



# Barrowed Time

## Project Design for a Community Archaeology Project

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Brendon Wilkins, Stuart Noon and Benjamin W. Roberts



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## Barrowed Time

Prepared on behalf of:

**The Heritage Lottery Fund**

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## Purpose of Document

This document has been prepared as a Project Design for the 'Barrowed Time' community excavation project. The purpose of this document is to define how DigVentures intends to deliver a project that exceeds the quality expectations of the Heritage Lottery Fund and their archaeological advisors. DigVentures accepts no responsibility or liability for any use that is made of this document other than by the HLF for the purposes for which it was originally commissioned and prepared. DigVentures has no liability regarding the use of this report except to the Heritage Lottery Fund.

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## Executive summary

This document is published in advance of fieldwork for a community-led research project at a recently discovered Bronze Age Barrow at Bolton le Sands, Lancashire. The results of a magnetometry survey (completed by the project team on 28<sup>th</sup> March 2016) have been assessed with recommendations for further fieldwork, scheduled to take place between 4<sup>th</sup> – 17<sup>th</sup> July 2016. This will focus on a programme of remote sensing (3D aerial photogrammetry survey) followed by targeted test trenches. The approach to this work is evidenced through the following MoRPHE compliant document, outlining key archaeological research questions, roles, procedures, stages and outputs, and focusing on the following work streams:

**Remote Sensing** A UAV mounted photogrammetry survey will be completed, to produce a full metrically accurate 3D digital terrain model of the site, to place the barrow and interventions into a landscape context.

**Targeted Excavation** Four trenches are proposed for 2016, aiming to investigate geophysical anomalies, characterise the site, recover potential dating evidence relating to different phases, and assess the the palaeoenvironmental conditions at the site.

**Public Engagement** The project is supported by a comprehensive learning, engagement and activity plan. An innovative digital recording system will be used to enable volunteers to record on smartphones or tablets in the field, making their data available instantly to anyone with an internet connection. A live feed of all video, photos, 3D models and archaeological data will stream to an off-site incident room, hosted in a pop-up shop in the centre of Morecambe.

## Compliance Matrix

Project background and research priorities	Detailed in Part 1 – this document
Methodology	Detailed in Part 2 – this document, with detailed method statement in Appendix 3
Relevant experience of project team	Detailed in Appendix 1
Organisational capability/quality assurance	Detailed in Part 2; See also ClfA RO reference (ID No. 102)
Public Engagement, promoting understanding, conservation and inclusivity	Detailed in Section 6, with comprehensive Aims and Objectives relating to public engagement detailed in Appendix 4.

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# A community excavation of a recently discovered Bronze Age barrow at Bolton le Sands, Lancashire

## PART 1: DESCRIPTION OF THE PROJECT

### Summary Description

*This document outlines proposals for a community-based field research project, to be delivered as part of the HLF supported 'Barrowed Time' community archaeology project. Fieldwork has been designed to help contextualise the the unexpected discovery of a Late Bronze Age tanged chisel and knife blade by a local metal detectorist. The results of a magnetometry survey (completed by the project team on 28<sup>th</sup> March 2016) have been assessed with recommendations for further fieldwork, scheduled to take place between 4<sup>th</sup> – 17<sup>th</sup> July 2016. This document explains how DigVentures, in partnership with Durham University, will coordinate the investigation, taking a creative approach to community excavation, using digital technology to help create an access step-change for engagement and participation. This open, digital approach is designed to expand opportunities for community participation, fulfilling the project's overarching vision to increase awareness of the local historic landscape, build local skills capacity and assemble a committed group of advocates to help support the local heritage scene over the long term.*

## 1 BACKGROUND

### 1.1 Introduction

- 1.1.1 This project design defines how DigVentures intends to deliver a community-led archaeological research project at Bolton le Sands, Lancashire (hereafter 'the Site'). Its overarching aim is to characterise the poorly understood archaeology associated with a recently discovered Bronze Age barrow, obtain potential dating evidence relating to different phases of use, and produce a metrically accurate 3D model situating the barrow in it's landscape context. The principle driver for this research project is to provide baseline information to contribute to the future management and public presentation of the monument (see Section 3, Business Case, below). The document is divided into two parts:
- 1.1.2 **'Part 1: Description of The Project'** provides the project context, including a brief summary of proposed methodology, key sources and activities required to support the delivery of the proposal's outcomes. **'Part 2: Resources and Programming'** identifies responsibilities of individual project staff members, outlines completion dates for specific tasks, with all associated costs itemised for transparency. A detailed Project Plan has also been provided as a separate document to assist with project tracking, and evaluation against HLF outcomes for people, communities and heritage.



## **1.2 Document Scope**

- 1.2.1 This project has been designed in response to the unexpected discovery of a Late Bronze Age bronze tanged chisel and knife blade by a local metal detectorist, lawfully reported to the Portable Antiquities Scheme (PAS) and subsequently declared Treasure under the provisions of the Treasure Act (1996;2002 amendment covering prehistoric base-metal hoards – (PAS - LANCUM-0788A0). Immediately following the discovery, a small-scale archaeological assessment was undertaken by University of Central Lancashire (UCLAN) students in conjunction with the Portable Antiquities Scheme, including a resistivity survey and a small test pit towards the periphery of the site (Batey 2014). The results of the archaeological assessment were presented in an unpublished MA Dissertation (Batey 2014, and see Section 1.5 below); this contains summary descriptions of the finds and no further post-excavation analyses was conducted by the UCLAN team.
- 1.2.2 The current project team was assembled in June 2015 to develop a project proposal, culminating in a successful grant application to the Heritage Lottery Fund in January 2016. The first Execution Stage of the project was completed on 28<sup>th</sup> March 2016, comprising a magnetometry survey of the find spot and area immediately adjacent (Figure 2). The results of this work have been assessed with recommendations for further fieldwork. Section 1 of this document will outline key research questions, detailing the research context and scope. Section 2 will define the roles, procedures, stages outputs and budget for the project, conceived as the second Execution Stage of the the project, and scheduled to take place between 4<sup>th</sup> – 17<sup>th</sup> August 2016.

## **1.3 Research Context**

- 1.3.1 The site is defined by an enclosure, platform and earthen mound barrow on the summit of a hill, located in a commanding position overlooking Morecambe bay. Early Bronze Age funerary architecture in the region can encompass barrows, cairns, ring cairns, flat cairns, ringworks, stone circles and timber circles in addition to multiple phases of construction (cf. Hodgson and Brennand in Brennand 2006; Quaternaine and Leech 2012). Any system of classification is necessarily provisional as so few sites have been excavated, analysed and published to modern standards and many of the remaining sites have suffered damage due to modern industrial and agricultural work (cf. Annable 1987; Middleton 1996; Barrowclough 2007, 95-99; Barrowclough 2008; Evans 2008, 100-117). On the basis of visible landscape features, the site at Bolton-Le-Sands has been provisionally termed a barrow, with the expectation tat this will be refined on the basis of further characterisation evidence.
- 1.3.2 The project represents the first major scientific excavation of an Early Bronze Age funerary monument in north Lancashire since 1982 (the rescue excavation of a damaged Early Bronze Age cairn at Manor Farm, Borwick in advance of gravel extraction, Oliver et al. 1987). Early Bronze Age funerary structures have been (hastily) excavated by antiquarians in Lancashire and south Cumbria since 1778 with the excavation of a barrow on “Barrow Hill” near Yealand Conyers (*Archaeologia* 7,141). Whilst many Early Bronze Age

funerary structures have been intrusively investigated since 1778, very few sites have been systematically excavated, scientifically analysed and fully published. These sites are: Manor Farm, Borwick, Lancashire (excavated 1982, full report - Oliver 1987); Ewanrigg, Maryport, Cumbria (excavated 1982-6, full report - Bewley et. al. 1992), Hardendale Nab, Shap, Cumbria (excavated in 1986, full report - Howard-Davis and Williams 2005) and Allithwaite, Cumbria (excavated in 2001, full report Wild 2003). Whilst an unurned cremation dating to the Early Bronze Age was found in recent excavations at Dallam School, Milnthorpe, Cumbria, there was no evidence for an associated funerary structure (excavated in 2005, full report - Platell 2013).

- 1.3.3 It is far more typical that Early Bronze Age funerary structures were excavated fairly badly by local antiquarians in the 19<sup>th</sup> – early 20<sup>th</sup> century and frequently re-analysed and re-dated in recent decades. These include: Bleasdale timber circle (Varley 1938), Hades Hill (Sutcliffe 1898-1900) and Sizergh Fell excavated 1903, interim - Hughes 1904a; 1904b; reassessment - Fell 1953; re-excavated 2002-5; published Edmonds and Evans 2007). There are subsequently much more systematic excavations by local archaeologists and community groups in the mid-late 20<sup>th</sup> century but have yet to be fully analysed or published. There are exceptions such as Winter Hill cairn (excavated 1958, full report Bu'lock et. al. 1960); these include: Levens Park (excavated 1968-71, interim - Sturdy 1973; Turnbull and Walsh 1996); Whitelow cairn, Ramsbottom (excavated 1960-2, interim - Tyson 1994); Noon Hill (excavated 1958 and 1963-4 – no published report – summary in Walsh 2013); Pendleton (excavated 1972, summary - Barrowclough 2014); and Moseley Height (Bennett 1951; currently being re-investigated by UCLAN with excavations in 2009-10 – no publication).
- 1.3.4 The Northwest Wetland surveys of south Cumbria (Hodgkinson et al. 2000) and north Lancashire (Middleton et al. 1995) provide the closest analysed environmental sequences to the Bolton-Le-Sands barrow that encompass the Early Bronze Age and together represent an invaluable context for understanding Early Bronze Age landscape activity. An HLF funded community survey and excavation project on Brackenber Moor, Cumbria is also relevant, encompassing Early Bronze Age cremations (interim unpublished reports - Railton 2011; Slater and Railton 2013). The palaeogeographical analysis of sea level change in Morecambe Bay (Zong 1993) further enhances the understanding of the environmental context.
- 1.3.5 The excavated Early Bronze Age funerary sites in Lancashire have yet to be (re-) dated or re-assessed on the scale of those in Northumberland (e.g. Fowler 2013), Yorkshire (see Manby et al. 2003), Derbyshire (e.g. Barnatt and Collis 1996) or mainland Scotland (e.g. Sheridan 2007a; 2007b). The Early Bronze Age funerary sites in Cumbria have been far more intensively surveyed (see Hoan and Loney 2007; Evans 2008; Barrowclough 2010a; e.g. Quartermaine and Leech 2012) and more frequently excavated, extensively analysed and fully published to modern standards as at Ewanrigg (Bewley et. al. 1992), Hardendale Nab (Howard-Davis and Williams 2005) and Allithwaite (Wild 2003). The relative lack of well excavated, radiocarbon dated and fully published Early Bronze Age sites in Lancashire is also

highlighted by two recent surveys of Early Bronze Age human remains (Walsh 2013) and Food Vessels (Wilkin 2014) in northern England.

- 1.3.6 Beyond the exemplary publication of the rescue excavation of the cairn at Manor Farm, Borwick (Oliver 1987) and the earlier excavation and publication of the cairn at Winter Hill (Bu'lock et al. 1960), Early Bronze Age funerary activity in Lancashire remains poorly understood – as has been noted in recent county-wide assessments (Middleton 1996; Barrowclough 2007; 2008). Within northwest England, this is most comparable to the current state of knowledge and understanding in Cheshire (Mullin 2003; 2007).
- 1.3.7 The available radiocarbon dates for Early Bronze Age Lancashire have been enhanced by several new dates from research projects led by David Barrowclough (see Barrowclough 2007; 2008; 2010b; Walsh 2013). The old and new radiocarbon dates have enabled a basic chronological framework but one that is in definite need of further refinement. This is especially pertinent given the complexities of Early Bronze Age funerary construction sequences and re-use as recently highlighted using Bayesian modelling at Over, Cambridgeshire (Garrow et al. 2014) and the re-use of earlier objects in later funerary deposits as at Pendleton, Lancashire (Barrowclough 2014).
- 1.3.8 Many of the key artefacts and types found in Early Bronze Age funerary structures in Lancashire have subject to recent re-analyses as part of regional and national projects. These include ceramic vessels such as Food vessels (Wilkin 2014) and Collared Urns (Longworth 1984; Barrowclough 2010b); bronze and flint daggers (Frieman 2014; Needham in Hunter and Woodward 2015); and jet beads and necklaces (Sheridan and Davis 1998; 2002; Sheridan in Hunter and Woodward 2015).
- 1.3.9 The accessible and surviving human bones from excavated Early Bronze Age sites in Lancashire have also been recently re-assessed (Walsh 2013). In addition, the all cremated human remains dating to the Middle Bronze Age in Britain have been recently compiled for a journal publication to be submitted in 2016 (Caswell 2013). The current state of understanding relating to the treatment of the dead – and in particular the construction, dating, organisation and location of funerary structures during the Early Bronze Age (c. 2200-1600 BC) remains poor, especially relative to neighbouring regions. There are very few well excavated, scientifically analysed and fully published sites. The diversity of funerary practices evidenced in all excavations, from antiquarian to the present day, indicates a rich archaeological record.

## **1.4 Social Context**

- 1.4.1 With a rich archaeological and cultural heritage, the landscape in this part of northern England is characterised by pastoral farmland, important coastal habitats as well as a number of exceptional prehistoric monuments and historic properties. Though occupying a commanding and prominent position on the brow of a hill, the site has hitherto escaped the attention of antiquarians and treasure hunters, and represents a rare opportunity to build a community around the first scientific excavation of this site type for a generation. There are, however, heritage management issues with the Bolton-le-Sands barrow in the face of potential attritional threats. The burial

environment is clearly conducive to the survival of stratified metal work and potentially datable palaeoenvironmental remains, however, further work is urgently required to implement a coherent management plan. The site remains at risk of illicit metal detecting activity, with the potential loss of irrecoverable dating and contextual information.

- 1.4.2 The site was discovered by responsible metal detectorists working with permission of the landowner and in partnership with the Portable Antiquities Scheme. This arrangement has thus far led to a successful outcome; however further unregulated metal detecting may also lead to the site's ultimate demise. The likelihood of recovery of further grave goods from the site is high, however the find spot remaining secret is extremely unlikely. The site is close to Bolton-le- Sands, and is easily accessible from Morecambe and Lancaster. There are a large number of metal detectorists active in the area, and sites of this nature are often subject to illegal treasure hunting.
- 1.4.3 The site's immediate communities (North Lancaster, Morecambe and Heysham) fall within the 25% most deprived areas in England, with much lower levels of educational achievement than the national average (Source: Lancaster District Core Strategy). The ambition is to engage non-traditional audiences in archaeology by streaming digital content live from site to an off-site incident room, hosted in a pop-up shop in the centre of Morecambe. One of the principle challenges of the project will be to stimulate these surrounding communities to become more involved with and enthused about the stewardship of their local heritage. This will be achieved through the combination of outreach events in the heart of these communities, alongside a community excavation and training programme.
- 1.4.4 Designed in line with National Vocational Standards, on site learning activities will deliver a combination of basic, intermediate and advanced archaeological and transferable skills, using a specially designed 'Skills Passport' for participants to log their progress. The goal is to build community capacity around the regions threatened heritage resource, contributing to and safeguarding its long-term sustainability. All site work will be supported by a comprehensive twelve-month activity plan, including education and training with schools and groups living locally.

## **1.5 2013 Fieldwork Summary**

- 1.5.1 The evaluation and geophysical survey by the University of Central Lancashire in partnership with the Portable Antiquities Scheme was undertaken between the 29th July and the 2nd August 2013. The evaluation was centred on the summit of the hill incorporating the original treasure find spot of a tanged chisel, knife blade and metal working waste. A trench (6m x 2m) was opened and the topsoil layer (context (A1)) silty clay revealed two fragments of jet, and fragments of chert and flint. The sub-soil layer (A2) again of silty clay revealed numerous small pieces of worked burnt flint, one on particular (031) appears to be the remains of a flint scraper, probably dating to the Early Bronze Age.
- 1.5.2 A trench extension was then opened (2.5m x 2.5m) to incorporate new readings from metal detectors in the main trench in the south-east corner.

Due to time limitations it was deemed more suitable to open two sondages rather than take down the layer to the same depth. The first sondage was at the base of the south facing section wall in the main trench, rectangular in shape 45cm x 45cm and uncovered a copper-alloy ring likely to be a part of a Bronze Age horse harness. The second sondage of similar size was opened in the trench extension and uncovered a copper-alloy fragment of a Late Bronze Age razor.

1.5.3 Further excavation of the main trench uncovered a feature that ran almost the entire length of the northern section of the trench 30cm wide from the edge of the south facing section wall, oval in shape and extending around 3-4m east to west. At the eastern edge of this feature was a cluster of flat stones which appeared to be deliberately arranged in a circular pattern. The deposit of sandy/silty clay (A4) within the circular arrangement of stones was visibly different in colour and composition to that of the rest of the trench. The slope-top of the cut [A3] was at a depth of 0.20m with the base of the feature having a depth of 0.4m. The feature was excavated with care so as not to disturb or remove the flat stones which uncovered burnt remains including deposits of charcoal, burnt wood and a substantial deposit of cremated bone.

1.5.4 The presence of burnt bone along with burnt organic material is suggestive of ritual deposition involving the cremation of a human or animal or simply the deposition of these remains at the site. The Early to Late Bronze Age material in the same stratigraphic layers as the burnt material suggests that these artefacts were deposited roughly around the same time with the site itself continuing to remain in use for up to 1,700 years. Geophysical survey on the hill top suggests that this site may be an Early Bronze Age cairn, possibly begun in the Late Neolithic period continuing in usage through to the Middle to Late Bronze Age. It is clear that further investigation of the barrow at Bolton-le-Sands is a priority in order to understand the use and chronology of this site and its role within the wider landscape context.

## **1.6 2016 Fieldwork Proposals**

1.6.1 The goal of the 2016 fieldwork season will be to continue remote sensing work and small scale excavation trenches following-up on the profitable research leads generated during the 2013 field season. It will focus on the excavation of four trenches designed to characterise specific topographic and geophysical anomalies. This will be undertaken principally with two trenches in a cruciform pattern along the length and breadth of barrow, defining the extent of the monument, as well as assessing evidence for potential platforms and an enclosing bank (approx. 60m coverage in total). one smaller trenches will also be targeted on a probable tree throw and modern feature to remove this evidence from consideration.

## **2 RESEARCH AIMS & OBJECTIVES**

### **2.1 Project Model**

2.1.1 The overarching aim of the project is to define and characterise the physical extent of the site through a programme of non-intrusive investigations and intrusive excavation, obtaining baseline data that will facilitate its future

management. This project model is framed as overarching aims and key questions/objectives that provide a framework for the methods, stages, products and tasks set out in Part 2 of the Project Design below.

## **2.2 Aim 1 – To define and establish the precise physical extent and condition of the Site with a programme of remote sensing and metric survey**

2.2.1 This aim will entail a combination of non-intrusive remote sensing (low-level aerial photography and digital terrain modelling).

- Q1. Can the layout of the enclosure and any associated subsurface archaeology be determined and refined by remote survey?
- Q2. What are the topographic anomalies visible immediately adjacent to the structure, and is this evidence for anthropogenic activity?
- Q3. Can we identify any phasing in the topographic or remote sensing anomalies indicative of an extended period of use?

## **2.3 Aim 2 – Understand the chronological development of Ben Scar Cave refining its chronology, phasing and character site with two targeted trenches**

2.3.1 In the light of the evidence base collated for Aim 1, this aim will be addressed with a programme of targeted trenches designed to 'ground-truth' the results of remote sensing and metric survey. The purpose will be to identify and investigate any archaeological features encountered, and obtain appropriate samples for archaeological, artefactual and palaeoenvironmental assessment.

- Q4. Can we corroborate chronological phasing for the Site, including the presence of earlier and later features and structures, as defined in Aim 1?
- Q5. What are the typical and atypical features of the enclosure and did this influence the functions and activities that took place?
- Q6. What is the landscape setting and character surrounding the cave and enclosure, and how did this shape its location, design and development?

## **2.4 Aim 3 – Understand the Site's archaeological and palaeoenvironmental conditions**

2.4.1 This aim will be achieved with an assessment of the samples as defined and recovered in Aim 2, using appropriate palaeoenvironmental and archaeological techniques to establish preservation and significance.

- Q7. What is the current state of the archaeological and palaeoenvironmental material across the site?
- Q8: How well do deposits and artefacts survive, and how deeply are they buried?
- Q9. Can the palaeoenvironmental data recovered from sampling in the trenches inform us about burial or broader settlement activities that may have taken place at or near to the site?



- Q10. What is the range and spatial patterning of artefacts recovered from the barrow, and can this inform our understanding of the use of the upland Pennine landscape and utilisation of wider resources?
- Q11. Can we increase our understanding of the local environment in the Bronze Age period in terms of the environmental manipulation and differential exploitation of natural resources?

## **2.5 Aim 4 – Making recommendations, analysis and publication**

2.5.1 This aim will require all data from Aims 1-3 to be collated, with an integrated analysis of the archaeological and palaeoenvironmental resource at Bolton le Sands, making recommendations to conserve, enhance and interpret the heritage significance of the site.

- Q12: What can an integrated synthesis of the results of this work with previous interventions tell us about the Site and its setting?
- Q13: What recommendations can be made to protect, conserve and enhance the heritage asset, in the light of the issues and opportunities identified under Aims 1 - 3?

## **3 BUSINESS CASE**

### **3.1 SHAPE Sub-Programme**

3.1.1 The project has been designed in accordance with priorities articulated in Historic England's Action Plan 2015-18 (informing Heritage 2020, the successor to the National Heritage Protection Plan) and detailing how heritage organisations will work together to benefit the historic environment. In addition to these priorities, the project drivers can also be articulated in accordance with the fundamental principles of SHAPE (Strategic framework for the Historic Environment Activities and Programmes in Historic England, 2008).

3.1.2 In line with Historic England working practice and the fundamental principles of SHAPE (Strategic framework for the Historic Environment Activities and Programmes in Historic England, 2008) to understand, manage, and promote archaeology, the project has a primary driver (SHAPE sub-programme number 11111.130) in addition to other research outcomes that will address other Historic England and sector priorities, delivering significant value added benefit.

3.1.3 The main aim of the project is therefore to increase our understanding of the character of the Site:

- SHAPE sub-programme number 11111.130: development of a sound evidence base for specific locales and historic assets in order to ensure appropriate management information is available and effective communication possible to community.

3.1.4 This research also has the potential to generate insight and recommendations with a local and national applicability, assisting the Client and Statutory Stakeholders in establishing best practice conservation and management measures.

- SHAPE sub-programme number 31521.110: building heritage issues into wider change-management considerations, taking account of conservation principles and heritage legislation whilst efficiently reducing management burden for given areas.

3.1.5 As a consequence of the innovative digital and cross-platform approach, in addition to the unique way that the Barrowed Time project is community funded and staffed, there is a significant 'value added' dimension to this project:

- SHAPE sub-programme number 12212.110: developing wider understanding of the value of the historic environment; enhancing lifelong learning, encouraging support and enthusiasm for all aspects of heritage whilst contributing to quality of life.
- SHAPE sub-programme number 51311.110: increasing public awareness, building direct support and engaging enthusiasm from which multiple benefits flow; encouraging knowledge transfer through enjoyment.
- SHAPE sub-programme number 51332.110: high-profile outreach hitting potentially millions of people. Targeted to raise key issues or encourage wider understanding.

## **3.2 Research Frameworks and Conservation Considerations**

3.2.1 There is no overarching national research agenda or framework specific to Bronze Age funerary sites. As such archaeological work at Bolton le Sands will be undertaken with regard to the wider regional research themes identified in the regional research agenda *The Archaeology of North West England: An Archaeological Research Framework for the North West Region* (Brennan 2006).

## **4 PROJECT SCOPE**

4.1.1 This Project Design covers the second Execution Stage, designed to ensure that appropriate management information is available to decision makers and that this is communicated as effectively as possible to the wider community (SHAPE sub-programme number 11111.130: development of a sound evidence base for specific locales and historic assets).

4.1.2 The purpose of this work will be to contribute to the future management, research and presentation of the Site, with an aerial photogrammetry survey and the excavation of two test trenches. This will specifically comprise:

- Remote Sensing: including a magnetometry survey and full photogrammetry survey of the Site to create a 3D Digital Elevation Model.
- Excavation: including four hand dug trenches.



## 5 INTERFACES

5.1.1 This project will interface with a series of other projects, stakeholders, and initiatives, summarised in the table below:

Interfaces	Description
<i>Core Project Team</i>	The core project team and specialist staff have consulted widely during the project planning and will continue to build on these connections as the project develops, forging strong links with local, national and international professionals and caving groups.
<i>Specialist Project Team</i>	<p>An academic advisory group of subject area experts (in Bronze Age archaeology) is being formed to ensure that the project remains pertinent to relevant research questions and agendas, interfacing with other teams working in similar sites in the UK.</p> <p>Lead/Metalwork/EBA funerary sites - Dr Benjamin Roberts - Lecturer (formerly BM Bronze Age Curator) - Durham University</p> <p>Ceramics/EBA funerary sites - Dr Neil Wilkin - Bronze Age Curator - British Museum (NB PhD on Food Vessels at EBA funerary sites in northern England)</p> <p>Jet/Faience/Amber/EBA funerary sites - Dr Alison Sheridan - Principle Curator - National Museum Scotland (NB free analysis at the NMS against national reference collection)</p> <p>Human Bone/EBA funerary sites - Dr Samantha Walsh - Independent Specialist (formerly UCLAN) (NB PhD on EBA human bone at funerary sites in northwest England)</p> <p>Animal bone - Dr Richard Madgwick - Lecturer - Cardiff University</p> <p>Isotope analysis - Dr Janet Montgomery - Reader - Durham University (NB published Gristhorpe Man and publishing Beaker people project isotopes)</p> <p>aDNA analysis (if possible) Dr Eva Fernandez - Senior Lecturer - Durham University</p> <p>Geophysics - Dr Jennifer Peacock - GSB Prospection (NB PhD on IA-Roman Cumbria)</p> <p>Landscape GIS - Edward Caswell - PhD student - Durham University (NB PhD on modelling BA settlement in Britain)</p> <p>Lithics - Alex Whitlock – Independent</p> <p>Archaeometallurgy – Dr Peter Bray – Postdoc - Oxford University (NB PhD on Early Bronze Age copper alloy metalwork in Britain and Ireland)</p> <p>Textiles – Dr Susannah Harris – Lecturer – University of Glasgow</p> <p>Geoarchaeology - Dr Jo Mackenzie – University of Bradford</p>

Interfaces	Description
<i>Heritage at Risk</i>	The crowdsourcing and digital archiving aspects of this project interface with recent English Heritage initiatives such as the 'National Heritage at Risk Grade II' scoping project.
<i>Local Stakeholders</i>	The project interfaces with active development-led projects currently being undertaken in the immediate vicinity, and the project team will consult with Peter Isles (Lancashire County Council) to ensure that all project outputs remain relevant and opportune. Local Archaeology Societies (such as Morecambe Heritage Group and Lancaster and District Heritage Group) have been invited to participate, ensuring the project interfaces with all local initiatives.

**Table 1 – Interfaces**

## **6 COMMUNICATIONS**

### **6.1 Project Team and Management Responsibilities**

6.1.1 The following section details specific staff responsibilities, drawing on terminology devised by Historic England for the MoRPHE project management framework (see Section 9.1). In addition to funding through the DigVentures crowdfunding platform, the overarching project is Heritage Lottery Funded, and overseen by Nick Herepath, Grants Officer (Project Sponsor). Project Assurance will be undertaken by the Project Executive (Lisa Westcott Wilkins, DigVentures) who will monitor compliance against the deliverables detailed in this document, with formal and informal progress reports submitted to the HLF and the YDNPA.

6.1.2 The project team have all worked closely together before (Flag Fen 2012; and Leiston Abbey 2013, 2014 and 2015). Brendon Wilkins (Project Manager and Co-Director) will undertake day-to-day Project Management supported by Stuart Noon and Benjamin Roberts (Co-Directors), with supervisory assistance from Raksha Dave and Nigel Steel (Project Support). There will be six core DigVentures archaeological staff on site throughout the fieldwork, and all will be retained throughout the post-excavation phase of the project. All core staff are employed in line with ClfA guidelines, and are practicing field archaeologists of good standing at ACIfA level or above. The expert team will analyse the relevant data from the fieldwork and provide a report for the assessment. This team has been drawn from various university departments and laboratories with a considerable range of experience in the undertaking and delivery of similar research projects.

### **6.2 Communication and Archive**

6.2.1 The Project Directors will produce monthly status reports for the Project Executive and Project Team throughout this Execution Stage up to the review of the Assessment Report/UPD (Review Point 4). This will present an

overview of progress, list tasks completed or part completed, including any ongoing work and issues affecting progress.

- 6.2.2 All communication between DigVentures and stakeholders will be directed through DigVentures' Project Manager (Brendon Wilkins) in the first instance, who will also serve as the main point of contact for any broader issues. The principal structure for routine communication with stakeholders (including Highlight Reports) will be the project review mechanisms described in the following section. Communication with stakeholders and other interested parties will be directed through the Project Manager in the first instance.
- 6.2.3 The Project Manager will be responsible for ensuring that the project runs to schedule, keeping track of key resources (notably staff time) on the basis of weekly Work Records. The Project Team will have a project meeting at each milestone described on the Gantt chart (Section 15) to ensure that all major tasks are briefed / debriefed as necessary. Provision will be made for the project in 'Basecamp', a web-based project communication package used by DigVentures, enabling project participants to generate and record notes, tasks, milestones and other project-related communication.
- 6.2.4 The project archive will be prepared in accordance with DigVentures guidelines for Archive Preparation, following Appendix 1, P1 of MoRPHE PPN 3 (Historic England 2011), fulfilling the *Guidelines for the preparation of excavation archives for long term storage* (UKIC 1990). All reports produced by the project will be openly and freely disseminated through YDNPA Historic Environment Record, Archaeological Data Service, OASIS portal and DigVentures website. A digital copy of the report will be distributed to through Lancashire County Council Historic Environment Record, Archaeological Data Service, OASIS portal and Project website. Copyright on all reports submitted will reside with DigVentures, although a third party in-perpetuity licence will automatically be given for reproduction of the works by the originator, subject to agreement in writing with DigVentures.

### **6.3 Project Management**

- 6.3.1 DigVentures operates a computer-assisted project management system. Projects are undertaken under the direction of the Project Director who is responsible for the successful completion of all aspects of the project. All work is monitored and checked whilst in progress on a regular basis, and the Project Director/Managing Director checks all reports and other documents before being issued. A series of guideline documents or manuals form the basis for all work.
- 6.3.2 The Project Manager is a full member and elected councillor of the Chartered Institute for Archaeologists (MCIfA), and full member of the Institute of Archaeologists of Ireland (MIAI). DigVentures is a CfA Registered Organisation (No. 102), and fully endorses the *Code of Conduct*, the *Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology*, and the *Standards and Guidance* documents of the Institute for Archaeologists. All DigVentures staff are employed in line with the Institute's Codes and will usually be members of the Institute.

## **6.4 Outreach – and HLF sponsored ‘Barrowed Time’ activity plan**

- 6.4.1 As a crowdfunded and crowdsourced archaeological project, every aspect of the project is cognisant of a wider outreach agenda. The community and outreach aspects have been distilled into a separate activity plan (DigVentures 2015), falling under the auspices of ‘Barrowed Time’, an HLF supported digital archiving, education and outreach initiative. This will include a dedicated educational programme of schools visits, digital archiving workshops and events programme designed to increase local awareness of archaeology and conservation, and amplify this with a coordinated digital and social media strategy. In addition to paid participation, an equal number of free spaces will be provided for members of local archaeology or other groups. The majority of project activities will be provided without cost, and these will be offered through the Morecambe Heritage Centre (a pop-up on Morecambe promenade).
- 6.4.2 The project has been widely advertised locally on radio, newspapers and local news TV, and flyers have been distributed through the existing networks as well as in pubs, shops, businesses and venues. Signposts will also be erected on all roads leading to the Site to encourage passing traffic to visit. The End of Site party will be held at the Morecambe Heritage Centre; the event will be open to the public and will feature a presentation of the initial results as well as light refreshments for all attendees.
- 6.4.3 Engagement will be both on and offline, with a digital platform developed to engage a new local and global audience, inviting external communities (and those not usually engaged with archaeology) to take an active role in knowledge production. ‘Digital Dig Team’, a cloud-based, open-source software platform enabling participants to publish data directly from the field using any web-enabled device (such as a smartphone or tablet) into a live relational database. The implications of this new approach is the subject of research in its own right, as the born-digital archive enables geographically dispersed specialist teams to collaborate in real time during the data collection stage of field projects (Wilkins 2015). The database has been built, and once the dig becomes live, the excavation archive will be viewable by following this link and navigating to ‘See the Data’: <http://digventures.com/barrowed-time>
- 6.4.4 All major social media channels will be used to amplifying daily blog content. A digital video specialist will be on site throughout the excavation, and broadcast quality footage will be uploaded to YouTube daily. The project will feature regular evening lectures open to the public where the day’s findings will be discussed, followed by presentations by the wider specialist team in addition to the on site specialist team. These will also be filmed and broadcast live, with the recorded archive made available on the project website.
- 6.4.5 The impact of this outreach work will be measured with a quantitative and qualitative evaluation of all participants to establish baseline audience awareness data and assist with future management strategies and promotion. This will be undertaken with a visitor survey conducted

throughout the field season, targeting both excavation participants and casual visitors.

## 6.5 Dissemination

6.5.1 Rapid dissemination of the results to, and involvement of, stakeholders of the project is vital throughout. This will take place through multiple channels, addressing a multitude of established and new audiences. Dissemination outlined below will all be undertaken during 2016, and will include, but not be limited to:

- Dedicated website with daily news updates on a blog and all major social media channels (Facebook, Twitter, Google+, Flickr and Instagram) amplified through third-party coverage by the networked blogging community: <http://digventures.com/barrowed-time>
- Daily broadcast quality video feature released on YouTube throughout excavation stage: <http://digventures.com/barrowed-time/timeline/>
- Conference presentation (European Association of Archaeology 2017) in Maastricht.
- Wide circulation of Assessment and Final Report, Updated Project Design and links to the OASIS record: Oasis ID: digventu1-212051
- Site publication in an appropriate local/national journal commensurate with the final results (such as the Yorkshire Archaeological Journal).
- Deposition of the Assessment Report with the Lancashire Historic Environment Record, and summary article in PAST –the newsletter of the Prehistoric Society Public Seminar and Exhibition presenting the final results (Autumn 2016).
- Public lecture hosted in Morecambe presenting the final results (April 2017).

## 7 PROJECT REVIEW

7.1.1 The project will be continually reviewed by the Project Executive and Project Manager, with a formal review undertaken at the end of each Stage as follows:

Stage	Description	Review Point	Completion Date
Initiation	Consideration of Project Proposal, Heritage Lottery Fund	RV1 – Assemble Project Team and liaise with stakeholders	Completed – September 2015

Stage	Description	Review Point	Completion Date
Stage 1	Project Start-up, finalising Project Design and definition of scope	RV2 – Sign-off on MoRPHE Project Design, and liaison with stakeholders and landowners	Completed – May 2016
Stage 2	Archaeological Fieldwork	RV3 – assemble site archive and distribute pertinent data to specialists	Completed – August 2016
Stage 3	Assessment Report & Updated Project Design	RV4 – critically review findings, making recommendations for further work or closure	Completed – November 2016
Stage 4	Analysis & Publication	RV5 – final publication sign-off, and prepare archive for accession	December 2016
Closure		RV5	December 2016

**Table 2** – Project Review Stages

7.1.2 It is anticipated that each of the Review Points will be conducted internally, with input from Lancashire County Council on the basis of deliverables (draft reports etc.) submitted by DigVentures. The Project Executive will undertake continuous review of the project through receipt of internal Highlight Reports and by Monitoring Meetings. A schedule of Monitoring Meetings will be agreed with Lancashire County Council on commencement of the project.

## **8 HEALTH AND SAFETY**

8.1.1 DigVentures will undertake the works in accordance with Health and Safety requirements and a Health and Safety Plan. This document will take account of any design information pertaining to above and below ground hazards such as cave passage, scree slopes, crags, steep slopes and loose rock.

8.1.2 DigVentures will ensure that all work is carried out in accordance with its company Health and Safety Policy, to standards defined in *The Health and*

*Safety at Work etc. Act 1974, and The Management of Health and Safety Regulations 1992, and in accordance with the SCAUM (Standing Conference of Archaeological Unit Managers) health and safety manual Health and Safety in Field Archaeology (1996).*

# A community excavation of a recently discovered Bronze Age barrow at Bolton le Sands, Lancashire

## PART 2: RESOURCES AND PROGRAMMING

### 9 PROJECT TEAM STRUCTURE

#### 9.1 Team Structure and Key Responsibilities

9.1.1 DigVentures' Core Project Team is detailed in Table 3 below. A summary CV, setting out the skills and expertise of team members is set out in Appendix 1, with CVs for the wider specialist team available on request. Expert ecofactual and artefact support will be provided by a range of partner organisations as needed, and the University of Durham in particular.

Name	Initials (see resources and programming)	Project Role	Key Responsibility
Lisa Westcott Wilkins	LWW	Project Executive	Overall project responsibility, and project assurance
Brendon Wilkins	BW	Project Manager & Co-Director	Overall project responsibility, training, project design and liaison with project partners; field skills training responsibility as lead archaeologist
Stuart Noon	SN	Heritage & Archaeology Specialist & Co-Director	Shared responsibility for site strategy, project design, finds and specialist research
Benjamin Roberts	BR	Bronze Age Specialist, and Co-Director	Responsible for defining research agenda, specialist team and publication
Raksha Dave	RD	Public Archaeologist & Project Support	On-site field-work, responsible for field school, and post-excavation assessment
Nigel Steel	NS	Community Archaeologist & Project Support	On-site field-work, and post-excavation assessment
Maiya Pina-Dacier	MPD	Community Archaeologist & Project Support	On-site and post excavation assistance.
Rosanna Ring	RR	Community Archaeologist & Project Support	On-site and post excavation assistance, schools and education
Anna Van	AVN	Community	On-site and post





<b>Name</b>	<b>Initials (see resources and programming)</b>	<b>Project Role</b>	<b>Key Responsibility</b>
Nostrand		Archaeologist & Project Support	excavation assistance, schools and education
Adam Stanford	AS	Expert – Photogrammetry	3D Modelling and Photogrammetry

**Table 3** – Core Project Team Structure

## 10 METHODOLOGY

### 10.1 Introduction

10.1.1 The methods reflect the project Stages set out in Section 7 above. A task list, with allocation of staff time and team member is set out in Section 11.2 below, along with a GANTT chart in Section 15, setting out a provisional programme. Detailed method statements relating the specific techniques or approaches detailed below to their constituent research questions can be found in Appendix 2 at the end of this document.

### 10.2 Stage 1 – Project Start-Up

10.2.1 Stage 1 will comprise the first stage of work to meet project Aim 1, and will entail stakeholder consultation to finalise the terms of the MoRPHE Project Design. The archaeological project design will be refined during this stage, aligning method statements with research questions following further consultation with academic and statutory stakeholders. All deliverables and milestones will be confirmed with all project partners, and DigVentures will set aside meeting time during this project stage, either to attend multi-partner project meetings on site (such as the pre-start briefing meeting and pre-start building contract meeting), or to undertake conference calls as required (via Google Hangouts, Skype or equivalent). A meeting will also be arranged with local heritage groups to develop opportunities for participation in all aspects of the project and ensuring that their local or subject area expertise is reflected on the excavation team.

### 10.3 Stage 2 – Archaeological Fieldwork

10.3.1 Stage 2 will comprise the first fieldwork stage to meet the objectives of Archaeological Aims 1 and 2. Fieldwork will be carried out in accordance with the Chartered Institute for Archaeologists' *Standard and Guidance for Archaeological Excavation* (CIfA 2008) and *Standard and Guidance for Geophysical Survey* (CIfA 2008) with the results of both investigations also addressing (but not limited to) the following research questions:

- Q1. Can the layout of the mound and any associated subsurface archaeology be determined by remote survey?
- Q2. What are the topographic anomalies visible immediately adjacent to the mound, and is this evidence of an enclosing bank?
- Q3. Can we identify any phasing in the topographic or remote sensing anomalies indicative of an extended period of use?

- Q4. Can we corroborate chronological phasing for the Site, including the presence of earlier and later features, as defined in Aim 1?
- Q5. What are the typical and atypical features of the excavated barrow and did this influence the functions and activities that took place?
- Q6. What is the landscape setting and character of the site, and how did this shape its location, design and development?

10.3.2 Fieldwork will comprise a two-week community excavation (six day working weeks, including weekends). A minimum of six DigVentures staff will be on site at all times, with teaching responsibilities, curriculum and learning outcomes explicitly designed in line with National Occupational Standards (NOS). Community training will be undertaken as a series of set piece activities, integrated into (rather than interrupting) the daily work plan. This will be supported by a dedicated 'incident room' in a pop-up shop on Morecambe prom, with activities designed to appeal to as wide a demographic as possible (aiming to engage a minimum of 150 people on and off-site, and 250 school children).

#### **10.4 Stage 3 – Assessment Report & Updated Project Design**

10.4.1 Tasks associated with this stage will principally be completed off-site, with specialist assessment and analysis of materials obtained during Stage 2. Where possible, community participants will be involved with the post-excavation work, with weekend finds processing and environmental workshops lead by specialists on the wider DigVentures team. This stage will seek to address the following research questions, culminating in Review Point 3:

- Q7. What is the current state of the archaeological and palaeoenvironmental material across the site?
- Q8: How well do deposits survive, and how deeply are they buried?
- Q9. Can the palaeoenvironmental data recovered from sampling in the trenches inform us about burial or broader settlement activities that may have taken place at or near to the site?
- Q10. What is the range and spatial patterning of artefacts recovered from the barrow, and can this inform our understanding of the use of the upland Pennine landscape and utilisation of wider resources?
- Q11. Can we increase our understanding of the local environment in the prehistoric period?

#### **10.5 Stage 4 – Further work, Analysis and Publication**

10.5.1 Addressing Aim 4, this is the main reporting and recommendation stage of the project, culminating in Review Point 4. Whilst still adhering to the project critical path, session time will also be created to ensure that community participants can contribute to post-excavation tasks wherever relevant, drawing on crowdsourced insights posted on the microsite project records. This stage will principally address Aim 4, and the following research question.

- Q12: What can an integrated synthesis of the results of the community archaeology project investigations with previous interventions tell us about the site and its setting in terms of the more extensively researched and studied landscapes?

- Q13: What recommendations can be made to protect, conserve and enhance the heritage asset, in the light of the issues and opportunities identified under Aims 1 - 3?

## 10.6 Methodological Linkages

10.6.1 Following an assessment of the scope of works it is anticipated that the project will be undertaken in four stages. These are set out in the table below and are set against the project aims and questions that will be met at each stage, the products that will be produced and the tasks undertaken. For transparency, task numbers are linked directly to the project GANNT chart (for full sequence including milestones see chart in Section 15) and this is linked to the Project Budget in Section 14.

Stage	Description	Project Aims/Questions	Products	Task & ID Number
<b>Stage 1</b>	Project Design	Aim 1-4 Q1-14	1. Permissions (planning application & stewardship derogations) 2. Finalised PD & Risk Log 3. Educational Plan & Information Pack 4. Digital Communication Plan 5. Risk Assessment & Health and Safety Plan	3. Consult with wider project team and stakeholders to define milestones and delivery timetable. 4. Core Archaeology Team Meeting. 5. Design project database. 6. RV2 – Sign Off on MoRPHE
<b>Stage 2</b>	Archaeological Fieldwork –	Aim 1 Q1-3  Aim 2 Q4-7	6. Field Archive 7. Geophysical Archive 8. 3D Survey Archive	8. Site Preparation 9. Fieldwork (remote sensing & Excavation) 10. Reinstatement of excavated area 11. RV3 – assemble site archive & distribute to specialists
<b>Stage 3</b>	Assessment Report & Updated Project	Aim 3 Q8-10	9. Stratigraphic & Assessment	13. Specialist finds and

Stage	Description	Project Aims/Questions	Products	Task & ID Number
	Design	Aim 4 Q11-14	Report	palaeoenvironmental assessments 14. Integrated assessment report 15.RV4 – recommendations for further work
<b>Stage 4</b>	Analysis and Publication	Aim 1-4 Q1-14	10. Final report 11. Publication 12. Completed and accessioned archive	18. Specialist analysis 19. Finalise report and publication 20. Prepare data and archive for online deposition. 21. RV5 – final sign-off 22. Closure

**Table 4 (continued)** – Project stages, products and tasks

## 10.7 Task List by Person days and Team Member

10.7.1 DigVentures projects are managed according to the Historic England MoRPHE project model (Management of Archaeological Research Projects in the Historic Environment) based on a PRINCE2 framework. This is further detailed in the project GANNT chart (Section 15), including project milestones, and linked by Stage with the project budget (Section 14).

Task ID Number	Aims	Task Description	Performed by:	Person days	Start (no later than)
<b>Stage 1: PD</b>					
3	1	Consult with wider project team and stakeholders to define milestones and delivery timetable	BW, LWW, SN, BR	1	19 <sup>th</sup> August 2015
4	1	Core Team Meeting	BW, LWW, BR, SNRD, NHS	0.25	28 <sup>th</sup> March 2016
5	1	Design project database	BW, RR	0.5	31 <sup>st</sup> May 2016
6	1	RV2 – Sign Off on MoRPHE	Project Team	0.25	15 <sup>th</sup> May 2016
<b>Stage 2:</b>					

Task ID Number	Aims	Task Description	Performed by:	Person days	Start (no later than)
<b>Fieldwork</b>					
8	1 & 2	Site Preparation	BW, LWW, RD, NHS	2	3 <sup>rd</sup> July 2016
9	1 & 2	Fieldwork (remote sensing & Excavation)	BW, LWW, BR, SN, RD, NHS, MPD, RR, AN	14	4 <sup>th</sup> – 17 <sup>th</sup> July 2016
10	1 & 2	RV3 – assemble site archive & distribute to specialists	Project Team	5	18 <sup>th</sup> July 2016
<b>Stage 3 Assessment</b>					
13	3	Specialist assessments	Expert Team	10	October 2016
14	3	Integrated Report	BW, SN, BR & Project Team	5	October 2016
15	3	RV4 – recommendations for further work	Project Team	1	October 2016
<b>Stage 4: Analysis and Publication</b>					
18	4	Specialist Analysis	BW, LWW & Project Team	7	October 2016
19	4	Finalise report and publication	BW, SN, BR, NHS	7	November 2016
20	4	Prepare data and archive for deposition.	TG	2	December 2016
21	4	RV5 – final sign-off	Project Team	1	January 2017

**Table 5 (overleaf) – Project Task List**

## 11 OWNERSHIP

11.1.1 The Copyright on all reports submitted will reside with DigVentures, although a third party in-perpetuity licence will automatically be given for reproduction of all products, subject to agreement with DigVentures. The original copyright holder will retain copyright in pre-existing data. Any publications resulting from the project will be subject to agreement with YDNPA and will bear an acknowledgement of the support of Yorkshire Dales National Park Authority.



**12 RISK LOG**

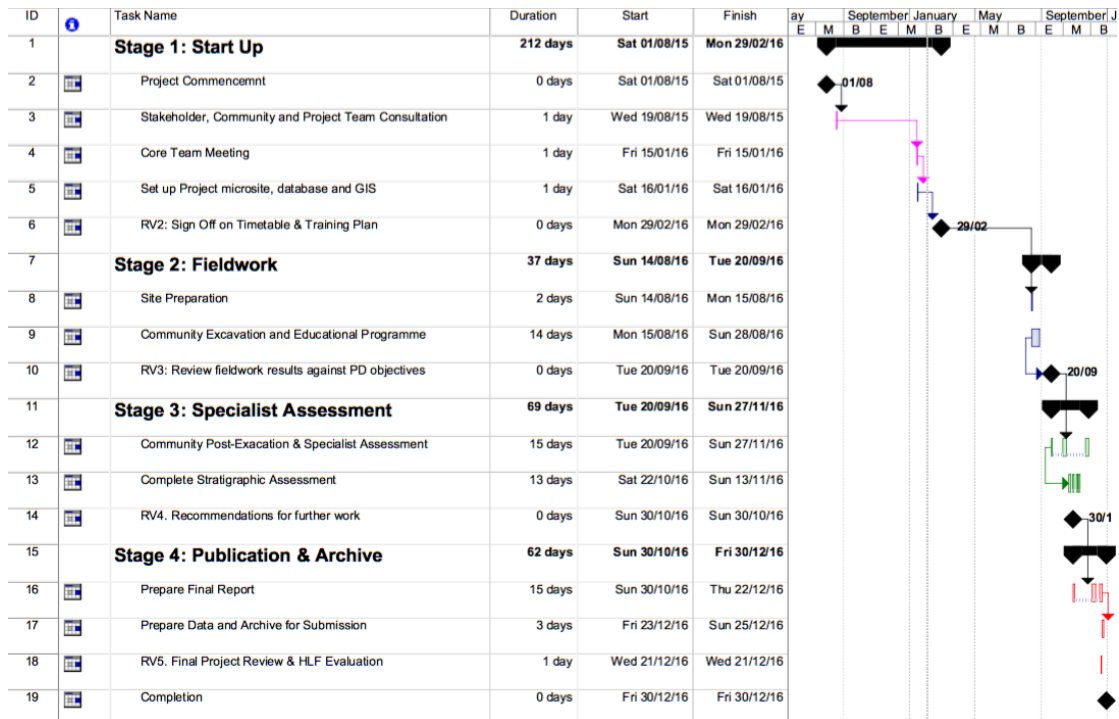
12.1.1 A Risk Log is appended as Appendix 4 to this document.

**13 BUDGET**

13.1.1 The estimated overall budget for the project will be delivered entirely within the 2016 financial year.

**14 PROJECT GANNT CHART**

14.1.1 It is anticipated that the project will be completed in four stages. These are set out in the GANNT chart below; with specific task ID numbers and milestones linked to the project Aims and Objectives in Table 4, and the project budget.



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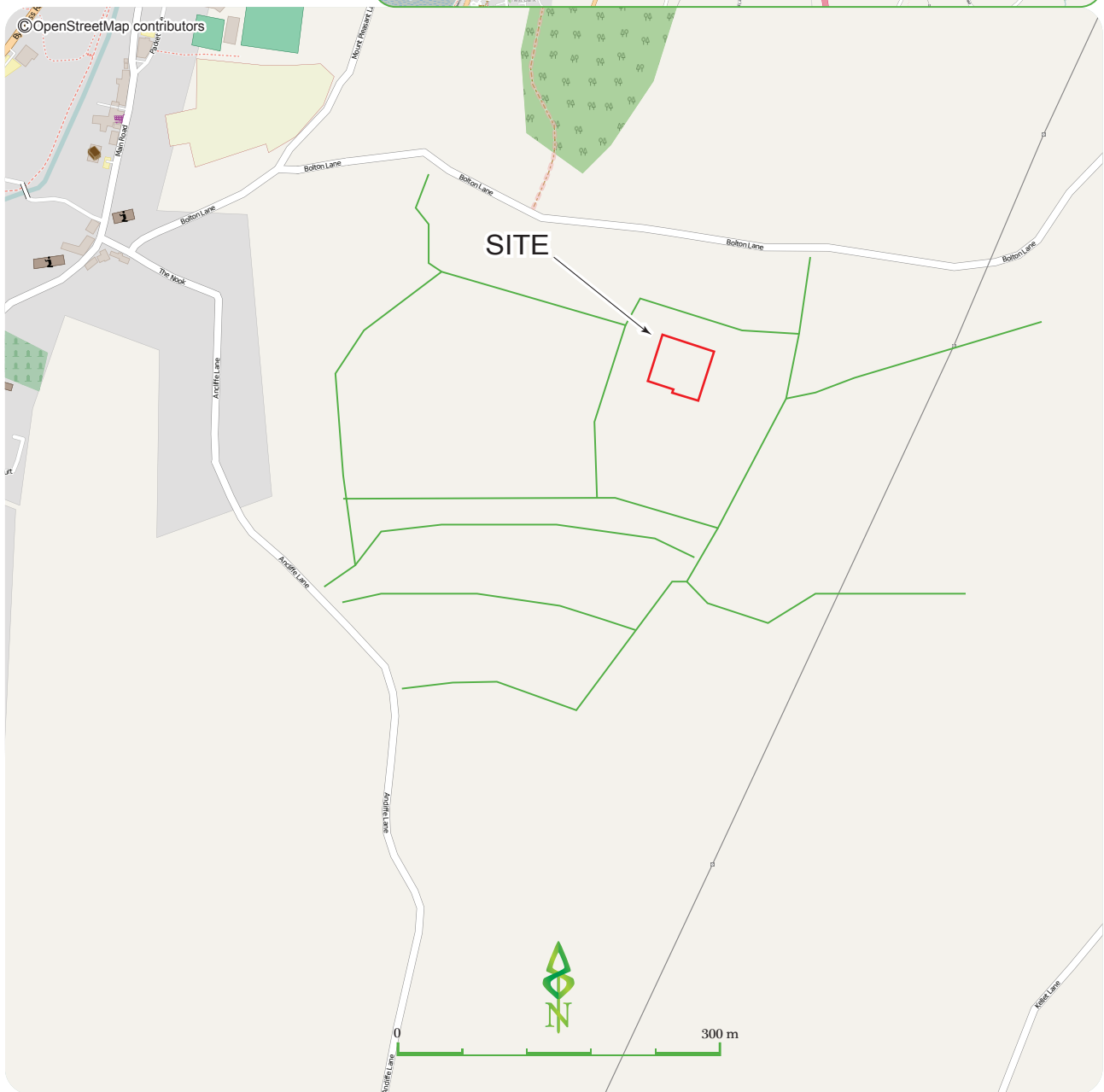
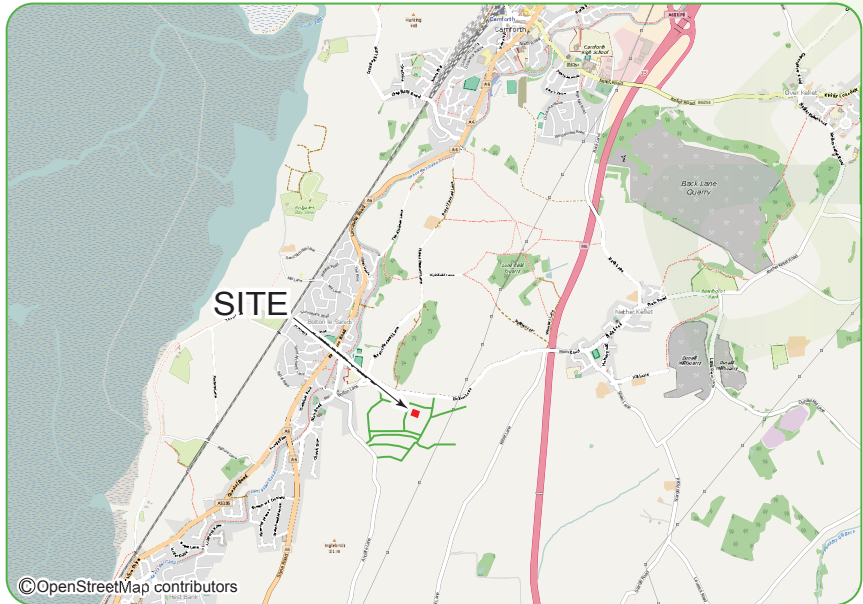


Figure 1 - Barrowed Time, Bolton le Sands: Site location.





Figure 2 - Barrowed Time: Proposed trenches overlaid on the 2016 magnetometry results, featuring an earlier resistivity plot (courtesy of UCLAN, 2013).

**16 APPENDICIES**

**Appendix 1 – CVs**

## Appendix 2 – Method Statements

The methods for the proposed project will involve a combination of aerial survey, GIS modelling, archaeological excavation, sampling, palaeo-environmental sampling and assessment. The methods are linked directly to the project aims and objectives (see Table 7) and detailed below.

Key Questions and Objectives	Aerial Photogrammetry Survey	Digital Terrain Modelling	Earthwork Survey, GIS Modelling and Geophysical Survey	Archaeological Excavation	Sampling	Environmental Assessment & Dating	Findings Assessment	Synthesis and Data Integration
Q.1	✓	✓	✓					
Q.2	✓		✓					
Q.3	✓	✓	✓					
Q.4				✓				
Q.5				✓				
Q.6				✓				
Q.7			✓	✓	✓	✓		
Q.8				✓	✓	✓	✓	
Q.9					✓	✓	✓	
Q.10					✓	✓		
Q.11						✓		✓
Q.12						✓		✓
Q.13								✓
Q.14								✓

**Table 6** – Linking methods with objectives

### Aerial Photogrammetry Survey

A comprehensive aerial survey will be undertaken on the landscape surrounding the barrow, producing a metrically accurate 3D digital surface model (DSM). The resulting DSM will provide an accurate and versatile record of the form and condition of the earthwork features providing a baseline dataset for comparison with future surveys to determine weathering rates and potential damage.

The photogrammetry survey will utilize Agisoft PhotoScan 3D Modelling software to detect the feature points of the structure, and match these in different images to create a point cloud. The camera positions will be calculated automatically by the software and a dense reconstruction or geometric model will be built to create a DSM. The resulting DSM can be manipulated for viewing from any angle using a variety of artificial light and shading techniques to highlight certain features, or overlaid or draped with the original photographs for true colour representation. This work will be used to provide a landscape context to more detailed invasive and non-invasive work at the Site. The specific techniques and methodologies and reinstatement strategies relating to this intrusive work are detailed below.

### **Topographic Survey and GIS Modelling**

Any additional topographical survey work will be carried out using a Trimble Real Time Differential GPS survey system. The Trimble VRS system is used in conjunction with a GPS Rover unit. It allows for surveying without the use of a site specific fixed base station. This is achieved by connecting to Trimble's network of fixed base stations by means of mobile phone communication. This method is highly efficient and accurate (+/- 2cm) when good signal is available. The survey data is exported from the data logger as a comma delimited file (csv) and a Trimble data collector file (dc). Either of these files can be imported into Trimble GeoSite Communicator, which recognises the feature code library and plots all strings, polygons and labels as intended. All survey and excavation data will be stored within a GIS environment, which will remain the principle conduit for all spatial data throughout the project.

### **Geophysical Survey**

The project team will establish and tie-in (to permanent landscape features) the survey areas (30m by 30m grids) using tapes and a Trimble GPS; where appropriate, semi-permanent marker pegs will be left on site, so that the grid can be accurately re-located by a third party. On rare occasions where this methodology is not practicable, a combination of Total Station, optical square, ranging rods and tape measures may be used. Readings will be stored in the memory of the instruments and are later downloaded to computer for processing and interpretation. The data will be interpreted and presented at suitable scales and located on Ordnance Survey base maps as appropriate. Large scale, typically 1:500, reference plots. The survey methodology, report and any recommendations will comply with current guidelines outlined by English Heritage (Geophysical Survey in Archaeological Field Evaluation, Research and Professional Services Guidelines No 1, compiled by A David, April 2008) and by the Institute of Field Archaeologists (The Use of Geophysical Techniques in Archaeological Evaluations, IFA Paper No 6, C Gaffney, J Gater and S Ovenden, 2002).

### **Archaeological Excavation**

Three hand dug test trenches will be excavated, with their final position refined on the basis of remote sensing results (Figure 2), as detailed below:



Trench	Dimensions	Target & Location	Description
1	2 x 35m	Find spot and geophysical anomaly	A 2 x 35 metre hand dug test trench (north-south) designed to intersect in a cruciform pattern with Trench 2, aiming to assess character of the barrow and any associated archaeology, stratigraphic relationships and recover dating evidence. This trench will be extended to assess a probable modern linear feature to the north of the barrow. The trench aim to will characterise and date this anomaly. The trench will be widened if significant cut features are identified extending beyond the limit of excavation.
2	2 x 25m	Find spot and geophysical anomaly	A 2 x 25 metre hand dug test trench (east-west) designed to intersect in a cruciform pattern with Trench 1, aiming to assess character of the barrow and any associated archaeology, stratigraphic relationships and recover dating evidence. The trench will be widened if significant cut features are identified extending beyond the limit of excavation.
3	2 x 8m	Geophysical anomaly	A 2 x 8 metre hand dug test trench above a probable tree throw to the northeast of the barrow. The trench aim to will characterise and date this anomaly.

**Table 7** – Trench target, location and description

### **Interventions**

All trenches will be cleaned by hand, planned and photographed prior to any further excavation. A representative section, not less than 1m in width, of the entire deposit sequence encountered will be recorded. If complex stratigraphy and/ or significant remains (e.g. structural remains, artefact scatters, remains clearly of a funerary nature etc.) are encountered, following consultation with statutory stakeholders, these may only be excavated to the minimum requirement in order to satisfy the project objective, to avoid compromising the integrity of remains that may be either (a) preserved in situ, or (b) excavated in detail during any next phase of research excavation (not with standing the potential threat of looting). Interventions will focus on feature intersections in order to establish relative chronologies, and 'clean' sections to maximise retrieval of stratigraphically secure dating evidence and environmental samples.

Full written, drawn and photographic records will be made of each trench and test pit, even where no archaeological remains are identified. A plan at an appropriate

scale (1:50 or 1:100) will be prepared, showing the areas investigated and their relation to more permanent topographical features, and the location of contexts observed and recorded in the course of the investigation. Plans, sections and elevations of archaeological features and deposits will be drawn as necessary at an appropriate scale (normally 1:20, or 1:10 for complex features). Drawings will be made in pencil (H6) on permanent drafting film and archived in a suitable depository.

Each trench or test pit, will be recorded using a Digital format created for Digital Dig Team, following the DigVentures single context recording system. Digital photography will be used for all photography of significant features, finds, deposits and general site working. The photographic record will illustrate both the detail and the general context of the principal features and finds excavated, and the Site as a whole.

### **Reinstatement**

Turf will be carefully removed by hand in 40cm x 60cm turves and carefully stacked away from the trench edge, we will maintain their integrity by ensuring that the turves are placed in a correct position (turf side up) and are watered frequently and monitored daily. Trenches will be reinstated immediately following excavation with subsoil followed by topsoil. The site will be visibly similar in appearance to it's condition pre-excavation; there shall be no visible mounds of excavated soil around the site and turf shall be replaced and watered in.

### **Palaeoenvironmental Sampling**

All deposits with good palaeoenvironmental potential will be sampled; bulk samples will be taken from the section as appropriate, under advice from the project specialist. Context specific samples will be taken by the most appropriate means (kubiena tins, contiguous columns, incremental block, bulk etc.) for multi-disciplinary analysis. All aspects of the collection, selection, processing, assessment and reporting on the environmental archaeology component of the evaluation will be undertaken in accordance with the principles set out in '*Environmental Archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation*' (Historic England 2011) and with reference to the Association for Environmental Archaeology's 'Working Paper No. 2, *Environmental Archaeology and Archaeological Evaluations*' (1995).

### **Bulk Sampling Strategy**

Bulk samples will usually be 60 litres in size, depending on the likely density of macrofossils. Ten litre samples will only be used for the recovery of plant macrofossils from waterlogged contexts. Samples will be stored in ten litre plastic buckets with lids and handles. A waterproof label will be fixed to the bucket and will record site code, context number and sample number and number of buckets in comprising the sample. A duplicate label will be retained inside the bucket. Samples will be protected from temperatures below 5° and above 25° Celsius and will be prevented from either wetting or drying out.

- Bulk samples selected for processing will be wet-sieved/floated and washed (by the excavation team at a suitable area close to the temporary headquarters) over a mesh size of 250 microns for the recovery of palaeobotanical and other organic remains, and re-floated to maximise recovery;
- Non-organic residues shall be washed through a nest of sieves of 10mm, 5mm, 2mm, 1mm and 250 micron mesh to maximise finds recovery;
- Both organic and non-organic residues shall be dried under controlled conditions;

- The dried inorganic fractions will be sorted for small finds or any non- buoyant palaeoenvironmental remains, and scanned with a magnet to pick up ferrous debris such as hammer scale;
- The dried organic fractions will be sorted under a light microscope to identify the range of species or other material on a presence/absence basis, the degree of preservation of the bio-archaeological material and the rough proportions of different categories of material present;
- In the event that waterlogged deposits are identified and sampled, further processing will be undertaken as appropriate and agreed, including paraffin flotation to recover insect remains. Any such remains will be scanned to identify and assess their potential;
- Selection of other types of sample for processing and the methods to be used for processing and assessment will be undertaken on the advice of the relevant specialist and will be agreed with the Consultant before implementation.

Contexts that are well stratified and potentially datable are all of value, so a systematic approach to selecting samples for processing and assessment will be taken. These will be divided into three categories:

- Category A (always sampled): contexts where the composition of the sediments is likely to inform us of the use of a particular structure or feature or if the deposits are waterlogged. These will include: *in situ* occupation deposits and fills/layers associated with particular activities; hearths; destruction deposits; basal pit/slot trench fills; waterlogged deposits, cesspits or latrines.
- Category B (always sampled, though discretion can be exercised by the trench supervisor): deposits identified as containing material that could yield information regarding their origin or the process that produced them. These will include: dumps, middens, upper pit fills with evidence for charred material, shell, bone and industrial waste.
- Category C: deposits containing material which is not necessarily related to the function of the feature to which they are related, but which can characterise deposits from different areas of the site. These will include: secondary and tertiary fills, postholes, levelling deposits, spreads etc.

Category A deposits should always be sampled, Category B deposits always sampled however, the supervisor's discretion may allow for a strategy such as 'scatter sampling' enabling exploration of variation within a deposit and Category C deposits sampled on a random basis (such as 1 in 5). These samples can help to characterise the background noise of a site, so as to highlight spatial or temporal trends and provide material that can be directly compared with those from Category A and B. All samples will be taken in large white 10 litre tubs, with labels placed inside with the deposit and attached to the bucket. All samples will be processed off site in a dedicated floatation and wet sieving area.

### **Zooarchaeology**

If large deposits of bone or marine shell are encountered advice of the project Zooarchaeologist will be sought as regards further sampling. If large deposits of bone or marine shell are encountered the project Zooarchaeologist advice will be sought as regards further sampling. If articulated groups of bones are encountered (as found in previous excavations. they will be surveyed, recorded in situ, (including digital photography and planning), and then excavated to retain the group's integrity.

Bones from each articulated limb will be bagged separately. If inhumations or cremation burials are encountered and excavated the surrounding soil will be sampled to retrieve any loose teeth or bone fragments.

All hand collected animal bones and bones from processed samples will be assessed, following Historic England's Environmental Archaeology guidelines (2011). If warranted by the size of the recovered assemblage, it will be assessed using two different quantification methods to determine the most suitable for full analysis, taking into account methods used in comparative assemblages. The assessment will not distinguish between certain taxonomic groups; full speciation will be carried out as part of the analysis, using a vertebrate comparative collection. In addition to quantification of domestic species and occurrence of wild species, the assessment will consider the number of articulated bone groups, and the prevalence of aging, sexing and osteometric data available for full analysis, following standard published conventions. The assessment report will comment on the potential of the assemblage, particularly in the context of the excavation's research questions and current understanding of comparative assemblages. It will also provide recommendations for any necessary future analysis.

### **Human Osteoarchaeology**

In the event of the discovery of human remains (inhumations, cremations and disarticulated fragments) they will be left *in situ*, covered and protected, until Miles Johnson (YDNPA) and Natural England have been informed. If a decision is taken to remove them, they will be fully recorded and excavated in compliance with the relevant Ministry of Justice Licence. A copy of the Ministry of Justice licence will be supplied to Natural England for logging onto the agri-environment agreement documents. The excavation of human remains will be carried out in accordance with the procedures detailed in the document *Excavation and post-excavation treatment of cremated and inhumed human remains* (McKinley and Roberts 1993, CIfA Technical Paper 13). Significant assemblages of human remains will be subject to an assessment of DNA preservation to establish potential familial relationships.

Inhumations will be scanned with a metal detector prior to excavation, and the position of possible metallic grave goods will be noted. Wherever possible, each burial will be excavated within a single working day, particularly with regard to visible grave goods. To minimise unauthorised disturbance of human remains, partially exposed remains will be covered overnight, though in such a way as to not draw undue attention, using loose excavated spoil.

Excavation of inhumations will be undertaken using a trowel, plasterer's leaf, plastic spoon and paintbrush as appropriate depending on the condition of the bones. When lifted the bones will be bagged by skeletal area (skull, axial, upper and lower limbs) with separate bags for the left and right side. A standard series of samples will be taken from each inhumation burial to ensure full recovery of any remaining osseous tissues or small artefacts. Once human remains are removed from inhumation graves, any soil residue remaining at the base of the grave will be retrieved for bulk processing.

Inhumations and cremations will be drawn at a scale of 1:10 and photographed prior to lifting. They will be recorded on Skeleton Record Sheets that form an integral part of the site *pro forma* recording system. The recording will include condition, completeness, articulation, orientation and posture.

Fragile objects found within graves will be lifted with appropriate care and handling to minimise breakage. This may include subsequent controlled excavation under laboratory conditions. A trained conservator will be employed on the site if necessary. All cremation burials and cremation-related contexts will be excavated and sampled in quadrants to ascertain the distribution of any archaeological components within the fills, with division into spit also if appropriate. Cremation-related features other than burials may be subject to more detailed sub-divisions, the appropriate strategy being developed by a specialist as the size and nature of the remains becomes clear.

Undisturbed and slightly disturbed, but largely intact, urn cremation burials will be lifted *en masse* for excavation under laboratory conditions. The urns will be wrapped in crepe bandages and securely boxed for transportation. Where a vessel has been crushed, thereby disrupting any original internal deposition of the cremated remains, it will be lifted *en masse* after separate recovery of displaced sherds. All cremation-related contexts will be subject to whole-earth recovery from the point at which any cremated bone or other pyre debris is observed. If deposits of placed human bone are encountered in features, these may be excavated in spits if appropriate. The soils from these features will be bulk sampled.

### **Finds**

All finds will be treated in accordance with the relevant guidance given in the Institute of Field Archaeologist's *Standard and Guidance for Archaeological Evaluation* (2008), excepting where statements made below supersede them. All artefacts will be retained from excavated contexts, except features or deposits undoubtedly of modern date. In these circumstances sufficient artefacts will only be retained to elucidate the date and function of the feature or deposit.

All artefacts from the excavation will, as a minimum, be washed, marked, counted, weighed and identified. Any stratified ironwork will be X-rayed and stored in a stable condition along with other fragile and delicate material. The X-raying of objects and other conservation needs will be undertaken by appropriately qualified conservation specialists. Suitable material, primarily the pottery and non-ferrous metalwork, will be scanned to assess the date range of the assemblage.

### **Conservation**

If Artefacts 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.

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 materials, 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). 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.

**Scientific Dating**

Radiocarbon dating will be appropriate for clarifying and linking aspects of archaeological and environmental chronologies, and a strategy for this will be agreed following discussion with the relevant specialists following assessment.

**Synthesis and data integration**

Radiocarbon The results of the project will be integrated and synthesised with those from the previous investigations if and when data from previous excavations is made available (see Section 1.3), and other relevant work within the region and further afield. This will include a literature review of other pertinent sites.

## **Appendix 4 – Public Outreach & Impact**

### **Social Impact**

The project will be coordinated through a dedicated microsite hosted on the DigVentures website, and based on 'Digital Dig Team' recording system. The purpose of these dedicated pages will be to augment off-line workshops and activity with a package of interactive on-line resources. An evaluation of our previous work delivering projects in this format has demonstrated a far wider range of community engagement than would usually be found in similar projects, especially with groups typically considered to be hard to reach (Westcott Wilkins 2014).

In addition to widening the potential impact of the 'Barrowed Time' project, learning outcomes from this approach will be sensitive to both 'soft' measures (empowering individuals through the connection with the local cultural landscape and the discovery of 'self') and 'hard' measures (enabling skills attainments for volunteers aspiring to develop a career in the cultural heritage sector). Coordinating the project through a dedicated microsite will help us achieve this by providing a spectrum of on and off-line opportunities for engagement (from a video 'like', to an online course sign-up to full workshop enrolment), resulting in a participatory reach that stretches far outside the narrow audience traditionally perceived as the beneficiaries of HLF supported archaeology projects.

Our previous work delivering similar projects in this format has helped us create opportunities to work with hard to reach groups (many of whom are 'digital natives') who might otherwise be classed as difficult, excluded or peripheral. Through our 'pay it forward' scheme – enabling companies and individuals to sponsor field school places – we have worked with NEETS, the long-term unemployed, people with mental health problems and people with physical disabilities. This is vitally important to us because we passionately believe that archaeology should serve a wider social benefit, and we will actively seek out opportunities to work with similar groups as part of this contract.

### **Archaeological Experience and Field Skills Training**

In all training and mentoring activities delivered through the 'Barrowed Time' project, it will be essential that skills are taught and assessed by practitioners with comprehensive, first-hand field experience. At the heart of our social enterprise, and fundamental to all our organisational activities, we are practicing field archaeologists, managing and excavating community-based field projects on locally, nationally and internationally important sites. As such, we are the only community-focused archaeological organisation to have been professionally accredited as part of the prestigious 'Registered Organisation' scheme by *The Chartered Institute for Archaeologists*. On this basis we have piloted a scheme with ClfA to deliver NVQ training for archaeological field skills, and are currently the only archaeological organisation accredited to this. All our field training, irrespective of certification, is therefore designed explicitly in line with National Occupational Standards (NOS) and we encourage all participants to log their progress in a 'Skills Passport' with the potential to build this towards a ClfA accredited professional portfolio.

### **Mentoring, Support and Sustainability**

A key outcome of this project will be the provision of mentoring to community (in particular caving) groups, building skills capacity within the local community to help contribute to the long-term sustainability of the local archaeological resource. We



have a solid track record working in a similar mentoring capacity, using the latest social engagement techniques to generate additional income and participation to support archaeological and community activities. Through a crowdfunding and crowdsourcing participation approach we have generated massive interest in projects and raised significant funds to support on-going work.

This distinctive profile has allowed us to help heritage sites 'at risk', providing expert support and advice at a time when austerity measures have led to an erosion of Local Authority capacity in many areas, as well as the withdrawal of specialist heritage advisory posts and funding. We have addressed these challenges by adopting a start-up mentality: creatively forming the structures, alliances and strategies to amplify existing assets, rather than being restricted by financial constraints. This unique approach situates archaeology firmly in the context of heritage-led regeneration, and the product of our work helps heritage sites, attractions and projects develop conservation and audience development strategies to ensure their long-term sustainability. By engaging volunteers at the heart of archaeological research, we also add a far greater range of value outcomes, designed to create lasting, positive change for communities.

The DigVentures approach has been widely profiled in the media (such as BBC Radio 4 Today Programme, The Guardian, The Times, Lonely Planet, The One Show, The Big Issue), and DigVentures was selected as a flagship case study at the HLF's recent 'Heritage Exchange 2014' conference to illustrate the potential for digital social innovation in the Heritage sector. For further details on how our collaborative approach draws on digital, audience, marketing and project management expertise in the context of a community archaeology project, we have provided several examples from our project portfolio on our website.

This section describes our approach to audience building, demonstrating a strategic approach to public engagement, articulated as a series of three aims:

***Aim 1: Engage as broad a selection of the local community as possible through digital engagement***

With equal importance to the archaeological aims and objectives, the project will seek to engage the local community in their heritage, maintaining and building heritage skills capacity in the local area. A dedicated project microsite will be developed for the project and hosted on the DigVentures website, combining social profiles for all community participants, project publications, excavation blogs, timelines, social media content. Based on our Digital Dig Team recording system, this will enable archaeologists and community participants to record from the trench on any web-enabled device, publishing text/photos/video/3D models to a dedicated project website and individual social profiles. Participants will be able to follow the project's progress digitally, in real-time, with a function to curate the archaeological data and content for the project on an on-going basis. Data is exportable into a number of formats, and could easily be migrated to local repositories, or ultimately accessioned with the Archaeological Data Service.

***Aim 2: Deliver NVQ level training, encouraging participants to record progress in a 'Skills Passport'***

All training and mentoring for the 'Barrowed Time' project will be delivered by DigVentures core staff, based on our experience delivering similar training programmes during our annual community field schools. This approach has been refined on our other community research projects through our selection as the only



organisation to pioneer a new programme with *The Chartered Institute for Archaeologists* (CIfA) as the first 'Accredited Field School' to deliver NVQ accredited training. Our field skills training curriculum is therefore designed in line with National Occupational Standards, aiming to help participants increase their employment prospects, gaining archaeological and transferable skills and if appropriate, an industry-recognised qualification.

Through initial consultation with individual participants, we will identify specific learning aims for adult project volunteers, and align learning plans with National Occupational Standards (NOS). An example of specific Standards applicable to this project are:

- **CCSAPAC3** Contribute to non-intrusive archaeological investigations
- **CCSAPAC2** Conduct non-intrusive investigations
- **CCSAPAC5** Contribute to intrusive archaeological investigations
- **CCSAPAH10** Contribute to health and safety in the workplace
- **CCSAPAC7** Transfer archaeological items
- **CCSAPAJ3** Develop your own resources and protect the interests of others

Satisfactory completion of this work by project volunteers (based on a range of core, secondary and tertiary skills) will result in the award of a CIfA CPD certificate, with the potential to build this into an NVQ accredited professional portfolio. DigVentures have adopted the 'Skills Passport' model of training log, enabling participants to track progress through the curriculum, and continue practicing heritage skills into heritage project delivery phase. Trainers will act as assessors for this, taking the time to discuss with participants the skills that they need to work on and helping to determine their level of ability:

- **Novice:** Able to carry out the specified task under supervision.
- **Competent:** Able to carry out the specific task with limited supervision.
- **Proficient:** Able to carry out the specific task independently and support others confidently.

All our field training, irrespective of certification, is therefore designed explicitly in line with National Occupational Standards (NOS) and we encourage all participants to log their progress in a 'Skills Passport' with the potential to build this towards a CIfA accredited professional portfolio. Through our partnership with HE archaeology departments, we are also able to offer courses accredited on the ECTS grading scale (as at our site at Leiston Abbey), enabling participants to contribute course credits to the award of a university degree.

### ***Aim 3: Securing press coverage to maintain and build interest in the local heritage landscape***

DigVentures has an established background in traditional media planning and delivery (print, television and radio), advertising and outreach, and we have a particular specialism using these social media and digital methods to amplify content. The 'Barrowed Time' project has a particularly compelling history, with the potential to provide snapshots of social history that are both newsworthy and relevant to local and regional media interests. To achieve this aim we have tailored a programme of marketing support to ensure the widest coverage possible for the project on an on-going basis (i.e., not limited to the duration of excavation). This will include:

- News updates on relevant third-party blogs likely to be read by our target audience, amplified through all major social media channels (Facebook, Twitter, Google+, Flickr and Instagram).
- An audit of local and national social media influencers who will support and promote opportunities to participate and can be leveraged to grow the project's following rapidly.
- News articles in *Current Archaeology* (UK) and *Past Horizons* (UK) and *British Archaeology* (UK)

Local broadcast/print media coverage, based around newsworthy dig 'events' (such as the photogrammetry workshops) or post-excavation discoveries and stories, which can be 'drip-fed' (supported by press release and engaging images).

**Appendix 5 – Risk Log**

(To be updated weekly)

<b>Risk number</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Description	Inclement Weather - Prolonged periods of Rain	Exceptional Weather (Drying exposed Archaeology)	Absence of Core Team Member	Absence of Specialist Team Member
Probability	Medium	Medium-low	Low	Low
Impact	Delay programme of work	Slow progress	Delay programme of work	Delay programme of work
Countermeasures	Provision of Indoor Archiving Tasks + Flexible programme	Provision of Water and Spray using back mounted water carriers	Reallocation of responsibilities or appointment of alternative	Reallocation of responsibilities or appointment of alternative
Estimated time/cost	3 Days	None	Minimal if done by adjustment	Minimal if done by adjustment
<b>Owner</b>	<b>BW/LWW</b>	<b>BW/LWW</b>	<b>BW/LWW</b>	<b>BW/LWW</b>
<b>Risk number</b>	<b>5</b>	<b>6</b>		
Description	Equipment Theft/Breakages	Serious Site Injury		
Probability	Medium	Medium		
Impact	Delay programme of work	Delay programme of work		
Countermeasures	Secure Lock-up for all digital equipment	Detailed H&S Risk Assessment + daily safety briefing		
Estimated time/cost	3 days	3 days		
<b>Owner</b>	<b>BW/LWW/NHS</b>	<b>BW/LWW/NHS</b>		