mapparch

MAP Archaeological Practice

Lincolnshire Lakes
land east of M181 and north of Burringham Road
Scunthorpe

Written Scheme of Investigation
Archaeological Trial Trenching

MAP 05.04.22

OASIS ID: maparcha1-506854

NLMS Archaeology Site Code: BURAH

Read by	Revision	Company/Position	Initial and Date

Lincolnshire Lakes
Land east of M181 and north of Burringham Road
Scunthorpe

WRITTEN SCHEME OF INVESTIGATION:
Archaeological Trial Trenching

CONTENTS PAGE

Lincolnshire Lakes
Land east of M181 and north of Burringham Road
Scunthorpe

Written Scheme of Investigation
Archaeological Trial Trenching

1 Summary

1.1 This document, which has been produced in collaboration with the Head of Geoarchaeology at York Archaeology, sets out the details for the archaeological work required on land at Lincolnshire Lakes, Near Scunthorpe (SE 86261 08611) in order to inform the Historic Environment Officer at North Lincolnshire County Council (NLHEO), of the archaeological potential of the site, prior to the commencement of a residential development consisting 599no. dwellings and lake, along with associated infrastructure, including landscaping, public open space and play area, pedestrian and cycle links, pumping station and sub-station. The results of the evaluation are required to inform the preparation of the planning application and the determination of permission by the planning authority in accordance with the National Planning Policy Framework.

1.2 In accordance with the recommendations of the National Planning Policy Framework (2021) on 'Archaeology and Planning' a staged scheme of archaeological work is proposed. The results of the Trial Trenching will be summarised in a report and an appropriate mitigation strategy will be formulated if necessary.

1.3 Local planning policy relevant to the archaeological requirements of the site are discussed conditions attached to the Outline planning permission (see 2.4) however the following documents are also relevant to the application.

- Core Strategy DPD (2011)
- Housing and Land Allocations DPD (2016)
- Saved Policies of the Local Plan (2003)
- Lincolnshire Lakes Area Action Plan (2016)

2 Site Description and Planning Background

2.1 The site, which measures approximately 24.95ha is located some 2.5km south-west of Scunthorpe and is bounded to the west by the M181 motorway, to the south by Burringham Road and by Carisbrook Manor to the east. (Centred SE 86261 08611).

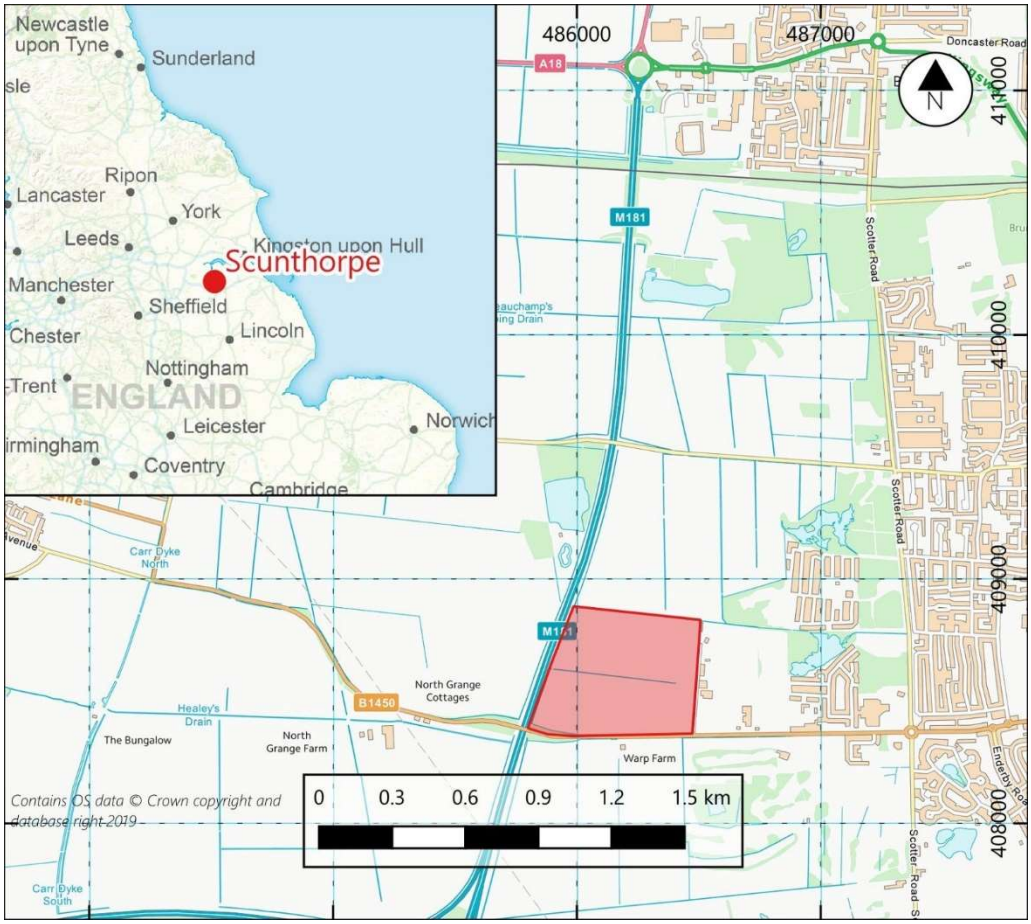

Figure 1. Site Location.

2.2 The site, which lies at approximately 2m AOD is relatively flat and lies on bedrock geology of the Mercia Mudstone Formation which is overlaid by quaternary deposits (BGS. 2022). Deep deposits of windblown sands are present within the site boundary. The site currently consists of two agricultural fields.

2.3 An EIA screening request was made to North Lincolnshire Council, relating to the erection of 599no. dwellings and lake, along with associated infrastructure, including landscaping, public open space and play area, pedestrian and cycle links, pumping station and sub-station (PA/SCR/2022/1).A subsequent Screening Opinion (May 2022) states that the '*the development would not comprise EIA development*' A consultation response from Historic Environment Officer at North Lincolnshire County Council highlights the need for pre-application field evaluation. A staged programme of pre-application field evaluation is required, in order to inform the preparation of the planning application and the determination of permission by the planning authority in accordance with the National Planning Policy Framework.

2.4 Outline planning permission has previously been granted, by North Lincolnshire Council, for the erection of up to 2500 dwellings and a village centre including a school, healthcare facility, wildlife habitats and waterbodies (planning reference PA/2015/0396). The current site lies within this wider Outline area. Conditions 28-33 attached to the approval state that;

28. Prior to the submission of the first Reserved Matters application the submitted Archaeological Framework Strategy shall be updated to include the

results of archaeological evaluation which shall include but not be limited to the following surveys as appropriate:

- *Geoarchaeological and palaeo-environmental assessment*
- *Geophysical survey*
- *Trial trench excavation*

Each stage of archaeological evaluation shall be undertaken in accordance with a written scheme of investigation that has been submitted to and agreed in writing by the Planning Authority at least 15 working days in advance of commencement of proposed fieldwork. Written reports for each stage shall be submitted to the Planning Authority.

Reason: As the application has been submitted in outline form, it is essential to ensure that adequate assessment of the significance of any heritage assets is completed during the design stage to inform a well-planned development that takes full account of the significance of heritage assets, including the potential for nationally important sites, and to inform further decision making in accordance with paragraphs 184 - 202 of the National Planning Policy Framework, policy CS6 of the North Lincolnshire Core Strategy, policies HE8 & HE9 of the North Lincolnshire Local Plan and the Lincolnshire Lakes Area Action Plan sustainability assessment.

29. Prior to or concurrent with the submission of the first Reserved Matters application, and prior to subsequent submission for future Phases of the development, as described within the approved Phasing Plan submitted pursuant to condition 7 or any future update that shall be agreed in writing, the updated Archaeological Framework Strategy shall be submitted and

approved in writing by the Local Planning Authority. The Strategy shall include the following:

- *Details of proposed construction works including but not limited to site preparation, installation of infrastructure, foundation designs,*
- *An Archaeological Impact Assessment Report*
- *Mitigation proposals for preservation in situ, or for the investigation, recording and recovery of archaeological and palaeo-environmental remains, post-excavation assessment and analysis, and the publishing and archiving of result, including plans that define the areas for archaeological mitigation.*

Reason As the application has been submitted in outline form, it is essential to ensure that satisfactory assessment of all impacts of the development on the significance of any heritage assets, including those of potential national importance, is undertaken in order that appropriate mitigation is agreed prior to any works commencing on site and that the details of the development are satisfactory to the Local Planning Authority in view of the nature and scale of the development proposed, in accordance with paragraphs 184-202of the National Planning Policy Framework, policy CS6 of the North Lincolnshire Core Strategy, policies HE8 & HE9 of the North Lincolnshire Local Plan and the Lincolnshire Lakes Area Action Plan sustainability assessment.

30. No development shall commence on each Phase, as described within the approved Phasing Plan submitted pursuant to condition 7 or any future update that shall be agreed in writing, until the applicant, or their agents or successors in title, has secured the implementation of the programme of archaeological work set out in the approved updated Archaeological Framework Strategy, and until detailed written schemes of investigation for site and post-excavation assessment works have been submitted to, and

approved in writing by, the Local Planning Authority at least 15 working days in advance of commencement of proposed fieldwork. The written scheme of investigations shall include the following:

(i) measures to ensure the preservation in situ, or the preservation by record, of archaeological features of identified importance

(ii) methodologies for the recording and recovery of archaeological remains including artefacts and ecofacts

(iii) post-fieldwork methodologies for assessment and analyses including production of an updated project design

(iv) report content and arrangements for dissemination, and publication proposals

(v) archive preparation and deposition with recognised repositories

(vi) a timetable of works in relation to the proposed development, including sufficient notification and allowance of time to ensure that the site work is undertaken and completed in accordance with the strategy

(vii) monitoring arrangements, including the notification in writing to the North Lincolnshire historic Environment Record Office of the commencement of archaeological works and the opportunity to monitor such works

(viii) a list of all staff involved in the implementation of the strategy, including subcontractors and specialists, their responsibilities and qualifications

Reason To ensure the satisfactory standard of archaeological work in accordance with paragraphs 184–202 of the National Planning Policy Framework, policy CS6 of the North Lincolnshire Core Strategy, policies HE8 & HE9 of the North Lincolnshire Local Plan and the Lincolnshire Lakes Area Action Plan sustainability assessment.

31. The archaeological evaluation and mitigation strategies shall be carried out in accordance with the approved details and timings, subject to any variations submitted in writing to and agreed in writing by the Local Planning Authority. The approved updated Archaeological Framework Strategy shall be reviewed and updated as necessary upon the results of each completed stage of archaeological evaluation and mitigation fieldwork.

Reason To ensure the satisfactory standard of archaeological work in accordance with paragraphs 184–202 of the National Planning Policy Framework, policy CS6 of the North Lincolnshire Core Strategy, policies HE8 & HE9 of the North Lincolnshire Local Plan and the Lincolnshire Lakes Area Action Plan sustainability assessment.

32. The final Phase of the development hereby approved by this permission shall not be occupied or brought into use until the site investigation and post investigation assessment has been completed in accordance with the programme set out in the updated Archaeological Framework Strategy and until the applicant, or their agents or successors in title, has secured the implementation of an updated project design providing for the analysis, publication and dissemination of results and archive deposition that has been submitted to, and approved in writing by, the Planning Authority.

Reason To ensure that the results of the archaeological investigations are publicly accessible in a timely manner to advance the understanding of the significance of heritage assets within the application site in accordance with paragraphs 184–202 of the National Planning Policy Framework, policy CS6 of the North Lincolnshire Core Strategy, policies HE8 & HE9 of the North Lincolnshire Local Plan and the Lincolnshire Lakes Area Action Plan sustainability assessment.

33. A copy of any analysis, reporting, publication or archiving required as part of the mitigation strategy shall be deposited at the North Lincolnshire Historic Environment Record within one year of the date of completion of the development hereby approved by this permission or such other period as may be agreed in writing by the Local Planning Authority.

Reason To ensure that the results of the archaeological investigations are publicly accessible in a timely manner to advance the understanding of the significance of heritage assets within the application site in accordance with paragraphs 184–202 of the National Planning Policy Framework, policy CS6 of the North Lincolnshire Core Strategy, policies HE8 & HE9 of the North Lincolnshire Local Plan and the Lincolnshire Lakes Area Action Plan sustainability assessment.

2.5 Permission was granted in 2016 for the excavation of a lake within the site boundary, as part of the wider Lincolnshire Lakes proposal (planning reference PA/2016/1736). Condition 20 attached to this application stated that

No development hall take place until the applicant, or their agents or successors in title, has secured the implementation of an archaeological mitigation strategy, as defined in written scheme of investigation, which has been submitted to and approved by the local planning authority. The written scheme of investigation shall include details of the following

i. A programme of paleoenvironmental analysis in accordance with the recommendations of the Post-Excavation Assessment Report for Lane L1, Lincolnshire Lakes, Scunthorpe, North Lincolnshire, prepared by AOC Archaeology Group, 2017;

ii. *Measures to identify and assess the significance of archaeological remains during the excavation of the lake*

iii. *Measures to ensure the preservation in situ, or by record, of archaeological features of identified importance*

iv. *Methodologies for the recording and recovery of archaeological remains including artefacts and ecofacts*

v. *Post-fieldwork methodologies for for assessment and analyses*

vi. *Report content and arrangements for dissemination, and publication records*

vii. *Archive preparation and deposition with recognised repositories including the North Lincolnshire Museum Service and the ADS (Archaeological Data Service);*

viii. *A timetable of works in relation to the proposed development, including sufficient notification and allowance of time to ensure that the site work is undertaken and completed in accordance with the strategy*

ix. *Monitoring arrangements, including the notification in writing to the North Lincolnshire Historic Environment Record Office of the commencement of archaeological works and the opportunity to monitor such works;*

x. *A list of all staff involved in the implementation of the strategy, including sub-contractors and specialists, their responsibilities and qualifications.*

Reason: To comply with NPPF 141, policy CS6 of the Core Strategy and policy HE9 of the North Lincolnshire Local plan, because deposits of proven paleoenvironmental significance furthering local, regional and national

agendas will be destroyed during the excavation of the lake and undiscovered archaeologically significant material may also be destroyed.

2.6 In agreement with the Historic Environment Officer at North Lincolnshire County Council and following discussion with a geoarchaeologist, a variation in the methodology of evaluation, as stipulated in condition 29 of the Outline planning permission is proposed (see section 6). Owing to the presence of warped sands across the site and the potential for Geophysical Survey to identify modern anomalies, this stage of evaluation will not be carried out. Instead, forty-eight trenches will be excavated, allowing for a larger sample, and offering an even spread across the site.

Geology

2.7 The underlying geology as mapped by the British Geological Survey (BGS) comprises the Mercia Mudstone Group (located at approximately 15.95m Below Ground Level (BGL) at the site location). The superficial depositional sequences at the site are likely to be complex which has been demonstrated during detailed palaeoenvironmental survey conducted to the south of Flixborough, c. 5.50km north of the site across the width of the Trent Valley floodplain (Lille, 1998).

The Mercia Mudstone Formation is recorded as being overlain by 5.95m of sand and gravel, itself overlain by 4.00m of glaciofluvial deposits and an additional 3.50m of blown sand (Sutton Sand Formation).

2.8 The Sutton Sand Formation is concentrated in an area between York and Lincoln and is characterised as aeolian in origin. These sands were originally deposited in the Devensian although no precise chronology exists with regards to the retreat of the Vale of York ice front (Bateman et al. 2015).

However, organic sediments underlying the Sutton Sand Formation at Sutton on the Forest, some 60.00km northwest of the site, have been dated to 12,879 +/- 168 cal yr BP indicating that the ice sheet front must have retreated to the north of this location by the late Devensian (Bateman et al. 2015). Locally, west of Scunthorpe, borehole data have shown that the sands range from 1.50-7.30m in thickness and are likely to have been extensively reworked in the Holocene (McIlwaine and McDonnell, 2006). Detailed investigations as part of the North Lincolnshire Coversands Research Project (McIlwaine and McDonnell, 2006) at Willow Holt Quarry, Flixborough, indicate that the 'cover sands' have been accumulating and reprofiling since c.11,000 BP. These have the potential to seal former landsurfaces and contain archaeological remains such as lithic scatters.

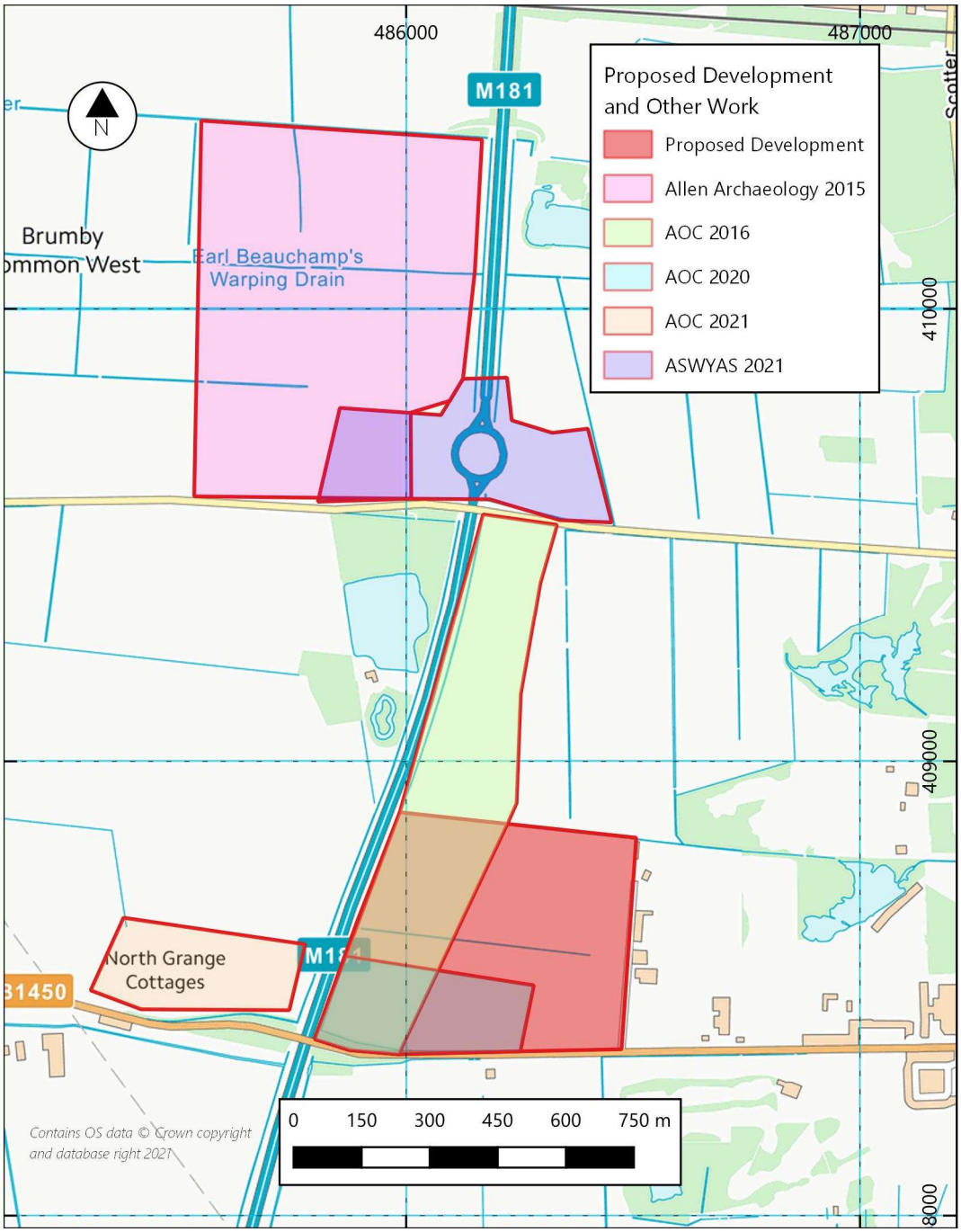

Figure 2: Archaeological work in the vicinity of the site.

2.9 The BGS mapped geology indicates Sutton Sand Formation outcrops at the surface to the east, but within the site Warp deposits seal the sands. Recently the depositional sequence has been investigated by a number of contractors with evaluations carried out by Allen Archaeology (2016c), ASWYAS (2020) and AOC (2017a, b) in the vicinity of the site (Figure 2). In all cases the surface

of the sands undulate and within these undulations are accumulation of peat, which have been observed both to the north (Allen 2015c) and within the site (AOC 2017a, b) of the site. Peat accumulations recorded within the site by AOC have been dated from c.6700-3000 BP (c. 5600-1500 cal BC). In the more recent ASWYAS investigations, the peat was confined to a large depression at the southern end of the site suggesting accumulation from the late Mesolithic to the Early Bronze Age, within a seasonally wet acidic heathland environment (YA 2020 for ASWYAS). A simple chronological model was proposed which requires further refinement (Table 1):

Core / Trench	Sample	C14 Elevation (m OD)	C14 Sample Depth (m BGL)	Radiocarbon Age (BP)	Calibrated Date (95.4%)
Trench 1	Peat (Humic Acid)	1.41	0.67	4676 ± 33	3624-3367 cal BC
ASWYAS Trench 12 <1211> / 1204	*Maloideae* roundwood	0.97	1.06	3710±30	2201 to 2024 and; 1993 to 1983 cal BC
ASWYAS Trench 12 <1211> / 1204	Peat (Humin Acid)	0.77	1.26-1.30	4040±30	2632 to 2469 and: 2663 to 2651 cal BC
Core 1A2	Macroplant	0.76	1.64	268 ± 27	1521-1798 cal AD
Core 1A2	Peat (Humic Acid)	0.50	1.90	5785 ± 25	4707-4555 cal BC
Core 1A3	Peat (Humic Acid)	0.30	2.10	6723 ± 28	5707-5568 cal BC
ASWYAS Trench 12<1211> / 1204	Peat (Humin Acid)	0.27	1.76-1.80	8170±30	7194 to 7065 and; 7317 to 7266 and; 7261 to 7226 cal BC
ASWYAS Trench 12<1211> / 1204	Peat (Humic Acid)	0.27	1.76-1.80	6700±30	5670 to 5605 and; 5600 to 5556 and; 5708 to 5609 cal BC
Core 1A4	Macroplant	-1.03	3.43	6951 ± 31	5902-5741 cal BC

Table 1: Radiocarbon age estimates from AOC 2017 Core 1 and Trench 1, and ASWYAS Trench 12 shown in order of descending elevation (m OD; GL = 2.08m OD).

2.10 The peat deposits are sealed by Warp which comprises finely laminated clays and silts deposited by deliberate inundation, and are mapped across the site. Warping was undertaken within the Lower Trent Valley for two principal reasons: to make unproductive peaty and acidic soils workable and to reduce the impact of seasonal inundations and waterlogging by artificially raising the ground surface level (Lillie, 1998). This process was largely achieved by

the deliberate 'flood-warping' of areas, with material (silts and clays) carried in suspension being allowed to settle and accumulate throughout areas where warping was desirable.

2.11 The extent of warping is summarised as, 'most of the (Trent) floodplain south of Neap House (*3.70km north of the site*) is occupied by flood-warp, which was allowed to run from the levee slopes eastwards to the rising blown sand outcrops' (cf Gaunt, 1976: 419 in Lille 1998b). Specifically, the land south of Crosby (the Great Common), some 2.00km north-north west of the site, underwent warping from 1808 with 243ha of ings, common and moor warped until c.1832 (Lille, 1998b: 110). A substantial warping drain is located c.450m north of the site (Earl Beauchamp's Warping Drain). These deposits can seal former land surfaces in addition to smoothing out any subsurface topographic variation.

3. Archaeological and Historical Background

3.1 The site is located in an area of known archaeological activity with prehistoric features and landforms likely to be present in the vicinity; appearing to be weighted towards the use of wetland margins. Paleoenvironmental evidence for the area is concerned primarily with the occurrence of peat formation and episodic depositions of sands, as a product of pre/historical variances of sea/river levels in the wider landscape.

3.2 A potential Bronze Age barrow has been identified some 750m north of the site (MLS25906). The feature, which has a diameter of approximately 25m, was identified in the results of a Geophysical Survey carried out in 2015.

3.3 A gully (MLS 26107) was identified in the southern region of the site. The feature, which measured 0.16m wide and 0.2m deep (Morris & Potten. 2017) contained no material to suggest a date or purpose. Evidence of warping within the site boundary has also been identified (MLS26106). Two warping drains were identified close to the southern end of the proposed lake. The features were interpreted as shallow warp drains which had been excavated in order to channel fertile sediments from the River Trent, across the site (Ibid).

Geoarchaeological and palaeoenvironmental investigations

3.4 The area surrounding the site has undergone many phases of archaeological and palaeoenvironmental assessment. Three boreholes and four test pits were carried out as part of geoenvironmental site investigations in 2015 (FWS. 2015). The work identified three distinct phases of deposition: an *'upper sand unit'* containing interleaved silts and peat lenses (Warp); an *'intermediate clay'* and a *'lower sand unit'* devoid of any organic material.

3.5 in 2016 AOC Archaeology excavated a total of 13 trenches in respect of the application for the excavation of a lake, the southern half of which will be located down the western side of the site. Six of the 14 trial trenches fall within the site. The trenches were machine excavated to a depth of 1m with sondages excavated each end excavated to a total depth of 2m. Auguring beyond this 2m depth suggested that peat horizons were present to a depth of approximately 3m below existing ground level. A detailed palaeoenvironmental assessment (AOC 2017b) was carried out including, pollen, diatoms, ostracods and forams, insects, plant macrofossils, radiocarbon dating and XRF core scanning (ITRAX). The peat in the northern half of the site recorded Mesolithic age determinations (c.7726-6309 BP),

with a single Bronze Age date from Trench 4. The preservation of pollen and ostracods/forams were good, although diatoms were only variably preserved. The ostracods provided some suggestion that potentially earlier deposits, possibly from an interglacial may be preserved at the site although this hypothesis remains to be tested.

3.6 Work carried out to the north at Brumby Common (York Archaeology on behalf of ASWYAS 2021) recorded peat deposits within a natural depression in the sands (0.80-1.90mbgl) which demonstrated accumulation from the Mesolithic into the Bronze Age. The pollen assemblage was dominated by tree and shrub taxa, represented by birch and pine with insects representing heathland environments on the higher and drier ground. The sample site was located at the edge of the wider Lower Trent Valley wetland, and would have been subject to seasonal fluctuations in water levels.

3.7 Although the peat deposits discussed above appeared in stratigraphic sequence, this was not the case to the north of the site where the deepest identified peat produced the youngest date. It is clear that deposits are not uniform across the site, likely as a result of warping and possibly post-depositional reworking

4. Aims and Objectives

4.1 The aim of the Archaeological Trial Trenching is;

- To determine the presence/absence, nature, date, quality of survival and importance of archaeological and paleoenvironmental deposits to enable an assessment of the potential and significance of the archaeology and paleoenvironment to be made;

- To establish the chronology of the sediment sequence, particularly with reference to the peat development at the site;
- To determine the potential for the underlying sands to preserve archaeological remains and land surfaces.

4.2 The objectives of the work are:

- To undertake trial trenching across the site and to make a record of any archaeological features/deposits;
- To recover dateable artefacts and environmental samples to characterise the activity at the site;
- To undertake test pitting to record the lithology of the underlying sands/peat deposits;
- To recover samples for paleoenvironmental assessment and scientific dating;
- To create a deposit model and archaeological framework for the site using the results of the test pitting and previous phases of work;
- To present the results of the fieldwork, deposit modelling and any palaeoenvironmental assessment in a report.
- To inform the requirement for and scope of any archaeological mitigation including further archaeological works which may be required

4.3 In addition this site has the potential to address the following East Midlands Research Agenda topics (http://archaeologydataservice.ac.uk/researchframeworks/eastmidlands/wiki/Main).

2 MESOLITHIC (c.9500 - c.4000 cal BC)
2A - Enhance understanding of the environmental background to Mesolithic activity:

'By comparison with some other areas of the country, the Mesolithic environment of the East Midlands is little known… There is a need to obtain more closely dated pollen sequences from upland, riverine and coastal peat deposits and to extend the investigation of ancient environments to include isotope studies of the organic fractions of coastal and riverine sediments.' (Knight et al 2012, 36)
2.6.1 What can analyses of cave deposits, palaeochannel fills, upland peats and other deposits with potential for preserved pollen, charcoal and other organic remains contribute to studies of the earliest stages of woodland clearance and plant domestication?
2.6.2 How can we maximise the potential of palaeochannels, upland or coastal peats and other organically rich deposits as sources of data on Early Holocene landscapes and changes in subsistence strategies and diet?
2H - Investigate the transition from the Mesolithic to Neolithic: 'The issue of changing subsistence strategies and the relationship between Mesolithic and Neolithic lifeways can be addressed in part by consistent sampling of organic material preserved in palaeochannels and other waterlogged or wetland contexts spanning the transition period.' (Knight et al 2012, 43)
NEOLITHIC AND EARLY TO MIDDLE BRONZE AGE (c.4000–c.1150 cal BC)
3E - Target sites with Late Mesolithic and Early organic remains: '…significantly more organically rich contexts of this period need to be targeted for environmental analysis and radiocarbon dating to elucidate patterns of landscape change during this key transitional period. Particular attention should be focused upon sites preserving organic remains that may be threatened by dewatering, while the information gained from sites under threat from development should be maximised.' (Knight et al 2012, 52).
3.2.3 How may environmental sampling strategies assist in elucidating the transition from later Mesolithic to earlier Neolithic economies?
3.7.2 What ceremonial or ritual roles may rivers or other watery locations have performed and how may this have varied regionally and over time?

4.4 In addition, the site can build on the work undertaken by the Lincolnshire Coversands Project which recommended a number of key considerations for future work in the area (McIlwaine and McDonell 2006). These included elucidating the extent, depth and topography of the coversands. Recent work in the development of the Mesolithic Research and Conservation Framework highlights the targeting of research on sites at risk such as

wetlands where peat is drying out (Blinkhorn and Milner 2013, 30). Key themes were identified in relation to prospection of sites:

S2.2: Broader use of fieldwalking, test-pitting and other low-impact techniques is needed, especially within a developer-led context.

S2.4: Novel methodologies to evaluate the locations of Mesolithic activity should be sought and successes in the field appropriately communicated across all sectors. For instance, these might be grounded in geoarchaeological modelling, or the application of borehole, coring and sieving strategies.

5 Compliance

5.1 MAP will adhere to the general principles of the CIfA Code of Conduct (CIfA 2021) throughout the project and to the CIfA 'Standards and Guidance for Archaeological Field Evaluations' (CIFA 2020).

5.2 All work will be carried out in accordance with chapter 16 of the National Planning Policy Framework (2021) on 'Archaeology and Planning'.

5.3 The work will be monitored under the auspices of the Historic Environment Officer at North Lincolnshire County Council, who will be consulted before the commencement of site works.

5.4 All maps within this report have been produced from the Ordnance Survey with the permission of the Controller of Her Majesty's Stationery Office, Crown Copyright. License No. AL 50453A and also data derived from Open Street Map (htps://www.opennstreetmap.org/copyright).

5.5 If human remains are encountered during the course of this evaluation it is considered best practice to not remove the remains at this stage, however, this should be considered at a site-specific level. If it is deemed necessary to remove human remains, this will be carried out under the conditions of licences for the removal of human remains (issued by the Ministry of Justice) and in accordance with the Burial Act (1857) and 'Guidelines to the Standards for Recording Human Remains' (Brickley & McKinley. 2004) to ensure that they are treated with due dignity.

5.6 MAP Archaeological Practice is an ISO 9001 accredited organisation (certificate number GB2005425). The award of the ISO 9001 certificate, independently audited by the British Standards Institution (BSI), demonstrates MAP's commitment to providing a quality service to our clients. ISO (the International Organisation for Standardisation) is the most recognised standards body in the world, helping to drive excellence and continuous improvement within businesses.

6 Fieldwork Methodology

Excavation and Recording

6.1 Forty-eight trenches are proposed, positioned in such a way that an even spread across the site is achieved, in combination with the previously excavated six trenches. (Fig. 2). All measure 50m x 2m. A total of forty-eight test pits will be excavated at one end of each trench to make a lithological record of the underlying deposits.

6.2 Trenches will be positioned to an accuracy of +- 100mm of the specified trench location using survey grade GPS or equivalent metric-survey equipment

6.3 All overburden, topsoil and any subsequent subsoils will be carefully removed by mechanical excavator using a wide toothless blade, under archaeological supervision, in level spits of no more than 100mm until either the top of the first archaeological horizon, or undisturbed natural deposits are encountered. Excavated topsoil will be redeposited in bunds around the edge of the site, or at an alternative location, to be determined in agreement with the client. Topsoil and subsoils will be stored separately, and all spoil will be stored and managed in line with the standards of the Construction Code of Practice for Sustainable Use of Soils on Construction Sites (DEFRA 2009).

6.4 Shovel testing will take place within each trench to establish the presence of lithics. The equivalent of a 5% sample by area (equating to five x one metre squares) of each 100mm spit will be passed through a 5mm sieve, in order to retrieve artefactual evidence such as prehistoric flint artefacts and flint-working debris. A record will be made of the location of each sample area and spit and any lithics and other artefacts noted and retained for processing and analysis. The shovel test areas are to be located at equal intervals along the trench including at each end.

6.5 All excavation of archaeological features, concentrations of artefacts and deposits carried out will be by hand. Areas of intensive modern disturbance will be given a low priority in excavation. Where practicable, the fills of these features will be removed by mechanical excavator.

6.6 All archaeological deposits and features will be recorded using Diggit Archaeology, a digital recording system which is compatible with the MoLAS recording system. All indices will be produced using MAP's pro forma sheets. The MAP recording manual will be used on site where necessary.

6.7 The stratigraphy of trenches will be recorded even if no archaeology is found. The test pits will be recorded by a geoarchaeologist using the Troels-Smith (1955) system of sediment classification (Appendix 1). The scheme breaks down a sediment sample into four main components and allows the inclusion of extra components that are also present, but that are not dominant. Key physical properties of the sediment layers are darkness (Da), stratification (St), elasticity (El), dryness of the sediment (Sicc) and the sharpness of the upper sediment boundary (UB). A summary of the sedimentary and physical properties classified by Troels-Smith (1955) and a stratigraphic breakdown of the deposits will be recorded on proforma log sheets. The logs will be supplemented by digital photography.

6.8 The excavation sampling policy will be :

a. A 100% sample of stakeholes

b. An initial 50% sample will be taken of all postholes, but where they are part of a building these will be 100% excavated

c. A 50% sample of pits with a diameter up to 1.5m (where justified, these will be 100% excavated,

d. A minimum 25% sample of all pits over 1.5m in diameter, but this will include a complete section across the pit to record a full profile (where justified, these will be 100% excavated)

e. linear features will be sampled a minimum of 10% along their length (each sample section to be not less than 1m), or a minimum of a 1m sample section, if the feature is less than 5m long.

f. All junctions/intersections and corners of linear features will be investigated and their stratigraphic relationships determined – if necessary, using box sections and all ditch terminals will be examined,

g. Funerary contexts, buildings and industrial features will be subject to sufficient excavation to establish the objectives of the evaluation but no archaeological deposit will be entirely removed unless this is unavoidable to meet the aims of the fieldwork.

6.8 In certain cases, the use of mechanical excavation equipment may also be appropriate for removing deep intrusions (e.g modern brick and concrete floors or footings), or for putting sections through major features after partial excavation (e.g ditches), or through deposits to check that they are of natural origin. Under no circumstances will any deposits be removed by machine without the prior agreement of the North Lincolnshire Historic Environment Officer.

6.9 A full written, drawn and photographic record will be made of all material revealed during the course of the evaluation. Plans will usually be completed at a scale of 1:50 or 1:20 (as appropriate) whilst section drawings will be at a scale of 1:10. All sections, plans and elevations will include spot-heights related to Ordnance Datum in metres as correct to two decimal places High resolution (minimum 12-megapixel resolution) digital photography will be used to for the basis of the photographic archive following the advice of the Archaeological Data Service (ADS 2011).

6.10 A sampling strategy for the recovery for environmental remains has been formulated in accordance with an Environmental Strategy written by an Environmental Consultant (Diane Aldritt, appendix 1) and York Archaeology. The strategies also follows the guidance of the Association for Environmental Archaeology (1995) and Historic England Guidance for Environmental Archaeology and Geoarchaeology (2011 and 2015).

6.11 Soil samples will be taken from all securely stratified deposits using a strategy which combines systematic and judgement sampling, but which also follows the methodologies outlined in the English Heritage (2011) 'Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (Second Edition) guidance. Positive features will also be sampled; retention of structural material such as bricks will be implemented where necessary. Sampling will also be considered for those features where dating by other methods (for example pottery and artefacts) is uncertain. Animal bones will be hand collected, and bulk samples collected from contexts containing a high density of bones. Spot finds of other material will be recovered where applicable. Flotation samples and samples taken for coarse-mesh sieving from dry deposits will be processed at the time of the fieldwork wherever possible, partly to permit variation of sampling strategies, if necessary, but also because processing at a later stage could cause delays.

6.12 Waterlogged deposits will be sampled using kubiena tins from open sections where possible, with measured 20L bulk samples taken alongside the tin. Samples of roundwood for radiocarbon dating and species identification may also be recovered, and all locations will be recorded on hand drawn sections, with digital photography and using GNSS. If suitable deposits are

encountered, i.e undisturbed sand, OSL samples will be recovered. Kubiena samples will be subsampled at York Archaeology facilities for the assessment of macrofossil remains (pollen, diatoms, ostracods). Bulk waterlogged samples will be wet sieved for the recovery of plant macrofossil and insect remains. Material of post-glacial date will be submitted for radiocarbon AMS dating, single entity macrofossils and identifiable small diameter roundwood will be selected where possible. If no such remains are encountered, then bulk sediment will be submitted for dating.

6.13 If human remains are encountered during the course of this evaluation and it is deemed necessary to remove the remains, this will take place under the conditions of licences for the removal of human remains (issued by the Ministry of Justice, to ensure that they are treated with due dignity). The preferred option would be for them to be adequately recorded before lifting, and then carefully removed for scientific study, and long-term storage with an appropriate museum; however, the burial licence may specify reburial or cremation as a requirement.

6.14 A finds recovery and conservation strategy will be discussed with the Historic Environment Officer and recipient museum in advance of the project commencing, and a policy for finds recording should be agreed and submitted to the Historic Environment Officer, before commencement of site works. Any recording, marking and storage, materials will be of archive quality, and recording forms and manuals will be submitted to the Historic Environment Officer, prior to the commencement of on-site works, if these have not been supplied previously. Allowance will be made for preliminary

conservation and stabilisation of all objects and an assessment of long-term conservation and storage needs.

6.15 All finds (artefacts and ecofacts) visible during excavation will be collected and processed, unless variations in this principle are agreed with the Local Authority. Finds will be appropriately packaged and stored under optimum conditions, as detailed in the RESCUE/UKIC publication First Aid for Finds. In accordance with the procedures outlined in MoRPHE, all iron objects, a selection of non-ferrous artefacts (including all coins), and a sample of any industrial debris relating to metallurgy will be X-radiographed before assessment.

6.16 We will make provision within our excavation strategies, where necessary, for use of shoring, pumps or artificial lighting. Such strategies will also allow for sampling for radiocarbon, archaeomagnetic and/or dendrochronological determinations, as appropriate: where in situ timbers are found to survive in good condition, samples will be taken for dendrochronological assay, following procedures set out in Historic England Waterlogged Wood: Guidelines on the Recording, Sampling, Conservation and Curation of Waterlogged Wood, (2018).

6.17 Arrangements for site access and reinstatement are to be agreed with the commissioning body.

6.18 Health and safety will take priority over archaeological matters. All archaeologists undertaking fieldwork must comply with all Health and Safety Legislation, this includes the preparation of a Risk Assessment.

6.19 All archaeological staff and visitors to the site will comply with current government guidance regarding COVID-19. All precautions, including those concerning social distancing will be outlined in MAP's risk and method statement.

6.20 'The North Lincolnshire HEO will be responsible for monitoring the archaeological work on behalf of the local planning authority. A minimum of 15 days' notice of the commencement of fieldwork must be given so that arrangements for monitoring can be made. She will be kept regularly informed about developments both during the site works and subsequent post-excavation work.

6.21 Necessary precautions should be taken over underground services and overhead lines.

6.22 All on site staff hold valid CSCS cards. All Project Officers and Project Managers hold a valid First Aid at Work Certificate and Site Supervisor Safety Training qualifications.

6.23.1 MAP will provide evidence of all necessary insurances, including Employer's Liability, Professional Liability and Public Liability Cover.

7. Post Excavation Assessment

7.1 Upon completion of the evaluation, the artefacts, soil samples and stratigraphic information will be assessed as to their potential and significance for further analysis.

7.2 A rapid scan of all excavated material will be undertaken by conservators and finds researchers in collaboration. Material considered vulnerable will be selected for stabilisation after specialist recording.

7.3 Where intervention is necessary, consideration will be given to possible investigative procedures (e.g glass composition studies, residues in or on pottery, and mineral preserved organic material).

7.4 Allowance will be made for preliminary conservation and stabilisation of all objects and an assessment of long term conservation and storage needs.

7.5 Assessment of artefacts will include inspection of X-radiographs of all iron objects, a selection of non-ferrous artefacts (including coins), and a sample of any industrial debris relating to metallurgy.

7.6 Once assessed, all material will be packed and stored in optimum conditions, as described in First Aid for Finds.

7.7 Waterlogged organic materials will be dealt with, following Historic England documents, Guidelines for the care of waterlogged archaeological leather, and guidelines on the recording, sampling, conservation and curation of waterlogged wood.

7.8 Processing of all samples collected for biological assessment, or subsamples of them, will be completed. Bulk and site-riddled samples from dry deposits will have been processed during excavation, where possible.

7.9 The preservation state, density and significance of material retrieved will be assessed, following methods presented in Environmental Archaeology (Historic England, 2011). Unprocessed sub-samples will be stored in conditions specified by the appropriate specialists.

7.10 Assessments for any technological residues will be undertaken. Samples for dating will be submitted to laboratories promptly, so as to ensure that results are available to aid development of specifications for subsequent mitigation strategies.

7.11 The following Specialists have been contacted as are available to work on the project:

Pottery - T G Manby (Prehistoric),

M R Stephens (medieval and Post-medieval)

P A Ware (Roman)

Flint - P Makey

Animal Bone – Jane Richardson

Environmental Sampling – Diane Alldritt

Conservation – York Archaeological Trust

Human Remains – York Osteology

Ceramic Building Material – Dr Phil Mills

Clay Tobacco Pipe - M R Stephens

Geoarchaeology- Kristina Krawiec (York Archaeology)

Pollen Dr Tom Hill (independent)

Diatoms Dr Tom Hill (independent)

Ostracods Dr John Whittaker (independent)

OSL Dr Phil Toms (University of Gloucester)

Plant macrofossils Stacey Adams (York Archaeology)

Insects Dr David Smith (University of Birmingham)

8. Reporting

8.1 Within two weeks of the completion of the fieldwork, a brief interim report will be issued to the North Lincolnshire Historic Environment Officer presenting the findings of these investigations.

8.2 On completion of the post-excavation assessment, a site assessment report will be prepared within 12 weeks of the completion of fieldwork, subject to specialist availability, to include the following;

a) A non-technical summary of the results of the work, Introduction and aims and objectives.

b) An introduction which will include

- the site code/project number
- planning reference number
- dates when fieldwork took place
- grid reference
- North Lincolnshire Museum Site Code
- Oasis reference

c) An account of the methods and results of the evaluation, describing structural data and associated finds and/or environmental data recovered.

d) Interpretation, including phasing of the site sequence and spot-dating of ceramics (Descriptive material will be clearly separated from interpretive statements). This will be supported by the use of photographs and drawings, to include an overall plan of the site accurately identifying the location of trenches, accurately tied in to the National Grid; individual trench plans as excavated indicating the location of archaeological features, with at least one section detailing the stratigraphic sequence of deposits within each trench

and sections of archaeological features. All plans and sections will include accurate scales and hights relative to Ordnance Datum correct to two decimal places.

e) A specialist assessment of the artefacts recovered with a view to their potential for further study.

f) A specialist assessment of environmental samples taken, with a view to their potential for subsequent study.

g) The results of the geoarchaeological assessment will be included in the evaluation report and will include an updated deposit model, a description of deposit formation processes and depositional conditions including a full lithological description and incorporating the results of specialist assessment and dating, and description of the sub-surface topography and characterisation of sediments present on site. Recommendations for the potential of samples taken from environmental reconstruction will be made as appropriate.

h) The results from investigations in archaeological sciences will be included in the Site Archive and presented in the Evaluation Report. Reports will include sufficient detail to permit assessment of potential analysis. They will include tabulation of data in relation to site phasing and contexts, and will include non-technical summaries. The objective presentation of data will be clearly separated from interpretation. Recommendation for further investigation (both on samples already collected, and at future excavations) will be clearly separated from the results and interpretation.

i) An assessment of the archaeological and paleoenvironmental significance of the deposits identified, in relation to other sites in the region cross-referenced to the regional research framework.

j) A conclusion with recommendations for further post-excavation work, if required.

k) Detailed archive location and destination.

l) Appendices and figures, as appropriate

m) References and bibliography of all sources used

n) A copy of the OASIS summary report form

8.3 Copies of the evaluation report will be submitted to the commissioning body, the Local Planning Authority and the North Lincolnshire Historic Environment Record within 12 weeks and subject to any contractual requirements on confidentiality

8.4 The report and a summary of findings will be lodged with OASIS, following the completion of work. OASIS Id: maparcha1-506854

9. Copyright, Confidentiality and Publicity

9.1 Unless the individual/organisation commissioning the project wishes to state otherwise, the copyright of any written, graphic or photographic records and reports rests with MAP.

9.2 MAP undertake public engagement for all appropriate projects. This will be offered in numerous ways to reflect the nature of the archaeological works.

7.1 Upon completion of the evaluation, the artefacts, soil samples and stratigraphic information will be assessed as to their potential and significance for further analysis.

7.2 A report will be prepared to include the following:

e) A non-technical summary of the results of the work, Introduction and aims and objectives.

f) An introduction which should include

- the site code/project number
- planning reference number and SMR Casework number
- dates when fieldwork took place
- grid reference

An account of the methods and results of the evaluation

10. Archive Preparation and Dissemination

10.1 The requirements for archive preparation and deposition will be addressed and undertaken in a manner agreed with North Lincolnshire Museum Service. The recipient museum has been contacted during the production of this WSI and will be contacted before commencement of fieldwork. The Museum Site code for the work is NLMS Archaeology Site Code : BURAH.

10.2 A site archive should be prepared in accordance with the specification outlined in *Management of Archaeological Projects* (MoRPHE (Lee, E, 2006). See also *Towards an Accessible Archaeological Archive, the Transfer of Archaeological Archives to Museums: Guidelines for use in England, Northern Ireland, Scotland and Wales* Society of Museum Archaeologists 1995.

10.3 The site archive, including finds and environmental material, subject to the permission of the relevant landowners, will be labelled, conserved and stored according to the United Kingdom Institute for Conservation (UKIC)'s. Provision will be made for the stable storage of paper records and their long term storage on a suitable medium, such as microfilm. An index to the

contents of the archive together with details of its date and place of deposition should be lodged with the HER.

10.4 Archive deposition will be arranged in consultation with the recipient museum and Historic Environment Officer and will take account of the requirements of the recipient museum and the relevant guidelines (see above) relating to the preparation and transfer of archives. The timetable for deposition shall be agreed on completion of the site archive and narrative.

11. Bibliography

Allen Archaeology. 2015. Archaeological Watching Brief Report: Lincolnshire Lakes Project, Brumby Common Lane, Scunthorpe, North Lincolnshire.

Allen Archaeology, 2015a, Fieldwalking and Metal Detecting for the Lincolnshire Lakes Project, Scunthorpe, North Lincolnshire

Allen Archaeology, 2015b, Geophysical Survey by Magnetometry: Scunthorpe United Football Club Stadium Project, Scunthorpe, North Lincolnshire

Allen Archaeology, 2015c, Geophysical Survey by Magnetometry: Lincolnshire Lakes Project, Scunthorpe, North Lincolnshire

Allen Archaeology, 2015d, Palaeoenvironmental Survey: Proposed Scunthorpe United Football Ground, Land off Brumby Common Lane, Scunthorpe, North Lincolnshire

AOC Archaeology Group. 2017a. Lake L1, Lincolnshire Lakes Scunthorpe, North Lincolnshire Archaeological Evaluation Report. Unpublished AOC report

AOC Archaeology Group. 2017b. Lake L1, Lincolnshire Lakes Scunthorpe, North Lincolnshire Post-Excavation Assessment Report. Unpublished AOC report.

Bateman, M.D, Evans, D, J, A, Buckland, P.C, Connell, E.R, Friend, R. J, Hartmann, D. Moxon, H. Fairburn, W.A, Panagiotakopulu, E. Ashurst, R.A. 2015. 'Last glacial dynamics of the Vale of York and North Sea lobes of the British and Irish Ice Sheet.' Proceedings of the Geologists' Association 126: 6, 712-730

Blinkhorn, E and Milner, N. 2013. Mesolithic research and conservation framework 2013. Mesolithic Wiki: Meso_Res_Cons_Framework (archaeologydataservice.ac.uk).

FWS Consultants Ltd. 2015. Geo-Environmental Site Investigation on Land at Lincolnshire Lakes Area V2 and Lake 1

Lille, M. 1998. Alluvium and warping in the lower Trent valley. In R, Van De Noort . and S, Ellis (eds) Wetlands Heritage of the Ancholme and Lower Trent Valleys. Short Run Press: Exeter.

McIlwaine, J. and McDonnell, G. 2006: *North Lincolnshire Coversands Research Project*. Final Project Report for English Heritage ASLF/PD 3548

Morris, C. & Potten, S.. 2017. Lake L1, Lincolnshire Lakes, Scunthorpe, North Lincolnshire: Archaeological Evaluation Report

Troels-Smith, J. 1955. Karakteriseringaf lose jordater (characterisation of unconsolidated sediments). *DenmarksGeologiskeUndersogelse*, Series IV/3, 10, 73.

12. Best Practice & Scientific Guidance

Archaeological Conservation

Investigative Conservation: Guidelines on how the Detailed Examination of Artefacts from Archaeological Sites can Shed Light on their Manufacture and Use (2008): Officially archived, but available on request.

Guidelines on the X-radiography of Archaeological Metalwork (2006): https://historicengland.org.uk/images-books/publications/x-radiography-of-archaeological-metalwork/

Waterlogged Organic Artefacts: Guidelines on their Recovery, Analysis and Conservation (2018): https://historicengland.org.uk/images-books/publications/waterlogged-organic-artefacts/

Environmental Archaeology

Animal Bones and Archaeology - Recovery to Archive (2019): https://historicengland.org.uk/images-books/publications/animal-bones-and-archaeology/

Deposit Modelling and Archaeology: Guidance for Mapping Buried Deposits (2020): https://historicengland.org.uk/images-books/publications/deposit-modelling-and-archaeology/

Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (Second Edition) (2011):

https://historicengland.org.uk/images-books/publications/environmental-archaeology-2nd/

Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record (2015): https://historicengland.org.uk/images-books/publications/geoarchaeology-earth-sciences-to-understand-archaeological-record/

Guidelines for the Curation of Waterlogged Macroscopic Plant and Invertebrate Remains (2008): Currently being revised, but available on request.

Mineralised Plant and Invertebrate Remains: A Guide to the Identification of Calcium Phosphate Replaced Remains (2020): https://historicengland.org.uk/images-books/publications/mineralised-plant-and-invertebrate-remains/

Geophysical Survey

EAC Guidelines for the Use of Geophysics in Archaeology: Questions to Ask and Points to Consider (2016) [Europae Archaeologiae Consilium]: https://historicengland.org.uk/images-books/publications/eac-guidelines-for-use-of-geophysics-in-archaeology/

Geophysical Survey in Archaeological Field Evaluation (2008): Officially archived, but available on request.

Marine Geophysics Data Acquisition, Processing and Interpretation: Guidance Notes (2013):

https://historicengland.org.uk/images-books/publications/marine-geophysics-data-acquisition-processing-interpretation/

Human Remains

Guidance for Best Practice for the Treatment of Human Remains Excavated from Christian Burial Grounds in England (Second Edition) (2017) [Advisory Panel on the Archaeology of Burials in England]: https://www.archaeologyuk.org/apabe/pdf/APABE_ToHREfCBG_FINAL_WEB.pdf

Guidance for the Care of Human Remains in Museums (2005) [Department for Culture, Media and Sport]: https://www.archaeologyuk.org/apabe/pdf/DCMS_Guidance_Human_Remains_in_Museums.pdf

Large Burial Grounds: Guidance on Sampling in Archaeological Fieldwork Projects (2015) [Advisory Panel on the Archaeology of Burials in England]: https://www.archaeologyuk.org/apabe/pdf/Large_Burial_Grounds.pdf

Science and the Dead: A Guideline for the Destructive Sampling of Archaeological Human Remains for Scientific Analysis (2013) [Advisory Panel on the Archaeology of Burials in England]: https://www.archaeologyuk.org/apabe/pdf/Science_and_the_Dead.pdf

The Role of the Human Osteologist in an Archaeological Fieldwork Project (2018): https://historicengland.org.uk/images-books/publications/role-of-human-osteologist-in-archaeological-fieldwork-project/

Updated Guidelines to the Standards for Recording Human Remains (2017) [Chartered Institute for Archaeologists / British Association for Biological Anthropology and Osteoarchaeology]: https://babao.org.uk/assets/Uploads-to-Web/14-Updated-Guidelines-to-the-Standards-for-Recording-Human-Remains-digital.pdf

Materials Science and Industrial Processes

A Standard for Pottery Studies in Archaeology (2016) [Prehistoric Ceramics Research Group, the Study Group for Roman Pottery and the Medieval Pottery Research Group]: https://historicengland.org.uk/images-books/publications/standard-for-pottery-studies-in-archaeology/

Archaeological and Historic Pottery Production Sites: Guidelines for Best Practice (2015): https://historicengland.org.uk/images-books/publications/archaeological-and-historic-pottery-production-sites/

Archaeometallurgy: Guidelines for Best Practice (2015): https://historicengland.org.uk/images-books/publications/archaeometallurgy-guidelines-best-practice/

Archaeological Evidence for Glassworking: Guidelines for Recovering, Analysing and Interpreting Evidence (2018): https://historicengland.org.uk/images-books/publications/glassworkingguidelines/

Organic Residue Analysis and Archaeology: Guidance for Good Practice (2017): https://historicengland.org.uk/images-books/publications/organic-residue-analysis-and-archaeology/

Science for Historic Industries: Guidelines for the Investigation of 17th- to 19th-century Industries (2018): https://historicengland.org.uk/images-books/publications/science-for-historic-industries/

Preservation in Situ

Land Contamination and Archaeology: Good Practice Guidance (2017): https://historicengland.org.uk/images-books/publications/land-contamination-and-archaeology/

Piling and Archaeology: Guidance and Good Practice (2019): https://historicengland.org.uk/images-books/publications/piling-and-archaeology/

Preserving Archaeological Remains: Decision-taking for Sites under Development (2016): https://historicengland.org.uk/images-books/publications/preserving-archaeological-remains/

Scientific Dating

Archaeomagnetic Dating: Guidelines on Producing and Interpreting Archaeomagnetic Dates (2006): Officially archived, but available on request; Historic England also suggests people consult the 'Archaeomagnetism: Magnetic Moments in the Past' webpages

(https://www.bradford.ac.uk/archaeomagnetism/) hosted by the University of Bradford.

Dendrochronology: Guidelines on Producing and Interpreting Dendrochronological Dates (2004): Currently being revised, but available on request.

Luminescence Dating: Guidelines on Using Luminescence Dating in Archaeology (2008): Currently being revised, but available on request.

Practice and Guidelines

Archiving and Project Management

Brown, D.H. 2011. Archaeological Archives – A guide to best practice in creation, compilation, transfer and curation. Institute for Archaeologists and the Archaeological Archives Forum. 2nd Edition. http://www.archaeologyuk.org/archives/aaf_archaeological_archives_2011.pdf

Chartered Institute for Archaeologists. (2019) Code of Conduct. https://www.archaeologists.net/sites/default/files/CodesofConduct.pdf

Chartered Institute for Archaeologists. (2014b) Standard and Guidance for Archaeological Excavation. https://www.archaeologists.net/sites/default/files/CIfAS&GExcavation_1.pdf

Historic England. 2015c. Management of Research Project in the Historic Environment: The MoRPHE Project Managers' Guide. Swindon: English Heritage.

https://historicengland.org.uk/images-books/publications/morphe-project-managers-guide/heag024-morphe-managers-guide/

Institute for Archaeologists. 2008. Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials. Reading: Institute for Archaeologists. http://www.archaeologists.net/sites/default/files/nodefiles/ifa_standards_materials.pdf

Institute for Archaeologists. 2009. Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives. Reading: Institute for Archaeologists. http://www.archaeologists.net/sites/default/files/nodefiles/Archives2009.pdf

Institute for Archaeologists. 2010 Draft Standard and Guidance for Archaeological Geophysical Survey. Reading: Institute for Archaeologists. http://www.archaeologists.net/sites/default/files/nodefiles/geophysicsSG.pdf

mapArch
MAP Archaeological Practice

Legend

- Development Outline

Trenching

- Completed
- Proposed

N

0 40 80 120 160 200 m

Trench Location Plan
Scale: 1:4000 @ A4
Version: A-290622
Client: Keepmoat Homes

APPENDIX 1

Conservation Strategy By Ian Panter of York Archaeological Trust

Artefacts from all categories and all periods will be recovered as a matter of routine during the excavation. When retrieved from the ground finds will be kept in a finds tray or appropriate bags in accordance with First Aid for Finds. Where necessary, a conservator may be required to recover fragile finds from the ground depending upon circumstances.

If waterlogged conditions are encountered a wide range of organic materials may be recovered, including wood, leather and textiles. Advice will be sought from a conservator to discuss optimum storage requirements before any attempt is made to retrieve organic finds and structural timbers from the ground.

After the completion of the fieldwork stage, a conservation assessment will be undertaken which will include the X-radiography of all the ironwork (after initial screening to separate obviously modern debris), and a selection of the non-ferrous finds (including all coins). A sample of slag may also be X-rayed to assist with identification and interpretation. Wet-packed material, including glass, bone and leather will be stabilised and consolidated to ensure their long-term preservation. All finds will be stored in optimum conditions in accordance with First Aid for Finds and Guidelines for the Preparation of Excavation Archives for Long-Term Storage (Walker, 1990).

Waterlogged wood, including structural elements will be assessed following the English Heritage guidelines, Waterlogged wood: sampling, conservation and

curation of structural wood (Brunning 1996). The assessment will include species identification, technological examination and potential for dating.

The conservation assessment report will include statements on condition, stability and potential for further investigation (with conservation costs) for all material groups. The conservation report will be included in the updated project design prepared for the analysis stage of the project.

References

Brunning, R. and Watson, J. *Guidelines on Recording, Sampling, Conversation and Curation of Waterlogged Wood*. Swindon: English Heritage (2010). http://www.english-heritage.org.uk/publications/waterlogged-wood/waterlogged-wood.pdf

Karsten, A., Graham, K., Jones, J., Mould, Q. and Walton Rogers, P. (2012) *Waterlogged Organic Artefacts: Guidelines on Their Recovery, Analysis and Conservation*. Swindon: English Heritage. http://www.english-heritage.org.uk/publications/waterlogged-organic-artefacts/woa-guidelines.pdf

Walker, K. 1990 *Guidelines for the preparation of excavation archives for long-term storage*, Archaeology Section of the United Kingdom Institute for Conservation.

Watson, J., Fell, V. and Jones, J. (2008) *Investigative Conservation: Guidelines on How the Detailed Examination of Artefacts from Archaeological Sites can Shed Light on their Manufacture and Use*. Swindon: English Heritage. http://www.english-heritage.org.uk/publications/investigative-conservation/investigative-conservation.pdf

Watkinson, D. and Neal, V. 1998 First Aid for Finds *(3rd edition), RESCUE and the Archaeology Section of the United Kingdom Institute for Conservation.*

Institute for Archaeologists. (2008) *Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials*. Reading: Institute for Archaeologists. http://www.archaeologists.net/sites/default/files/node-files/ifa_standards_materials.pdf

APPENDIX 2

Environmental Strategy By Diane Alldrit

The on-site environmental sampling strategy will systematically seek to recover a representative sample of botanical, molluscan (both terrestrial and aquatic), avian and mammalian evidence from the full range of contexts encountered during the excavation. This will enable, at the assessment stage, the possibility for radiocarbon dating material to be obtained, and for an initial analysis of the economic and environmental potential of the site. In order to achieve this, a bulk sample (BS, Dobney *et al* 1992) comprising an optimum size of 40litre of sediment (where possible) should be taken from every stratigraphically secure and archaeologically significant context. In practice it may not always be possible to obtain 28l of sediment from certain features during the assessment stage, for instance from partially excavated pits or post-holes, in which case a single bucket sample, c.10 to 14litre should be taken at the site supervisors discretion. Deposits of mixed origin, for instance topsoil, wall fills and obvious areas of modern contamination, should be avoided where possible, as these will contain intrusive material and not provide secure radiocarbon dates.

All buckets and other sampling equipment must be clean and free of adherent soil in order to prevent cross-contamination between samples. If dry soil is to be stored for any length of time it should be kept in cool, dry conditions, and away from strong light sources. However, it is preferable to process samples as soon as possible after excavation.

Bulk soil samples shall be processed using an Ankara-type water flotation machine (French 1971) for the recovery of carbonised plant remains and charcoal. The

flotation tank should contain a >1mm mesh for collection of the retent or 'residue' portion of the sample (which may contain pottery, lithics and animal / bird bone, in addition to the heavier fragments of charcoal which do not float). The 'flot' portion of the sample, which may include carbonised seeds, cereal grain, charcoal and sometimes mollusc shell, should be captured using a nest of >1mm and >300micron Endicot sieves. Flotation equipment, including sieves, meshes, brushes and so forth must be meticulously cleaned between samples in order to prevent contamination of potential radiocarbon dating material. All material resulting from flotation will be dried prior to microscopic examination. Flotation is not suitable for the recovery of pollen or for processing waterlogged samples, which shall be discussed below.

Where there is potential for waterlogged preservation, shown for instance by the presence of wood and other organic or wet material, then a 5 to 10litre size sample should be taken (GBA sample, Dobney *et al* 1992). This material is to be retained for later processing using laboratory methods to enable the recovery of waterlogged plant material and insects. For assessment purposes a 1litre sub-sample of the organic sediment from each potential waterlogged sample shall be processed using laboratory wash-over methods, and once processed kept wet. All waterlogged samples awaiting processing should be kept damp, preferably stored in plastic sealable tubs, and in cool conditions. Where large waterlogged timbers are recovered these should be stored under refrigerated conditions and an appropriate conservator consulted.

There is the possibility that the waterlogged deposits may require parasite egg analysis. It is proposed that the 'squash' technique is adapted, this would require small lumps of raw sediment approximately 3mm in diameter taken from three separate points from within the sample and homogenised in a little water by shaking. After allowing coarse particles to settle for a few moments, a drop of the

supernatant was removed. This work would be undertaken by either John Carrott or Harry Kenwood if necessary.

If sediment suitable for pollen analysis is encountered, for instance rich organic peaty deposits, or deep ditch sections with organic preservation, the archaeobotanical specialist is to be consulted prior to any sampling taking place. These deposits would require sampling with large kubiena tins and require the specialist to be on-site. Pollen analysis, even at assessment level, would subsequently impose a considerable cost implication should it be carried out.

The specialist is available to provide consultation and advice on the environmental sampling strategy throughout the course of the excavation and during post-excavation processing if required.

References

Dobney, K. D., Hall, A. R., Kenward, H. K. and Milles, A. 1992 A working classification of sample types for environmental archaeology. *Circaea* 9 24-26.

French, D. H. 1971 An Experiment in Water Sieving. *Anatolian Studies 21* 59-64.

Appendix 3 Physical and sedimentary properties of deposits according to Troels-Smith (1955)

Darkness	
nig.4	black
nig.3	
nig.2	
nig.1	
nig.0	white

Degree of Stratification	
strf.4	well stratified
strf.3	
strf.2	
strf.1	
strf.0	no stratification

Degree of Elasticity	
elas.4	very elastic
elas.3	
elas.2	
elas.1	
elas.0	no elasticity

Degree of Dryness	
sicc.4	very dry
sicc.3	
sicc.2	
sicc.1	
sicc.0	water

	Sharpness of Upper Boundary
lim.4	< 0.5mm
lim.3	< 1.0 &> 0.5mm
lim.2	< 2.0 &> 1.0mm
lim.1	< 10.0 &> 2.0mm
lim.0	> 10.0mm

	Sh	*Substantia humosa*	Humous substance, homogeneous microscopic structure
I Turfa	*Tb*	*T. bryophytica*	Mosses +/- humous substance
	Tl	*T. lignosa*	Stumps, roots, intertwined rootlets, of ligneous plants
	Th	*T. herbacea*	Roots, intertwined rootlets, rhizomes of herbaceous plants
II Detritus	*Dl*	*D. lignosus*	Fragments of ligneous plants >2mm
	Dh	*D. herbosus*	Fragments of herbaceous plants >2mm
	Dg	*D. granosus*	Fragments of ligneous and herbaceous plants <2mm >0.1mm
III Limus	*Lf*	*L. ferrugineus*	Rust, non-hardened. Particles <0.1mm
IV Argilla	*As*	*A.steatodes*	Particles of clay
	Ag	*A. granosa*	Particles of silt
V Grana	*Ga*	*G. arenosa*	Mineral particles 0.6 to 0.2mm
	Gs	*G. saburralia*	Mineral particles 2.0 to 0.6mm
	Gg(min)	*G. glareosa minora*	Mineral particles 6.0 to 2.0mm

	Gg(maj)	*G. glareosa majora*	Mineral particles 20.0 to 6.0mm
	Ptm	*Particulaetestaemolloscorum*	Fragments of calcareous shells

Appendix 4
Digital Data Management Plan

Project Administration	
Project Name	Lincolnshire Lakes, Land east of M181 and north of Burringham Road
Site Code	05.04.22
Project Description (Eg, number of trenches, area of excavation)	Excavation of forty-eight 50m x 2m treches including geoarchaeological test pitting
OASIS ID	maparcha1- 506854
Museum Name & Accession code (where applicable)	North Lincolnshire Museum BURAH.
Client/ Landowner (where applicable)	Keepmoat
Project Lead	Alistair Cross
Project Manager	Charlie Puntorno (MAP) & Kristina Krawiec (York Archaeology)
Date & Version	C 22.05.23

Data Collection

Data to be Collected/ Created (to be updated throughout duration of project)		
Type	Format	Volume
GIS	ESRI Shapefile (.shp & .shx & .dbf, plus associated files) (Metadata to be deposited as .csv)	WSI- 2x shapefile
CAD	.dwg, .dxf (Metadata to be deposited as .csv)	
Spreadsheets & databases	Excel (.xlsx) Access (.accdb) (to be deposited as .csv)	Inc (Context Register / Finds & Samples Register / Photo Register / Drawing Register / Specialist data tables x 6 / Metadata tables)
Images	.jpg, .raw (to be deposited as .tiff)	WSI- 2x .Jpg
Text/ Documents	Word (.docx) PDF (.pdf)	WSI- 3x word doc, 1x PDF

- All data will be collected in line with the project specific Written Scheme of Investigation, *Guides to Good Practice* produced by the ADS and MAP's

guidance on the *Creation and Treatment of Documentary, Digital and Material Archives*.

- The digital archive will be stored in an appropriately named project specific folder which will be regularly backed up. All data raw data will be stored in the appropriate folder. Version control will be maintained throughout the project.

Documentation and Metadata

- Data collected will include standard formats which maximise opportunities for use and reuse in the future

- Data documentation will meet the requirement of the Museum Deposition Guidelines, Digital Repository Guidelines and the methodology described in the Written Scheme of Investigation. Following the completion of the project all paper-based material will be digitised and included within the archive.

- A metadata form consistent with ADS examples will be completed for each dataset and included within the final archive. As a minimum the metadata will include a file name, keywords & dates, creator & date of creation, copyright holder, location (site address or coordinates as appropriate), software and version

- An archive catalogue documenting both physical and digital archive products will be maintained and submitted with both the Museum and Trusted Digital Repository (ADS).

Ethics and Legal Compliance

- MAP staff must only participate in work which conforms to accepted ethical standards and which they are able to competently preform. Where there is any doubt, which should be raised with management.

- MAP places an emphasis on internal peer review of documents and the discussion of results. All Written Schemes of Investigations are reviewed by the relevant Local Authority Archaeologists prior to submission. Where confidentiality is requested by a client, this is strictly upheld by MAP.

- The project archive will include the names of all individuals who contributed to the project unless it is requested otherwise. No personal data will be held within the project archive.

- MAP have a GDPR compliant Privacy Policy underpins the management of all personal data. Such data is not retained in project specific folders and is not accessible to unauthorised staff nor will it be shared with any third-party companies.

- Unless otherwise agreed at the inception of a project, the copyright of all data collected throughout the project belongs to MAP. The inclusion of data derived from external specialists and/or contractors is secured at the point of agreement of their participation on the project.

- By depositing an archive with an HER or museum MAP gives permission for the material presented to be used by the recipient, in perpetuity, although MAP retains the right to be identified as the author of all project documentation and reports as specified in the Copyright, Designs and Patents Act 1988 (Chapter IV, section 79).

- All relevant licences and permissions to reproduce external data are discussed in the site-specific Written Scheme of Investigation and all subsequent reporting, including Desk Based Assessment. Where site specific licences are required (i.e. for the removal of human remains), licence numbers and dates will also be included within site reports and a copy of the licence held within the archive.

Data Security: Storage and Backup

- MAP's current IT infrastructure is divided between SharePoint for documents and an NAS (Network Attached Storage) drive for larger data files (acting as back up of locally held files on work laptops). Both require username and password intrinsic to the individual users.

- Digital Recording, which is currently on trial (June 2022), is provided by DiggitArchaeology.com, who provide access to the app and web versions by email and password. The backup of this material is provided by Diggit's use of the three point server system with automatic backups working in tandem. At the close of the site material will be downloaded and stored using SharePoint.

- In regard to filing within the SharePoint and NAS, a folder template sets out the associated locations of files; these folders should be appropriately named and populated with file names for field data stored on the NAS. See section on "Naming Conventions"

- SharePoint is maintained/delivered under licence by Practical Networks with in-house maintenance by the Commercial Director. The NAS drive is a WD PR2100 and is maintained by the Archaeology and Geomatics Manager with weekly backups and checks of the data; field data such as photographs and survey data to be uploaded weekly by the Project Officer.

- Field and in-house access to the SharePoint and the NAS drive is limited/restricted by user email and password.

- Files such as databases, tables and documents required by the external specialists and in-house post-excavation team will be distributed using the SharePoint system. Any further data such as photographs, AutoCAD files, QGIS projects etc will be distributed via secure alternative means (WeTransfer or similar) to protect the integrity of the NAS Drive.

Selection and Preservation

- A selection strategy and the DMP for each project will be considered from the inception of the work. The process of selection should be devised in consultation with LPA frameworks, guidance and individual stakeholders, reviewed by the Appointed Project Manager at each milestone of a project's lifespan; inclusive a peer review and appropriate consultation with stakeholders to provide quality assurance.

- The strategy should dictate which parts of the archive, both digital and analogue, are relevant and would provide future generations with a soundly curated archive. Documents and Data should be quality assured prior to deposition, checking for consistency and following any deposition guidance of the eventual repository.

- All costs relating to the digital archiving have been factored into the original quote and intended repository will be notified. At each milestone costing considerations must be undertaken to ensure that deposition is not out of pocket or unexpectedly above factored levels.

Data Sharing

- A summary of the site will be made available at the earliest opportunity, latterly curated and adapted at each major milestone to reflect most up to date information regarding the site.

- All reports relevant to the site will also be curated and added to the OASIS record, updated at pertinent milestones of the project; the final report must be lodged with the HER in the first instance.

- Any archive material must be authorised for dissemination by the relevant stakeholders, primarily this is likely to be the client; though any such action will only be temporary, and usually as a result of planning issues.

Responsibilities

- The appointed Project Manager shall ensure the DMP is correctly followed, reviewed and adapted (where appropriate) at each milestone. In the unlikely event that the project changes hands, the responsibility will ultimately rest with the Managing Director, who will ensure the needs of the DMP are addressed and properly handed over to the next Project Manager.

- Curation of the field data, data synthesis/analysis, quality assurance should be the responsibility of senior figures of the project team, usually the Project Officer/Supervisor. They will make sure that all data is stored correctly and backed up to minimise any loss of integrity of the archive.

- Reports both internal and external shall be subject to MAP's ideal naming preferences of project files. It is the responsibility of each department to ensure their curated report/work is correct, quality assured and seek clarification from the authors (external or otherwise) of any document which contains errors.

- All work will be latterly audited by the Project Manager working towards creating an archive and level of reporting which is both ethically sound, accurate and reliable for future use by anyone internal or external to the company.

Naming Conventions

- Files and Folders should be named consistently throughout the project folder. The use of an _ (underscore) should be used to separate words instead of spaces e.g. use Pott_Asmnt instead of Pottery Assessment. File names vary according to the content of the file, the _ rule still applies here.
  - There should be no spaces in any file naming
  - No symbols (e.g. #?,) should be used as they are not ADS compliant
  - Full stops in file names are not accepted, except between file name and file type
  - Abbreviate where possible, losing extraneous vowels and consonants, as file paths are cumulative and cannot exceed a certain number of characters

- Naming Examples.

  - Reports and digitised registers

  Should follow the structure of: Site Code, Type of Work (Adding excavation Phase if required), Component, Version. Varied slightly for digitised registers as per example:

  e.g. 05-08-20-TT_FINALReport_A210622

  05-26-19-EXC_PhsB_App01_CtxtListing

  - Digital Photographs and Black & White Photographs

  Should include the Site Code, Type of Work (Adding excavation Phase if required), and Frame No, varied slightly for B&W film:

  e.g. 05-08-20-TT_Digi_001

  05-26-19-EXC_PhsB_BW_FLM01-001

  NB be aware that jpegs and raw (as well as selected archive tiff's) should be in separate folders and be concurrent with each other

- Scanned Site Registers

Should be scanned in pdf format and be formatted as: Site Code, Type of Work (Adding excavation Phase if required), Register Name.

e.g. 05-08-20-TT_CtxtReg

05-26-19-EXC_PhsB_DrawReg

- Scanned Context Sheets & other site sheets

Should be scanned in pdf format and be formatted as: Site Code, Type of Work (Adding excavation Phase if required), Type of Sheet, Sheet Nos.

e.g. 05-08-20-TT_Ctxt-0001-0050

05-26-19-EXC_PhsB_Ctxt0001-0050

- Site Drawings and Plans

Should be scanned as TIFF's and be formatted as: Site Code, Type of Work (Adding excavation phase if required), Drw, Sheet No

e.g. 05-08-20-TT_Drw_Sh-001

05-26-19-EXC_PhsB_Drw_Sh-001

NB. The phase of work or field numbers may only be relevant at the time the work was undertaken, if work is part of a larger continuing outline, check where the next tranche of numbers will start and bare that in mind or check with PM prior to archiving reports.

List of Abbreviations

Registers

Ctxt

Drw

Digi

BW

Env

SF

Specialist Reports

Pott Pottery

ABn Animal Bone

FeR Iron Waste Residues

Crbn Carbonised Plant Remains

Cnsrv Conservation

Appendix 4
Digital Data Management Plan

Project Administration	
Project Name	Lincolnshire Lakes, Land east of M181 and north of Burringham Road
Site Code	05.04.22
Project Description (Eg, number of trenches, area of excavation)	Excavation of forty-eight 50m x 2m treches including geoarchaeological test pitting
OASIS ID	maparcha1- 506854
Museum Name & Accession code (where applicable)	North Lincolnshire Museum BURAH.
Client/ Landowner (where applicable)	Keepmoat
Project Lead	Alistair Cross
Project Manager	Charlie Puntorno (MAP) & Kristina Krawiec (York Archaeology)
Date & Version	C 22.05.23

Data Collection

Data to be Collected/ Created (to be updated throughout duration of project)		
Type	Format	Volume
GIS	ESRI Shapefile (.shp & .shx & .dbf, plus associated files) (Metadata to be deposited as .csv)	WSI- 2x shapefile
CAD	.dwg, .dxf (Metadata to be deposited as .csv)	
Spreadsheets & databases	Excel (.xlsx) Access (.accdb) (to be deposited as .csv)	Inc (Context Register / Finds & Samples Register / Photo Register / Drawing Register / Specialist data tables x 6 / Metadata tables)
Images	.jpg, .raw (to be deposited as .tiff)	WSI- 2x .Jpg
Text/ Documents	Word (.docx) PDF (.pdf)	WSI- 3x word doc, 1x PDF

- All data will be collected in line with the project specific Written Scheme of Investigation, *Guides to Good Practice* produced by the ADS and MAP's

guidance on the *Creation and Treatment of Documentary, Digital and Material Archives*.

- The digital archive will be stored in an appropriately named project specific folder which will be regularly backed up. All data raw data will be stored in the appropriate folder. Version control will be maintained throughout the project.

Documentation and Metadata

- Data collected will include standard formats which maximise opportunities for use and reuse in the future

- Data documentation will meet the requirement of the Museum Deposition Guidelines, Digital Repository Guidelines and the methodology described in the Written Scheme of Investigation. Following the completion of the project all paper-based material will be digitised and included within the archive.

- A metadata form consistent with ADS examples will be completed for each dataset and included within the final archive. As a minimum the metadata will include a file name, keywords & dates, creator & date of creation, copyright holder, location (site address or coordinates as appropriate), software and version

- An archive catalogue documenting both physical and digital archive products will be maintained and submitted with both the Museum and Trusted Digital Repository (ADS).

Ethics and Legal Compliance

- MAP staff must only participate in work which conforms to accepted ethical standards and which they are able to competently preform. Where there is any doubt, which should be raised with management.

- MAP places an emphasis on internal peer review of documents and the discussion of results. All Written Schemes of Investigations are reviewed by the relevant Local Authority Archaeologists prior to submission. Where confidentiality is requested by a client, this is strictly upheld by MAP.

- The project archive will include the names of all individuals who contributed to the project unless it is requested otherwise. No personal data will be held within the project archive.

- MAP have a GDPR compliant Privacy Policy underpins the management of all personal data. Such data is not retained in project specific folders and is not accessible to unauthorised staff nor will it be shared with any third-party companies.

- Unless otherwise agreed at the inception of a project, the copyright of all data collected throughout the project belongs to MAP. The inclusion of data derived from external specialists and/or contractors is secured at the point of agreement of their participation on the project.

- By depositing an archive with an HER or museum MAP gives permission for the material presented to be used by the recipient, in perpetuity, although MAP retains the right to be identified as the author of all project documentation and reports as specified in the Copyright, Designs and Patents Act 1988 (Chapter IV, section 79).

- All relevant licences and permissions to reproduce external data are discussed in the site-specific Written Scheme of Investigation and all subsequent reporting, including Desk Based Assessment. Where site specific licences are required (i.e. for the removal of human remains), licence numbers and dates will also be included within site reports and a copy of the licence held within the archive.

Data Security: Storage and Backup

- MAP's current IT infrastructure is divided between SharePoint for documents and an NAS (Network Attached Storage) drive for larger data files (acting as back up of locally held files on work laptops). Both require username and password intrinsic to the individual users.

- Digital Recording, which is currently on trial (June 2022), is provided by DiggitArchaeology.com, who provide access to the app and web versions by email and password. The backup of this material is provided by Diggit's use of the three point server system with automatic backups working in tandem. At the close of the site material will be downloaded and stored using SharePoint.

- In regard to filing within the SharePoint and NAS, a folder template sets out the associated locations of files; these folders should be appropriately named and populated with file names for field data stored on the NAS. See section on "Naming Conventions"

- SharePoint is maintained/delivered under licence by Practical Networks with in-house maintenance by the Commercial Director. The NAS drive is a WD PR2100 and is maintained by the Archaeology and Geomatics Manager with weekly backups and checks of the data; field data such as photographs and survey data to be uploaded weekly by the Project Officer.

- Field and in-house access to the SharePoint and the NAS drive is limited/restricted by user email and password.

- Files such as databases, tables and documents required by the external specialists and in-house post-excavation team will be distributed using the SharePoint system. Any further data such as photographs, AutoCAD files, QGIS projects etc will be distributed via secure alternative means (WeTransfer or similar) to protect the integrity of the NAS Drive.

Selection and Preservation

- A selection strategy and the DMP for each project will be considered from the inception of the work. The process of selection should be devised in consultation with LPA frameworks, guidance and individual stakeholders, reviewed by the Appointed Project Manager at each milestone of a project's lifespan; inclusive a peer review and appropriate consultation with stakeholders to provide quality assurance.

- The strategy should dictate which parts of the archive, both digital and analogue, are relevant and would provide future generations with a soundly curated archive. Documents and Data should be quality assured prior to deposition, checking for consistency and following any deposition guidance of the eventual repository.

- All costs relating to the digital archiving have been factored into the original quote and intended repository will be notified. At each milestone costing considerations must be undertaken to ensure that deposition is not out of pocket or unexpectedly above factored levels.

Data Sharing

- A summary of the site will be made available at the earliest opportunity, latterly curated and adapted at each major milestone to reflect most up to date information regarding the site.

- All reports relevant to the site will also be curated and added to the OASIS record, updated at pertinent milestones of the project; the final report must be lodged with the HER in the first instance.

- Any archive material must be authorised for dissemination by the relevant stakeholders, primarily this is likely to be the client; though any such action will only be temporary, and usually as a result of planning issues.

Responsibilities

- The appointed Project Manager shall ensure the DMP is correctly followed, reviewed and adapted (where appropriate) at each milestone. In the unlikely event that the project changes hands, the responsibility will ultimately rest with the Managing Director, who will ensure the needs of the DMP are addressed and properly handed over to the next Project Manager.

- Curation of the field data, data synthesis/analysis, quality assurance should be the responsibility of senior figures of the project team, usually the Project Officer/Supervisor. They will make sure that all data is stored correctly and backed up to minimise any loss of integrity of the archive.

- Reports both internal and external shall be subject to MAP's ideal naming preferences of project files. It is the responsibility of each department to ensure their curated report/work is correct, quality assured and seek clarification from the authors (external or otherwise) of any document which contains errors.

- All work will be latterly audited by the Project Manager working towards creating an archive and level of reporting which is both ethically sound, accurate and reliable for future use by anyone internal or external to the company.

Naming Conventions

- Files and Folders should be named consistently throughout the project folder. The use of an _ (underscore) should be used to separate words instead of spaces e.g. use Pott_Asmnt instead of Pottery Assessment. File names vary according to the content of the file, the _ rule still applies here.
  - There should be no spaces in any file naming
  - No symbols (e.g. #?,) should be used as they are not ADS compliant
  - Full stops in file names are not accepted, except between file name and file type
  - Abbreviate where possible, losing extraneous vowels and consonants, as file paths are cumulative and cannot exceed a certain number of characters

  - Naming Examples.

    - Reports and digitised registers

    Should follow the structure of: Site Code, Type of Work (Adding excavation Phase if required), Component, Version. Varied slightly for digitised registers as per example:

    e.g. 05-08-20-TT_FINALReport_A210622

    05-26-19-EXC_PhsB_App01_CtxtListing

    - Digital Photographs and Black & White Photographs

    Should include the Site Code, Type of Work (Adding excavation Phase if required), and Frame No, varied slightly for B&W film:

    e.g. 05-08-20-TT_Digi_001

    05-26-19-EXC_PhsB_BW_FLM01-001

    NB be aware that jpegs and raw (as well as selected archive tiff's) should be in separate folders and be concurrent with each other

- Scanned Site Registers

Should be scanned in pdf format and be formatted as: Site Code, Type of Work (Adding excavation Phase if required), Register Name.

e.g. 05-08-20-TT_CtxtReg

05-26-19-EXC_PhsB_DrawReg

- Scanned Context Sheets & other site sheets

Should be scanned in pdf format and be formatted as: Site Code, Type of Work (Adding excavation Phase if required), Type of Sheet, Sheet Nos.

e.g. 05-08-20-TT_Ctxt-0001-0050

05-26-19-EXC_PhsB_Ctxt0001-0050

- Site Drawings and Plans

Should be scanned as TIFF's and be formatted as: Site Code, Type of Work (Adding excavation phase if required), Drw, Sheet No

e.g. 05-08-20-TT_Drw_Sh-001

05-26-19-EXC_PhsB_Drw_Sh-001

NB. The phase of work or field numbers may only be relevant at the time the work was undertaken, if work is part of a larger continuing outline, check where the next tranche of numbers will start and bare that in mind or check with PM prior to archiving reports.

List of Abbreviations

Registers

Ctxt

Drw

Digi

BW

Env

SF

Specialist Reports

Pott Pottery

ABn Animal Bone

FeR Iron Waste Residues

Crbn Carbonised Plant Remains

Cnsrv Conservation