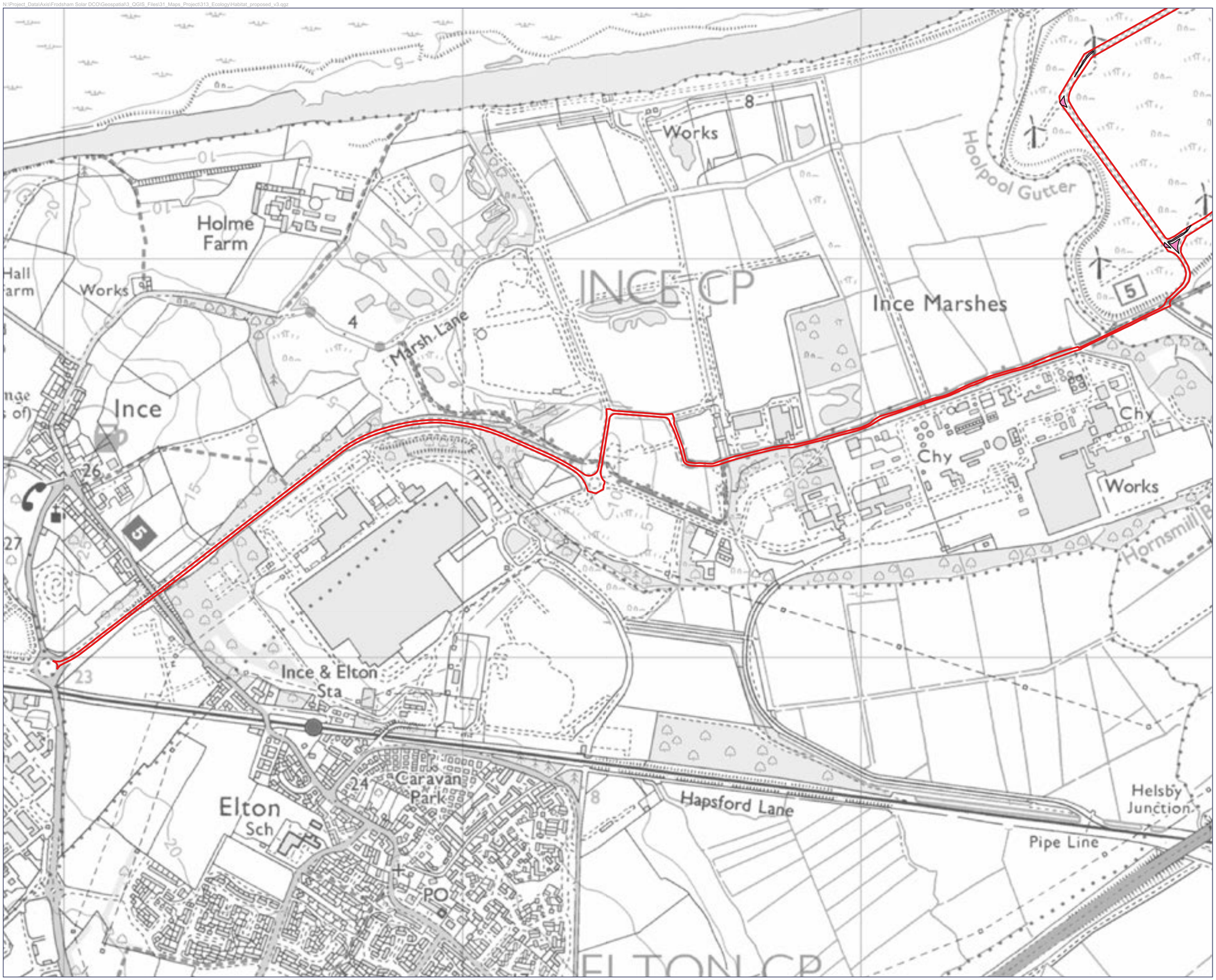
Scale

1:6463@A3

Date

24/02/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v3.qgz



Order Limits

Post Development Habitats

Retained Biodiversity Area

N

0 180 360 540 720 890 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 4

Figure Title

Proposed Post-Development Created Habitats - Map 1

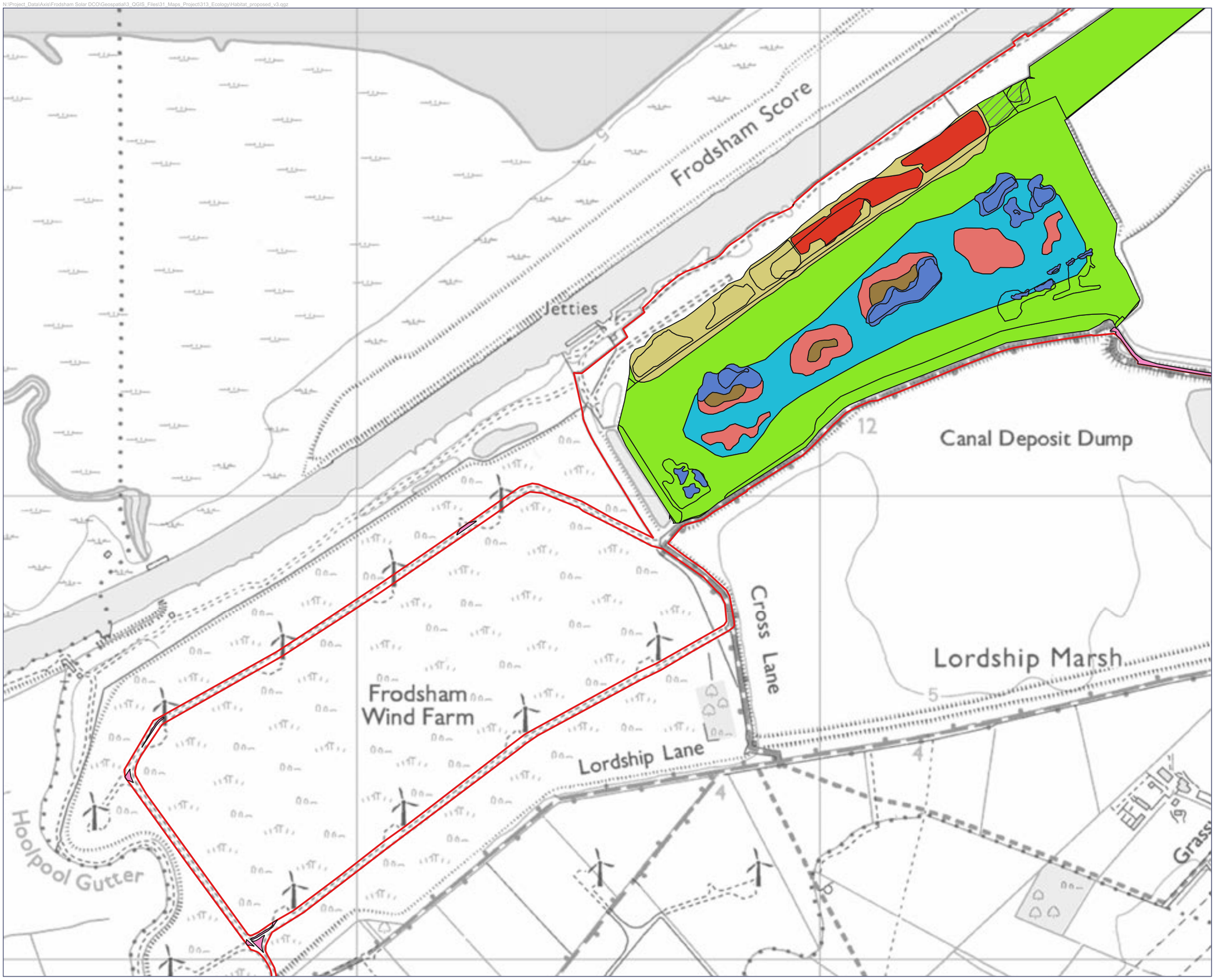
Scale

1:8944@A3

Date

21/04/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v3.qgz



Order Limits

Post Development Habitats

- Proposed Additional Scrape
- Proposed Grassland
- Proposed Grassland (Trees to be Removed)
- Proposed Island
- Proposed Raised Bank (with Grassland)
- Proposed Scrape
- Proposed Water Storage Area
- Proposed Wet Grassland Area
- Retained Biodiversity Area

N

0 150 310 460 620 770 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 4

Figure Title

Proposed Post-Development Created Habitats - Map 2

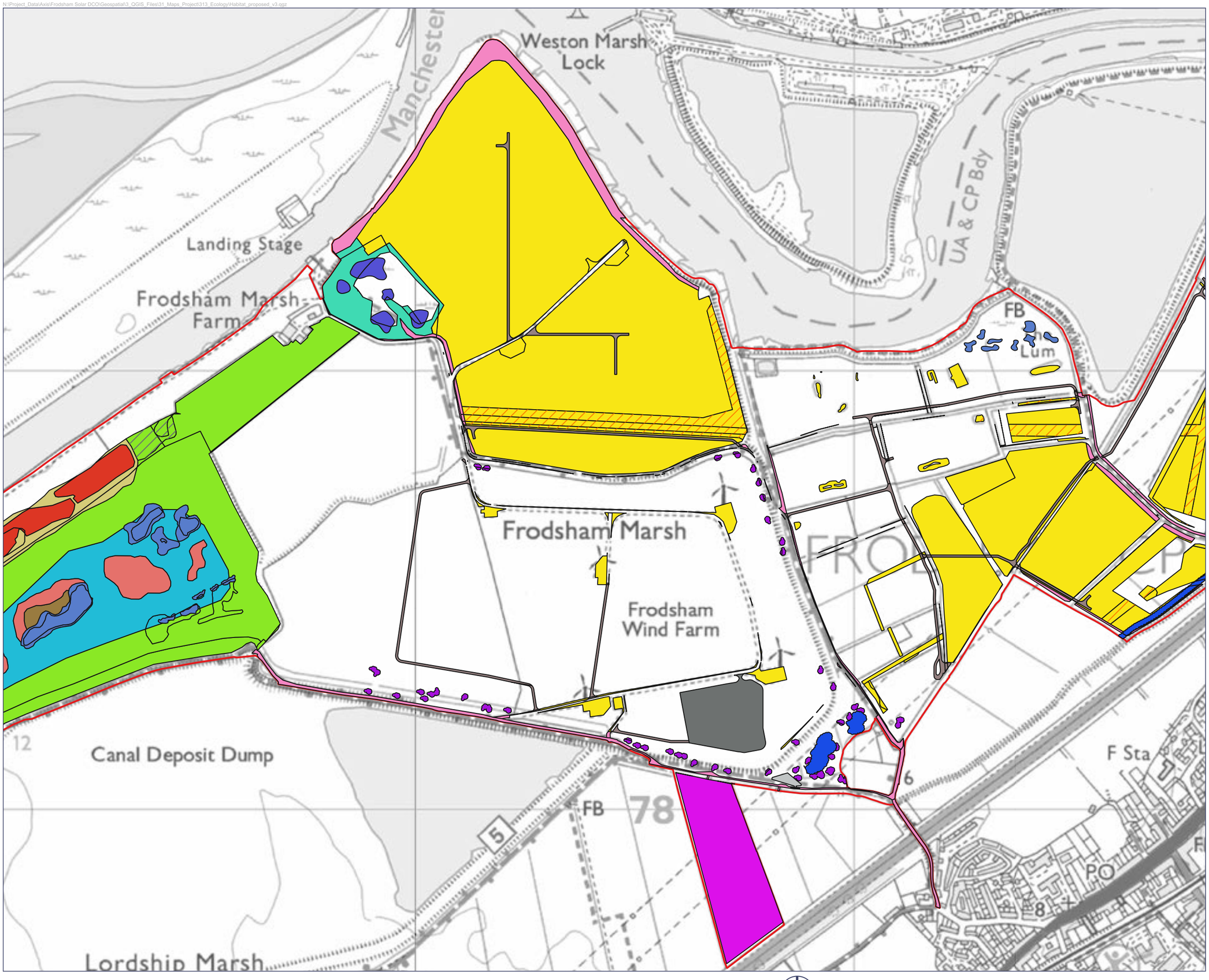
Scale

1:7691@A3

Date

21/04/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v3.qgz



Order Limits

Post Development Habitats

- Car Park
- Developed land - BESS
- Proposed Additional Scrape
- Proposed Grassland
- Proposed Grassland (Trees to be Removed)
- Proposed planting
- Proposed Raised Bank (with Grassland)
- Proposed Reedbed
- Proposed Scrape
- Proposed Scrub
- Proposed Track
- Proposed Water Storage Area
- Proposed Wet Grassland Area
- Proposed Wetland
- Retained Biodiversity Area
- Skylark Mitigation Area
- Solar Area
- Solar Area - Access and public footpath area

N

0 160 320 490 650 810 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 4

Figure Title

Proposed Post-Development Created Habitats - Map 3

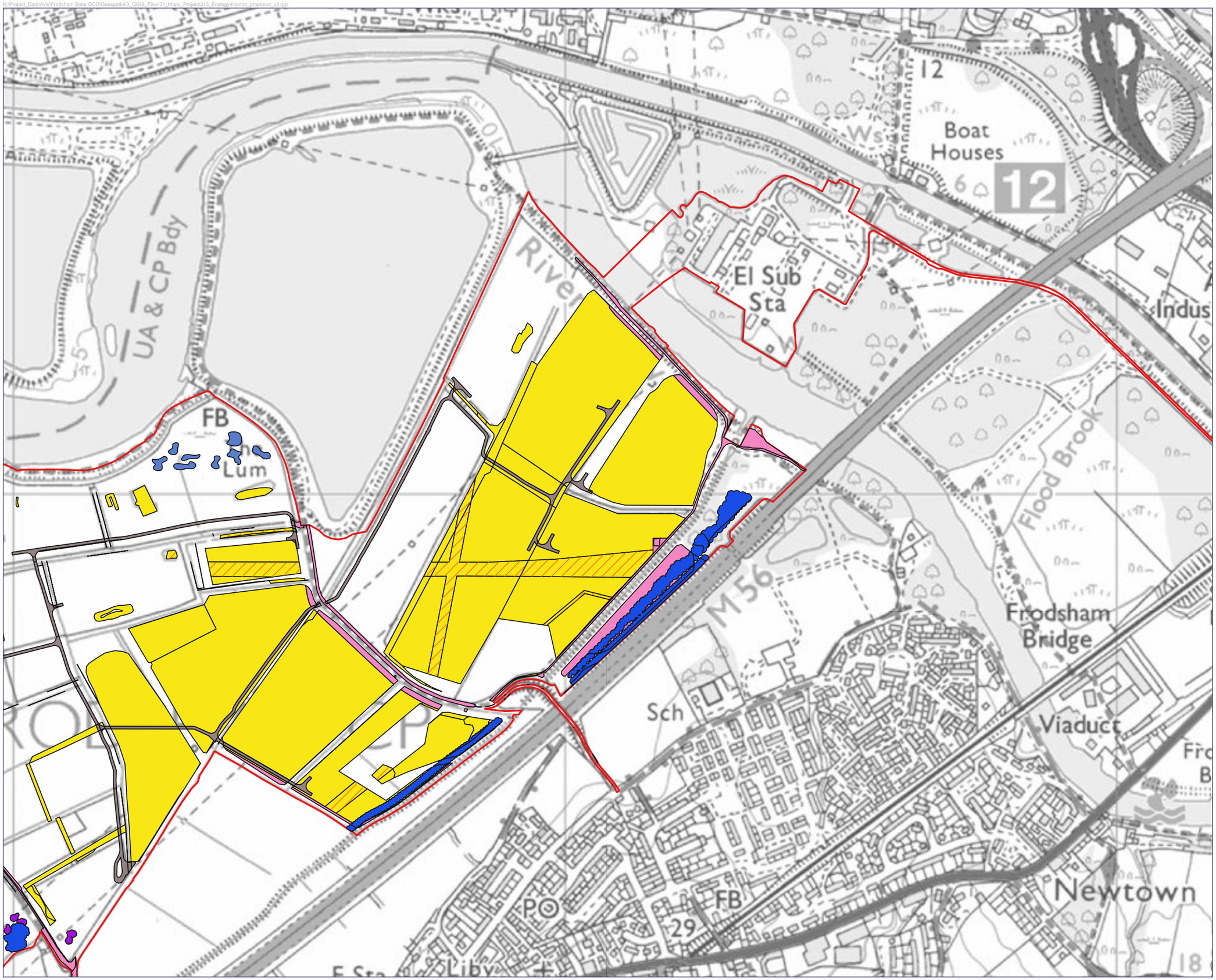
Scale

1:8083@A3

Date

21/04/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v3.qgz



Order Limits

Post Development Habitats

- Proposed planting
- Proposed Scrape
- Proposed Track
- Retained Biodiversity Area
- Solar Area
- Solar Area - Access and public footpath area

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 4

Figure Title

Proposed Post-Development Created Habitats - Map 4

Scale

1:6463@A3

Date

21/04/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v1.qgz

Order Limits

Works
Hoolpool Gutter
Holme Farm
Hall Farm
Works
INCE CP
Ince Marshes
Marsh Lane
Ince
Chy
Chy
Works
Hornsmill Brook
Ince & Elton Sta
Caravan Park
Elton Sch
PO
Hapsford Lane
Helsby Junction
Pipe Line
ELTON CP

N

0 180 360 540 720 890 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 5

Figure Title

Proposed Hedge Plan- Map 1

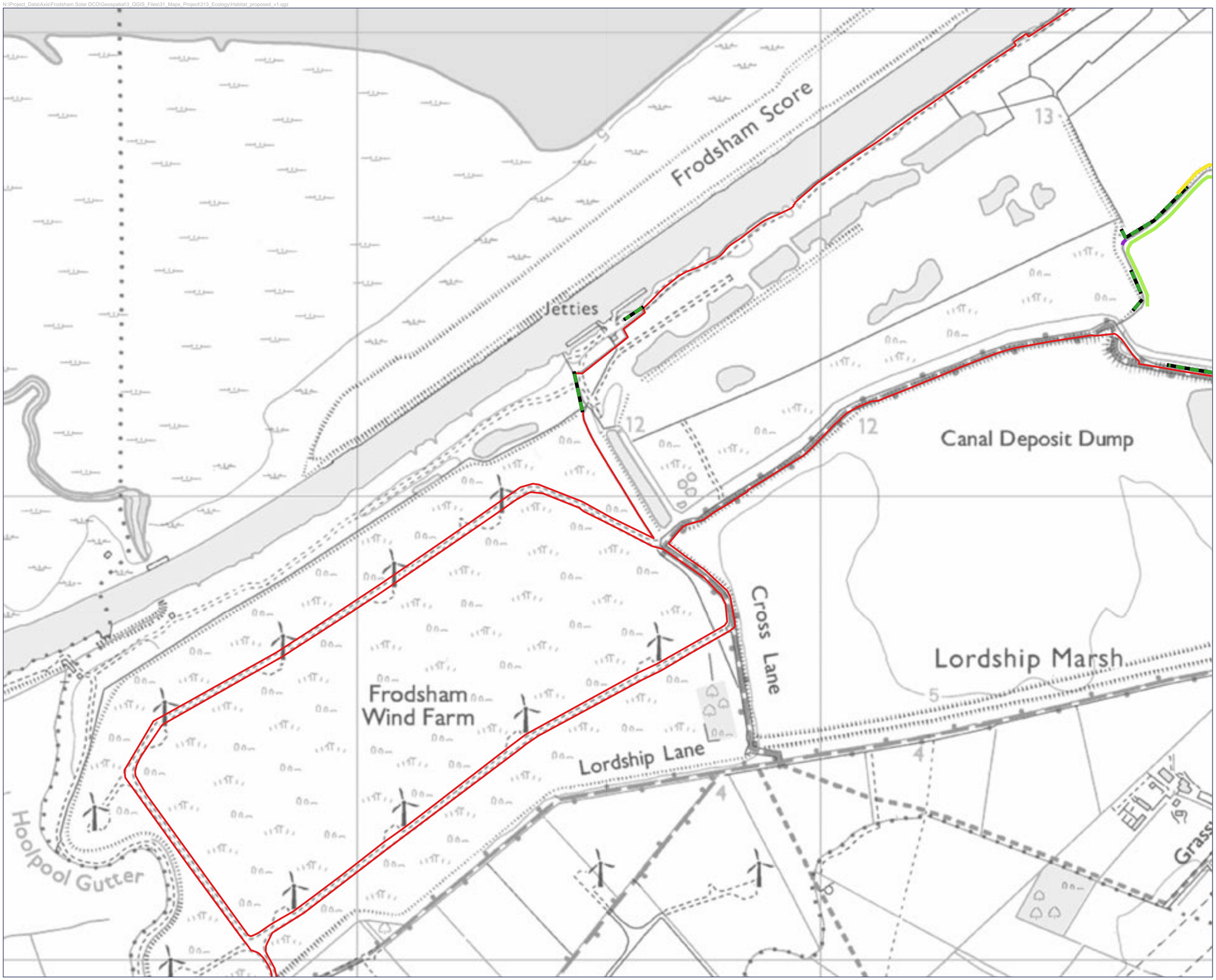
Scale

1:8944@A3

Date

23/02/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v1.qgz



Order Limits

Retained Linear Features

w1g - Other broadleaved woodland

Proposed Linear Features

Bird Screening

Proposed Hedgerow (Species Rich)

Proposed Low Height Hedgerow (Species Rich)

N

0 150 310 460 620 770 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007

axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 5

Figure Title

Proposed Hedge Plan- Map 2

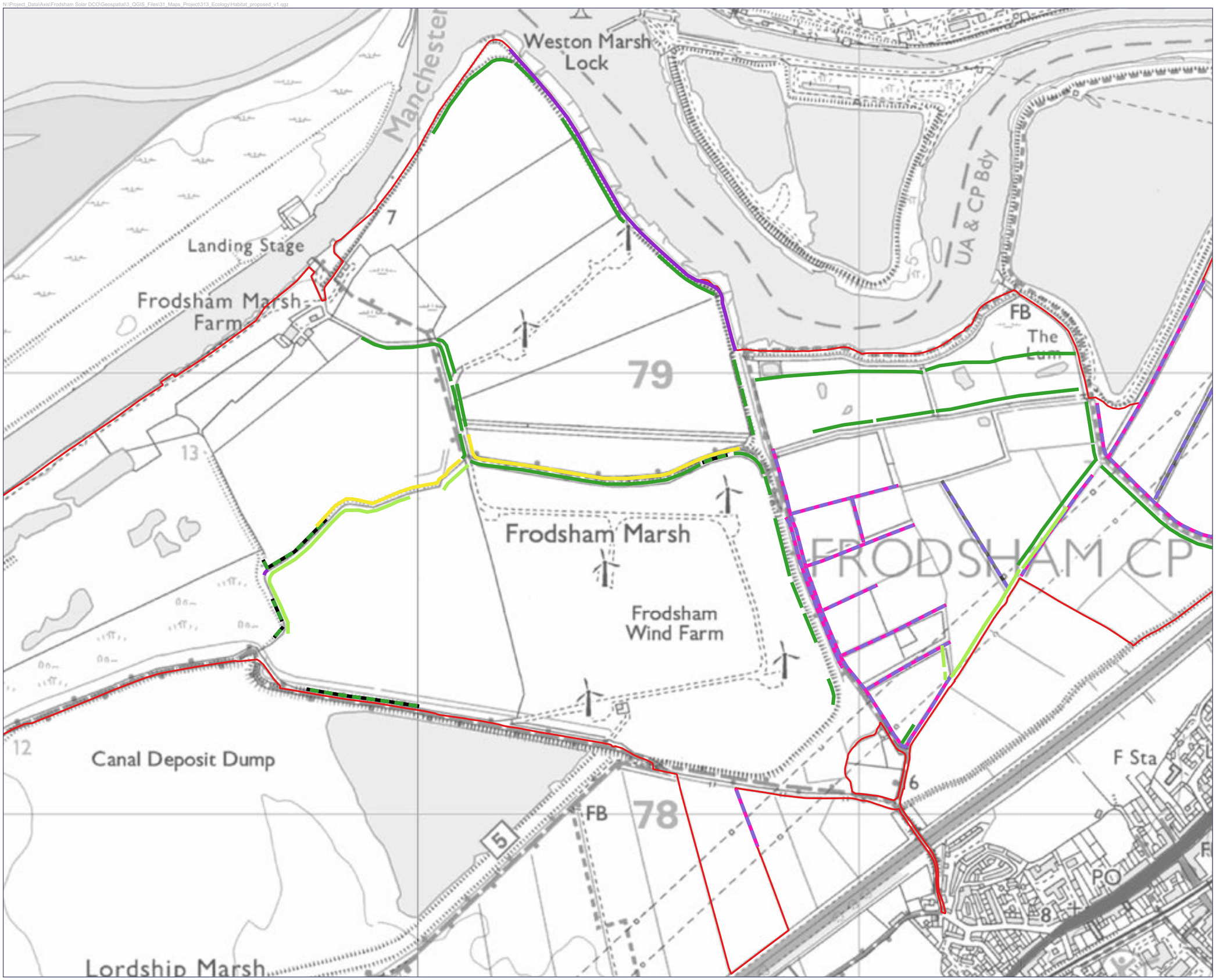
Scale

1:7691@A3

Date

23/02/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v1.qgz



Order Limits

Retained Linear Features

- h2a5 - Species-rich native hedgerow
- h2a6 - Other native hedgerows
- w1g - Other broadleaved woodland

Proposed Linear Features

- Bird Screening
- Native Tree and Shrub Belt (Species-rich native hedgerow with trees)
- Proposed Hedgerow (Species Rich)
- Proposed Low Height Hedgerow (Species Rich)

N

0 160 320 490 650 810 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 5

Figure Title

Proposed Hedge Plan- Map 3

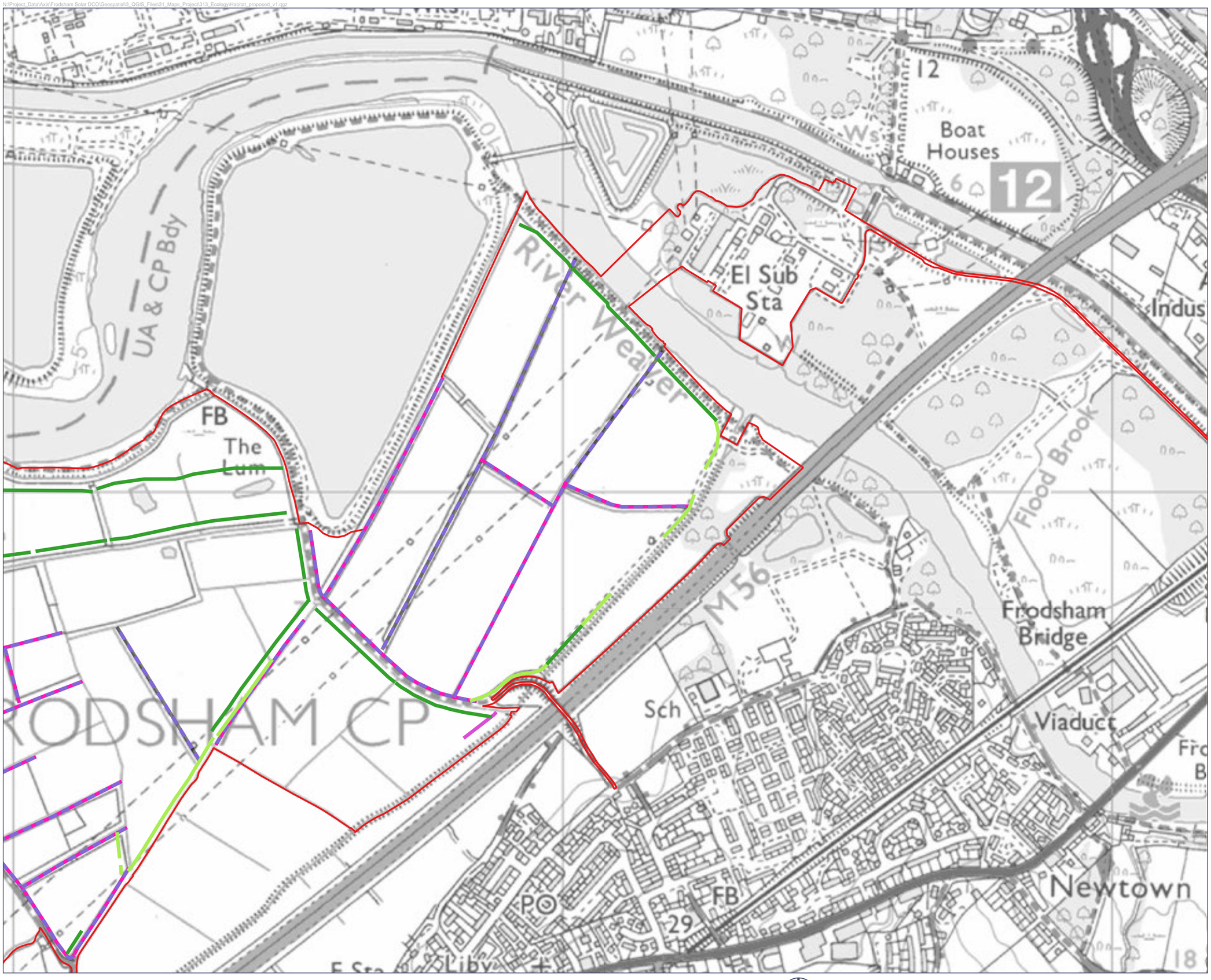
Scale

1:8083@A3

Date

23/02/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v1.qgz



Order Limits

Retained Linear Features

- h2a5 - Species-rich native hedgerow
- h2a6 - Other native hedgerows

Proposed Linear Features

- 3m Bird Screening
- Native Tree and Shrub Belt (Species-rich native hedgerow with trees)
- Proposed Hedgerow (Species Rich)

N

0 130 260 390 520 650 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 5

Figure Title

Proposed Hedge Plan- Map 4

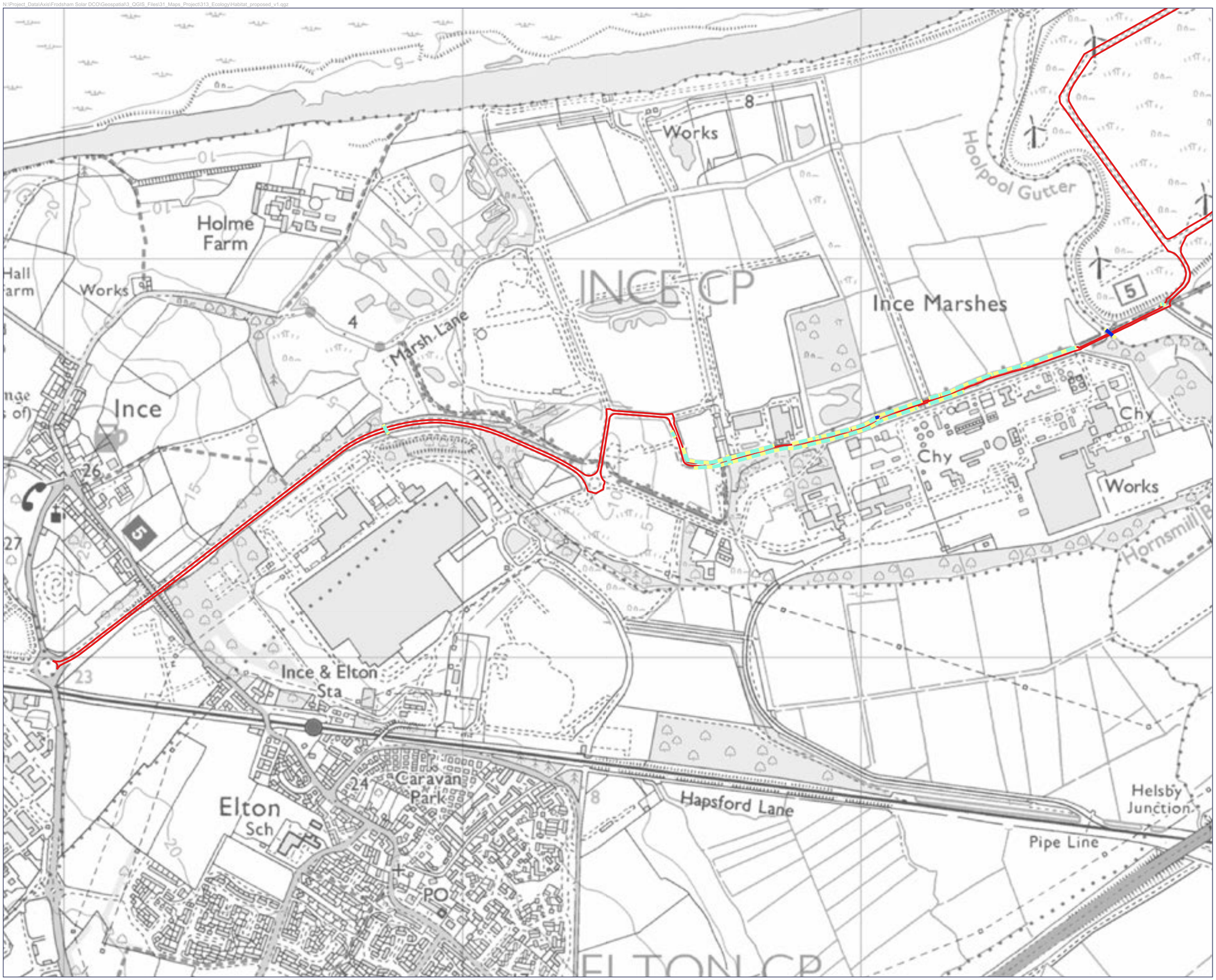
Scale

1:6463@A3

Date

23/02/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v1.qgz



Order Limits

Retained Linear Features

r1-Standing open water and canals

r1.50-Standing open water and canals; Ditch

N

0 180 360 540 720 890 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 6

Figure Title

Proposed Watercourse Plan- Map 1

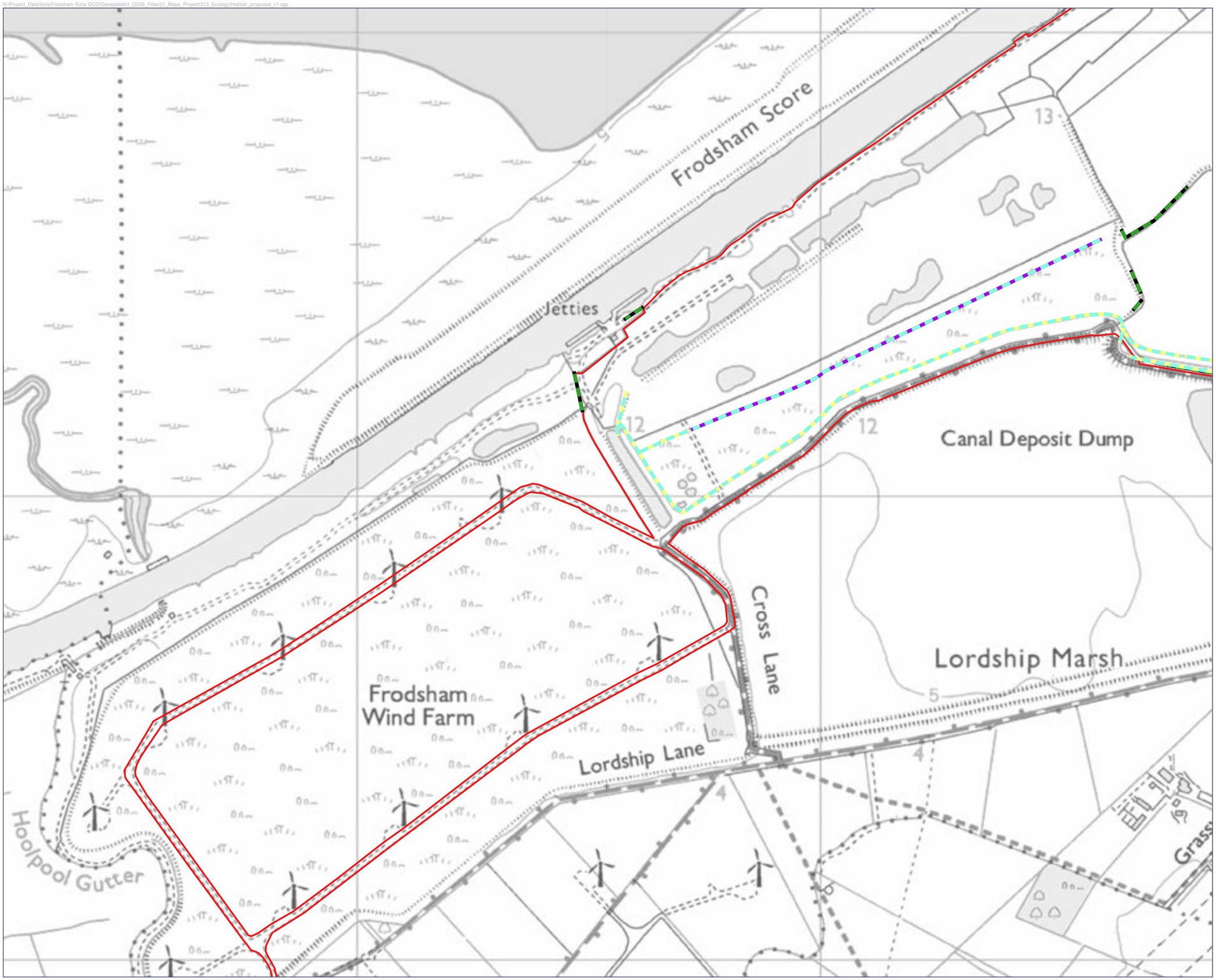
Scale

1:8944@A3

Date

23/02/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v1.qgz



Order Limits

Retained Linear Features

- r1.10.50-Standing open water and canals; Scattered scrub, Ditch
- r1.50-Standing open water and canals; Ditch

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 6

Figure Title

Proposed Watercourse Plan- Map 2

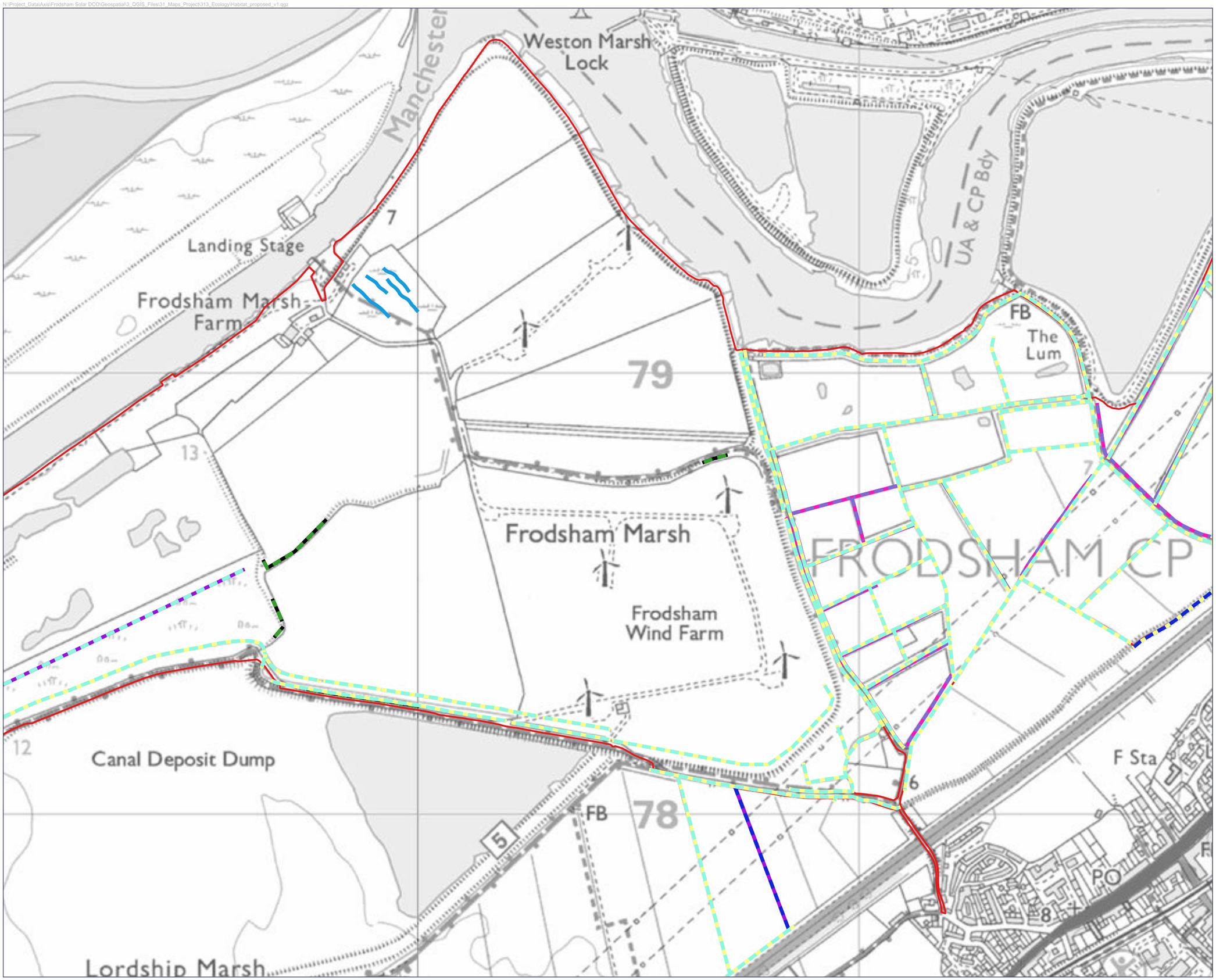
Scale

1:7691@A3

Date

23/02/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v1.qgz



Order Limits

Retained Linear Features

- r1.10-Standing open water and canals; Scattered scrub
- r1.10.50-Standing open water and canals; Scattered scrub, Ditch
- r1.50-Standing open water and canals; Ditch

Proposed Linear Features

- r1.50-Standing open water and canals; Ditch

N

0 160 320 490 650 810 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 6

Figure Title

Proposed Watercourse Plan- Map 3

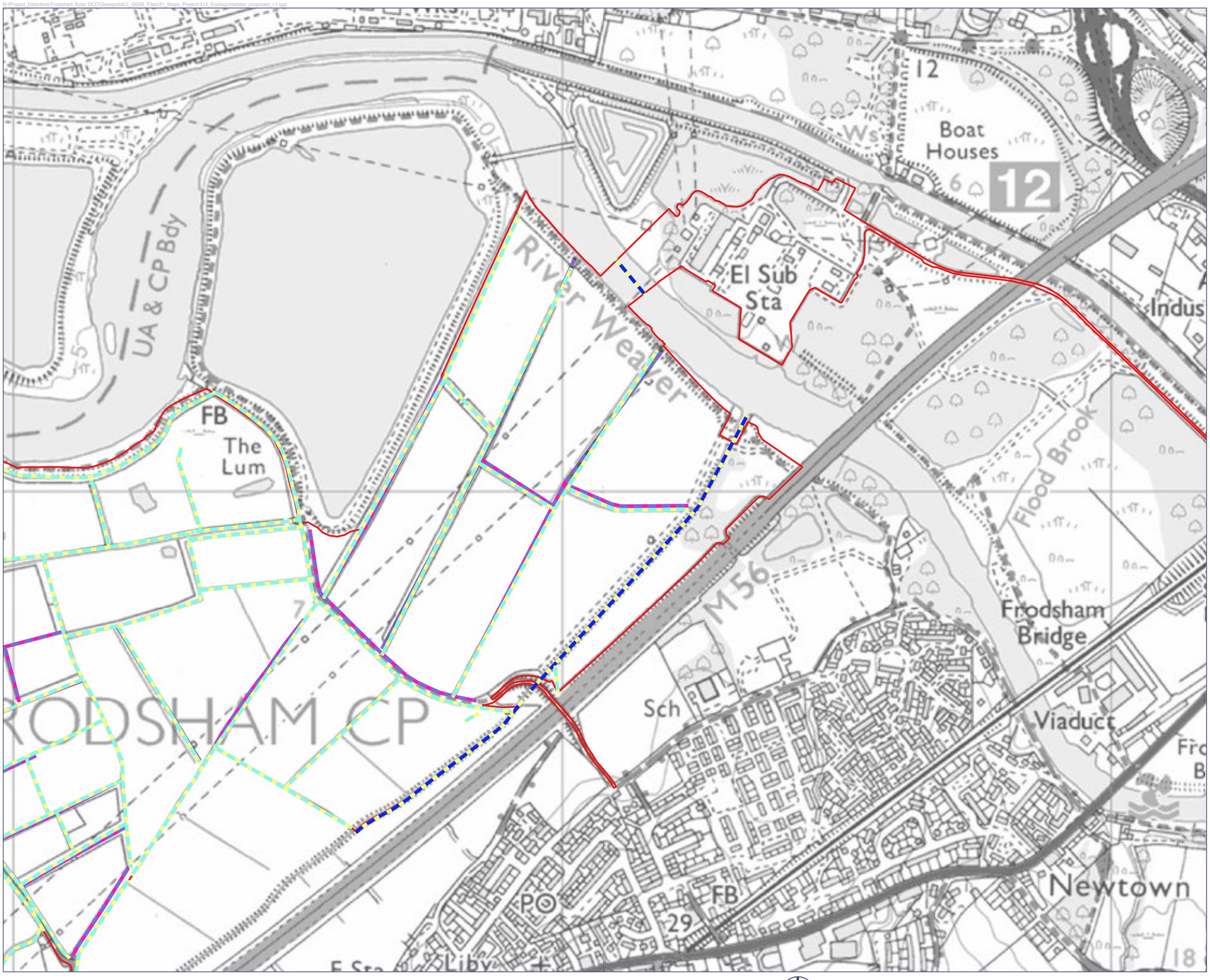
Scale

1:8083@A3

Date

23/02/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\Habitat_proposed_v1.qgz



Order Limits

Retained Linear Features

- r1-Standing open water and canals
- r1.50-Standing open water and canals; Ditch

N

0 130 260 390 520 650 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 6

Figure Title

Proposed Watercourse Plan- Map 4

Scale

1:6463@A3

Date

23/02/2026

N:\Project_Data\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\31_Maps_Project\313_Ecology\MoRPh_plan_v1.qgz

Order Limits

Main Development Area

MoRPh Module Location

- Ditch 1, D1
- Ditch 1, D2
- Ditch 1, D3
- Hoolpool Gutter
- Manchester Shipping Canal A
- Manchester Shipping Canal B
- River Weaver
- River Weaver A
- River Weaver B

N

0 290 590 880 1,200 1,500 m

Cubico SUSTAINABLE INVESTMENTS

0344 8700 007
axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 7

Figure Title

Modular River Physical Survey Location Plan

Scale

1:14720@A3

Date

20/02/2026

Annex 1

Statutory Biodiversity Net Gain Metric Tool

Provided as a separate document

Annex 2

Baseline Condition Assessments

Label	Condition Sheet	Criteria	Score
D50	Ditches	C D E H	Poor
D51	Ditches	A D E F G H	Moderate
D53	Ditches	A C D E F G H	Moderate
D54	Ditches	A C E G H	Poor
D55	Ditches	D E H	Poor
D55	Ditches	A D E F H	Poor
D56	Ditches	A C D E G H	Moderate
D57	Ditches	A D G H	Poor
D58	Ditches	A D G H	Poor
D59	Ditches	A D E G H	Poor
D60	Ditches	A E H	Poor
D61	Ditches	A D E F G H	Moderate
D62	Ditches	E G H	Poor
D63	Ditches	C E G H	Poor
D64	Ditches	C E H	Poor
D66	Ditches	A D E H	Poor
D67	Ditches	A E H	Poor
D68	Ditches	A C E H	Poor
D69	Ditches	A C E H	Poor
D70	Ditches	A C D E F G H	Moderate
D71	Ditches	C D E H	Poor
D72	Ditches	A C E H	Poor
D73	Ditches	A C E H	Poor
D74	Ditches	A C D E H	Poor
D75	Ditches	A C E F H	Poor
D76	Ditches	A C E H	Poor
D77	Ditches	A C E H	Poor
D78	Ditches	A E H	Poor
D79	Ditches	A C D E H	Poor
D80	Ditches	A C D E G H	Moderate
D81	Ditches	A C D E G H	Moderate
D82	Ditches	A C D E G H	Moderate
D84	Ditches	A C E H	Poor
D85	Ditches	A C E H	Poor
Ditch 1	Ditches	E, G, H	Poor
Ditch 10	Ditches	C-F, H	Poor
Ditch 11	Ditches	C-F, H	Poor
Ditch 12	Ditches	A, C, D, E, F, H	Moderate
Ditch 13	Ditches	A, C, D, E, H	Poor
Ditch 14	Ditches	A, C, E, F, H	Poor
Ditch 15	Ditches	C, E, H	Poor
Ditch 16	Ditches	A, C, D, E, H	Poor
Ditch 17	Ditches	A, C, H	Poor
Ditch 18	Ditches	A, C, D, E, H	Poor

Ditch 19	Ditches	A, C, D, G, H	Poor
Ditch 2	Ditches	C, E, F, G, H	Poor
Ditch 20	Ditches	A, C, D, H	Poor
Ditch 21	Ditches	C, E, H	Poor
Ditch 22	Ditches	C, H	Poor
Ditch 23	Ditches	A, C, E, G, H	Poor
Ditch 24	Ditches	A, C, D, E, G, H	Moderate
Ditch 25	Ditches	A, C, D, E, G, H	Moderate
Ditch 3	Ditches	A, C, E, F, G, H	Moderate
Ditch 4	Ditches	C-F, H	Poor
Ditch 40	Ditches	A, C, E, H	Poor
Ditch 5	Ditches	C-F, H	Poor
Ditch 6	Ditches	C-F, H	Poor
Ditch 7	Ditches	C-F, H	Poor
Ditch 8	Ditches	C-F, H	Poor
Ditch 8	Ditches	C-F, H	Poor
Ditch 9	Ditches	A, C-E	Poor
G106	Grassland (Low)	B C D E F G	Poor
G107	Grassland (Low)	B C D E F G	Poor
G108	Grassland (Low)	B C D E F G	Poor
G54	Grassland (Low)	B C D E F G	Poor
G56	Grassland (Low)	C D E F G	Poor
Grassland 12	Grassland (Low)	B, C, D, E, F, G	Poor
Grassland 12	Grassland (Low)	B C D E F G	Poor
Grassland 13	Grassland (Low)	B, C, E, F, G	Poor
Grassland 14	Grassland (Low)	B, C, E, F, G	Poor
Grassland 15	Grassland (Low)	B-G	Poor
Grassland 15	Grassland (Low)	B-G	Poor
Grassland 16	Grassland (Low)	B-G	Poor
Grassland 30	Grassland (Low)	A, B, C, E, F, G	Good
Grassland 31	Grassland (Low)	F, G	Poor
G1	Grassland (Medium & High)	Fails E and F	Moderate
G100	Grassland (Medium & High)	B C D E	Poor
G101	Grassland (Medium & High)	C D	Poor
G102	Grassland (Medium & High)	B C E	Poor
G103	Grassland (Medium & High)	B C D E	Poor
G104	Grassland (Medium & High)	A C D E	Moderate
G105	Grassland (Medium & High)	A C D E	Moderate
G16	Grassland (Medium & High)	B-E	Poor
G22	Grassland (Medium & High)	B-E	Poor
G3	Grassland (Medium & High)	Passes B and C	Poor
G50	Grassland (Medium & High)	C D E	Poor
G51	Grassland (Medium & High)	C D E	Poor
G52	Grassland (Medium & High)	A B C D E	Moderate
G53	Grassland (Medium & High)	A C D E	Moderate
G55	Grassland (Medium & High)	B C D E	Poor
G57	Grassland (Medium & High)	B C D E	Poor
G58	Grassland (Medium & High)	A B C D E	Moderate
G59	Grassland (Medium & High)	B D E	Poor
G60	Grassland (Medium & High)	B C D E	Poor

G61	Grassland (Medium & High)	A B C D E	Moderate
G62	Grassland (Medium & High)	A B C D E	Moderate
G63	Grassland (Medium & High)	B C D E	Poor
G64	Grassland (Medium & High)	A B C D E	Poor
G65	Grassland (Medium & High)	B C D E	Poor
G66	Grassland (Medium & High)	A B C D E	Moderate
G67	Grassland (Medium & High)	A B C D E	Moderate
G68	Grassland (Medium & High)	A B C D E	Moderate
G69	Grassland (Medium & High)	B C D E	Poor
G70	Grassland (Medium & High)	B C D E	Poor
G71	Grassland (Medium & High)	B C D E	Poor
G72	Grassland (Medium & High)	B D E	Poor
G74	Grassland (Medium & High)	A B C D	Poor
G75	Grassland (Medium & High)	C D E	Poor
G76	Grassland (Medium & High)	C D E	Poor
G77	Grassland (Medium & High)	B C D	Poor
G78	Grassland (Medium & High)	C D	Poor
G79	Grassland (Medium & High)	C D	Poor
G80	Grassland (Medium & High)	B C D E	Poor
G81	Grassland (Medium & High)	B C D E	Poor
G82	Grassland (Medium & High)	B C D E	Poor
G83	Grassland (Medium & High)	C D E	Poor
G84	Grassland (Medium & High)	C D	Poor
G85	Grassland (Medium & High)	B C D E	Poor
G86	Grassland (Medium & High)	D	Poor
G88	Grassland (Medium & High)	A C D E	Moderate
G89	Grassland (Medium & High)	A C D E	Moderate
G90	Grassland (Medium & High)	B C D E	Poor
G91	Grassland (Medium & High)	C D	Poor
G92	Grassland (Medium & High)	B D	Poor
G93	Grassland (Medium & High)	B C D E	Poor
G94	Grassland (Medium & High)	C D E	Poor
G95	Grassland (Medium & High)	B C D E	Poor
G96	Grassland (Medium & High)	C D E	Poor
G97	Grassland (Medium & High)	B C D E	Poor
G98	Grassland (Medium & High)	B D	Poor
G99	Grassland (Medium & High)	B C D E	Poor
Grassland 1	Grassland (Medium & High)	B-E	Moderate
Grassland 10	Grassland (Medium & High)	C, D, E	Poor
Grassland 10	Grassland (Medium & High)	A B C D E	Moderate
Grassland 11	Grassland (Medium & High)	B-E	Poor
Grassland 11	Grassland (Medium & High)	A B C D E	Poor
Grassland 14	Grassland (Medium & High)	B C D E	Poor
Grassland 15	Grassland (Medium & High)	B C D E	Poor
Grassland 18	Grassland (Medium & High)	B, C, D	Poor
Grassland 19	Grassland (Medium & High)	B, D, E	Poor
Grassland 2	Grassland (Medium & High)	B, C, D, E	Moderate
Grassland 2	Grassland (Medium & High)	B-E	Moderate
Grassland 20	Grassland (Medium & High)	B, C, D, E	Poor
Grassland 20	Grassland (Medium & High)	A B C D E	Moderate

Grassland 21	Grassland (Medium & High)	B, C, D, E	Moderate
Grassland 22	Grassland (Medium & High)	A B C D E	Moderate
Grassland 3	Grassland (Medium & High)	B, C, D, E	Poor
Grassland 3	Grassland (Medium & High)	A B C D E	Moderate
Grassland 30	Grassland (Medium & High)	B C D E	Poor
Grassland 4	Grassland (Medium & High)	B-E	Poor
Grassland 4	Grassland (Medium & High)	A B C D E	Moderate
Grassland 5	Grassland (Medium & High)	B-E	Poor
Grassland 5	Grassland (Medium & High)	B-E	Poor
Grassland 5	Grassland (Medium & High)	A B C D E	Moderate
Grassland 6	Grassland (Medium & High)	B-E	Poor
Grassland 6	Grassland (Medium & High)	A B C D E	Moderate
Grassland 7	Grassland (Medium & High)	B-E	Poor
Grassland 7	Grassland (Medium & High)	A B C D E	Moderate
Grassland 8	Grassland (Medium & High)	B-E	Poor
Grassland 8	Grassland (Medium & High)	A B C D E	Poor
Grassland 9	Grassland (Medium & High)	B-E	Poor
Grassland 9	Grassland (Medium & High)	A B C D E	Moderate
RB58	Grassland (Medium & High)	Fails F	Moderate
H50	Hedgerow	A1 A2 B1 C1 D1 D2	Moderate
H51	Hedgerow	A1 A2 B2 C1 D1 D2	Good
H52	Hedgerow	A1 A2 B1 B2 C1 D1 D2	Good
H53	Hedgerow	A1 A2 B1 B2 C1 D1 D2 E2	Good
H54	Hedgerow	A1 A2 B2 C1 C2 D1 D2	Good
H55	Hedgerow	A1 A2 B2 C1 C2 D1 D2	Good
H56	Hedgerow	A1 A2 B2 C1 D1 D2	Good
H57	Hedgerow	A1 A2 C1 C2 D1 D2	Moderate
H58	Hedgerow	A1 A2 C1 D1 D2	Moderate
H59	Hedgerow	A1 A2 B2 C1 C2 D1 D2 E2	Good
H60	Hedgerow	A1 A2 C1 D1 D2	Moderate
Hedgerow 1	Hedgerow	A1, A2, B1, B2, C1, D1, D2	Moderate
Hedgerow 1	Hedgerow	A1 A2 B1 B2 C1 D1 D2	Good
Hedgerow 15	Hedgerow	A1, A2, C1, C2, D1, D2	Poor
Hedgerow 15	Hedgerow	A1 A2 C1 C2 D1 D2	Moderate
Hedgerow 2	Hedgerow	A1, A2, B2, C1, D1, D2	Moderate
Hedgerow 2	Hedgerow	A1 A2 B2 C1 D1 D2	Good
Hedgerow 3	Hedgerow	A1, A2, B2, C1, D1, D2	Moderate
Hedgerow 3	Hedgerow	A1 A2 B2 C1 D1 D2	Good
Hedgerow 4	Hedgerow	A1 A2 B1 B2 C1 D1 D2	Good
Hedgerow 5	Hedgerow	A1, A2, B1, B2, C1, D1, D2	Moderate
Hedgerow 5	Hedgerow	A1, A2, B2, C1, D1, D2	Moderate
Hedgerow 5	Hedgerow	A1 A2 B2 C1 D1 D2	Good
Hedgerow 6	Hedgerow	A1, A2, B2, C2, D1, D2	Moderate
Hedgerow 6	Hedgerow	A1 A2 B2 C2 D1 D2	Good
Hedgerow 7	Hedgerow	A1, A2, B2, C1, D1, D2	Moderate
Hedgerow 7	Hedgerow	A1 A2 B2 C1 D1 D2	Good
Hedgerow 8	Hedgerow	A1, A2, B2, C1, D1, D2	Moderate
Hedgerow 8	Hedgerow	A1 A2 B2 C1 D1 D2	Good
T50	Individual Trees	A B D E F	Good
T51	Individual Trees	A B C D E F	Good

Treeline 1	Individual Trees	A, C, E	Moderate
TL50	Line Of Trees	A C E	Moderate
TL51	Line Of Trees	A B C D E	Good
TL52	Line Of Trees	A B C D E	Good
TL53	Line Of Trees	A C D E	Moderate
TL54	Line Of Trees	A B D E	Moderate
TL55	Line Of Trees	A B E	Moderate
P23	Pond	A, B, C, E, F, G, I	Moderate
P24	Pond	A, B, C, E, I	Poor
P25	Pond	A, B, C, E, F, G, I	Moderate
P26	Pond	A, B, C, E, F, G, H, I	Moderate
Pond 1	Pond	A-G	Moderate
Pond 10	Pond	A, C-I	Moderate
Pond 11	Pond	A, C-I	Moderate
Pond 12	Pond	A, C-I	Moderate
Pond 13	Pond	A, C-I	Moderate
Pond 13	Pond	A, C-I	Moderate
Pond 14	Pond	A, B, C, D, F, G	Moderate
Pond 15	Pond	A, B, D-I	Moderate
Pond 16	Pond	A - I	Good
Pond 2	Pond	A, B, C, F, G, I	Moderate
Pond 21	Pond	A, B, D, E, F, G, I	Moderate
Pond 22	Pond	A-G	Moderate
Pond 3	Pond	A, C-I	Moderate
Pond 4	Pond	A, C-I	Moderate
Pond 5	Pond	A, C-I	Moderate
Pond 6	Pond	A, C-I	Moderate
Pond 7	Pond	A, C-I	Moderate
Pond 8	Pond	A, C-I	Moderate
Pond 9	Pond	A, C-I	Moderate
P29	Pond	A B C D E F G I	Moderate
P30	Pond	A B C D E F G I	Moderate
P31	Pond	B C D E F G I	Moderate
P32	Pond	A B C D E F G I	Moderate
P33	Pond	A B D E F G I	Moderate
P34	Pond	A B C D E F G I	Moderate
P35	Pond	A B C D E F G I	Moderate
P36	Pond	A B C D E F G I	Moderate
P37	Pond	A B C D E F G I	Moderate
P38	Pond	A B C D E F G I	Moderate
P39	Pond	A C E F G I	Moderate
P50	Pond	A B C D E F G I	Moderate
Pond 17	Pond	A B C D E F G H I	Good
Pond 18	Pond	A B C D E F G H I	Good
Pond 19	Pond	A B C D E F G H I	Good
Pond 20	Pond	A B C D E F G H I	Good
Pond 23	Pond	A B C D E F G H I	Good
Pond 24	Pond	A B C D E F G H I	Good
Scrub 1	Scrub	C, D	Poor
Scrub 10	Scrub	C, D, E	Moderate

Scrub 11	Scrub	C, D, E	Moderate
Scrub 12	Scrub	C,	Poor
Scrub 13	Scrub	C, D, E	Moderate
Scrub 14	Scrub	C, D, E	Moderate
Scrub 15	Scrub	B-E	Moderate
Scrub 16	Scrub	C, D, E	Moderate
Scrub 17	Scrub	A, B, C, E	Moderate
Scrub 2	Scrub	C, D, E	Moderate
Scrub 3	Scrub	A-D	Moderate
Scrub 30	Scrub	C,D,E	Moderate
Scrub 31	Scrub	C, D	Poor
Scrub 32	Scrub	A - E	Good
Scrub 33	Scrub	C, D	Poor
Scrub 34	Scrub	C, D, E	Moderate
Scrub 4	Scrub	C	Poor
Scrub 40	Scrub	C	Poor
Scrub 41	Scrub	B, C, E	Moderate
Scrub 5	Scrub	A, B, C, E	Moderate
Scrub 6	Scrub	B, C, D, E	Moderate
Scrub 7	Scrub	A, B, C, E	Moderate
Scrub 8	Scrub	B, C, E	Moderate
Scrub 9	Scrub	C, D, E	Moderate
Br1	Scrub	Passes B only	Poor
S1	Scrub	Fails D and E	Moderate
S2	Scrub	Fails D and E	Moderate
S3	Scrub	Fails D and E	Moderate
S4	Scrub	Fails C and E	Moderate
S50	Scrub	A C E	Moderate
S55	Scrub	A B C E	Moderate
S56	Scrub	A B C E	Moderate
S57	Scrub	A B C E	Moderate
S58	Scrub	C D E	Moderate
S59	Scrub	A B C D E	Good
S60	Scrub	A B C D E	Good
S61	Scrub	B C D E	Moderate
S62	Scrub	A B C D E	Good
S63	Scrub	C D E	Moderate
S64	Scrub	B C D E	Moderate
S65	Scrub	B C D	Moderate
W56	Scrub	B, D	Poor
G73	Urban	B C	Moderate
SV1	Urban	C	Poor
F1	Wetland	A C D E F	Good
R1	Wetland	Passes B D E and F. Fails A, C and I	Moderate
R3	Wetland	Fails I	Good
RB50	Wetland	A B D E	Moderate
RB51	Wetland	A D E	Poor
RB52	Wetland	A C D E	Moderate
RB53	Wetland	A D E F I	Moderate
RB54	Wetland	A D E F I	Moderate

RB55	Wetland	A E F I	Moderate
RB56	Wetland	A B C D E F I	Good
RB57	Wetland	A B C D E F	Moderate
RB59	Wetland	A B C D E F	Good
RB60	Wetland	A C E F	Moderate
Reedbed 1	Wetland	C, E, F	Poor
Reedbed 10	Wetland	B-F, I	Good
Reedbed 10	Wetland	A B C D E F I	Good
Reedbed 11	Wetland	B C D E F	Moderate
Reedbed 12	Wetland	A-F	Moderate
Reedbed 12	Wetland	A B C D E F	Moderate
Reedbed 2	Wetland	C-F	Poor
Reedbed 2	Wetland	C D E F	Moderate
Reedbed 3	Wetland	B-F	Poor
Reedbed 3	Wetland	A B C D E F	Moderate
Reedbed 30	Wetland	A-F	Good
Reedbed 30	Wetland	A B C D E F	Moderate
Reedbed 4	Wetland	A-F	Moderate
Reedbed 4	Wetland	A B C D E F	Moderate
Reedbed 40	Wetland	A, B, C, D, E, I	Good
Reedbed 40	Wetland	A B C D E I	Good
Reedbed 5	Wetland	C D E F	Moderate
Reedbed 6	Wetland	A, D, E, F,	Moderate
Reedbed 6	Wetland	A D E F	Moderate
Reedbed 7	Wetland	A, B, C, D, E, F	Moderate
Reedbed 7	Wetland	A B C D E F	Moderate
Reedbed 8	Wetland	C, E, F	Poor
Reedbed 8	Wetland	C E F	Poor
Reedbed 9	Wetland	B, C, E, F, I	Moderate
Reedbed 9	Wetland	B C D E	Moderate
Reedbed 5	Wetland	C-F	Poor
Reedbed 11	Wetland	B - F	Moderate

Label	Criteria 1	Criteria 2	Criteria 3	Criteria 4	Criteria 5	Criteria 6	Criteria 7	Criteria 8	Criteria 9	Criteria 10	Criteria 11	Criteria 12	Criteria 13	Final Score
Woodland 1	Moderate	Moderate	Good	Poor	Good	Poor	Poor	Good	Poor	Poor	Poor	Poor	Moderate	Poor
Woodland 2	Moderate	Good	Good	Poor	Good	Poor	Moderate	Good	Poor	Moderate	Poor	Poor	Moderate	Poor
Woodland 3	Moderate	Moderate	Good	Poor	Good	Poor	Moderate	Good	Poor	Moderate	Poor	Poor	Moderate	Poor
Woodland 30	Moderate	Good	Good	Moderate	Good	Poor	Moderate	Moderate	Poor	Poor	Poor	Moderate	Poor	Poor
Woodland 4	Moderate	Good	Good	Moderate	Good	Poor	Poor	Good	Poor	Moderate	Poor	Poor	Poor	Poor
Woodland 5	Moderate	Poor	Good	Poor	Good	Poor	Poor	Good	Poor	Poor	Poor	Poor	Poor	Poor
W1	Moderate	Good	Good	Moderate	Good	Moderate	Poor	Moderate	Poor	Poor	Poor	Poor	Moderate	Poor
W50	Poor	Good	Good	Moderate	Good	Moderate	Poor	Good	Poor	Moderate	Poor	Poor	Good	Moderate
W51	Moderate	Good	Good	Good	Good	Poor	Poor	Good	Poor	Moderate	Poor	Moderate	Poor	Moderate
W53	Moderate	Moderate	Good	Good	Good	Poor	Poor	Good	Poor	Poor	Poor	Poor	Poor	Poor
W54	Moderate	Moderate	Good	Poor	Good	Poor	Moderate	Good	Poor	Moderate	Moderate	Poor	Poor	Poor
W55	Moderate	Good	Good	Good	Good	Poor	Moderate	Good	Poor	Poor	Poor	Poor	Poor	Poor
W57	Moderate	Good	Good	Moderate	Good	Poor	Moderate	Good	Poor	Poor	Poor	Moderate	Poor	Poor

Annex 3

Metric Rule 4 Note

Clarification Note for Frodsham Solar in response to Written Representations by Cheshire West and Chester Council.

Interpretation on Application of Statutory Biodiversity Metric Rule 4: Natural England note January 2026

Introduction

Background and Report Purpose

This note has been prepared to provide an interpretation on the application of Rule 4 of the Statutory Biodiversity Metric in relation to the Proposed Frodsham Solar Development ('the Proposed Development').

The Statutory Biodiversity Metric User Guide includes four rules, which if not followed a biodiversity net gain cannot be claimed. The four rules are as follows:

- Rule 1 The trading rules of this biodiversity metric must be followed.
- Rule 2 Biodiversity unit outputs, for each type of unit, must not be summed, traded, or converted between types. The requirement to deliver at least a 10% net gain applies to each type of unit.
- Rule 3 To accurately apply the biodiversity metric formula, you must use the statutory biodiversity metric calculation tool or small sites biodiversity metric tool (SSM) for small sites.
- Rule 4: In exceptional ecological circumstances, deviation from this biodiversity metric methodology may be permitted by the relevant planning authority

In particular, this note is prepared in relation to written representations made by Cheshire West and Chester (CWaC) regarding trading rules in relation to reedbed habitat (REP1-048, WR_CWACC4.46).

This note draws on the Metric user Guide and also a recent blog post published by Natural England dated 7 January 2026, provided as Annex 1 to this document. The aim is to highlight parallels between the Proposed Development and the example presented in Natural England's blog post.

Application of Rule 4

Page 17 to 18 of the Metric User Guide gives further detail on when Rule 4 can be applied. For brevity this is not repeated in full but is summarised below.

Rule 4 can only be used in exceptional circumstances where:

1. The site has optimal conditions (such as soil condition, hydrology, nutrient status) for restoration of a wildlife-rich or historic natural habitat;
2. The project team has the expertise and resource to deliver the habitat with negligible risk of failure; and,
3. one or more of the following applies:

a. Highly complex landscape scale habitat changes such as creation of heathland, heathland grassland mosaic or other mosaic habitats;

b. River re-meandering; or,

c. Large-scale restoration of natural processes.

If the above requirements are met, Rule 4 can be implemented through deviations to the Metric trading rules

Justification for Rule 4

1. Optimal Conditions

The Site described within Natural England blog post provided as Annex 1 (the 'Case Study Site') is described as being located close to 'small but very valuable area of land… important for its plant life but also supports a wide variety of birds, insects and reptiles' and also as 'part of a chain of chain of closely connected wildlife sites'. It is not known if this area has any statutory or non-statutory designation applied however cannot be of a higher designation than the River Mersey Special Protection Area (SPA), a site of international value for its bird life, located adjacent to the Proposed Development Order Limits and targeted for mitigation and enhancement in the Non-breeding Bird Mitigation Area (NBBMA).

Conditions within the NBBMA are optimal for creation of habitats, and also due to proximity to the Mersey Estuary SPA and its current use by SPA waterbird species. As such **this requirement is considered met.**

2. Expertise

The NBBMA will be managed by a suitably experienced nature conservation organisation as a condition of the Development Consent Order. As stated in PD2-027 Appendix D the Royal Society for the Protection of Birds (RSPB) have expressed interest in fulfilling the role of the management organisation and discussions are on-going. The appointed nature conservation organisation will have the necessary experience in the creation and management of wetlands for the benefit of birdlife and wider biodiversity. As such **this requirement is considered met**

3. Landscape changes

While 'Landscape scale' is not defined under Rule 4, the Natural England case study provides important context as to how this has been applied. The mitigation site in the Natural England blog post is described as 'exceptionally large, at 275 hectares'. The Frodsham Solar Order Limits total approximately 337.5ha, with extensive landscaping provided across the Solar Array Development Area (246ha) and NBBMA (66.7ha). As such, the landscaped area for the Proposed Development considerably exceeds that of the Case Study Site and the Frodsham Solar Site must be considered to be of a landscape scale.

Changes proposed, particularly within the NBBMA, are highly complex comprising a mosaic of wet grassland, managed grassland and scrapes as part of a network of wetland features with the ability to control water levels. An indicative overview of the proposed NBBMA is provided as Figure 3 within the Non-breeding bird mitigation strategy within the Outline Landscape Ecological Management Plan (oLEMP) [REP1-028].

As such **this requirement is considered met**

Deviations to Trading Rules

The Natural England case study site resulted in the loss of Open Mosaic Habitat (OMH) which is classed of 'high distinctiveness' in the Statutory Biodiversity Metric and requires 'like-for-like' replacement; however the case study does not include the replacement of OMH, rather it is replaced with what is considered to be more ecologically valuable habitat based on local site characteristics (mainly the presence of reptiles) OMH is a habitat classified as of the same level of distinctiveness as the reedbed habitat, for which trading rules at the Proposed Development are not met. As such, the Case Study Site provides precedent for the disapplication of trading rules to habitats of this distinctiveness and, **deviations to trading rules are considered justified.** It is further added that the Proposed Development will provide an overall increase in area of +0.5ha of reedbed habitat following development.

Summary

The Frodsham Solar development could be considered to meet all criteria required to apply Rule 4 of the Metric, should this be applied. This would be fully justified by the benefits to the Mersey Estuary SPA and the scale of habitat enhancements. It is relevant that the overall area of reeded habitat will be increased by 0.5ha, despite a loss of units.

It should be clarified that the Applicant is not seeking the application of Rule 4, and maintains that this is not applicable given Statutory Biodiversity Net Gain is not applicable to developments of National Significance. This note however demonstrates that deviation from the trading rules is acceptable in certain circumstances, and that the development could be considered to meet the criteria for Rule 4 to be applied.

Prepared by: J. Stevens BSc (Hons), Principal Ecologist

Reviewed by: H. Fearn MSc MCIEEM, Managing Director

Annex 1: Natural England Blog Post (7th January 2026)

A Biodiversity Net Gain Solution for a High Value Brownfield Site

[redacted], 7 January 2026 - Biodiversity, Biodiversity Net Gain, Biodiversity Net Gain – Hints and Tips, Development, Natural England

By [redacted], Northumberland County Council

In this guest blog, [redacted], County Ecologist for Northumberland, explains the approach taken to approve a major new industrial development on a brownfield site at Cambois. The site contained a significant amount of *open mosaic habitat* (OMH), which is an important and complex type of wildlife habitat.

To make sure the project could go ahead while still protecting biodiversity, an alternative solution was found. This approach allowed the development to proceed while ensuring that nature was not only protected but enhanced at a landscape scale.

Potland Burn Habitat Bank (prior to any habitat creation work commencing). © Advance Northumberland

Introduction

In May 2025, Northumberland County Council gave initial approval for plans to build a campus of ten data centres at Cambois, in southeast Northumberland.

The site covers 102 hectares and was once used as the coal yard for Blyth Power Station, which closed in 2001. Since then, the land has remained unused. Over time, different plant species have grown across the area, creating a mix of habitats typical of land that has previously been developed and then left to nature.

Arcadis, the ecological consultants working with QTS (the developer), did a great deal to protect existing habitats and create new ones on site wherever possible. However, despite this, the project still faced a shortfall of 289 biodiversity units. This included 152 units of an ecologically important brownfield habitat known as *open mosaic habitat* (OMH) - by which we mean areas that are typically characterised by a mosaic of bare ground and other habitat types such as flower rich meadows, short, patchy grassland, scrub and wet areas. The individual compound habitats may not be notable in their own right, however, in combination they can create areas of high value for biodiversity.

This was a serious challenge. At the time, there simply weren't enough OMH units available to buy on the private market. Purchasing statutory biodiversity credits was not considered a financially attractive option in this case.

Site of the Cambois Data Centre. © Arcades Consulting (UK) Ltd

Creating a Habitat Bank to Support Jobs and Investment

Before QTS showed interest in the Cambois site, Northumberland County Council had already recognised the need for a clear biodiversity net gain (BNG) solution across the county's key employment sites. This was seen as vital for attracting major investors, who often compare different locations. By reducing the risks around meeting BNG requirements, the Council aimed to keep Northumberland competitive.

One site identified as central to this plan was Potland Burn near Ashington. Recently restored after surface mining, the 275-hectare site is mainly covered in temporary grassland and does not contain high-quality agricultural soils. This made it an ideal "blank canvas" for creating a habitat bank – a place where new habitats can be developed to offset biodiversity losses elsewhere.

The land was owned by Advance Northumberland, the Council's arm's length development company who quickly set up a new company, *Advance Green Futures Ltd*, to take the project forward.

Site of the Cambois Data Centre. © Arcades Consulting (UK) Ltd

Tackling the Open Mosaic Habitat Challenge

Although the creation of a habitat bank at Potland Burn helped provide a biodiversity net gain solution for employment sites across Northumberland, it didn't immediately solve the specific challenge at Cambois. The issue centred on OMH, a rare and valuable type of habitat.

One option considered was to create OMH on a large scale at Potland Burn. However, this idea was ruled out for several reasons:

- It would have meant damaging large areas of natural soil, which is an irreplaceable resource.
- It would have required importing huge volumes of waste material, raising serious planning and licensing concerns.
- Even if these hurdles were overcome, there was still a high risk that the habitat creation would fail.

In short, while Potland Burn was a good site for other types of habitat, it wasn't a practical or sustainable solution for OMH.

Next to the new habitat bank is a small but very valuable area of land containing a mix of grassland, scrub, and wetlands, with plants such as dyer's greenweed, pepper saxifrage, and agrimony. This mosaic of habitats is not only important for its plant life but also supports a wide variety of birds, insects and reptiles.

It seemed clear that copying this successful mix of habitats on the wider habitat bank land would be a good idea. Doing so would bring both botanical and wildlife benefits. This thinking led to exploring how Rule 4 of the Statutory Biodiversity Metric could apply in this situation, helping ensure that the new habitats deliver genuine ecological value.

Applying Rule 4 to Potland Burn

Rule 4 allows flexibility in exceptional ecological circumstances, provided certain conditions are met. One of these conditions is the creation of a highly complex habitat mosaic on a large, landscape scale.

While the guidance does not clearly define these terms, we were confident that Potland Burn could qualify. The site is exceptionally large at 275 hectares. For comparison, the average size of nature conservation sites in lowland Northumberland is 41.2 hectares, with many others being much smaller.

Potland Burn also sits within the Southeast Northumberland Habitat Network, identified in the Local Plan, and forms the southernmost part of a chain of closely connected wildlife sites stretching north through Druridge Bay. Taken together, this gave us confidence that the project met the requirements of Rule 4.

To be certain, Advance Northumberland asked the Natural Capital team at Freeths law firm to review the case. Their expert opinion confirmed our assessment.

Conclusion

Close collaboration between the client, Arcadis, Northumberland County Council, and Advance Northumberland has delivered a practical BNG solution for the Cambois project. By applying Rule 4 in this way, the £10 billion investment in the QTS data centre campus was able to move forward, with enabling works starting in October 2025.

The approach will also create a rich mix of grassland, scrub, and ponds across the Potland Burn Habitat Bank. This will establish valuable habitats on a large scale, supporting wildlife and strengthening Northumberland's natural environment for the future.

Tags: biodiversity, biodiversity net gain, environment, growth, Growth and Nature, Growth and Nature Blog Series, guest blog, Natural England, nature

Annex 4

Classification of Reedbed Note

avianecology
Walnut Tree Farm, Northwich Road, Lower Stretton, Cheshire, WA4 4PG
t. 0843 506 5116 | w. www.avianecology.co.uk | e. enquiries@avianecology.co.uk

Clarification Note for Frodsham Solar in response to Relevant Representations by Cheshire West and Chester Council.

Further Information on the Classification of Reedbeds

Introduction

Background and Report Purpose

This note has been prepared to provide further ecological information additional to that presented in Environmental Statement (ES) Vol 1 Chapter 7 Terrestrial Ecology [EN010153/DR/6.1] (**APP-040**) Biodiversity for the Proposed Frodsham Solar Development ('the Proposed Development'.

Specifically, this note presents further information relating to reedbed habitats within the Order Limits. The review of existing information has been undertaken following Relevant Representations received from Cheshire West and Chester (CWACC) council dated 19th August 2025.

Definitions

For the avoidance of doubt, the following areas are defined, as shown in ES Vol 3 figure 1-2 [EN010153/DR/6.3] **(APP-105)**:

- the 'Solar Array Development Area (SADA)' comprising the area that would include solar photovoltaic (PV) modules and support frames, internal access tracks, cabling, inverters, transformers, the solar array substation (known as the 'Frodsham Solar Substation') and the BESS;
- the 'Non-Breeding Bird Mitigation Area (NBBMA)' comprising land primarily within Cell 3, which currently forms part of the Frodsham Wind Farm mitigation. This area of land would be used as a mitigation area for the anticipated displacement of wetland birds associated with the Mersey Estuary;
- the 'SPEN/National Grid Substation and Access' comprising the existing SPEN/National Grid Substation and access road;
- the 'Skylark Mitigation Area' comprising land where it is anticipated that neutral grassland would be created during the operational lifetime of the Proposed Development for the benefit of skylarks;
- the 'Main Site Access with Private Wire Connection' comprising the access road with Protos private wire connection to the west of the SADA; and,
- the 'Main Site Access without Private Wire Connection' comprising the access road without private wire connection to the west of the SADA.

For the purpose of Chapter 7: Terrestrial Ecology [EN010153/DR/6.1] **(APP-040)** and this note, the SADA, the NBBMA and the SPEN/National Grid Substation and Access are collectively termed the 'Main Development Area', as shown in ES Vol3 figure 7-1 [EN010153/DR/6.3] **(APP-122)**.

Methods

This document has been informed by a walkover survey undertaken by Avian Ecology Principal Ecologist J. Stevens BSc (Hons) on 1st October 2025. The survey focussed on areas of identified reedbed that are proposed to be impacted by the Proposed Development and involved assessing the habitats against Joint Nature Conservation Commission (JNCC) 'priority habitat' descriptions as well as UKHab survey guidance.

Overview of Existing Information

Baseline habitat survey information in relation to the Proposed Development is presented in ES Vol 2 Technical Appendix 7.1 Habitats Baseline Report [EN010153/DR/6.2] **(APP-075)**. Baseline habitat survey of the Order Limits was undertaken following the UKHabitat Survey (UKHab) Methodology and identifies several areas of reedbed (UKHab primary code f2e) within the Order Limits.

For this note, four areas were looked at in detail as outlined below and shown on **Figure 1**:

NBBMA - SJ4863478295

Marsh Farm - SJ4992479194

Frodsham Windfarm East - SJ5070978474

Wildfowlers - SJ5174778553

Conservation Status

Reedbeds are listed as a Habtiat of Principal Importance (also known as Priority Habitats) as required by Section 41 of the Natural Environmental and Rrual Communities (NERC) Act 2006.

JNCC Definition

The JNCC description for reedbed Habitat of Principal Importance is provided in full as **Appendix 1a** however key information is provided below:

*Reedbeds are wetlands **dominated by stands of the common reed** Phragmites australis, wherein the **water table is at or above ground level for most of the year*** (emphasis added).

The JNCC definition does not include specific criteria to assess against, it does however make clear that soil moisture regime is important to the definition of the habitat. Additional detail is provided in the UKHab description, below.

UKHab Description

The UKHab description is provided in full as **Appendix 1b** however key information is provided below:

*Wetlands that are dominated by **>5m wide stands of common reed** and where the **water table is at or above ground level** for most of the year* (emphasis added).

As such, the full definition of a reedbed is not only reliant on the presence of common reed, but also on the water table and soil moisture regime. In UKHab terminology, the water table being at or above ground level for most of the year would correspond to ground being 'waterlogged' or 'inundated' as indicated by secondary codes 504 and 505, respectively, and defined below:

504 – waterlogged: *Water table at the surface with standing water for 50-70% of year with soil completely saturated. Only small patches remain wet in midsummer. Wet defined as water table within 40cm of the surface and soil contains free water most of year*

505 – Inundated: *Water table distinctly above the level of substrate for most of the year.*

The UKHabitat classification also includes other habitats of relevance to this assessment, including f2f Other Wetlands, and broad habitat g3 neutral grassland.

Habitat f2f is a broad habitat that includes any habitats not captured in f2a-e. There is however a specific exclusion to this habitat of 'parcels dominated by common reed… where no part is inundated for most of the year' and suggests that instead broad habitat g3 (neutral grassland) should be used with secondary code 16 (tall forbs).

Assessment of Reedbeds with the Order Limits

A description of each of the four reedbed areas assessed is provided in **Table 1** below. Photographs are presented as **Appendix 2**.

Areas of reed associated with ditches were not specifically assessed, however due to the functioning of these ditches in holding water it is assumed that the water table would be at surface level for most of the year.

The four survey areas, along with all areas classified as reedbed in ES Vol 1 Chapter 7 Terrestrial Ecology [EN010153/DR/6.1] (**APP-040**) are shown on **Figure 1**.

Table 1: Summary of survey findings

Area	Description	Photo No
NBBMA SJ4863478295	An area measuring c. 0.5ha dominated by common reed at the western edge of a series of pools. A single willow tree is present within the centre of the area. At the time of survey water levels appeared to be below the surface level however may be higher at other times of year. This area meets size criteria (>5m wide) and following a precautionary approach is assumed to meet inundation criteria. **Meets the UKHabs definition of reedbed** however not priority reedbed due to size. Could also be considered as reed dominated marginal vegetation of wider pond.	1, 2
Marsh Farm SJ4992479194	Area measuring approximately 1.75ha dominated by reeds within a large depression/ bowl. While water levels at the time of survey were not clearly at surface level given the landform it is likely that the land is inundated more frequently in winter months. This area meets size criteria (>5m wide) and following a precautionary approach is assumed to meet inundation criteria. **Meets both the UKHabs and JNCC definitions of reedbed.**	3,4

Area	Description	Photo No
Frodsham Windfarm East SJ5070978474	This comprises several smaller patches dominated by common reed with patches themselves separated by areas of grazing pasture grassland. Cumulatively, the area measures c. 2.5ha. Each of the patches likely exceed 5m however the ground was very dry and it is considered likely that the water table is not regularly at or near surface level. This habitat parcel is considered to **best meet the definition of g3.16** (neutral grassland with tall forbs). **Not considered to meet either definition of reedbed.**	5, 6
Wildfowlers SJ5174778553	Area measuring approximately 1.1ha dominated by reeds with willow and birch scrub. Access was limited at the time of survey due to dense vegetation however amongst the trees more open and wetter areas appeared evident. This area meets size criteria (>5m wide) and following a precautionary approach is assumed to meet inundation criteria. **Meets the UKH definition of reedbed, however, not a priority habitat** due to extensive willow shrub cover.	7

Summary

Following receipt of Relevant Representations by CWACC a review has been undertaken of particular reedbed habitats against both JNCC and UKHab definitions. Following the review, an area formerly classified as reeded located within Frodsham Windfarm East has now been reclassified as g3.16 instead due to not meeting soil moisture criteria. Further, several areas which may meet the UKHab definition of reedbed, are not considered priority habitat but rather smaller stands of reed.

Areas of reed associated with ditches were not specifically assessed, however due to the functioning of these ditches in holding water it is assumed that the water table would be at surface level for most of the year.

Prepared by: J. Stevens BSc (Hons), Principal Ecologist

Reviewed by: H. Fearn MSc MCIEEM, Managing Director

S:\Avian Data\Project Folders\Axis\Frodsham Solar DCO\Geospatial\3_QGIS_Files\32_Data_Prep\Reedbeds\Reedbeds.qgz

Marsh Farm

Windfarm East

Wildfowlers

NBBMA

Order Limits

Survey Area

Reedbed

Inset Scale 1:150,000

N

0 300 600 900 1,200 1,500 m

Cubico

0344 8700 007

axis.co.uk

axis

Project

FRODSHAM SOLAR

Figure Number

Figure 1

Figure Title

Reedbed Survey Plan

Scale

1:15000@A3

Date

October 2025

Appendix 1a: JNCC Reedbed Priority Habitat Description

UK Biodiversity Action Plan
Priority Habitat Descriptions

Reedbeds

From:
UK Biodiversity Action Plan; Priority Habitat Descriptions. BRIG (ed. Ant Maddock) 2008.

This document is available from:
http://jncc.defra.gov.uk/page-5706

For more information about the UK Biodiversity Action Plan (UK BAP) visit
http://www.jncc.defra.gov.uk/page-5155

Please note: this document was uploaded in November 2016, and replaces an earlier version, in order to correct a broken web-link. No other changes have been made. The earlier version can be viewed and downloaded from The National Archives:
http://webarchive.nationalarchives.gov.uk/20150302161254/http://jncc.defra.gov.uk/page-5706

Reedbeds

The definition of this habitat remains unchanged from the pre-existing Habitat Action Plan (https://webarchive.nationalarchives.gov.uk/20110303150026/http://www.ukbap.org.uk/UKPlans.aspx?ID=19), a summary of which appears below.

Reedbeds are wetlands dominated by stands of the common reed *Phragmites australis*, wherein the water table is at or above ground level for most of the year. They tend to incorporate areas of open water and ditches, and small areas of wet grassland and carr woodland may be associated with them. There are about 5,000ha of reedbeds in the UK, but of the 900 or so sites contributing to this total, only about 50 are greater than 20ha, and these make a large contribution to the total area. Reedbeds are amongst the most important habitats for birds in the UK. They support a distinctive breeding bird assemblage including six nationally rare Red Data Birds: the bittern *Botaurus stellaris*, marsh harrier *Circus aeruginosus*, crane *Grus grus*, Cetti's warbler *Cettia cetti*, Savi's warbler *Locustella luscinioides*, and bearded tit *Panurus biarmicus*, provide roosting and feeding sites for migratory species (including the globally threatened aquatic warbler *Acrocephalus paludicola*), and are used as roost sites for several raptor species in winter. Five GB Red Data Book invertebrates are also closely associated with reedbeds, including red leopard moth *Phragmataecia castanaea* and a rove beetle *Lathrobium rufipenne*.

Appendix 1b: UKHab Reedbed Habitat Description

Code and Name

g3 Neutral grassland

Category Type

Primary Level 3

Spatial Feature Type

Area

Definition

Vegetation dominated by grasses and herbs on a range of neutral soils, usually with a pH of 4.5 – 6.5.

Landscape and ecological context

This habitat includes enclosed mesic hay meadows and pastures, together with a range of grasslands that are periodically inundated with water or permanently moist.

Synonyms

Mesotrophic grasslands.

Species

These communities have few diagnostic indicator species but lack strong calcicoles or calcifuges that are characteristic of base-rich and acid soils, respectively. They differ from modified grassland (see g4) by having a less lush sward, a greater range and higher cover of herbs, and usually <25% cover of Perennial Rye-grass *Lolium perenne*.

Back to Grassland Ecosystem

Code and Name

f2e Reedbeds

Category Type

Primary Level 4

Spatial Feature Type

Area

Status

Priority Habitat

Definition

Wetlands that are dominated by >5 m wide stands of the Common Reed *Phragmites australis* and where the water table is at or above ground level for most of the year.

Landscape and ecological context

Reedbeds tend to incorporate areas of open water and ditches. Small areas of wet grassland and carr woodland may also be associated with them.

Inclusions

Parcels that meet the size threshold in the definition and that include both a reed-filled ditch and reed-dominated vegetation extending onto dry land.

Parcels where Common Club-rush *Schoenoplectus lacustris* and Reed Canary-grass *Phalaris arundinacea are prominent.*

Reedbeds with a saline influence (see 702) that include saline-tolerant species such as *Atriplex spp.*.

Exclusions

Parcels of Common Reed *Phragmites australis* that are <5 m wide (see f2d, f2f).

Common Reedmace *Typha latifolia* swamp (see f2d, f2f).

Back to Wetland Ecosystem

Code and Name

f2f Other wetlands

Category Type

Primary Level 4

Spatial Feature Type

Area Line

Definition

Wetlands that are not included in f2a, f2b, f2c, f2d or f2e, including swamps other than reedbeds (see f2e).

Exclusions

Parcels dominated by Common Reed *Phragmites australis* where no part is inundated for most of the year (see g3~ 16).

Species

Reed Canary-grass *Phalaris arundinacea* is likely to be constant, as is Great Willowherb *Epilobium hirsutum*, Nettle *Urtica dioica*, Common Couch *Elymus repens* and Yorkshire Fog *Holcus lanatus*.

Back to Wetland Ecosystem

Code and Name

504 Waterlogged

Category Type

Additional Secondary Codes - All Habitats

Spatial Feature Type

Area Line

Allowable Primary Codes

w~ f~ c~ u~ s~

Definition

Water table at the surface with standing water for 50-70% of the year or with the soil completely saturated. Only small patches remain 'wet' in mid-summer.

Back to Additional Secondary Code List

Code and Name

505 Inundation vegetation

Category Type

Additional Secondary Codes - All Habitats

Spatial Feature Type

Area

Allowable Primary Codes

g~ f~ s~ r~

Definition

Frequently inundated vegetation, the water table distinctly above the level of the substrate for most of the year.

Back to Additional Secondary Code List

Appendix 2: Photographs

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Photo 1:</td><td>Photo 2:</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Photo 3:</td><td>Photo 4:</td></tr>
</table>

	
Photo 5	**Photo 6**
	
Photo 7	