Oxford Flood Alleviation Scheme Phase 2

Heritage Desk-based Assessment

oxfordarchaeology
southsouthsouth

June 2017

Client: Environment Agency

Issue No: 5

Heritage Desk-based Assessment

Client Name: CH2M

Client Ref No: N/A

Document Title: Oxford Flood Alleviation Scheme, Phase 2

Document Type: Heritage Desk Based Assessment

Issue Number: 5

National Grid Reference: NGR 451719 203640
Planning Reference: N/A

OA Job Number: N/A
Site Code: N/A
Invoice Code: OXFLRDBA
Receiving Museum: N/A
Museum Accession No: N/A

Prepared by:	Jonathan Millward, Lucy Lawrence, Martyn Allen, Kirsty Smith.
Position:	Project Officers
Date:	June 2017
Checked by:	Ianto Wain
Position:	Head of Heritage Management Services
Date:	June 2017
Approved by:	Rebecca Nicholson ……
Position:	Senior Project Manager
Date:	June 2017
Document File Location	\\10.0.10.85\Projects\o\Oxford Flood Risk Management\2016\Report
Graphics File Location	\\10.0.10.85\Projects\o\Oxford Flood Risk Management\2016\010Geomatics \01 PDFs\
Illustrated by	Gary Jones, Matt Bradley

Oxford Archaeology

Janus House
Osney Mead
Oxford OX2 0ES
t: (0044) 01865 263800 e: info@oxfordarch.co.uk
f: (0044) 01865 793496 w: www.oxfordarch.co.uk

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1 INTRODUCTION

1.1 *Background*

1.1.1 CH2M (on behalf of the Environment Agency) has commissioned Oxford Archaeology (OA) to carry out a study of the archaeological potential of the area to be crossed by the proposed Western Conveyance route. The scheme area runs across the western floodplain of the River Thames from Botley Road southwards to Sandford-on-Thames encompassing the Thames and its tributaries. OA were originally supplied with an indicative plan (supplied in January 2015) of the Study Area and an indicative channel alignment. This information was used to provide a first draft report (September 2015). OA has subsequently supplied with a Technical Report laying out further details of the Route Corridor Options (CH2M Hill, November 2015). This document was used to prepare a second version of the report (version 2) draft. Two additional spoil areas, near to South Hinksey and Radley respectively, have also been identified. OA were commissioned, in April 2016, to assess these additional areas and discussion of these areas is discussed in Sections 6 and 7.

1.1.2 In September and October 2015 OA carried out a geoarchaeological Watching Brief during a Geotechnical Ground Investigation survey carried out along the line of the potential route. The results of that survey are discussed in the report below (paras 1.1.28-1.1.32) and the full geophysical survey report is presented in Appendix 10.

1.1.3 In February 2017 OA were commissioned to carry out further programmes of research and analysis upon:

- The line of the Hinksey Causeway (OA 119): and
- The possible line of the 19th century Ruskin's Causeway

1.1.4 At this time they were also commissioned to carry out a review of published and available cropmark plots for the study area. The reports upon all these surveys are contained within Appendix 11.

1.1.5 In March 2017 OA were commissioned to carry out a programme of further survey into the site of the potentially medieval mill site at Botley. The report of this survey is contained in Appendix 12.

1.1.6 ***Data sources and scope***

1.1.7 This project builds upon, and expands from, similar projects undertaken by OA for the Environment Agency in 2005 and 2008. For the 2005 study, the principal data-sources were the Oxford City Council Urban Archaeological Database (UAD), the Oxfordshire County Council Historic Environment Record (HER) and the National Monuments Record (NMR) which is maintained by Historic England (English Heritage as they then were).

1.1.8 For the 2008 study, the baseline prepared in 2005 was updated by a new set of data obtained from the Oxfordshire County Council HER. In addition, OA reviewed archaeological literature (including grey literature) published or prepared since 2005 and which covered the Study Area and the development of the floodplain. OA also undertook a detailed review of historic Ordnance Survey

mapping, from the first edition 25 Inch maps of the late 19th century to the latest coverage published in 2007. The historic map review produced data on major previous impacts within the Study Area (*e.g.* quarrying) and informed the understanding of the transformation of the historical landscape.

1.1.9 For this study, which has a much smaller Study Area than the 2008 report, the data was filtered and updated from the NMR, HER and the Oxford UAD. The results of the 2008 aerial photography and geoarchaeology reports have been reviewed and recent advances in the understanding of the Oxford floodplain sequences have been analysed. The report has been updated to reflect the new understanding of the region following these studies.

1.1.10 LiDAR data of the Study Area was analysed (by the current study) in order to identify hitherto undetected archaeological earthworks and below ground features. No significant additional features were located. A plan of the LiDAR data is included as Figure 9.

1.1.11 The 2005 survey did not involve any field survey. The 2008 survey involved a rapid walkover survey of all accessible parts of the then defined Study Area (which was larger than the current Study Area). Most of the areas were publicly accessible. The present survey did not repeat this walkover, however the majority of the route corridor was inspected as part of a detailed survey carried out in advance of Geotechnical Ground Investigation survey carried out in September and October 2015. The walkover survey, which was carried out on the 9th and 10th September 2015 examined the location of all the proposed test pits and boreholes to ensure that no significant archaeological earthworks were affected. One archaeological earthwork (**OA 202**) was identified by this survey. A further walkover survey covering the additional spoil areas was undertaken on the 1st July 2016. This found no new archaeological assets. The additional areas are discussed in Sections 6 and 7.

1.1.12 The additional (temporary storage) areas were subject to field survey. A walkover survey of the two additional areas was undertaken on 1st July 2016. The walkover was undertaken by following public footpaths that crossed or bordered the additional areas, although this did not provide complete access it was possible to observe all sections of the proposed storage areas. The walkover identified no new archaeological assets. However, due to the density of ground cover (both fallow fields and crops), particularly in the Radley Area, it is possible that archaeological assets may have been present but have not been identified. It also considered the potential impacts on landscape and setting, and upon protected views of Oxford, through the use of these areas for storage.

1.1.13 Oxfordshire County Council are currently carrying out the Historic Landscape Character (HLC) assessment of the County. Work has been ongoing since October 2012 and it is understood (from the OCC website) that the results of the survey will be available in 2016. OA have attempted to obtain draft results of the survey but communication from Oxfordshire County Council has indicated that the work is ongoing and that it would not be possible to supply draft interim results at this time.

1.1.14 A map regression exercise was undertaken and reviewed a number of historic cartographic sources to identify any hedgerows within the Study Area that may meet the definition of important hedgerows as defined by the Hedgerow Regulations (1997). Important hedgerows are those which define the boundaries of historic parishes or townships (historic is defined as pre 1850), incorporates an identified archaeological asset, is situated within the area of an archaeological asset, marks the boundary of a pre 1600 estate or manor or is associated with one, is recorded as being part of a pre inclosure field system or is associated with an inclosure system that is

largely complete or has been designated as a key landscape characteristic within an area.

1.1.15 The review of cartographic material included pre-enclosure maps, Inclosure and Tithe Maps as well as Ordnance Survey (OS) Surveyor's drawings and the OS first edition 25 inch maps. A full list of the maps consulted is presented in Appendix 9. Hedgerows identified from historic mapping have been checked against both modern OS mapping and aerial photographs to ensure that highlighted sections survive. The hedgerows identified have been mapped in GIS and can be seen on Figure 6a and Figure 6b.

1.1.16 The majority of the Study Area was covered by Rocque's map of 1761, and Inclosure or Tithe maps although limited areas were only covered by the first edition OS map s n A number of hedgerows, which remain in-situ, were identified from Rocque and the pre-1850 enclosure maps These are likely to meet the definition of important hedgerows and have been mapped as such on Figures 6a and 6b. Some parts of the study area are only mapped on pre-1850 Tithe Maps and post-1850 Enclosure maps and hedgerows noted on these (the importance of which are uncertain) have been mapped separately. Where hedgerows have only been identified on historic OS maps these have also been separately mapped.

1.1.17 Full details of the data sources used for this project are included in Appendix 8. The method and scope for the survey of the additional spoil areas is presented in Sections 6 and 7.

Previous Surveys (and their review)

1.1.18 As part of the 2008 study, separate studies of the aerial photographs of the route (undertaken by Waterman CPM) and the geoarchaeology (undertaken by ArchaeoScape) were carried out. Further details of the geoarchaeology report are contained in the Geological Background section (paras 3.4.6 - 3.4.9 below).

1.1.19 The present survey included a review of the detailed aerial photographic survey, carried out during the 2008 works as a separate piece of work by Waterman CPM. The results of this review are set out in Appendix 11 and are summarised here. The 2008 survey examined a larger study area than that examined during the current works. This study area extended from Kings Weir (Wytham) in the north to Sandford in the South.

1.1.20 The survey consulted the following sources/archives of aerial photographs:

- National Library of Aerial Photographs (NLP) as held by Historic England (then known as English Heritage) at the National Monuments Record Centre in Swindon;
- Cropmark plots as produced by the Royal Commission for Historical Monuments of England (RCHME) as part of the National Mapping Programme (NMP) between 1990 and 1994[1];
- aerial photographs held by the Cambridge University Unit for Landscape Modelling;
- aerial photographs as held by Oxfordshire County Council Sites and Monuments Record (as it was then known);
- various internet-based sources including colour vertical aerial photographs taken for the Millennium Map by UK Perspectives (UKP, a consortium of Aerofilms

[1] This resource is discussed further below in paragraph 3.1.5

and Infoterra) and similar photographs viewed via Google Earth. Sites and Monuments Record (as it was then known);

- ortho-rectified aerial photographs and Light Detecting and Ranging (LiDAR) imagery supplied by the Environment Agency.

1.1.21 OA were supplied with a draft version of the Waterman CPM report (dated 14th May 2008) in 2008. This suggested that the survey had identified 20 discrete areas of cropmarks (numbered in the report as AP 01-20). Digital data was supplied which showed the outline of these areas of cropmarks, but no detailed plots of the cropmarks were supplied. This report and the GIS have been reviewed and the information used in the current desk-based assessment report.

1.1.22 OA has attempted to obtain a copy of any detailed plots that may have been produced as part of the 2008 survey but no such plots have been located. The desk-based assessment report therefore used the outline polygons as supplied by Watermans CPM as a guide to areas of known cropmark activity, allocating them OA nos in accordance with the numbering system used in the main desk-based assessment report. Cropmark polygons were allocated OA nos 640-647 and are shown upon Figures 3a and 3b of the main desk-based assessment report.

1.1.23 Prior to the 2008 Survey, the only detailed survey of the cropmarks of the study area was one carried out by the Royal Commission on the Historical Monuments of England (RCHME) Air Photo Unit as a pilot project for the National Mapping Programme (NMP). This is an ongoing project which aims to map all cropmarks within England. The Pilot project (which included the cropmarks within the study area) was carried out between 1990 and 1994 and concentrated upon the gravel soils of the Thames Valley. The survey did not interpret or map medieval fields and later features. The survey does not come with any annotation or interpretation. The result of the survey was transcribed upon a series of film overlays at a scale of 1:10000. These were designed to overlay the 1:10,000 scale Ordnance Survey quarter sheets. The results of the survey are now held by Historic England who, as English Heritage, replaced the RCHME.

1.1.24 Following the completion of the desk-based assessment, OA were commissioned to contact Historic England and obtain copies of the NMP transcriptions to add the transcribed cropmarks to the mapping.

1.1.25 Historic England were contacted in February 2017 and supplied vectorised Raster data (essentially digitised copies of the original hard copy data) and OA has produced a series of maps (Figure 28a-d) which show the location of plotted NMP cropmarks overlaid upon a map of the 2008 polygons (with their OA rather than Waterman nos).

1.1.26 The results of this survey have been incorporated into the gazetteer of this desk-based assessment (Appendix 3) and discussed in the text below. The correlation between gazetteer references and the original Waterman CPM polygons is detailed in Table 1 below.

2008 Waterman's Cropmark Polygon	**OA**	**Date**	**Description**
AP 06	640	Medieval with possibly earlier or later components	Area of cropmarks/earthworks identified during 2008 survey of aerial photographs within FAS area. Medieval cultivation remains (ridge and furrow). Area also includes possible enclosure and drains of unknown dates (HER MOX8747/NMR 1201255).
AP 19	641	Medieval	Area of cropmarks identified during 2008 survey of aerial photographs within FAS area. Area contains eroded ridge and

			furrow earthworks seen on aerial photographs.
AP 02	642	Uncertain, potentially prehistoric	Area of cropmarks identified during 2008 survey of aerial photographs within FAS area. Survey identified buried rectilinear ditched enclosure and linear ditch at this location. Also includes undated linear features (HER MOX12043) and cropmarks of a possible enclosures and a pit (NMR 1071692).
AP 17	643	Prehistoric	Area of cropmarks identified during 2008 survey of aerial photographs within FAS area. The area contains a buried round barrow. This feature is also recorded by the NMR as 1071689 and 661995.
AP 07	644	Uncertain, potentially prehistoric	Area of cropmarks identified during 2008 survey of aerial photographs within FAS area. Clear evidence on aerial photographs for a buried ditched rectilinear enclosure, ditches and pits. These features are also recorded as NMR 1095230, 1095232, 1095231 and HER MOX10956.
AP 01	645	Uncertain possibly Prehistoric	Area of cropmarks identified during 2008 survey of aerial photographs within FAS area due to the presence of a circular feature on military aerial photographs.
AP 20	646	Medieval	Area of cropmarks identified during 2008 survey of aerial photographs within FAS area. Eroded ridge and furrow earthworks seen on aerial photographs.
AP 16	647	Uncertain possibly Prehistoric Medieval elements	Area of cropmarks identified during 2008 survey of aerial photographs within FAS area due to the presence of a group of heavily-ploughed ring ditches. These are also recorded as HER MOX10951 and NMR 662007. Also contains clear ridge and furrow earthworks towards the southern end and three paddocks in the central area as seen by OA during the walkover survey.

Table 1: Correlation of Waterman CPM cropmark polygons and OA gazetteer numbers, with feature descriptions and preliminary dating

1.1.27 In addition to this (and to ensure that as many cropmark plots as possible were included on this map) OA examined two further sources which had the potential to provide areas of plotted cropmarks. The Oxfordshire County Council Historic Environment Record was contacted to ascertain whether they had any (non-NMP) cropmark plots. They indicated that they did not. OA also consulted a published survey of cropmarks within the Upper Thames Valley (Benson and Miles 1974) produced by the Oxfordshire Archaeological Unit[2]. This survey had identified cropmarks to the north (Port Meadow) and south (Sandford-upon-Thames) of the study area for the current study but no cropmarks have been identified within the study area itself.

Geoarchaeological Watching Brief

1.1.28 In September and October 2015 OA carried out a geoarchaeological Watching Brief during a Geotechnical Ground Investigation survey (OA 2016). The survey comprised 140 individual interventions which included mainly trial pits, with window samples, augering, a small number of cable percussion boreholes and hand dug test pits. A summary of the interventions is presented in Table 2 below.

Method	Cable percussion borehole	Hollow stem auger	Window sample	Hand test pit	Trial pit	Total
Average depth below ground level	8.5m	4.0m	2.5m	1.20m	2.3m	
Area 1: Botley Road				2	7	9
Area 2: Botley Road to Willow Walk	1	1	2		5	9

[2] A forerunner of the present Oxford Archaeology.

Area 3: Willow Walk to South Hinksey		15			30	45
Area 4: Redbridge	6	7	10	3	18	44
Area 5: Sandford North	2	2			9	13
Area 6: Sandford South	1	1			7	9
Area 7: Weirs mill		2	3		6	11
Total	10	28	15	5	82	140

Table 2 Summary of interventions carried out for the 2015 geotechnical ground investigation divided by the areas as outlined in the route options (CH2M 2015)

1.1.29 In general, the watching brief was restricted to the monitoring of trial pit excavation, although some other interventions were also monitored where hand dug service inspection were excavated prior to drilling. The drilling of the boreholes, window sampling and augering were not generally monitored although geotechnical logs describing the sequence of sediments are available. No interventions were monitored in areas of known modern landfill around Redbridge. The trial pits measured on average 0.5-0.7m wide and *c* 2.5m in length. Excavated depth varied from 1.10m to 3.60m with an average depth of 2.3m. Visibility was generally good for the first *c* 1.5m, but the narrow width of the trial pits reduced visibility beyond this depth. No excavations were entered beyond *c* 1m in depth.

1.1.30 The primary aim of the watching brief in 2015 was to record any archaeological remains exposed during the trial pit excavation, record the sequence of alluvial sediments and identify the location of organic peat deposits with high palaeo-environmental potential, buried land surfaces, palaeo-channels and floodplain islands which may have acted as a focus for human activity. Archaeological remains were restricted to occasional potsherds although the footprint of the trial pits was admittedly small. Overall no extensive floodplain peat deposits were recorded, however organic units were noted at several locations, the deepest and most complex of which generally coincide with areas adjacent to current watercourses such as the Seacourt and Hinksey streams, reaching 2.5m to 3.0m in depth but occasionally more.

1.1.31 Previous archaeological investigations in the region have found that some extant watercourses linked to the main Thames channel may be located within the footprint of earlier wider silted up channels, perhaps dating back to the end of the last glacial period and beginning of the Holocene (*c* 12,000 years) for example the proto- Trill Mill Stream and proto- St Aldates channel in Oxford City. Organic deposits at the base of the alluvium over Pleistocene gravel were also noted at a few locations on the general floodplain between North and South Hinksey (TP275, TP278 and TP225). These do not appear to be associated with current channels and were recorded at shallower depths than described above and may represent ephemeral floodplain pools. One notable observation across the general floodplain are areas where the alluvium over gravel is relatively shallow at 0.50m to 0.70m depth, particularly at the western edge of the floodplain between the Hinksey villages and further south at Sandford.

1.1.32 The Watching Brief report is included as Appendix 10.

2 METHODOLOGY

2.1 *Commentary*

2.1.1 This study provides an archaeological commentary of the Oxford Thames floodplain, within a Study Area stretching from approximately Botley Road in the north to Sandford-on-Thames in the south (Figure 1). The Study Area

encompasses the first Thames gravel terrace, and deals specifically with the floodplain and tributaries. A brief overall geological and hydrological background of the wider Study Area is provided with a commentary on the interplay between natural processes and human activity, exploring the consequent effect on the landscape. This is followed by a more detailed commentary on the archaeology present within the Study Area.

2.1.2 Information upon Designated Heritage Assets (Scheduled Monuments, Listed Buildings etc.) has been obtained from the Historic England National Heritage List and information upon Conservation Areas has been obtained from Oxfordshire County Council and Oxford City Council. The location of Designated Heritage Assets has been mapped on Figure 2 and summary details are provided in Appendix 1.

2.1.3 To aid understanding, the Study Area has been divided into two sections (North and South). The commentary discusses the archaeology in a logical progression by period from north to south, contextualising the area and focussing on sites of particular importance. The individual sites discussed are shown on Figures 3a & b.

2.1.4 A gazetteer listing the known cultural heritage features located within the Study Area is provided in Appendices 1, 2 and 3. Each entry has been assigned an OA number, marked on the GIS and discussed in the text.

2.1.5 Two additional areas have been added to the extents of the scheme, these are both potential temporary storage areas. To ensure that the following discussion is clear the areas will be referred to as the South Hinksey Area and the Radley Area.

2.1.6 The location of designated heritage assets within the Additional Areas are shown on Figure 7, of non-designated assets on Figure 8 and Gazetteers of the identified heritage assets are included as Appendices 5-8.

3 GEOLOGICAL AND ARCHAEOLOGICAL BACKGROUND

3.1 *Location, Geology and Topography*

3.1.1 The western conveyance route starts near Botley Bridge to the north and finishes near Sandford Lock to the south, covering a length of approximately 7km. The route predominantly traverses areas of low-lying floodplain meadow, criss-crossed by streams, drainage ditches and hedgerows. The eastern conveyance route runs for approximately 1km between Donnington Bridge and the A483.

3.1.2 British Geological Survey (BGS) mapping of the area records predominantly Holocene alluvium, overlying Pleistocene river gravel of the Northmoor Floodplain Terrace, deposited towards the end of the last (Devensian) glaciation. Aerial imagery suggests a number of infilled palaeo-channels of various sizes exist below the modern ground surface. Localised or discrete areas of made ground or disturbance are known to be present from a limited number of historic boreholes in the vicinity of the route, frequently adjacent to roads and trackways. Modern landfill areas are located on the outskirts of Kennington.

3.2 *Geological and Hydrological Development*

3.2.1 Only recently has the contribution of archaeology to understanding the palaeo-hydrology been given the recognition it deserves. The frequency of archaeological sites on river valleys that are interstratified with alluvium has tended to focus research on both Holocene archaeology, and its palaeo-hydrology.

Archaeological remains sealed by alluvium include a range of features, including settlement sites, religious monuments such as burial mounds and cursuses, and other ditch systems and trackways. These sites can be dated by archaeological typologies and scientific methods such as radiocarbon dating, thus providing insights into the dates of alluvial accumulations. Apart from the important role of archaeology in dating and interpreting floodplain deposits, it is one of the few ways of assessing directly the impact of human activity on prehistoric hydrological systems.

3.2.2 Unlike many other floodplain sequences of the Upper Thames, the Oxford floodplain has been studied in greater detail and its sedimentary sequence is comparatively well understood. Our understanding of this sequence is based on the previous excavations undertaken on the floodplain since the 1970s (Lambrick and Macdonald, 1985) and the seminal work of Professor Mark Robinson most recently presented in *Oxford Before the University* (Dodd, 2003). The following background summarises much of this previous work and has been updated in line with the findings from recently completed archaeological investigations.

3.2.3 In the late Devensian (at the end of the last Ice Age, *c* 10,000 BC), minor and rapidly shifting channels reworked part of the first Thames terrace and lowered it to create the undulating gravel surface beneath the modern floodplain. There is no evidence of significant Holocene (post-glacial) reworking of the floodplain gravels which, together with evidence of major late Devensian channels at Farmoor and Yarnton, suggests that river flow became restricted to channels eroded to their greatest extent before or during the early Holocene. Recent and ongoing investigations by OA, at Westgate and Luther Court, however, suggest localised in-channel gravel mobilisation occurred periodically, possibly during periods of high river discharge. Both sites are located immediately adjacent to a steep rise in the second gravel terrace which may have been vulnerable to some undercutting and erosion.

3.2.4 The early changes on the floodplain are almost certainly related to climatic change, and the timing and duration of snow-melt at the end of the last glaciation. Initially, as the annual volume of melt-water increased, erosion outstripped accumulation of the floodplain gravels. The surface of the first gravel terrace which became the floodplain was therefore lowered. As the climate warmed and the snow melt was increasingly concentrated in the spring, the high volumes of melt water incised major channels within the gravels. When the climate had warmed further, melt-water discharges reduced, leaving excess channel capacity for the warmer temperate climate. As a result, many underused channels silted up or were cut off from the main channel flow.

3.2.5 Organic and peat deposits dating to the earlier prehistoric period are rare in Thames floodplain locations and are mostly locally restricted to abandoned former channel courses, backwaters and tributary valleys. In the Oxford area peat has been recorded filling a deep east - west palaeo-channel of the Thames in the vicinity of St Aldates (BT Tunnel and Luther Court) dating to the Mesolithic period (Dodd, 2003; OA, 2014). To the south, late Glacial and early Holocene peat sequences have been recorded at Minchery Farm, adjacent to the Northfield Brook which drains into the Thames at Sandford (Parker, 2001; Parker and Anderson, 1996; Parker and Preston, 2015). Further afield early channel and peat sequences have been analysed at Thrupp, Abingdon (Aalto *et al*, 1984), Farmoor (Robinson, 1992) and Mingies Ditch in the Windrush Valley (Allen and Robinson, 1993), (Diagram 1).

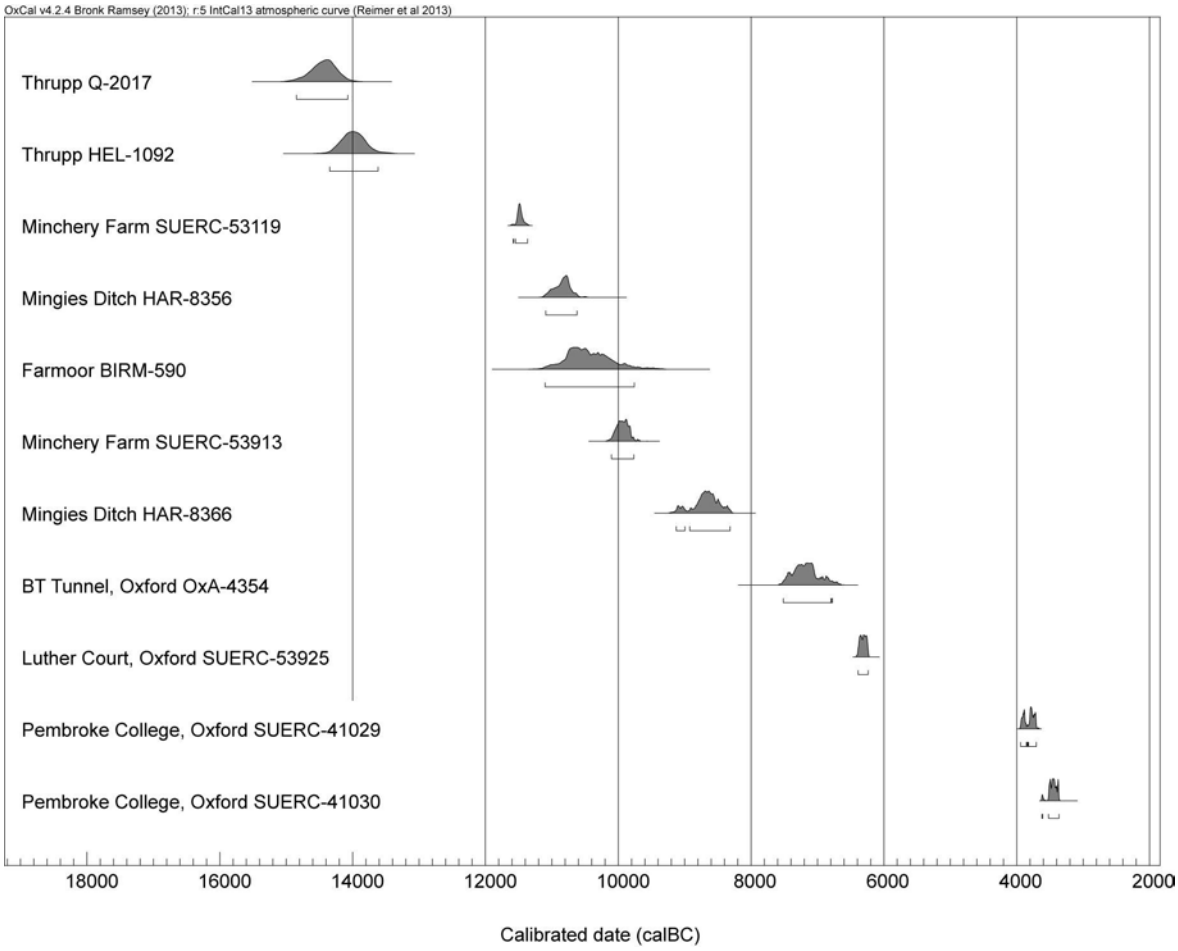

Diagram 1: Radiocarbon dates for organic accumulation in abandoned channels, backwaters and tributaries during the earlier prehistoric period in the Oxford area.

3.2.6 Hydrological changes during the early Holocene are difficult to establish due to the general lack of sedimentation during this period. It is clear that water levels may have been significantly lower than the present day due to factors like greater woodland coverage and a lower sea level. The floodplain may therefore have been relatively dry throughout much of the early prehistoric period with only areas of localised flooding. This would help to explain the extensive prehistoric landscape features that have been identified on the floodplain at Port Meadow (Atkinson, 1942) and Binsey (Rhodes, 1949). This activity was based on dry land soils that developed on top of the floodplain gravels and were preserved under later accumulations of alluvium.

3.2.7 The original soils of the floodplain were a combination of alluvium, loess and weathering products of the gravel. By the Neolithic period, pedological processes of soil formation seem to have predominated over alluvial accretion for much of the floodplain, and only a thin soil, not necessarily of alluvial origin, covered the gravel on most of these sites. Most of the pre-Iron Age soils are ungleyed and non-calcareous; it is difficult to prove that flooding without alluviation was not taking place, but observations have been recorded of man-made dumps of limestone gravel sealing the pre-Iron Age surface of the floodplain, which would have buffered any later phases of decalcification.

3.2.8 Excavations at Port Meadow also revealed a lack of preserved organic remains or gleying in Neolithic and Bronze Age ditches, which suggests, at least, a seasonally low water-table on the floodplain. However, ditches of similar depth dating between the late Bronze Age and the middle Iron Age are known to contain both a high

degree of organic preservation and gleying. This suggests that there was a rise in the water-table of the floodplain from the middle prehistoric period, and may represent the onset of regular seasonal inundation of much of the area covered by the modern floodplain.

3.2.9 Nowhere in the Upper Thames has alluvial clay been observed stratified earlier than the middle Iron Age. Sites such as Gravelly Guy, Farmoor and Drayton, show that this alluviation was well under way in the Roman period, and organic preservation at Mingies Ditch and Port Meadow suggest a continuing rise in water table after the Iron Age occupation. Similar evidence at Drayton shows that the Roman water-table was much higher than it had been in the late Neolithic. This theory is supported by the recent excavations at Yarnton (Hey *et al*. 2016) but it is uncertain whether alluviation or flooding continued in this area into the early Saxon period.

3.2.10 Many of the late Devensian / early Holocene channels were reactivated during the late prehistoric period. The excavations at Yarnton and more recently at the Westgate Centre (OA, 2007), have shown that many of these silted-up channels were re-incised. The accumulation of organic deposits overlying the gravels during this period have been shown to represent a period of rising water levels on the floodplain. Environmental analysis of these deposits has shown that they represent a reed swamp that developed within a drowned floodplain environment. These deposits continued to accumulate within areas of the floodplain into the Saxon period, whilst other areas at the lower elevations showed the first signs of clay alluviation in the post-Iron Age period.

3.2.11 On the South Oxford floodplain around St Aldates and Westgate dates for organic accumulation over the gravels cluster around the late Bronze Age and Iron Age, although ongoing investigations by OA adjacent to the Trill Mill Steam at lower elevations at Westgate have recently produced a slightly earlier middle Bronze Age date of 1400-1140 cal BC (Diagram 2).

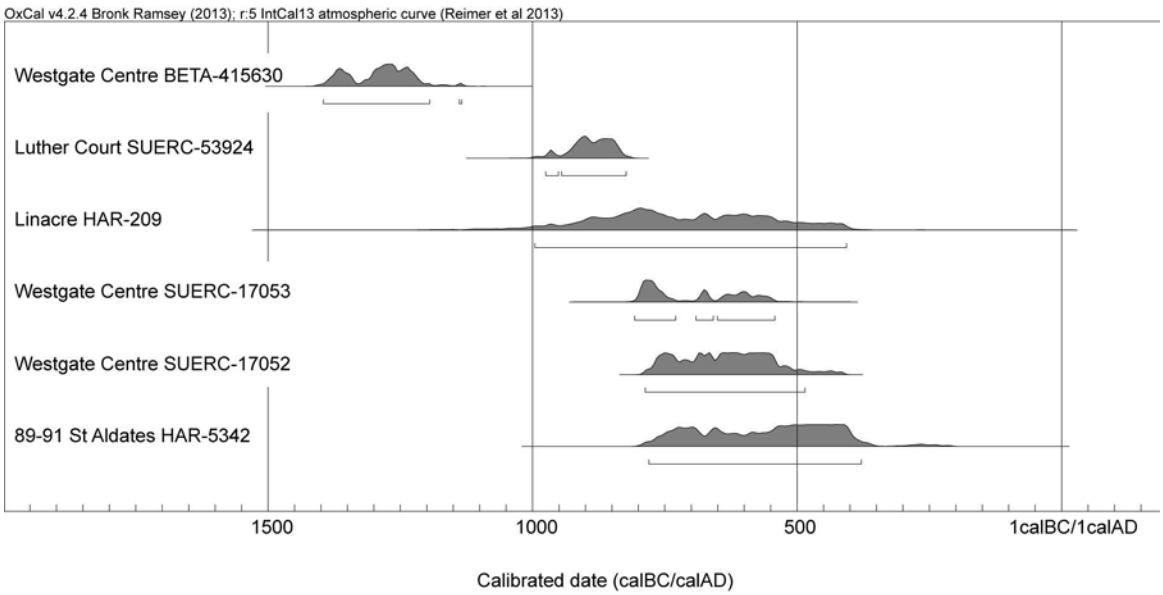

Diagram 2: Radiocarbon dates for the onset of organic accumulation on the surface of the floodplain gravels during the later prehistoric period in the area of Westgate and St Aldates, Oxford

3.2.12 The natural channel sequences of the Oxford floodplain were extensively remodelled and managed during the early medieval period. Channels became

canalised and interconnected, most likely in response to the development of a network of water mills at the edges of the Oxford floodplain. At the Westgate Centre these channels were clay lined and revetted with wooden stakes.

3.2.13 The main phase of clay alluviation accumulated after the early medieval canalisation of the various streams that run through Oxford. Most of the sedimentation on the floodplain occurred during the medieval and post-medieval periods. The depth of organic preservation in later archaeological features shows that the water-table on the floodplain remained high to the present day, and historical records show that seasonal flooding continued throughout the medieval and post-medieval periods. Alluviation, however, may have decreased from the late post-medieval period onwards.

3.3 *Causes of Alluvial and Hydrological change*

3.3.1 The two principal causes of hydrological and alluvial change are climatic change and the impact of human interference on the environment. The character of climatic change can only be established through interpretation of indirect evidence, including, most notably, biological sub-fossils. But these also reflect human interference with the environment. As such, the effects of climate as a cause of hydrological and alluvial change on river floodplains cannot be determined independently of studying the impact of human activity on the environment, particularly for periods after the introduction of agriculture in the Neolithic.

3.3.2 The virtual absence so far of any evidence of sedentary farmsteads in the region before the middle Bronze Age may reflect the long survival of a shifting pattern of domestic activity as seen at Yarnton and other sites (Holgate, 1988), in which some regeneration of woodland may have been typical. As a result of the nature of shifting settlement patterns and greater woodland coverage, runoff and sediment transportation would have been lower compared to the later periods.

3.3.3 There is growing evidence of late Bronze Age activity in the Upper Thames Valley for open and enclosed settlements, and in particular the emergence of land boundaries and field or paddock systems on the gravels (Thomas, 1980; Yates, 1997; Lambrick, 1979) and to some extent on the surrounding hills (Lambrick, 1988; Darvill, 1987). The late Bronze Age and earlier settlement tends to occur on the first gravel terrace (*e.g.* Yarnton) but gradually moves onto the higher second gravel terrace or gravel islands at the end of the late Bronze Age, most likely in response to increased seasonal flooding.

3.3.4 It can be argued that the early to middle Iron Age saw widespread woodland clearance to provide improved pastoral resources in the Cotswold hills, the economic importance of which may well be reflected in the labour investment required to construct hillforts and other earthworks (*e.g.* linear boundaries). This argument suggests that the Iron Age rise in water-table and flooding on the Thames floodplain could have been induced by the impact of later prehistoric farming and, more specifically, clearance for pastoralism, which could have resulted in much greater run-off without releasing much sediment into the drainage system. The suggestion is that woodland clearance further up the catchment (in the Cotswold hills) was having a direct effect on the hydrology of the floodplain and lower gravel terraces. Lambrick (1992) outlines increasing environmental evidence for the survival of significant woodland resources in the Upper Thames catchment in the early Bronze Age and later. Some monuments may have been built in woodland, recently cleared land or areas that reverted to woodland (Saville, 1983; Saville, 1990; Lambrick, 1988; Evans, 1972). In particular this is supported by evidence from Sidlings Copse 4km northeast of Oxford (Day, 1991). In the Cotswolds Hills the argument for predominantly

pastoral activities in the early Iron Age, as opposed to arable on the Thames gravels, stems from the fact that although a number of hillforts were constructed, there is little evidence of dense occupation, settlements are scattered and comprise of small enclosed farms. There is not the density of grain storage pits in these settlements, as seen in Wessex or on the Thames gravels.

3.3.5 The expansion of Roman settlement and large mixed farming establishments in the Oxfordshire region is well known (Young, 1986; Miles, 1986), but their origins are poorly understood. It is clear that Roman settlement expanded onto clay soils in the catchment, which may suggest that the clayey character of Roman alluvium might particularly reflect expansion of arable onto the relatively impermeable clay slopes, coupled with the provision of ditched drainage. This would provide an explanation of the observed changes in alluviation on the floodplain.

3.3.6 Likewise, the disruption of the economy and settlement pattern, possible disease and general de-intensification of land use and infrastructure during the early Saxon period (Hawkes, 1986) may well explain the decline in the rate of alluviation which was demonstrated for the first time by the magnetic dating of the Drayton profile (Clark, 1988). Again, there is a problem with the relative dearth of good archaeological and environmental data from the catchment, especially of the gravels. A point worth noting, however, is that carbonised crop remains tend to be less common on Saxon settlements on the gravels than their Iron Age or Roman predecessors. This could reflect some reversion to pastoralism.

3.3.7 The rapid expansion of settlement in the Late Saxon and early medieval period is well attested, and the Domesday Book (1086) provides the first clearly documented picture of land use in the catchment. It was also the first time since the Roman period that there was major urban expansion exerting pressure on agricultural resources. From the 9th century AD Oxford was growing rapidly. Physical evidence of extensive cultivation of the clays and other soils is provided by the occurrence of ridge-and-furrow, much of it still surviving as earthworks (Sutton, 1965). At the height of the medieval expansion of arable cultivation, ridge-and-furrow expanded onto the floodplain in some places, although extensive areas of pasture remained, either common (*e.g.* Port Meadow) or specialised hay meadows (*e.g.* Yarnton Meads).

3.3.8 This pattern of expanding human settlement and intensified land use probably resulted in significantly increased run off and erosion explaining the observed acceleration of alluviation on the floodplain at this period. The intensity of this expansion may well have exceeded that of the Late Iron Age to Roman period.

3.3.9 The late medieval and post-medieval slow-down in alluviation (despite continued flooding) is explicable in terms of changes in population, settlement and land use, reflected in the numerous deserted and shrunken villages in the area. As part of the process of economic readjustment in the 14th to 16th centuries, particularly after the Black Death, much arable land reverted to grassland, as is still evident from extensive ridge-and-furrow under permanent pasture. It has been suggested that desertion particularly affected minor settlements relying on marginal arable with only limited pastoral resources.

3.3.10 The absence of any obvious post-medieval acceleration of alluviation, despite the notorious flooding which continued into living memory, is perhaps surprising given the re-expansion of arable agriculture. However, the clays generally came back into cultivation late on, when improved piped drainage became widespread after *c* 1840 (Emery, 1974). Enclosure and the abandonment of ridge-and-furrow cultivation may well have been further factors tending to reduce the scale of sediment transport off the surface of arable fields, despite the substantial run-off.

3.4 *Previous geological floodplain modelling and ground investigation data*

Groundwater Monitoring (BGS/Environment Agency)

3.4.1 From 2005 a research project has been carried out entitled 'Groundwater and Surface Water Monitoring Network and Hydrogeological Interpretation at Oxford', funded by the Environment Agency and BGS. As part of this project a number of boreholes have been installed across the floodplain and descriptions of sediments encountered are available for some of these locations.

3.4.2 The BGS used historical borehole data to produce a 3D geological model of the Oxford floodplain which includes the area of the proposed scheme. The product of this model was thickness maps of alluvium and terrace deposits as well as geological information on superficial deposits, summarised in Newell (2007). The 3D model is currently not available, but it is anticipated it has been updated since 2007 and will be made available at a future time. If the 3D model does become available, it should be included in any future revisions of this report. This model may provide some broad information for archaeological assessment; albeit the data has been interpreted for non-archaeological purposes. The data was made available and incorporated into a hydrogeological review in 2008 (see below). Examination of the borehole distribution map in Newell (2007) suggests the coverage in the vicinity of the current route is sparse.

Flood Relief Management (FRM) Scheme Hydrogeological Review

3.4.3 In 2008 a hydrogeological review (Black and Veatch, 2009) was carried out as part of the FRM Feasibility Study. As part of this review the BGS 3D model was made available and used to prepare a geological long section along the proposed Western Conveyance Channel.

3.4.4 The report identified that the majority of the Study Area is underlain by alluvial clay overlying terrace deposits belonging to the Northmoor Sands and Gravel member. The alluvial clay varies from 0.3m to more than 2.5m in thickness, with an average thickness of 1m. The Terrace Deposits vary from 1m to more than 4m thick and are classed as minor aquifers of variable vulnerability.

3.4.5 The superficial deposits in the Study Area are underlain by Oxford Clay, except at the southern end of the scheme near Sandford Lock where the Upper and Lower Corallian Beds are anticipated. The limestones and fine grained sandstones of the Corallian Beds are considered to be the principal aquifer in the vicinity of the site. Groundwater levels generally occur 1m below ground level, within the Terrace Deposits.

FRM Geoarchaeological Assessment

3.4.6 In 2008 a geoarchaeological assessment (ArchaeoScape, 2008) was carried out as part of the FRM Feasibility Study. The assessment comprised a literature review and GIS analysis of historical borehole data. Overall it was noted for the whole of the Study Area that spatial coverage of borehole data was sparse, but particularly so along the western side of the floodplain, coinciding with the western conveyance route (as noted above). The study examined 109 boreholes from the BGS and 45 from an ongoing ground investigation (Fugro, 2008). Forty six records were rejected as they were either of insufficient quality to be useful or lay outside the Study Area. It is not clear from the report whether the ArchaeoScape study reviewed all of the records marked on the BGS website or boreholes installed for monitoring purposes with the BGS.

3.4.7 It was considered that the limitations of the spatial data precluded detailed stratigraphic modelling of the area for archaeological purposes and GIS analysis was limited to lithological characterisation of the floodplain sequences. Gravel was noted

in 89 records ranging from 0.8-5.4m in thickness, averaging 2.96m. The average thickness of silty clay alluvium was 1.4m with a range of 0.6-3.35m. Peat, an important geoarchaeological resource for preservation of pollen and plant macrofossils, was found in only 3 of the boreholes (2.8%) with an average depth of 1.77m and thickness of 0.32m. The assessment indicated that valley floor peats are not particularly thick or laterally extensive. Sand units were only present in 22 boreholes. Given the low energy river conditions as indicated by the widespread occurrence of alluvium, the sand is likely to indicate near-channel depositional environments.

3.4.8 The study concluded there was insufficient data to enable accurate geoarchaeological modelling of the subsurface gravel topography. For the majority of the Holocene the Thames at Oxford was an anastomosing river. However, the data does not currently allow for assessing how many channels were functioning during the Holocene, nor where principle and secondary channels or gravel islands may be located. The majority of the published reports from the area relate to archaeological sites closer to the city, which in certain respects offer information on local floodplain conditions that may be influenced by human activity such as the digging of ditches, channel revetments, causeway construction and urbanisation.

3.4.9 The key recommendation from the study was that further direct ground data should be obtained at a greater spatial resolution.

Route Geology Assessment

3.4.10 In 2014 a desk-based study was carried out of the western conveyance route by Fugro, to estimate the volume and saleability of the different strata that may be excavated as part of the western conveyance works. Only records held by Fugro (including the 2008 interventions) and publicly held borehole records were assessed. This review did not incorporate historic boreholes installed for monitoring purposes with the BGS.

3.4.11 Fugro noted that the spread of ground information was not well distributed, with some areas containing clusters of boreholes and large parts of the route having no data. They recommended additional ground investigation to obtain a better spatial distribution of information along the scheme alignment.

4 NORTHERN STUDY AREA: DESCRIPTION OF RESOURCE

4.1 *Introduction*

4.1.1 The northern extent of the Western Conveyance route (also the original Study Area, Figure 1) lies slightly to the north of the modern (and historic) Botley Road and the northern Study Area extends as far south as the line of the Southern Bypass which divides South Hinksey and Kennington. The northern end of the Route Corridor has been subject to very little archaeological investigation and no archaeological work has been carried out within the vicinity of the indicative channel alignment. This section of the Study Area contains a range of known archaeological features (mostly in the form of archaeological cropmarks identified on aerial photographs) and has also produced various chance findspots of archaeological material (Figures 2 and 3a).

4.2 *Designated Sites*

4.2.1 This northern section of the Western Conveyance route (original Study Area, Figure 1) contains one (multi-part) Scheduled Monument (**OA 2)** which represents an area of surviving medieval elements of the southern extent of the

Grandpont, the Norman causeway across the Thames. It also contains a Conservation Area at North Hinksey (**OA 33**) and parts of the Conservation Areas for Osney **(OA 35**) and Iffley (**OA 34).**

4.2.2 The northern section of the Study Area also contains four Grade II* Listed Buildings (**OA 3 – 6**) and 26 Grade II Listed Buildings. This includes 11 buildings (**OA 3** and **4**) which are located within the North Hinksey Conservation Area (**OA 33).** Two of these are Grade II* Listed (**OA 3** and **4**), comprising the 12th century church and the remains of a 15th century churchyard cross and the remainder **(OA 10-18**) are Grade II Listed. Outside the Conservation Areas the study corridor contains two Grade II* (**OA 5** and **6)** and 14 Grade II Listed Buildings (**OA 8, 9, 19-32)** of which nine are located within the historic settlement of South Hinksey (**OA 607**). The remaining Listed Buildings are generally located on the eastern fringes of the Study Area although the vicinity of the indicative channel alignment contains two Listed Buildings (**OA 8** and **9)** at the southern end of the modern settlement at Botley. The Historic England designated site mapping also still maps a Grade II Listed Building, Paisley House, on Old Abingdon Road (UID 249788) although this structure was demolished in the 1990s.

4.3 *Prehistoric*

4.3.1 This section of the route corridor contains some evidence of prehistoric activity in the shape of a number of chance findspots of prehistoric material and the identification of a number of areas of cropmarks which suggest the presence of areas of prehistoric settlement and burial activity.

4.3.2 The area contains a number of chance findspots of prehistoric material. A large collection of Early Prehistoric (Palaeolithic) handaxes was recovered from a gravel pit near New Iffley Lane (**OA 163**), and Palaeolithic implements are also reported from South Hinksey (**OA 154**) and New Hinksey (**OA 171** and **172)**. Other prehistoric findspots include Neolithic (**OA 124)** and Bronze Age (**OA 129**) flint tools from North Hinksey. Dredging of part of the Minster Ditch (to the east of North Hinksey and still extant) between 1895 and 1898 produced one of the more important groups of metalwork from the Thames. This included three late Bronze Age spearheads, a socketed axe and an extremely fine Iron Age dagger sheath with engraved 'Celtic' decoration (**OA 125**).

4.3.3 The area crossed by the indicative channel alignment and its surroundings contain a number of areas of cropmarks which are likely to represent areas of prehistoric or Roman activity. These include an area containing evidence for enclosures, ditches and pits (**OA 644**) suggesting settlement activity and a number of areas of probable ring ditches (ploughed out prehistoric or possibly Roman burial mounds) (**OA 643**, **647**). The area also contains a second area of cropmarks of possible enclosures (**OA 642**) which were identified during the 2008 aerial photographic survey carried out for the FAS scheme. These features were interpreted by the 2008 report as being of likely post-medieval date.

4.3.4 The area crossed by the channel has been the subject of no archaeological investigation or excavation but there have been a small number of excavations carried out on sites along the eastern edge of the study corridor and these have identified some areas of prehistoric settlement. These include an early to mid-Bronze Age settlement site (**OA 122**) located on the industrial estate to the east of the scheme and a small middle Iron Age settlement on a floodplain island (**OA 638)** located during excavations in advance of a new housing development on the eastern edge of the Study Area. At least two sites of presumed dwellings with

pits and ditched enclosures were uncovered during this work. The amount of domestic debris from hearths and the presence of loom weights and slag among the finds suggest a pattern of typical Iron Age crafts such as metalworking and weaving.

4.4 *Roman*

4.4.1 Although there is no evidence for a Roman town at Oxford, the area was the focus for a major pottery industry, mostly located on the higher ground of Headington/East Oxford located to the east of the scheme. Other Roman activity, primarily small-scale agricultural settlement, is known from the Central Oxford area. However, there has been a cluster of Roman deposits and artefacts found within the central area of this scheme, including an inhumation burial (**OA 169**), pottery (**OA 161**, **167** and **179**), a possible ford (**OA 168**), and the previously discussed areas of prehistoric or Roman ring ditches (**OA 643, 647**).

4.4.2 There is some evidence for activity at the south-eastern end of this section of the study corridor. A Roman quernstone has been found to the east of Weirs Mill (**OA 162**) and further Roman material is known to the west of the mill (**OA 167, 168**), but there is little direct evidence for any ford here.

4.4.3 The line of a Roman road has been found to potentially cross the northern Study Area. There is substantial evidence to suggest that the Oxford Greenbelt Way follows part of a Roman Road. Margary (1957, ii, 270) includes it as Route 164, which joined the areas now covered by North Hinksey and Bessels Leigh. North from North Hinskey, however, the route is lost and there is some discussion as to where its line continued (further details are presented in Appendix 11). Nonetheless, the route appears to follow the line of 'Hinksey Causeway' (**OA 119**—see below), a medieval road which joined North Hinksey with Osney Mead and probably continued to the line of what is now Botley Road. Some of this route is now partly lost under Ferry Hinksey Road.

4.5 *Medieval*

4.5.1 The Study Area is located immediately west of Oxford, and a possible new alignment for the route of the medieval western approach to Oxford 'Hinksey Causeway' and its possible Roman predecessor has been suggested as running through this section of the Study Area (**OA 119**). The existence of, date and significance of this potential alignment has been the subject of much (heated) debate over the past fifty years, although its potential identification as a medieval feature has been made on documentary and historic, rather than archaeological grounds, and is the subject of some debate amongst the academic community. Its current alignment follows an existing footpath/causeway running east-west across the line of the indicative channel. This alignment is shown on Figure 2. The feature, which is shown on historic maps, is clearly of some antiquity, but on present knowledge the significance of the feature is unclear. Following the production of the initial desk-based assessment OA was contracted to carry out some additional desk-based research and field survey examining the line of this route. The results of this survey (which suggested that there is a reasonable case to suggest that the feature is of early medieval and potentially Roman origin) is presented in Appendix 11.

4.5.2 Two Saxon iron spearheads and a bone draughtsman were found close to the Minster Ditch to the east of North Hinksey (VCH 1970) (**OA 130**), possibly indicating the location of an early crossing point.

4.5.3 To the east of Minster Ditch and still within the Study Area lies the modern Abingdon Road, the site of the main southern approach to Oxford, first mentioned by name in 911-912. The town developed as a fortified burgh around the turn of the 10th century and is recorded as such in the Burghal Hidage. There is increasing evidence that the town was developed to guard the strategic crossing of the Thames on the boundary between Wessex and Mercia (Dodd, 2003). The area known as Grandpont to the south of the historic centre of Oxford is named after the *Magnum Pons* (Great Bridge), of which a fragment remains, protected as a Scheduled Monument. The first documentary evidence for the existence of a stone built causeway on the southern approach to the city occurs in the 12th century charters of Abingdon Abbey. However, recent excavations in St Aldates have shown that this monumental structure was the successor to several phases of man-made causeways and crossing points which had begun to be constructed along the modern-day line of Abingdon Road and St Aldates at least as early as the 9th century. This southern route, which was formed by natural islands, causeways and fords, was the main route across the Thames into Oxford, completely superseding what may have been the previous crossing at North Hinksey (**OA 119**) which also may have existed in the Roman period.

4.5.4 The southern end of this section of the route corridor is crossed by the Old Abingdon Road, which forms the southern end of the Grandpont causeway, at the point at which the line of the road diverts to run roughly east-west to cross the originally braided streams of the Hinksey Stream. This section may have used the western half of a prehistoric and Roman routeway running east-west from the known area of Roman activity at Headington across the floodplain and west towards the higher ground at Cumnor. The history of the Old Abingdon Road crossing has been fully discussed by a number of recent reports and surveys including a desk-based assessment (Jacobs Babtie, 2006), an archaeological and architectural assessment (Waterman CPM, 2008). The 2006 desk-based assessment has suggested that the presence of a crossing in the South Hinksey area (Mayweed or Stanford Ford) can be demonstrated through pre-Conquest charters belonging to Abingdon Abbey and the line of the causeway is clearly shown upon maps from the 16th and 17th century onwards.

4.5.5 The presence and survival of Norman and medieval culvert structures was demonstrated by a programme of archaeological recording and prospection carried out in 2006-7 (Jacobs, 2007) and they were further investigated during a programme of archaeological recording during road repair works in 2008-9 (Jacobs, 2009). The culverts were scheduled by English Heritage (now Historic England) in October 2012 (List entry no: 1408790).

4.5.6 As with the section immediately to the south of Folly Bridge there is evidence for medieval stonework within the later bridge and culvert structures and selected elements of the road line (representing the medieval works) are Scheduled (**OA 2**). The location of the Scheduled areas is shown (as an inset) on Figure 2.

4.5.7 The western side of the study corridor contains the core of a number of small medieval settlements, running from Botley in the north to South Hinksey in the south. Botley ('Bota's clearing' or possibly 'wood') is first recorded in *c* 1170. Historically it was a small secondary medieval settlement with a mill and farm. The chief features of interest now are the small number of Listed Buildings, a farmhouse of *c* 1800 (**OA 8**), an early 17th century house (**OA 9**) and the 17th century Manor house which lies just to the west of the study corridor. These historic remnants are virtually all that survives amidst much intrusive modern development.

4.5.8 The site of a mill stood on the Seacourt Stream in Botley, around one mile west of the city of Oxford. Historical evidence suggests that a mill may have been present in this area since the 11th century, if not earlier, and would have

been one of a number that existed in and around Oxford throughout the medieval and post-medieval periods. The mill is depicted in a late 18th-century engraving and there are several 19th and early 20th-century photographs of the building before it was finally demolished in 1923 in advance of Botley Road being widened. There is evidence from post-medieval maps that the water courses which supplied the mill were altered over time, and a recent walk-over survey of the site as part of this heritage assessment has highlighted possible evidence for extant water-management features. A fuller account of the history and other evidence for Botley Mill, including the walk-over survey results, is presented in Appendix 12.

4.5.9 North and South Hinksey are recorded as Hengestesie' ('Hengest's Island' or the 'Island of the Stallion') in late Saxon charters, and as separate places from the 13th century. Both villages lie on the slightly higher ground overlooking the line of the indicative channel alignment. Both contain medieval churches dedicated to St Lawrence. The church at North Hinksey is early 12th century with a 13th century tower and the churchyard also contains a Grade II* Listed medieval churchyard cross. The church at South Hinksey (**OA 5**) is early to mid 13th century. The area to the east of South Hinksey village contains evidence of ridge and furrow (medieval arable cultivation earthworks) (**OA 646, 647**). Evidence of medieval activity (**OA 206**) was recovered from a Geo-technical test-pit (TP 284) close to South Hinksey village during the archaeological Watching Brief carried out on the Ground Investigation survey in 2015. This represented a dumped occupation layer containing medieval pottery sherds dating from between the mid 12th and 15th centuries.

4.5.10 The proposed channel alignment crosses the line of the Devils Backbone (**OA 170**), a probably medieval causeway (now followed by a metalled track and footpath) running across the floodplain between South Hinksey and Oxford.

4.5.11 On the eastern edge of the study corridor lies the medieval village of Iffley (**OA 612)** with its famous Norman Church and a spread of other Listed Buildings all of which lie within the Conservation Area and mostly outside the study corridor. The core of the village lies on the higher ground overlooking the Thames, the site of the medieval mill and existing post-medieval lock.

4.5.12 The first mention of a mill at Iffley appears in the late 12th century and it appears to have been constantly in use throughout the Middle Ages, often mentioned as owning the fisheries on the river as far north as East (later Folly) Bridge. In the late 16th century a second mill was built, however the construction of the Pound Lock in 1624 severely depleted the head of water that the mill could command and by 1679 the mill had temporarily stopped working. It was taken over by the miller of Sandford in 1720 and remained in use until it was burnt down in 1908. The Lock at Iffley was, with Sandford and Swift Ditch, one of the first pound locks to be built on the Thames and an Anglo-Saxon spearhead was recovered during its construction (**OA 173**).

4.6 *Post-medieval/Modern*

4.6.1 This section of the route corridor is heavily dominated by an array of 19th and 20th century infrastructure. Its eastern side is formed by the main Oxford–Didcot railway line which forms part of the railway line between Birmingham (and points further to the north) and London and the South. Its western side is marked by the line of the A34 and its southern end by the line of the Oxford Southern Bypass. The northern end of the corridor is marked by the historic line of the Botley Road, the line of which is marked by areas of 20th and 21st century

residential development and modern retail parks. The route corridor itself is crossed by several overhead electricity lines and bisected by the line of a modern footway (Electric Road) forming a link between Botley and South Hinksey.

4.6.2 Rocque's 1761 Map covers the entire Study Area (Figure 5), though it is only the area to the west of the River Thames (the historic extent of Berkshire) that is shown in sufficient detail to include field boundaries. Within the meadows north-east of South Hinksey there are two (extant) hedgerows that are shown on Rocque's 1761 map (Figure 6a). There is a general absence of surviving hedgerows from this date within the Study Area which appears to indicate that the present-day landscape is largely the result of inclosure that was undertaken in the latter part of the 18th century and the first half of the 19th century. The extent of 18th and 19th century inclosure within the Study Area is recorded on inclosure and tithe maps that include the Wooton and Boreshill Inclosure Map, 1792; Kennington Inclosure Map, 1803; South Hinksey Inclosure Map, 1814; Littlemore Inclosure Map, 1819; Sunningwell Parish Tithe Map, 1838; Nuneham Courtenay Parish Tithe Map, 1843; Radley Parish Tithe Map, 1849; Botley Meadows, Oatlands and Osney Meadow Inclosure Map, 1853 and the Bagley Wood Inclosure Map, 1856.

4.6.3 The Botley Meadow, Oatlands and Osney Meadow Inclosure Map of 1853 covers a limited area at the northernmost extent of the proposed scheme. It covers an area defined by Bridge to the west and the course of the Bulstake Stream to the south. The map records a hedgerow which defines the eastern, and part of the northern, boundary of Botley Park and Ride. A further hedgerow, shown on the 1876 OS map, which is aligned north to south lies between the Botley Road and Bulstake Stream and forms the western boundary of the allotment gardens adjacent to Osney Bridge.

4.6.4 The 1853 Botley Inclosure Map also records a hedgerow which lies south west of the Osney Mead Industrial Estate. A hedge to the west of Grandpont which forms the southern boundary of Grandpont Recreation Ground is shown on Rocque's 1761 map where it defines the northern edge of a road. A further hedgerow was shown on the 1876 OS map to the south of the Industrial Estate, to the west of the railway line and a hedgerow to the west of Grandpont. Morphologically these hedges do not appear to represent portions of a scheme of inclosure and may indicate the former alignment of trackways across the meadows in this area as they appear to be aligned on the same axes as neighbouring roads or tracks.

4.6.5 The area of the proposed route is entirely shielded from the (essentially) 19th and 20th century suburbs of Grandpont (**OA 632**), which lies to its east, by the railway line but the area to the north, between the A34 and the edge of the proposed route corridor contains the medieval and post-medieval settlements at North and South Hinksey, both of which contain concentrations of Listed Buildings. The core of the historic settlement at North Hinksey is contained within a Conservation Area.

4.6.6 The historic village of North Hinksey lies on the slightly higher ground overlooking the route corridor. The heart of the historic village, and the Conservation Area, extends south and west from the line of Willow Walk and contains nine Grade II Listed post-medieval structures (in addition to the medieval church and churchyard cross which are both Grade II* Listed). Willow Walk may have been constructed by Aubrey Harcourt, a local landowner between 1876-77 but it was not open to the public until 1922 (Hanson, 1996). Two of the Listed structures are chest tombs in the churchyard (**OA 10** and **11**). The remainder of the buildings (**OA 12-18**) lie to the south east of the church, situated facing onto North Hinksey Lane which forms the backbone of the historic linear settlement. The slight majority of the buildings lie on the western side of the road (**OA 13, 15-17**) although three of the buildings lie on the eastern

side of the road with their back gardens or rear aspects facing towards the proposed route corridor. The village has been affected by modern infilling and by the constant noise of the A34 that bounds the village to the west but nevertheless the Conservation Area and its associated Listed Buildings maintain a good level of coherence.

4.6.7 A number of hedgerows have been identified from the 1876 OS map to the south of North Hinksey and bounded to the north east by the Hinksey Stream. The morphology of the fields bounded by these hedges appears consistent with earlier inclosure field systems which have been identified in adjacent areas and it therefore seems probable that these hedges were planted somewhat earlier than 1876. Of these hedgerows, a short section follows the line of the boundary between North Hinksey and South Hinksey.

4.6.8 The historic core of South Hinksey extends east from the (Grade II* Listed) Church of St Lawrence (**OA 5**) and contains eight Grade II Listed Buildings (**OA 5, 21-7**). The majority of the Listed Buildings lie within the core of the village and would appear to be generally shielded from the scheme, although the scheme is likely to be visible from **OA 24** which lies on the eastern edge of the village overlooking the route corridor.

4.6.9 The South Hinksey Inclosure Map of 1814 covers the area of the scheme from South Hinksey Village to New Hinksey. There are three hedges that are shown on the South Hinksey Inclosure Map of 1814. None of these hedges are recorded on either Rocque's 1761 map or the OS Surveyor's drawing of 1811 and it seems probable that all three were planted as a result of inclosure in 1814.

4.6.10 On the first edition OS map (1876-78) (Figures 5a and 5b), the area between the two villages is shown as an area of fields. An interesting insight into the nature of the proposed study corridor between the two villages in the 19th century is provided by Oscar Wilde who, writing in 1879, remembers his participation in a project backed by the art critic John Ruskin to create a road between North and South Hinksey:

> *So he* [Ruskin] *went out round Oxford and found two villages, Upper and Lower Hinksey, and between them there lay a great swamp, so that the villagers could not pass from one to the other without many miles of a round. And when we came back in winter he asked us to help him to make a road across this morass for these village people to use.*

4.6.11 The location of Ruskin's track appears to follow the line of a road or trackway which ran between North and South Hinksey that can be seen on early county maps by Rocque (1761) and Andrews and Drury (1777). There is some evidence that this lane went into disuse sometime after. The first edition OS (1876-78) only shows part of the route leading south from North Hinksey; the remainder is defined by a field boundary. This section of the enclosure system lies on the line of a length of hedge shown on Rocque's 1761 map and may therefore represent a small, surviving section of a pre-inclosure field system (Figure 6a). Redevelopment work on the road from North Hinksey was undertaken by John Ruskin and a group of Oxford students, though it is clear that they did not reach South Hinksey and the project was abandoned after just one season. A fuller account of this history and evidence for the road is presented in Appendix 11.

4.6.12 The proposed channel alignment crosses the line of the Devils Backbone (**OA 170**), a probably medieval causeway (now followed by a metalled track and footpath) running across the floodplain between South Hinksey and Oxford.

4.6.13 This causeway has often been identified as the causeway mentioned in Arnold's `Scholar Gipsy' thus:

And once, in winter, on the causeway chill
Where home through flooded fields foot-travellers go,
Have I not pass'd thee on the wooden bridge,
Wrapt in thy cloak and battling with the snow,
Thy face tow'rd Hinksey and its wintry ridge?

4.6.14 This provides a further interesting validation of the 19th century disposition of the area of the proposed channel alignment.

4.6.15 Several hedges, which form a section of an agricultural enclosure system, lie to the east of Abingdon Road, adjacent to University College Sports Ground in New Hinksey. The hedgerows are shown on the 1876 OS map.

4.7 *Undated*

4.7.1 A survey of cropmarks across the northern Study Area was undertaken by Waterman CPM in 2008 as part of a separate study. Details of the background and the methodology of this survey are presented in the Sections 1.1.14–22 (see above) and in Appendix 11.

4.7.2 Preliminary dates have been ascribed to these features, ranging between the prehistoric and medieval periods. Some of the cropmarks almost certainly date to the periods suggested, such as **OA 640** which shows evidence of probable medieval ridge and furrow. However, none of the remains cited have been tested by archaeological investigation and currently remain undated.

5 SOUTHERN STUDY AREA: DESCRIPTION OF RESOURCE

5.1 *Introduction*

5.1.1 This section of the Western Conveyance route (original Study Area, Figure 1) runs from the line of the A423 (the Oxford Southern Bypass) south as far as Sandford on Thames. The study corridor is dominated by the line of the Railway to the west and the main channel of the Thames to the east and for most of its line it runs through open flood meadows. The area is dominated by medieval and post-medieval archaeology and has been particularly influenced by the presence of the Thames and a complex network of tributaries. This is represented by a concentration of mills, locks and weirs that are not as prevalent elsewhere in the Study Area.

5.2 *Designated Sites*

5.2.1 The southern section of the route fewer known constraints, although it does include the historic settlements of Kennington (**OA 608**) and Sandford-on-Thames (**OA 611**), as well as one Grade II* Listed Building (**OA 6**) and one Grade II Listed Building (**OA 30**).

5.3 *Prehistoric*

5.3.1 The area contains no known prehistoric sites although the River around Sandford has produced a wide array of prehistoric metalwork finds including Bronze Age Swords **(OA 188, 190**), a dagger and spearhead (**OA 193**) and further undefined implements **(OA 194**). All or some of these finds, which are not securely located, may be associated with the site of the `Sandy Ford' from which the village takes its name, which traditionally lay to the south of the site of the later lock.

5.4 *Roman*

5.4.1 There is little evidence of Roman activity within the area. The site of a number of pottery kilns were uncovered during works at Kennington during the Second World War (**OA 187**), while Roman tiles and pottery (**OA 194**) have been recorded as being dredged from the Thames close to the site of the original `Sandy Ford'. Further evidence of activity is found to the south of the Study Area. A Romano-British funerary urn of first century date has been recorded embedded in the bank of the river to the south of Sandford and this may be associated with a late 19th-century sighting of cropmarks and sherds of Roman pottery in Radley fields on the west side of the railway, but outside the immediate Study Area. The area to the south of the study boundary also contains cropmarks of both circular and square enclosures as well as trackways and possible pits.

5.5 *Medieval*

5.5.1 At the southern end of the Study Area lies Sandford Village, first recorded in a late Saxon Charter of 811 (VCH, 1957), the name originating from the 'Sandy Ford' that is recorded here in the Middle Ages on the site of the later ferry below Sandford Lock.

5.5.2 Sandford is mentioned in Domesday as the site of two fisheries and during the 12th and 13th centuries three mills are mentioned in the parish (VCH, 1957). The Knights Templar are recorded as owning the lease of a corn mill (probably on the site of the later corn and paper mill and a fulling mill slightly further to the north, although no trace of this now remains. The nuns of Littlemore Priory are also mentioned as owning a mill in the parish, possibly located on the site of the modern-day Littlemore Brook (ibid). Two mills are recorded here until 1694 but after this only the main mill on the west channel seems to have survived.

5.5.3 Traditionally the flow of water around the islands at Sandford was controlled by a system of weirs and flashlocks (weirs with removable stakes). Two weirs are mentioned in a charter of 1170 and in the fourteenth century there is mention of the men of Oxford tearing down the flashlocks that had been built to control the flow of water to the Mill at Sandford (VCH, 1957). This flashlock (**OA 189**), which appears to have been to the north of the site of the present weir (**OA 203-4**) on the western channel at Fiddlers Elbow, was considered so important to the flow of water to the mill that it was let along with the mill in 1519.

5.6 *Post-medieval*

5.6.1 Sandford is bounded by two important lines of communication, to the west lies the River Thames with the site of the medieval and post-medieval mill and 17th century lock (**OA 192**), while to the east lies the old Henley to Oxford road which forms a focus for the post-medieval development of the village. The heart of the medieval village (**OA 611**) lay to the south and east of the church in an area now covered by playing fields and a village hall. Sandford mill was destroyed by fire in 1768 and Davis's 1797 map of Oxford shows the new Mill Lock but no mill beside it. Rebuilt by 1806, it was converted to a paper mill in 1826 and gradually become independent of water power, being converted first to steam and in 1928 to electricity. The mill was closed in the late 1970s.

5.6.2 The first major improvement to the river at Sandford came with the construction of a Pound Lock (**OA 205**) on the eastern channel at the Mill in 1632. In 1790 the lock was sold to the Commissioners of the Thames Navigation who rebuilt and lengthened it in 1793. In 1836 a new lock was constructed alongside the old one and in 1839 a lock house was built and responsibility for charges passed to a resident lock keeper.

5.6.3 This section of the scheme also contains a number of historic weir structures (**OA 203, 204**) which were analysed in some detail by Michael Trueman in 2004 during the Thames Heritage Audit (Trueman, 2004). He suggests that the weirs on or close to this location were in place (and in private ownership) in 1791 and that they were transferred to the Thames Conservancy sometime after 1866. Present structures consist of a complex of weirs (Weirs A-C: **OA 203**) with a second weir (Weir D: **OA 204**) to its east. Detailed map and photograph regression carried out by the Thames Heritage Audit suggests that Weirs A-B were rebuilt in 1881-3 and Weirs A-C rebuilt in 1962-4.

5.6.4 Weir D appears to retain much of its 19th century fabric: The Thames Audit (ibid.) suggests that a photograph by the renowned photographer (and chronicler of the 19th century Thames) Henry Taunt taken in 1870 shows a rather worn structure with stone buttresses and a timber footbridge over. A photograph of 1885 shows a substantially repaired structure similar in appearance to that of today.

5.6.5 Adjacent to Weirs A- C is a 19th century obelisk/memorial, dating from 1845 and commemorating two men who drowned during a bathing accident in that year. Two more names were added in 1921. The obelisk is mentioned in Jerome K Jerome's `*Three Men in a Boat'*.

5.6.6 The Littlemore Inclosure Map of 1819 covers a small strip of land at the eastern edge of the Thames that falls within the scheme area in the vicinity of Heyford Hill. It shows a number of hedgerows which border the east bank of the river Thames. Of the large number of hedges recorded only two now survive. They are likely to have been planted as part of the scheme of inclosure.

5.6.7 The Kennington Inclosure Map of 1803 covers the areas of the proposed scheme, to the west of the River Thames, from around Hinksey Hill Interchange in the north to Sandford Lock and the Radley parish boundary in the south. A hedge lies to the east of the Kennington campus of the Said Business School. This hedgerow is shown as part of the scheme of inclosure on the 1803 map of Kennington. The 1803 map also shows a further hedgerow to the east of Kennington which runs to the river Thames and another hedge further to the south.

6 TEMPORARY STORAGE AREA: SOUTH HINKSEY

6.1 *Introduction*

6.1.1 The South Hinksey Study Area (Figure 1) is bounded to the north east by the line of the A34 trunk road and at its northernmost extent lies to the south of Harcourt Hill the area encompasses part of Hinksey Hill Golf Course and extends as far south as the fields to the south west of South Hinksey village. The area is largely covered by mixed use agricultural land, with areas of pasture, paddock arable and fallow observed during a walkover on 1st July 2016. No previously unidentified archaeological assets were identified during the walkover. The locations of designated and non-designated sites which are in the area are shown on Figures 7a and 8a.

6.1.2 There have been a limited number of previous archaeological investigations (**OA 439-441**) within this area which have identified a range of archaeological deposits and remains. An evaluation (**OA 441**) at Hinksey Hill Farm identified evidence of occupation dating to between the Mesolithic and Roman periods. A magnetometry survey (**OA 440**) at Chilswell Farm identified a range of anomalies that included a D shaped enclosure, trackway and pottery kilns. An evaluation (**OA 439**) on Lime Road, Botley identified an undated pit and a buried soil horizon.

6.2 *Designated Sites*

6.2.1 Within the South Hinksey Area there is one Scheduled Monument, the North Hinksey Conduit House (**OA 300**), which is also a Grade II* Listed Building. There are a further six designated sites within the area (**OA 301-307**) which are all Grade II Listed Buildings that date to either the post-medieval or modern periods. None of the designated sites lie within the area of the proposed works although Hinksey Hill Farmhouse and an associated barn (**OA 301** and **302**) lie immediately adjacent to the boundary.

6.3 *Prehistoric*

6.3.1 Extensive evidence of prehistoric activity has been recorded within this area. The identified archaeological material and features date to between the Mesolithic and Iron Age periods.

6.3.2 A Mesolithic lithic scatter (**OA 417**) was identified to the south west of Chilswell Farm. To the north west of Chilswell Farm, in the area of Powder Hill Copse and Chilswell House, a number of lithic tools (**OA 402, 403**) and scatters (**OA 404, 405, 408**) dating to between the Mesolithic and Bronze Age periods have been discovered. A possible flint working area (**OA 411**) dating to the Neolithic or Bronze Age has been identified in this area. Iron Age pottery (**OA 414**) has also been recovered.

6.3.3 A number of Mesolithic to Bronze Age lithic scatters (**OA 425**) have been found in the vicinity of Chilswell Copse. Three further lithic scatters (**OA 432, 434, 436**) containing Neolithic and Bronze Age material have also been found in this area. Of these **OA 425** lies outside the boundary of the proposed works whilst **OA 432, 434** and **436** all lie within the scheme boundary.

6.3.4 In the area north east of Pickett's Farm, a possible Neolithic flint factory (**OA 409**) has been identified. Two lithic scatters (**OA 400, 401**) containing material dating to the Neolithic and Bronze Age have also been found in this area.

6.3.5 A Neolithic polished stone axe (**OA 429**) was recovered from Hamels Lane in Boars Hill.

6.3.6 A Bronze Age Ring Ditch (**OA 407**) has been identified immediately to the north of Oxford Brookes University, Harcourt Hill Campus. A Bronze Age Palstave (**OA 413**) has also been found near to the Campus.

6.3.7 Early Iron Age features (**OA 415**) have been identified to the west of Hinksey Hill Farm. To the south west of the Farm a Middle Iron Age to Roman Settlement (**OA 428**) has also been identified. Another Iron Age settlement (**OA 437**), which continued in use into the Roman period has been identified on Middle Hill.

6.4 *Roman*

6.4.1 There is evidence of Roman settlement and activity over large portions of the South Hinksey Area. Evidence identified includes a villa, settlements, possible pottery kilns and finds of sherds of pottery.

6.4.2 A settlement (**OA 415**) has been identified to the west of Hinksey Hill Farm. This began in the Iron Age but continued in occupation during the Roman period.

6.4.3 A Roman villa (**OA 416**) was partially excavated in 1986 (Donald and Crawford, 1987) to the south of Chilswell Farm. A large amount of pottery (**OA 419**) has also been found in this vicinity and it is assumed that it is associated with the occupation of the villa. A magnetometry survey (**OA 440**) in the area of

Chilswell Farm identified a number of anomalies which have been interpreted as possible Roman kilns. Roman pottery (**OA 406, 412**) has also been recovered in the area to the east and south east of Chilswell House.

6.4.4 Evidence of Roman settlement (**OA 437**) (a continuation from the Iron Age) has been identified on Middle Hill. On Red Copse Lane, Boars Hill, to the west of the settlement, a quantity of Roman pottery (**OA 430**) has been recovered.

6.5 *Medieval*

6.5.1 Medieval archaeological evidence within the South Hinksey Area is focused on Chilswell Farm. The manor of Chilswell was held by Abingdon Abbey during the medieval period and it is recorded that the Abbey tenanted the manor in the late 12th and early 13th century. The manor appears to have been released to the Abbey in 1289 (VCH, 1924).

6.5.2 It is thought that after 1289 the Abbey administered Chilswell as a grange (**OA 421**), and this appears to be supported by the presence of a chapel (**OA 420**) at the farm which is unusual except in manorial or religious contexts. Medieval pottery (**OA 418**) and a coin of Henry II (1154-1189) (**OA 422**) have been found in the area surrounding Chilswell Farm.

6.6 *Post-medieval/Modern*

6.6.1 The identified archaeological assets within the South Hinksey Area are of limited significance as assets although they may indicate areas that are likely to have been heavily truncated by past activities and therefore have a low potential for earlier archaeological deposits to survive in situ.

6.6.2 A number of post-medieval quarries (**OA 410, 431, 433**), a clay pit (**OA 435**) and a brickfield (**OA 427**) have been identified within the area. The presence of such extensive mineral extraction within the Study Area is likely to indicate that there are extensive areas that are likely to have had any archaeological remains that date to earlier than the post-medieval period removed by quarrying. The HER data locations for the quarries indicates that (**OA 433**) lies within the bounds of the proposed works. However, the first edition OS 25" map shows that both quarries **OA 431** and **435** also extend within the bounds of the works.

6.6.3 The southern half of the area of the proposed works is crossed by a series of hedges that may be defined as important under the Hedgerows Regulations (1997). A number of hedges that lie within the bounds of the proposed works are recorded on the South Hinksey Inclosure Map of 1814 and a number of others are recorded on the 1856 Bagley Wood Inclosure Map. Further hedges at the western edge and within the northern part of the proposed works are crossed by hedgerows that are recorded on the 1876 OS 25" Map.

6.6.4 A Heavy Anti-Aircraft Battery (**OA 426**) was established at Hinksey Heights Golf Club in June 1942. The Battery contained four mobile 3.7in guns but was not equipped with radar. The battery was located outside the bounds of the proposed works although there is an underlying potential for unexploded ordnance in the vicinity of the former battery.

7 TEMPORARY STORAGE AREA: RADLEY

7.1 *Introduction*

7.1.1 The Radley Study Area (Figure 1) extends from Kennington and Sandford-on-Thames in the north to Lower Radley in the south. It also encompasses a small

area of Nuneham Courtenay parish at the south eastern corner of the area. The area is largely covered by arable agricultural land. No previously unidentified archaeological assets were identified during a walkover survey on 1st July 2016. The locations of designated and non-designated sites which are in the area are shown on Figures 7b and 8b.

7.1.2 A number of previous archaeological investigations have been undertaken within the Radley area. An evaluation at Thrupp Lane (**OA 871**) found two unstratified prehistoric flints, whilst evaluations at Goose Acre Farm (**OA 872**) and Stonhouse Crescent (**OA 874**) identified an undated pit and ditch respectively.

7.1.3 A programme of archaeological recording (**OA 875**) on the route of the Abingdon Pipeline gathered evidence of human activities dating to between the Neolithic and Roman periods, with occupation evidence most clearly defined for the Iron Age and Roman periods.

7.1.4 An excavation and geophysical survey (**OA 876**) at Lower Farm in Nuneham Courtenay identified a small amount of Iron Age pottery as well as a Romano-British pottery manufacturing site that comprised kilns, workshop, settlement and enclosure system that operated between the late 1st and the mid 4th centuries. These remains were overlain by the remains of medieval ridge and furrow.

7.2 *Designated Sites*

7.2.1 Within the Radley Area there are two Scheduled Monuments (**OA 700** and **701**). These represent settlement sites that date to the Roman (**OA 700**) and the prehistoric to Roman (**OA 701**) periods. The settlements were identified from cropmarks shown on aerial photographs.

7.2.2 There are four Grade II* Listed Buildings (**OA 705, 717, 718, 721**) within the Area. Of these there two which date to the medieval period. The Church of St Andrew (**OA 705**) in Sandford-on-Thames was built in the 11th century. The Church of St James (**OA 721**) in Radley was built in the 13th century with additions in the 14th and 15th centuries. The other two Grade II* buildings date to the post-medieval period.

7.2.3 Radley Hall (**OA 717**) now forms part of St Peter's College but was built between 1721 and 1727 by William Townsend and Bartholomew Peisley for Sir John Stonhouse. The chapel (**OA 718**) at St Peter's College was built in 1893/4 to designs by Sir TG Jackson.

7.2.4 There are 29 Grade II Listed Buildings within the Radley Area (**OA 702-704, 706-716, 719, 720, 722-734**). Of these five were built in the medieval period (**OA 703, 704, 720, 727, 731**), a further 23 were built in the post-medieval period (**OA 702, 704, 706-712, 714-716, 719, 722-726, 728-730, 732-734**) and one was built in the modern era (**OA 713**).

7.2.5 None of the designated assets lie within the bounds of the proposed works although the post-medieval Grade II Listed Lower Farmhouse and Park End (**OA 711** and **712**) lie immediately outside the western boundary of the works.

7.3 *Prehistoric*

7.3.1 There is very extensive evidence of prehistoric activity within the Radley Area. Evidence dating from between the Palaeolithic and the Iron Age has been identified.

7.3.2 Two Palaeolithic handaxes have been found within the Area at Goose Acre Farm (**OA 822**) and to the north east of Radley Station (**OA 834**).

7.3.3 Mesolithic activity was identified during works on the Abingdon pipeline with a pit containing a blade (**OA 841**) being identified. Neolithic flint arrowheads and evidence for Iron Age settlement were also found. Mesolithic (and Bronze Age) flint tools (**OA 816**) and cores were recovered to the north east of Goose Acre Farm.

7.3.4 The site of a possible Neolithic Long Barrow (**OA 850**) was identified in 1925 to the east of North Close Copse (Huntingford, 1925). The presence of a Long Barrow has subsequently been disputed and it may be that the mound represented a former gravel island (OAU, 1979). Neolithic flint scatters have been found to the north east of Radley Station (**OA 836**) and the east of North Close Copse (**OA 846**). **OA 836** lies within the bounds of the proposed works.

7.3.5 There are a large number of flint flakes (**OA 804, 807, 813, 814, 823, 824, 825, 827, 835, 838, 839, 862, 867**) recovered from within the Area that date to the Neolithic and Bronze Age. The finds have been made all over the Radley Area. Findspots (**OA 825, 838, 839**) all lie within the bounds of the proposed works.

7.3.6 A site to the north of Foxborough Road in Radley (**OA 810**) identified Neolithic flints and pottery. A Beaker burial and evidence of Iron Age settlement were also identified.

7.3.7 Two Bronze Age pits were found at Radley Park (**OA 800**) and to the south of Radley Large Wood (**OA 821**) during works on the Abingdon Pipeline. Cropmarks that are thought to relate to Bronze Age activity and associated finds (**OA 845**) have also been found to the south of Lower Radley.

7.3.8 Three Bronze Age round barrows (**OA 843, 852, 861**) have been identified in the area surrounding Lower Radley. A ring ditch (**OA 856**) which has been identified near Lower Radley is likely to represent the buried remains of another barrow and a further two ring ditches (**OA 817**) were identified at Selwyn Crescent in Radley. Another ring ditch (**OA 868**) was identified at Lower Farm as was a later prehistoric flint scatter. A Bronze Age Spearhead (**OA 869**) and a bronze implement (**OA 858**) were also found to the south of Lower Farm.

7.3.9 Evidence of Iron Age settlement has been found to the north of North Close Copse (**OA 826**) and to the south of Radley Station (**OA 829**). The presence of intercutting Iron Age pits (**OA 870**) to the south east of Lower Farm Cottages appears to indicate the presence of a further settlement in the vicinity. Possible prehistoric coins and pottery (**OA 865**) were also found to the south of Lower Farm Cottages. Two arrowheads (**OA 815, 819**) that are thought to date to either the Iron Age or early Roman period have been recovered from Kennington.

7.3.10 A complex of cropmark features (**OA 805**) has been identified on aerial photographs in the area to the south of Peach Croft Farm and are thought to date to the later prehistoric period (Cotton, 1961). Later prehistoric enclosures (**OA 837, 847, 864**) and other associated features have been noted in the area of Lower Radley.

7.3.11 A hearth and a gully (**OA 840**) were found to the east of North Close Copse during works on the Abingdon Pipeline. Later Prehistoric flint arrowheads and scrapers (**OA 832**) have also been found in the vicinity of North Close Copse, and lie within the bounds of the proposed works.

7.4 *Roman*

7.4.1 Evidence of Roman settlement and activity has been identified throughout the Radley Area, with settlements, pottery kilns and field systems identified in the Area. There are two Scheduled Monuments within the Radley Area that date to

the Roman period (**OA 700, 701**), both of which are settlements.

7.4.2 A Romano-British farmstead at Peachcroft Farm (**OA 806**) was identified from aerial photographs. Excavations confirmed the presence of a farmstead and an associated field system and identified material dating to between the 1st and 4th centuries. An area immediately to the south of this farmstead is a Scheduled Monument (**OA 701**) as it contains the remains of Roman settlement.

7.4.3 An area to the east of Goose Acre Farm is a Scheduled Monument (**OA 700**) as it contains extensive buried remains of a Roman settlement. Further evidence of settlement as well as ditches and pits (**OA 811**) have been identified to the north east of Goose Acre Farm. These features have been dated to either the Roman period or remain undated and cropmarks have been observed in the vicinity on aerial photographs. A quantity of Roman pottery (**OA 812**) has also been recovered from the area around the farm.

7.4.4 A Roman farmstead (**OA 826**) was identified during works for the Abingdon pipeline. Pits dating to the early Roman period were identified in the vicinity of an Iron Age roundhouse whilst a ditched enclosure was identified that had 3rd and 4th century pottery within the ditch fill. The farmstead lies within the bounds of the proposed works.

7.4.5 A Romano-British settlement (**OA 831**) was identified in the late 19th century from a combination of cropmarks and the recovery of Roman pottery from the surface. The settlement lies within the bounds of the proposed works.

7.4.6 A Romano-British site (**OA 868**) at Lower Farm was identified during works for the Thames Water Didcot-Oxford pipeline. The works revealed a Roman kiln site used between the 2nd and 4th centuries. Evidence of settlement and pottery workshops were also identified. Geophysical work identified further kiln locations and a linear pattern of rectangular enclosures with associated pits was shown very clearly with an adjacent road or trackway along its western edge (Booth, Boyle, and Keevil, 1994).

7.4.7 A Roman field system (**OA 829**) has been identified at Pumney Farm and a Romano British enclosure (**OA 833**) was observed as cropmarks to the north east of Radley Station. Roman boundary ditches and a field system (**OA 841**) have also been identified to the east of North Close Copse and lie within the bounds of the proposed works.

7.4.8 A timber lined Roman well (**OA 844**) was identified during quarrying to the south of Lower Radley. This is likely to indicate that there was further settlement in the vicinity during the Roman period.

7.4.9 A quantity of Roman pottery (**OA 828**) was recovered from Sandford Lane and Poplar Grove. The material was found to date to the 1st and 2nd centuries and is thought to be related to a settlement rather than a production site.

7.5 *Medieval*

7.5.1 Within the Radley Area there is extensive evidence of medieval activity. There are seven Listed Buildings within the Area that date to the medieval period. Of which two are Grade II* (**OA 705, 721**) and five are Grade II (**OA 703, 704, 720, 727, 731**). None of the designated buildings lie within the area of the proposed works.

7.5.2 There are two identified archaeological sites within the Area that date to the early medieval (Saxon) period. A pit (**OA 803**) was identified during works on the Abingdon pipeline and a possible cemetery (**OA 808**) has been identified at Radley.

7.5.3 The hedgerow to the north of Little Farm defines the parish boundary between Sandford-on-Thames and Nuneham Courtenay. It is known to have been the boundary since at least the late Saxon period and it has been speculated that it lies on the line of a Roman side road linking the pottery kilns at Little Farm to either the Dorchester road or the River Thames. The boundary is first mentioned in a land Charter dating from 1054 (VCH, 1957; Booth, Boyle and Keevil, 1994). The boundary also defined the northern edge of Little Field which was one of the medieval open fields of Nuneham parish (Booth, Boyle and Keevil, 1994). Much of the southern boundary of Littlefield also survives as hedgerows. The line of these is shown on Smith's map of Nuneham Courtenay which was produced in 1707 (map reproduced in VCH, 1957).

7.5.4 Radley Park (**OA 802**), is known to have been in existence in 1262 when it belonged to Abingdon Abbey. No evidence has been identified as to the original extent of the park. The name is now loosely applied to the land owned by Radley College and has been since at least the mid 19th century. The park was acquired by the Crown in 1558, and it has been claimed that disparkment had occurred before 1540 (VCH, 1924).

7.5.5 The site of a medieval cruck-framed building (**OA 849**) was investigated whilst the building was being demolished in 1964. Evidence of occupation dating to the 14th and 15th centuries was recovered (McNeill and Sutermeister, 1965).

7.5.6 The site of a medieval field system (**OA 854**) has been identified from aerial photographs in the area to the south of Lower Radley. Evidence of medieval ridge and furrow was also identified at Lower Farm (**OA 868**).

7.5.7 The remains of a medieval shrunken village (**OA 859**) have been identified at Sandford-on-Thames. The site was identified as a series of clear rectilinear earthworks. Those to the east of the church have been levelled to make a playing field and the construction of the village hall destroyed much of the remaining area of earthworks. Medieval building and domestic debris, including 13th-15th century pottery, has been recovered from the area.

7.6 *Post-medieval/Modern*

7.6.1 There are a number of Listed Buildings within the Radley Area that date to the post-medieval or modern periods. Of these there are two Grade II* (**OA 717, 718**) and 24 Grade II (**OA 702, 704, 706-712—716, 719, 722-726, 728-730, 732-734**).

7.6.2 The site of a mansion (**OA 809**) in Radley Park, that was built in 1575, is recorded. The mansion was the predecessor of the present Radley Hall (**OA 717**) which was built between 1721 and 1727 and is designated as a Grade II* Listed Building. The Hall now forms part of St Peter's College which includes a complex of post-medieval and modern buildings a number of which are Listed. The chapel (**OA 718**) is Grade II* Listed whilst the Memorial Arch (**OA 713**), Racquets Court (OA 714), Cloister building (**OA 715**), Dining Hall (**OA 716**) and the Cottage (**OA 719**) are all parts of the College and are Grade II Listed Buildings.

7.7 *Unknown Period*

7.7.1 There are a number of identified archaeological features within the Radley area that have not been accurately dated. The significance of all of these features is therefore uncertain. None of the undated features lies within the bounds of the proposed works.

7.7.2 An undated fishpond (**OA 801**) at Radley Park is likely to date to either the

medieval or post-medieval periods as it is in close proximity to the Hall with which it is likely to have been associated.

7.7.3 An undated trackway (**OA 820**) has been identified in the area of Selwyn Avenue in Radley.

7.7.4 There are a number of undated features in the area around Lower Radley. These include two series of linear features (**OA 830, 863**), a group of trackways (**OA 851**), two groups of pits (**OA 853, 855**) and an area of quarrying (**OA 857**).

8 ASSESSMENT OF POTENTIAL EFFECTS

8.1 *Introduction*

8.1.1 An assessment of the potential effects of the scheme has been prepared using the outline scheme alignment options presented in the *Oxford Flood Alleviation Scheme Route Corridor Options* document prepared by CH2M Hill in November 2015. This provides '*a high level review of the potential variations for the route corridor. It does not identify a preferred option but puts forward the feasible options based on the evidence produced to date for consultation*' (CH2M Hill, 2015).

8.1.2 The report breaks the route down into seven separate areas comprising:

- Area 1 – Botley Road
- Area 2 – Botley Road to Willow Walk
- Area 3 – Willow Walk to South Hinksey
- Area 4 – Redbridge
- Area 5 – Sandford North
- Area 6 – Sandford South
- Area 7 – Weirs Mill Stream

8.1.3 Potential options are presented in a series of seven plans which show the options as discussed in each chapter. The route areas broadly follow the Northern Area/Southern Area demarcation adopted by OA in the baseline section above with Areas 1–4 and Area 7 lying within the Northern Study Area and 5 & 6 lying within the Southern Area, although Area 4 (Redbridge) slightly overlaps into the latter. For ease of reference, the assessment below assesses the potential impacts upon cultural heritage using the Area-system adopted in the Options report.

8.2 *Consideration of Impact on Views*

8.2.1 The impact of the proposed works on the nature of three of the ten protected views of Oxford, as defined in the Oxford City Local Plan, has been considered for this report (Figure 10).

8.2.2 The important views from Raleigh Park, Boars Hill and Hinksey Hill are all defined by view cones in the Oxford City Local Plan (adopted 2001) and the area of the proposed works passes through the areas that fall within these views.

8.2.3 The impact of the works on the views has been considered with particular reference to a review of the views that was recently undertaken by the Oxford Preservation Trust (2015). The location of the view cones as defined by the Preservation Trust are shown on Figure 10.

8.2.4 The Preservation Trust describes the Raleigh Park view as: 'Raleigh Park now

provides the most publicly accessible example of the view of Oxford from Harcourt Hill above North Hinksey, which has been admired since the early 18th century and recommended in some of Oxford's earliest guidebooks as one of the best prospects from which to view the city's architectural splendour. The view has inspired numerous artists in the past three centuries, although development along the hilltop and an increasingly wooded landscape has reduced access to it. Establishment of Raleigh Park in the early 20th century preserved public access to the view. Sadly, this is one of the most compromised of the city's historic views due to the impact of later 20th century developments.' (Oxford Preservation Trust, 2015: Pt 2, p3).

8.2.5 The view from Raleigh Park allows a view of the historic core of Oxford in the distance. The foreground of the view now comprises the green space of Raleigh Park which is increasingly overgrown with trees and vegetation. The increased vegetation in Raleigh Park means that buildings in North Hinksey are no longer visible from Raleigh Park with the industrial units at Osney Mead representing the nearest elements of the built environment that are now visible from the viewpoint. None of the floodplain is presently visible from Raleigh Park.

8.2.6 The Preservation Trust describes the Boarshill view as 'The Boars Hill view is one of the most famous and unspoiled views of Oxford. It has inspired painters and poets since the 18th century, providing the origin of Oxford's identity as "… that sweet city with her dreaming spires". Despite threats that the viewing place would be lost to prestigious suburban development in the early 20th century, the former Berkeley Golf Course and Sir Arthur Evans' Jarn Mound are now publicly accessible, thanks to their ownership by Oxford Preservation Trust. The former golf course now contributes to the pastoral character of the foreground. The City Centre is seen at a distance of several miles looking from a point within the Vale of White Horse District over land in Oxford's Green Belt. The rolling green fields and woodlands appear to continue unbroken to the feet of the medieval city. The limestone churches and University and college buildings are seen forming a mass in the south east of the City Centre. These include long elevations of college buildings with intricate rooflines of pinnacles or spirelets, above which the towers, spires and domes rise. To the west (left) the rest of the City Centre is mainly comprised of a more humble mix of small, pitched rooftops. St George's Tower and the prison buildings of Oxford Castle with the spire of Nuffield College indicate the western limit of the City Centre. The rooftops, spires and domes of 18th and 19th University and college buildings and churches (including the Tower of the Winds and the Churches of St Barnabas and Ss Philip and James) continue to the left of the view where North Oxford and Jericho are seen as an extension of the City Centre. Nevertheless, the mass of the suburbs' buildings is disguised by the dense tree canopy. The modern suburbs of New Marston and Northway are hidden behind the City Centre in the Cherwell Valley, whilst East Oxford is screened by woodland in the foreground. The hills of Elsfield and Woodeaton form a wooded backcloth with 'blue' hills beyond.' (Oxford Preservation Trust, 2015: Pt 2, p15).

8.2.7 The view from Boarshill allows a largely unspoilt view of the centre of Oxford. The hedges and fields of Boarshill and the floodplain of the River Thames provide the foreground setting with the spires of Oxford in the middle distance and hills as a backdrop. The proposed scheme options are likely to be visible within this viewcone.

8.2.8 The Preservation Trust describes the Hinksey Hill A34 Interchange view as 'Recognising the prospect of the city from a modern highways interchange as a significant view may be surprising to many. However, the A34 Hinksey Interchange is in fact the site of a much older meeting of highways. It marks the

point where the high road from Oxford to Abingdon over the Cumnor Hills, met the route along the west side of the Thames valley through South and North Hinksey. This has been the first view of Oxford seen by many travellers approaching from the south since the Middle Ages.

8.2.9 J.M.W. Turner's paintings of this view highlight the broad expanse of the floodplain with the city's historic high buildings seen at eyelevel as distant pinnacles against the sky. In his more mature work, dating from 1818 the pairing of Tom Tower and All Saints' Church (Lincoln College Library) provides a central focus to the view, whilst the grouping of St Mary the Virgin Church Spire and the Radcliffe Camera's dome is supported by the shorter spire of Christ Church Cathedral and provides a mass to the left that adds to this focus. Other artists have focused on this central area.

8.2.10 The building of the interchange cemented the role of this point as the first point of arrival for many travellers approaching Oxford from southern England. The interchange provided a raised platform from which motorists would see the famous skyline across the green landscape of the valley. However, the development of dense foliage surrounding the interchange now makes it hard to see this view, whilst the two lines of pylons running up the valley from the south dominate the landscape setting of the city.' (Oxford Preservation Trust, 2015: Pt 2, p25).

8.2.11 The Hinksey Hill Interchange view is unlikely to be affected in any significant way as the view of the spires of Oxford is now largely obscured by vegetation and screen planting adjacent to the A34. It is not envisaged that there would be any alterations undertaken to the channel of the River Thames within the viewcone.

8.3 *Area 1 – Botley Road*

8.3.1 This section of the route corridor, which lies to the north of the Botley Road, contains the southern parts of two areas of archaeological cropmarks (**OA 640** and **OA 641**), representing areas of medieval ridge and furrow. In addition, the area contains a number of other known or possible archaeological features, including undated linears **(OA 103)** and a possible Bronze Age burial site (**OA 105)**, though these lie away from the area of possible ground works. The burial site **(OA 105**) lies beneath the area occupied by the present Park and Ride facility. In general, the area has a medium potential to contain archaeological deposits of local significance.

8.3.2 Two hedgerows which may be deemed important under the Hedgerows Regulations (1997) are situated within this area but will not be affected by the proposed works.

8.3.3 The proposed works in this area will not have any impact upon the protected views of Oxford, as defined in the Oxford City Local Plan.

8.3.4 The geotechnical investigation included seven trial pits and two hand dug test pits, 1.2m to 3.25m in depth. The spacing of the interventions was quite wide and the underlying alluvial sequences and depth of the terrace gravel surface were quite variable reflecting the complex of floodplain channels and drainage ditches that exist in this area. Organic peaty deposits (0.8m thick) were recorded within the alluvial sequence at the Seacourt Park and Ride adjacent to the current Seacourt Stream. The terrace gravel surface at these locations lay up to 2.5m below surface (e.g. TP292 and TP291). These deposits are probably associated with a former channel edge. However, to the east gravel depths appeared shallower at 0.6m to 1.3m depth, overlain by inorganic clay alluvium, perhaps

reflecting more the general floodplain surface. No archaeological remains were identified apart from a single sherd of a Staffordshire red ware jug handle from TP294 from just beneath the topsoil at 0.2m depth dated to the 19th century, along with one fragment of brick or tile of 18th-20th century date.

8.3.5 The proposed scheme works within this area (including possible localised channel works and the construction of flood embankments) will require some ground disturbance and this would run the risk of affecting known or potential archaeological deposits. No known sites of greater than local significance are likely to be affected.

8.4 *Area 2: Botley Road to Willow Walk*

8.4.1 This section of the route corridor crosses an area shown as open fields or meadows on the OS first edition 6" map and the pattern of fields has remained largely unchanged to the present day. The Area contains one site of considerable, local historical significance: Botley Mill. The historical and archaeological evidence for this structure, which stood on Seacourt Stream just south of the present Botley Road, has been the subject of a programme of detailed documentary and cartographic research and this is presented in Appendix 12. In summary map regression analysis and a recent walk-over survey has highlighted the potential impacts to the remains of the mill and associated water-management features both north and south of Botley Road.

8.4.2 Other than Botley Mill, Area 2 contains very little evidence of archaeological remains, and there is no evidence of any cropmarks which may relate to pre-modern activity (Appendix 11, Figure 28b).

8.4.3 The geotechnical investigation included five trial pits, two window samples, one auger hole and one borehole. The depths for the trial pits ranged from 3.2m to 1.6m but in many cases, they did not reach the underlying Pleistocene gravels. The window samples and borehole were more productive reaching depths of up to 5m and 10.45m respectively. All the interventions were aligned along the eastern bank of the Hinksey Stream which is located along the western edge of the Thames floodplain. The edge of the floodplain rises steeply away on the western side of the stream. The depths of the Holocene sequence as seen in the geotechnical works were much greater than seen in other areas and it is likely the deposits represent the silting of a much wider watercourse than the current stream. Most interventions identified a complex sequence of silts, sands and more organic peaty units with frequent plant remains, woody fragments and mollusc shell. The depths of the Holocene sequence over the gravel ranged from 1.5m to 4.2m below the surface. The deepest most organic sequences were noted near TP208 and BH201 at the southern extent of the area. No archaeological remains were identified.

8.4.4 One hedgerow which may be deemed important under the Hedgerows Regulations (1997) is situated within this area but will not be affected by the proposed works.

8.4.5 The proposed works in this area will not have any impact upon the protected views of Oxford, as defined in the Oxford City Local Plan.

8.4.6 On current knowledge, none of the options will have a greater or lesser effect upon the archaeological resource of the area. None of the options will significantly affect the setting of either of the Listed Buildings (**OA 3** and **4**) adjacent to the scheme and would also appear unlikely to have any effect upon the North Hinksey Conservation Area or the Grade II* church and churchyard cross which sit on the slightly higher ground just to the south of Willow Walk.

Any potential impact upon remains associated with Botley Mill will, however, need to be carefully considered.

8.5 *Area 3: Willow Walk to South Hinksey*

8.5.1 This section of the scheme crosses an area, which contains several known archaeological features. To the east of Willow Walk, the options will cross the line of the footpath running from North Hinksey across the Bulstake Stream towards Oxford. This path has been identified as the possible location of the early medieval western approach to Oxford and it has also been suggested that the feature may have Roman foundations (**OA 119**). The identification has been made on documentary and historic, rather than archaeological grounds, and is the subject of some debate amongst the academic community (see sections 4.4.3–4.5.1; Appendix 11). If identified as being of medieval (or earlier) date with surviving remains, the feature would be of regional interest. All options will affect this feature and the scheme appears to provide an opportunity to investigate its possible date, in doing so providing a valuable insight into a matter of some historic interest.

8.5.2 To the south-east of the footpath, Area 3 contains several areas of archaeological cropmarks (**OA 642**, **643**, **644** and **645**). These were identified during a survey by Waterman CPM in 2008. Features in **OA 642** appear to represent a buried enclosure and a ditch, which were tentatively dated as prehistoric. Two areas to the south—**OA 643** and **644**—are also thought to contain prehistoric features, including, in **OA 643**, a possible round barrow; this feature is also recorded on the NMR. In **OA 644,** a sub-square enclosure and a series of ditches and pits were observed during the Waterman survey, and these are likely to be the same features previously recorded on the NMR. Another smaller area—**OA 645**—was located immediately west of the present railway line, though the observed features here are more obscure. The possible prehistoric sites in this Area are likely to be of local/regional significance and their mitigation needs to be considered in advance of any construction work.

8.5.3 The geotechnical investigation included 30 trial pits and 15 auger holes. Initially the interventions followed the banks of the Hinksey Stream and sequences were like those described above. However, further south the distribution is denser covering a wider area of the floodplain. Here, the sediment sequences were largely typical, comprising inorganic orangey or yellow brown silty clay alluvium over gravel, averaging 0.7m to 1.0m in thickness. Occasional thin organic units were noted above the gravel but these appeared to be discrete and ephemeral (e.g. TP225, TP275 and TP278). Shallow sequences were noted towards the western floodplain edge where thin brickearth and/or colluvial sequences were noted to cap the gravels and alluvial deposits were either very thin or absent. These deposits were particularly obvious around the slopes of South Hinksey village (e.g. TP283 and TP282). No archaeological remains were identified apart from a single pottery sherd from the topsoil in TP273 of green glazed Late Brill Ware dated to the 16th-17th century. The absence of noted archaeological deposits within the area of known cropmarks (**OA 644**) is not necessarily an indication of absence of features within this area (as the distribution of trial pits may have simply not coincided with buried features).

8.5.4 All three options (Options A, B and C) will affect the area of site **644** to (more or less) the same degree although none of them will directly impact upon site **643**.

8.5.5 The construction of the flood defences to the north of South Hinksey Village will affect an area of heavily-eroded earthworks, probably medieval ridge and furrow

(**OA 646**) to the west of the village. These features are of low archaeological value. The works will also affect an area of cropmarks and earthworks (**OA 647**) to the east of the village. These include a group of ploughed-out ring ditches of probable prehistoric date, as well as several paddocks immediately to east of the modern village and an area of ridge and furrow within the central and southern area. The works will also affect a potential medieval occupation or dumping layer (**OA 206**) identified during the 2015 Ground Investigation works. All these features are of likely local interest.

8.5.6 All options will also affect the line of the Devils Backbone (**OA 170**), a causeway/trackway of likely medieval origin. The current line of the routeway is marked by a modern/20th century raised path with partial brick facings and it is uncertain whether any of the earlier fabric remains embedded within the later fabric. The feature is a local historic landmark of some interest but it is of uncertain archaeological importance.

8.5.7 Several hedgerows which may be deemed important under the Hedgerows Regulations (1997) are situated within this area. Most of these will not be affected by the proposed works. However, two hedges will be directly impacted upon by all the options.

8.5.8 The construction of a new groundwater fed lake in this area may affect the view of Oxford from Boars Hill. This view is one of the ten protected views defined in the Oxford City Local Plan. The lake would be visible as this area of the floodplain is not entirely masked by hedgerows.

8.5.9 The view from Raleigh Park (which is another of the ten protected views) would appear unlikely to be affected as the proposed works are screened from view by the mature trees in North Hinskey village and on the perimeter of the park and by scrub growth and hedgerows.

8.5.10 The proposed scheme (all options) will have a high impact upon an area of relatively low value historic landscape, substantially affecting an area of degraded floodplain meadows now in mainly pastoral use. The scheme will also seem likely to have a medium to low effect upon the setting of the Conservation Area at North Hinksey and the historic settlement at South Hinksey.

8.5.11 The introduction of a permanent water body into views both out from and in to North Hinksey Conservation Area is likely to slightly impinge upon its historic setting. However, the view from the village and those Listed Buildings (such as Ferry Cottage (**OA 14**) and 27 North Hinksey Lane (**OA 18**)) which lie on the eastern side of North Hinksey Lane (and whose rear aspect would face towards the scheme) has already been heavily affected by development and infrastructure on the eastern side of the route corridor.

8.5.12 The proposed scheme may also have a slight effect upon the setting of South Hinksey village through the introduction of raised flood defences and a permanent water body into views from or into the village. The historic core of the village is not designated as a Conservation Area and most the Listed Buildings are enclosed within the village with limited views of the route corridor. Views from (and of) the Grade II Listed 17-20 Manor Road (**OA 24**) which is located on the eastern edge of the village may be affected but this will require clarification during the detailed design phase.

8.6 *Area 4: Redbridge*

8.6.1 The primary archaeological constraint within this section of the scheme is the line of the Old Abingdon Road which crosses the line of the scheme to the south-west of South Hinksey. This road forms the southern end of the early medieval (Norman) Grandpont

causeway (**OA 1**) which runs south from Folly Bridge to form the northern stage of the current Abingdon Road. The Old Abingdon Road represents the point at the at which the line of the road diverts to run roughly east-west to cross the originally braided streams of the Hinksey Stream. This section is suggested to have used the western half of a prehistoric and Roman routeway running east-west from the known area of Roman activity at Headington across the floodplain and west towards the higher ground at Cumnor. As with the section immediately to the south of Folly Bridge there is evidence for earlier and later medieval stonework within the later bridge and culvert structures and selected elements of the road line (representing the medieval works) are Scheduled (**OA 2**). The presence and survival of Norman and medieval culvert structures was demonstrated by a programme of archaeological recording and prospection carried out in 2006-7 (Jacobs, 2007) and during a programme of archaeological recording during road repair works in 2008-9 (Jacobs, 2009). The culverts were Scheduled by English Heritage (now Historic England) in October 2012 (List entry no: 1408790).

8.6.2 Full details of the culverts and the extent of the protected areas is contained within the Historic England Scheduled Monument description which is reproduced as Appendix 9 of this report.

8.6.3 The location of the Scheduled areas is shown (as an inset) on Figure 2 and a detailed map of the monument is presented as Figure 4. The six discrete Scheduled areas are (from west to east):

- Stanford Bridge Culverts (which comprises two culverts one either side of the current Stanford Bridge).
- Redbridge Culvert 1 (West Culvert)
- Redbridge Culvert 2 (East Culvert)
- Mayweed Bridge Culverts. This comprises two culverts to the east of the main bridge but (unlike the Stanford Bridge culverts) the two culverts are so close together that they have been included within one area of archaeological protection.
- Mayweed Lesser Culvert

8.6.4 The current scheme proposals will require the construction of three culverts under the western end of Old Abingdon Road.

8.6.5 Although neither of these proposed new culverts will directly affect the known historic (and Scheduled) features within the Old Abingdon Road causeway both of them will run the risk of affecting archaeological deposits associated with the causeway. Such deposits may potentially include evidence for other culverts across (now lost) channels of the Hinksey Stream or (perhaps more likely) may comprise evidence for earthen or stone causeway construction layers. Such deposits, in association with the known Scheduled (nationally important) culverts within the road line, may be of national importance and their loss or damage without suitable mitigation would be likely to constitute a significant adverse effect. It is likely that further consultation will be needed with Historic England and the Oxford City Council and Oxfordshire County Council Archaeologists during detailed design works in order to agree a programme of further (intrusive) evaluation works to investigate the survival and potential significance of deposits within the footprint of the proposed scheme.

8.6.6 The geotechnical ground investigation works at Redbridge comprised 18 trial pits, ten window samples, seven auger holes, three hand dug testpits and six boreholes. North of Old Abingdon Road the sediment sequences were similar to those described above being relatively shallow inorganic silty clay alluvium over gravel with some evidence of colluvium on the slopes to the south of South Hinksey village. Medieval pottery sherds were recovered from TP285 at the edge

of South Hinksey village comprising a jug handle of Brill Boarstall Ware (14th or 15th century), a sherd of Ashampstead Ware (12th-14th century) and a sherd of an East Wiltshire Ware cooking pot (1150-1350AD). The pottery along with a single animal bone derive from a dumped occupation deposit lying directly beneath the topsoil at *c* 0.4m depth. This site has been added to the Archaeological Gazetteer (Appendix Two) and mapping (Figure 3b) as **OA 206**. A single fragment of a 17th century clay pipe was also recovered from TP286 nearby. TP228 produced one sherd of cream ware from the topsoil dated to 1760-1830AD.

8.6.7 Substantial deposits of modern made ground were noted at Dairy Crest, up to 1.45m in depth, overlying alluvium with the surface of the gravel at *c* 2.6m depth. Generally trial pits were not monitored within areas of known landfill south of the Old Abingdon Road. Examination of the geotechnical logs suggest on average 2.5-3m of modern landfill deposits exist overlying a clay liner. Terrace gravels were occasionally noted beneath the liner at a depth of *c* 2.4-2.8m (e.g. WS217 BH205, BH207, BH208), Two hand dug test pits, HP205 and HP206, suggest the area immediately east of the railway line does not contain land fill deposits. Here alluvial deposits with shell fragments and organic matter lie directly beneath the topsoil with gravel reached in HP206 at a depth of 0.7m.

8.6.8 Works to the north of the Old Abingdon Road causeway also have the potential to affect known or likely archaeological deposits. Both Options 4A and B will affect the upstanding (although degraded) remains of medieval cultivation earthworks (ridge and furrow) **(OA 647**) in the fields to the south-east of South Hinksey village. These features are of local importance (see also section 8.5.5 above).

8.6.9 Three hedgerows which may be deemed important under the Hedgerows Regulations (1997) are situated within this area. One of these hedges will be directly impacted upon by option 4B.

8.6.10 The proposed works in this area will not have any impact upon the protected views of Oxford, as defined in the Oxford City Local Plan.

8.6.11 Any works carried out to improve the conveyance capacity of the Hinksey Stream to east of the railway would potentially affect medieval water control deposits, associated with a medieval mill, elements of which were identified by Oxford Archaeology during evaluation works in 2007. If further deposits are identified these would be of likely local archaeological value.

8.7 *Area 5: Sandford North*

8.7.1 The Sandford North options will run through an area of floodplain meadow situated between the existing Thames Channel and the railway line. The area, which is shown as open flood meadow (marked `1iable to flood' on the 1st edition OS 6" map (Figure 5a) contains very limited known archaeology although it is possible that this may reflect the fact that it has remained undisturbed and undeveloped which will restrict the opportunities for archaeological material to be recognised. As discussed above (in Section 3) excavations elsewhere on the Oxford floodplain have suggested that areas such as this have the potential to contain well preserved archaeological deposits (primarily prehistoric or Roman) which are often sealed by layers of alluvium following changes in the water table in the late prehistoric period. These layers of alluvium often have the effect of both preserving and masking archaeological deposits, so that features are less likely to be identified on aerial photographs and archaeological material is less likely to be revealed through chance finds.

8.7.2 The geotechnical ground investigation comprised nine trial pits, two auger holes and two boreholes along a roughly north-south alignment. No archaeological remains were encountered. The thickness of alluvial deposits varied. In the northern part of the area they measured up to 2.4m depth and did contain some organic units (e.g. TP250 and TP252). However southwards the sequences shallowed considerably, to less than 1m, becoming inorganic and more typical of the floodplain sequences seen between North and South Hinksey villages. This is possibly a reflection of the narrow width of the floodplain at this location and a deeply incised Thames channel. Alluvium was notably thin or absent in the vicinity of TP257 and TP258 in the southern part of the area. This may suggest that any archaeological deposits within this area are likely to be located close beneath the topsoil and would be damaged by any construction activities which involve even relatively slight ground disturbance or topsoil stripping.

8.7.3 Evidence of prehistoric, Roman and Saxon (early medieval) activity in the area is indicated by several findspots from the main Thames Channel and its banks, including the recovery of Bronze Age swords (**OA 188** and **190**) and (further downstream at Sandford) a concentration of material (**OA 191, 193, 194**) including a number of Bronze Age weapons, Roman tiles and pottery and an Anglo-Saxon spearhead.

8.7.4 On present knowledge, there is little difference (in archaeological terms) between the two options although Option 5B will pass closer to (but not on current knowledge affect) an undated mound which lies just to the west of its line.

8.7.5 Option 5A will entail the modification of the existing weirs A–C (**OA 203**). The Thames Heritage Audit (Trueman, 2004) has suggested that, although these weirs are located on the site of a sequence of historic weirs, the current structures date from the 1970s and would therefore appear to be of little intrinsic historic value. It is assumed that the works would not entail any alteration or removal of the historic (1845) memorial/obelisk situated adjacent to the weir structures.

8.7.6 Three hedgerows which may be deemed important under the Hedgerows Regulations (1997) are situated within this area. One of these hedges will be directly impacted upon by both options 5A and B.

8.7.7 The proposed works in this area lie outside the view cones that define the protected views of Oxford, as defined in the Oxford City Local Plan.

8.7.8 The proposed scheme (all options) will have a high impact upon an area of relatively low value historic landscape, affecting an area of preserved open floodplain meadows, although the general setting of these has been diminished by the adjacent railway line and the presence along their western extent of electricity power lines.

8.8 *Area 6: Sandford South*

8.8.1 As with the Sanford North land parcel the Sandford South options will run through an area containing little known archaeology but with a potential to contain well preserved and significant archaeological deposits, potentially sealed beneath areas of later alluvium. In consideration of this none of the options is markedly better or worse on archaeological grounds. The determining factor is likely to be the extent of new landtake (which will have the potential to affect hitherto undetected archaeological sites of uncertain but potentially high significance) and on these grounds it would appear that Option 6C will be marginally less favourable although all options will have the potential to have significant archaeological implications.

8.8.2 The geotechnical ground investigation comprised seven trial pits, one auger hole and one borehole along a roughly north-south alignment. No archaeological remains were encountered apart from a single fragment of clay pipe dated to the 18th-19th century. The sequences were similar to those described above with alluvium averaging 0.7m depth over gravel. A single intervention at the southern extent of the area immediately adjacent to the current Thames channel (TP265) produced a thicker sequence with organic units to 2.35m depth.

8.8.3 One hedgerow which may be deemed important under the Hedgerows Regulations (1997) is situated within this area but will not be affected by the proposed works.

8.8.4 The proposed works in this area lie outside the view cones that define the protected views of Oxford, as defined in the Oxford City Local Plan.

8.8.5 The proposed scheme (all options) will have a high impact upon an area of relatively low value historic landscape, affecting an area of preserved open floodplain meadows, although the general setting of these has been diminished by the adjacent railway line, the presence along their western extent of electricity power lines and (at its southern end) the Sandford Lane Industrial estate.

8.9 *Area 7: Weirs Mill Stream Options*

8.9.1 The area of the Weirs Mill stream options contains very little known archaeology although, as with the Sandford Meadows area to its south, this is likely to be the result of very limited activity and potentially deep layers of alluvium which will have sealed and to an extent protected any archaeological deposits present. The presence of previous (prehistoric, Roman and Saxon) activity in the area is suggested by a concentration of findspots within the developed areas (**OA 166, 167, 171, 172**) and a number of chance finds from within the main Thames Channel and its environs **(OA 161, 162, 179, 181, 183**). It has also been suggested that the section of the Weirs Mill stream close to the former Weirs Mill (**OA 165**) may be the site of a Roman ford (**OA 168**) and the area has produced a number of finds of Roman material.

8.9.2 Three hedgerows which may be deemed important under the Hedgerows Regulations (1997) are situated within this area but will not be affected by the proposed works.

8.9.3 None of the proposed options will affect any known archaeological sites but they will require varied levels of ground disturbance and will consequently have greater and lesser potential archaeological impacts.

8.9.4 Potential archaeological impacts of the various options are considered to be:

- *Option 7A: Bypass channel at Iffley Lock.* This option will not affect any known archaeological sites but will require a degree of ground disturbance within an area of likely archaeological potential or sensitivity.
- *Option 7B: Widen Weirs Mill Stream.* This option will not affect any known archaeological sites but will require some ground disturbance within an area of likely archaeological potential or sensitivity.
- *Option 7C: Modify structures on Weirs Mill Stream.* The area of the weirs at Weirs Mill is an area of potential archaeological sensitivity as it has been identified as the possible site of a Roman Ford (**OA 168**) and has produced a number of finds of Roman material. Ground disturbance associated with the modification of structures may have archaeological implications.

- *Option 7D: No works on Weirs Mill Stream*. This option will have no archaeological effects.
- *Option 7E: Additional culverts under Donnington Bridge Road.* This option will not affect any known archaeological sites but ground disturbance associated with the construction of the new culverts would run the risk of affecting hitherto unidentified archaeological deposits.
- *Option 7F: New channel across Iffley Meadows.* This option will not affect any known archaeological sites but will require a degree of ground disturbance within an area of likely archaeological potential or sensitivity.

8.9.5 The proposed works in this area lie outside the view cones that define the protected views of Oxford, as defined in the Oxford City Local Plan.

8.9.6 In summary (on purely archaeological grounds) the least favourable options would therefore appear to be Options 7A, 7C and 7F. Option 7B which would appear to require the least amount of disturbance of new ground would appear to be the most favourable of these (three) unfavourable options. Clearly, on purely archaeological grounds, the most favourable option is the Do Nothing Option (Option 7D).

8.10 *Temporary Storage Area – South Hinksey*

8.10.1 Detailed plans over the exact nature of any works within the South Hinksey Area have not yet been produced. However, it is envisaged that any works in these area will be limited to storage areas for materials and plant associated with the works discussed in the main body of this report. The storage of materials within these Areas would cease at the completion of the works.

8.10.2 Within the bounds of the proposed works in the South Hinksey Area there are relatively few known archaeological assets. The presence of three lithic scatters that date to the Neolithic and Bronze Age (**OA 432, 434, 436**) indicate that there is prehistoric activity within the area although the lack of any identified archaeological assets (probably as a result of the lack of development and/or associated archaeological fieldwork) means that there is an uncertain potential for the site to contain significant archaeological deposits dating to the prehistoric period. The wider Study Area contains a range of archaeological features that are generally of local significance.

8.10.3 Post-medieval quarrying (**OA 433**) is located in the centre of the Site and is likely to have destroyed any archaeological deposits within the southernmost section of the proposed works.

8.10.4 The proposed works within this Area will have no direct impact on any designated heritage assets. However, the settings of a number of Listed Buildings (**OA 301-306**) may be affected for the duration of the works.

8.10.5 The Area contains a number of hedges that are likely to meet the definition of important as defined by the Hedgerows Regulations 1997. Assuming that the scheme will not affect the hedgerows themselves the storage of materials within this area will have no direct impact upon the historic hedgerows although in the short term stores of materials and plant will affect the character of the landscape.

8.10.6 The proposed scheme will have a low impact upon an area of relatively low value historic landscape which is defined by fields (now largely converted to Hinksey Heights Golf Course) formed as part of the 1814 South Hinksey Inclosure. After the works have been completed it is not envisaged that the proposed works in this area will have any lasting impact.

8.11 *Temporary Storage Area - Radley*

8.11.1 Detailed plans over the exact nature of any works within the Radley Area have not yet been produced. However, it is envisaged that any works in these area will be limited to storage areas for materials and plant associated with the works discussed in the main body of this report. The storage of materials within these Areas would cease at the completion of the works.

8.11.2 Within the bounds of the proposed works in the Radley Area there are quite a few known archaeological assets. Evidence of Iron Age, later prehistoric and Romano-British settlement (**OA 826, 831, 839, 841**) has been noted at four locations. Neolithic, Bronze Age and later prehistoric tools (**OA 825, 832, 836, 839, 840**) have been recovered from several locations within the bounds of the proposed works. A large number of identified archaeological assets are present in the area although the significance of these is uncertain. However, it seems possible that the assets have the potential to be archaeologically significant.

8.11.3 The proposed works within this Area will have no direct impact on any designated heritage assets. However, the settings of two Listed Buildings (**OA 711, 712**) may be affected for the duration of the works.

8.11.4 There are no hedgerows within the bounds of the proposed works that meet the definition of important as defined by the Hedgerows Regulations 1997.

8.11.5 The proposed scheme will have a low impact upon an area of relatively low value historic landscape which is divided by the line of the railway to the north of Radley Station. After the work has been completed, it is not envisaged that the proposed works in this area will have any lasting impact.

9 CONCLUSIONS

9.1 *Known or Potential Archaeological Impacts*

9.1.1 The proposed flood alleviation scheme will have a significant impact where it crosses and breaches the medieval (and potentially earlier) Old Abingdon Road at Redbridge. This road contains several identified medieval elements that have been afforded Scheduled Monument status. Although neither of the proposed culverts will directly affect Scheduled and other known historic features within the Old Abingdon Road, both will run the risk of affecting archaeological deposits associated with the causeway. Such deposits may potentially include evidence for other culverts across (now lost) channels of the Hinksey Stream or, perhaps more likely, may comprise evidence for earthen- or stone-causeway construction layers. Such deposits, in association with the scheduled culverts within the road line, may be of national importance and their loss or damage without suitable mitigation would be likely to constitute a significant adverse effect. It is likely that further consultation will be needed with Historic England, the Oxford City Council Archaeologist and with the Oxfordshire County Council Archaeologist during detailed design works to agree a programme of further evaluation to investigate the survival and potential significance of deposits within the footprint of the proposed scheme[3].

9.1.2 The scheme will affect potentially historic routes into and out of Oxford that run east–west across its line. In addition to the line of Old Abingdon Road (discussed above) these will include the line of Hinksey Causeway (**OA 119**—Appendix 11) and

[3] Fieldwork to investigate the presence or absence of significant deposits is currently (December 2016) underway. Further consideration of the potential significance of this feature using the results of the fieldwork will be addressed as part of any further reporting associated with the detailed design phases of this scheme.

the Devil's Backbone (**OA 170**). Both routes have regional historic value and are likely to be affected by the scheme.

9.1.3 Potential impacts to the remains of Botley Mill, particularly with regards to possible water-management features on Seacourt Stream to the north of Botley Road, should be considered prior to construction work (Appendix 12).

9.1.4 The scheme will cross an area of uncertain archaeological potential, located on the lower-lying floodplain areas. In most areas, on current knowledge, the scheme appears to have a low potential for encountering significant archaeological deposits dating to the Saxon, later medieval and post-medieval periods, other than those outlined above . The scheme will however cross an area which contains cropmark and artefactual evidence of possible prehistoric and Roman activity and consequently has the potential to affect hitherto undetected deposits dating to these periods (Appendix 11). The presence of cropmark enclosures in **OA 640**, **OA 642** and **OA 644** and potential round barrows in **OA 643** and **OA 647**, will require independent mitigation strategies.

9.1.5 The proposed storage of materials and plant within the South Hinksey and Radley Areas will not affect any known areas of high archaeological significance. The scheme would therefore appear to have a moderate potential to encounter locally significant archaeological deposits from the prehistoric and Roman periods and consequently has the potential to affect hitherto undetected deposits dating to these periods.

9.2 *Impact upon Historic Buildings and Landscape*

9.2.1 The scheme will have a generally high impact upon an area of generally low value historic landscape in the form of areas of generally low value historic landscape in the form of degraded floodplain meadows and areas of medieval cultivation earthworks. The scheme will have no impact on historic hedgerows in Areas 1, 2, 6 and 7 but will have a negative impact on a small number of potentially important hedgerows in Areas 3, 4 and 5. The scheme will have no significant visual impact upon any designated structures (Listed Buildings etc) although it is likely to have a medium to low effect upon the setting of the Conservation Area at North Hinksey and the historic settlement at South Hinksey.

9.2.2 The storage will affect the settings of Listed Buildings in both the South Hinksey and Radley Areas, though such impacts are a short-term issue that will cease after the construction works. The South Hinksey Area contains several hedgerows that meet the definition of important as defined by the Hedgerows Regulations 1997. The Radley Area contains no important historic hedgerows. None of the hedgerows will be affected by the storage of materials in these areas.

9.2.3 The construction of a ground water fed lake in Area 3 is likely to affect the protected view of Oxford from Boars Hill. It is not envisaged that the proposed scheme will affect either of the protected views from Raleigh Park or the Hinksey Hill Interchange. A more detailed analysis of the potential impacts of the proposed scheme upon the protected views will need to be addressed as part of a future programme of Environmental Impact Assessment.

9.2.1 The storage of materials and plant within the South Hinksey Area will have a short term effect on the protected view of Oxford from Boars Hill. However, this will cease at the conclusion of the construction phase of the scheme. There will be no impacts upon the protected views of Oxford within the Radley Area as it lies outside of the view cones.

Oxford Archaeology

June 2017

Appendix 1 - Gazetteer of Designated sites

OA Number	CLASS	GRADE	PERIOD	DESCRIPTION
1	Scheduled Monument		Medieval	Scheduled section of the Grandpont Causeway
2	Scheduled Monument		Medieval	Old Abingdon Road Culverts
3	Listed Building	II*	Medieval	Church of St Lawrence, North Hinksey. 12th Century.
4	Listed Building	II*	Medieval	Churchyard Cross in churchyard of St Lawrence Church. North Hinksey. 15th century.
5	Listed Building	II*	Medieval	Church of St Lawrence. South Hinksey. Early to mid 13th century.
6	Listed Building	II*	Post-medieval	Kennington manor house and attached wall and gatepiers. Built in 1629. Grade II* Listed Building.
7	Listed Building	II	Medieval	Base of churchyard cross approximately 10 metres north of Church of St Lawrence. Grade II Listed Building.
8	Listed Building	II	Post-medieval	South View. Built *c* 1800. Grade II Listed Building.
9	Listed Building	II	Post-medieval	The Old Manor House. Late 16th century. Grade II Listed Building.
10	Listed Building	II	Post-medieval	Chest tomb in churchyard of St Lawrence Church, North Hinksey.
11	Listed Building	II	Post-medieval	Chest tomb in churchyard of St Lawrence Church, North Hinksey.
12	Listed Building	II	Post-medieval	College Farmhouse. Early 19th century.
13	Listed Building	II	Post-medieval	Martyr Farmhouse.
14	Listed Building	II	Post-medieval	Ferry Cottage, Early 17th century.
15	Listed Building	II	Post-medieval	Ruskin Cottage, 17th century.
16	Listed Building	II	Post-medieval	22 North Hinksey Lane. Early to mid 18th century.
17		II	Post-medieval	26 North Hinksey Lane. Late 17th/early 18th century.
18		II	Post-medieval	27 North Hinksey Lane. Mid to late 18th century.
19	Listed Building	II	Post-medieval	Stone on Thames towpath at long bridges, Kennington backwater. 18th century. Grade II Listed Building.
20	Listed Building	II	Post-medieval	New Hinksey Vicarage. Grade II Listed Building.
21	Listed Building	II	Post-medieval	44, Manor Road. Early 18th century. Grade II Listed Building.
22	Listed Building	II	Post-medieval	32, Manor Road. Early 17th century. Grade II Listed Building.
23	Listed Building	II	Post-medieval	21 and 23, Manor Road. Late 17th century. Grade II Listed Building.
24	Listed Building	II	Post-medieval	18 and 20, Manor Road. 17th century. Grade II Listed Building.

OA Number	CLASS	GRADE	PERIOD	DESCRIPTION
25	Listed Building	II	Post-medieval	Horseshoe House. Early 16th century. Grade II Listed Building.
26	Listed Building	II	Post-medieval	Hill View And Myrtle Cottage. Late 17th/early 18th century. Grade II Listed Building.
27	Listed Building	II	Post-medieval	Pin Farm. Early 17th century. Grade II Listed Building.
28	Listed Building	II	Post-medieval	Roving bridge twenty yards upstream from Iffley Lock. Early 19th century. Grade II Listed Building.
29	Listed Building	II	Post-medieval	Old Iffley Lock. The original 'pound' lock in use by 1632 and one of the first 3 locks on the Thames. Grade II Listed Building.
30	Listed Building	II	Post-medieval	Barn approximately 20 metres north of number 211 (Kennington Manor House). Early 17th century. Grade II Listed Building.
31	Listed Building	II	Modern	Church Of St John The Evangelist. Built in 1900. Grade II Listed Building.
32	Listed Building	II	Modern	Templeton College. 1960s. Grade II Listed Building.
33	Conservation Area			North Hinskey Conservation Area. Contains two Grade II* Listed Buildings and nine Grade II Listed Buildings within the Study Area.
34	Conservation Area			Iffley Conservation Area. Contains no Listed Buildings within the Study Area.
35	Conservation Area			Osney Town Conservation Area. Contains one Grade II Listed Building within the Study Area.

Appendix 2 - Gazetteer of non-designated sites

N.B. The OA numbering sequence is not continuous as duplicate entries were identified and removed.

OA Number	UID no	Significance	PERIOD	DESCRIPTION
100	MOX8606	Local	Roman	Roman `net-sinkers'
103	1201256	Local	Undated	Possible drains of unknown date seen as earthworks on air photographs.
104	MOX12123	Local	Undated	Undated linear features
105	MOX12100	Local	Undated	Undated ring ditch, Botley Road
106	EOX5843	Negligible	Modern	Trial trenches at 110-120 Botley Road, Oxford. No archaeological features or deposits were identified within the excavated trenches although a number of modern concrete and brick foundation walls were uncovered. These are most likely associated with the 1930s buildings, demolished in late 20th century for the construction of the existing commercial development.
107	1411466	Local	Modern	The Botley Majestic Cinema was used as a World War II evacuee centre.
115	MOX8642	Local	Neolithic	Neolithic scraper
116	338446	Regional	Post-medieval	Site of Fortifications 1642-6
117	EOX5759	Local	Post-medieval	Watching brief during the installation of culverts along Willow Walk, North Hinksey, Oxford. The watching brief revealed a natural floodplain sequence comprised of multiple bands of gravel overlain by a thick layer of redeposited clay that formed the linear embankment along which Willow Walk runs. Set into this was the current stone surface dating to the Victorian period.
118	MOX25458	Negligible	Undated	Undated horseshoe found from the River Thames near the GWR Bridge in 1883.
119	MOX12098	Regional	Medieval	Medieval Causeway, North Hinksey. Possible medieval western approach to Oxford. Possible Roman foundation.
120	MOX11498	Regional	Post-medieval	Civil War fortifications
121	MOX24917	Local	Neolithic	Evaluation at Newsquest site, Osney Mead, Oxford recovered a Neolithic collared urn.
122	MOX23807	Local	Bronze Age	Possible Early/Middle Bronze Age Settlement Site, Osney Mead
124	MOX12079	Local	Neolithic	Neolithic Stone axe head
125	MOX8494	Local	Bronze Age	Bronze Age axehead from Minster Ditch

OA Number	UID no	Significance	PERIOD	DESCRIPTION
127	MOX12246	Regional	Medieval	Ford or causeway across Bulstake Stream in Oxford
128	MOX24920	Local	Medieval Post-medieval	Evaluation at Osney Mead, land adjoining Bulstake Stream recorded medieval-post-medieval plant remains
129	MOX12093	Local	Bronze Age	Bronze Age arrowhead, North Hinksey
130	MOX11657	Local	Saxon	Anglo Saxon finds
131	MOX11804	Local	Modern	Bridge built in 1886 for the Oxford Gas Company
132	338404	Local	Lower Palaeolithic	Lower Palaeolithic handaxes, flakes and roughouts found during dredging of the River Thames.
133	765604	Local	Prehistoric	Stone axe-hammer
134	336384	Local	Bronze Age	Palstave
135	EOX2386	Negligible	Undated	An Archaeological Evaluation at Holywell House, Osney Mead, Oxford. No archaeological deposits encountered.
137	MOX25184	Negligible		Excavations at the Gas Works *c*1886 recovered undated animal remains
140	336390	Local	Neolithic	A Neolithic polished stone axe was found 2.5 feet down in deep loam while digging a trench at No. 12, the Village.
141	MOX12044	Local	Undated	Undated linear features
143		Local	Undated	Possible ditches of unknown date seen as earthworks.
149		Local	Undated	Possible field boundary of unknown date seen as a cropmark.
154	MOX10875	Local	Palaeolithic	Palaeolithic Flint handaxe
155		Local	Prehistoric	Prehistoric flint flake found.
156	EOX5693	Local	Medieval	Hinksey Fish Pass, Iffley Evaluation and watching brief for the scheme recorded Saxon peat deposits but no archaeological features.
157		Local	Modern	Site of water pumping station used to pump water from the Seacourt Stream to a reservoir in Headington. It ceased pumping in 1920 and the filter beds are now the Hinksey swimming pool.
158	MOX11242	Negligible	Modern	Hinksey Halt Railway Station
159	MOX26748	Local	Undated	Peat deposit
161		Local	Roman	Roman Beaker
162	MOX12150	Local	Undated	Rotary quern from Iffley
163		Regional	Palaeolithic	28 Lower Palaeolithic handaxes found in Cornish Gravel Pit, between New Iffley Lane and Fairacres Road near Donnington Bridge. Faunal remains also found in the same area. Objects found on Terrace 2 possibly Summertown-Radley geology.
164		Local	Roman	Watching Brief Near Oxford's Southern By-Pass recovered Roman Oxfordshire ware sherds recovered from a ditch.
165	MOX11218	Local	Post-medieval	Paper Mill

OA Number	UID no	Significance	PERIOD	DESCRIPTION
166	MOX12135	Local	Bronze Age	Bronze implement
167	MOX12149	Local	Roman	Roman sherds from 41 Canning Crescent
168	MOX12157	Local	Roman	Roman objects and ford at Weirs Mill Stream
169	MOX10294	Local	Roman	A probable Roman inhumation was found during an excavation for a garden wall at South Hinksey
170		Local	Medieval	Line of the Devils Backbone, a medieval and post-medieval causeway across the floodplain from South Hinksey to South Oxford
171	MOX12167	Local	Palaeolithic	Palaeolithic Handaxe
172	MOX12134	Local	Palaeolithic	Palaeolithic Implements
175		Local	Modern	Isolation Hospital. The hospital was built in 1885 to designs by W.H. White and consisted of pavilion ward blocks, administrative block, laundry, ambulance garage, mortuary and disinfecting house. A tuberculosis chalet, built by Boulton and Paul.
177	MOX12664	Local	Post-medieval	Post-medieval Scatter from Allotments in South Hinksey
178		Negligible	Modern	Abingdon Road Halt. Railway station
179	MOX12151	Local	Roman	Roman vessel from Iffley Lock
180		Local	Iron Age	Iron Age gold coin (Addedomaros)
181		Local	Roman	Roman coin
183		Local	Roman	Roman vase found at Iffley in 1902.
184		Local	Medieval	Egrove Possible medieval settlement
185	MOX10930	Local	Modern	Iffley Halt. Railway Station at Iffley Halt
186	MOX12613	Local	Roman	Possible Roman Kiln at the site of the Cold Storage Plant, Kennington
187	MOX10962	Local	Roman	Romano British potteries
188	MOX10891	Local	Bronze Age	Late Bronze Age Sword
189		Local	Post-medieval	Fiddlers Elbow Weir, probably on the site of a flashlock recorded in 1519
190	MOX10888	Local	Bronze Age	Bronze Age Sword
191	MOX24133	Local	Various	Anglo Saxon spearhead, Roman tiles and pottery at Sandford Lock
192		Local	Post-Medieval	River locks built at Iffley and Sandford before 1632.
193	MOX10862	Local	Bronze Age	Bronze Age Dagger and Spearhead
194		Local	Bronze Age	Bronze Age, Roman, Early Medieval and Medieval implements
200		Uncertain	Undated	Possible slight mound or platform *c* 10m N/S x 8m E/W on field edge. Possibly formed by natural palaeochannels
201		Local	Medieval	Ridge and furrow. Comparatively ephemeral earthworks orientated north-south

OA Number	UID no	Significance	PERIOD	DESCRIPTION
202		Uncertain	Undated	Large mound or possible platform measuring 20m east-west x 12m north-south. It is quite possible that this mound was once circular, but that its northern side has been truncated by the deep adjacent ditch. Running eastwards from the mound, parallel to, and to the south of the current ditch is a clear and sinuous palaeochannel up to 4m in width x up to *c* 0.6m, running to the Thames. Running southwards from the south east corner is an apparent old field boundary up to *c* 4m in width x *c* 0.2m in depth with a possible ditch to its eastern side measuring *c* 0.15m in depth x *c* 4m in width.
203		Local	Post-Medieval	Sandford Weirs A, B & C and obelisk memorial. Weirs possibly in place by 1791 when it is mentioned as being in private ownership. Transferred to the ownership of the Thames Conservators under the Act of 1866. Weirs A-B were rebuilt in 1881-3 and Weirs A-C rebuilt in 1962-4. The obelisk dates from 1845 and commemorates two men who drowned during a bathing accident in that year. Two more names were added in 1921. The obelisk is mentioned in Jerome K Jerome's `*Three Men in a Boat*'. (Source: Thames Heritage Audit 2004)
204		Local	Post-Medieval	Sandford Weir D. Possibly in place by 1791 when it is mentioned as being in private ownership. Transferred to the ownership of the Thames Conservators under the Act of 1866. Taunt photograph of 1870 shows a rather worn structure with stone buttresses and a timber footbridge over. Photograph of 1885 shows a substantially repaired similar in appearance to that of today. (Source: Thames Heritage Audit 2004)
205		Local	Post-Medieval	Sandford Lock. Site of pound lock, with Iffley and Swift Ditch one of the first pound locks built along the Thames. Variously rebuilt and repaired during the 18th, 19th and 20th centuries and completely rebuilt in 1972.
206		Local	Medieval	Medieval pottery sherds were recovered (from TP285) during the archaeological Watching Brief carried out during the Ground Investigation works for this scheme during 2015. The material came from the edge of South Hinksey village and comprised a jug handle of Brill Boarstall Ware (14th-15th century), a sherd of Ashampstead Ware (12th-14th century) and a sherd of an East Wiltshire Ware cooking pot (1150-1350AD). The pottery along with a single animal bone derive from a dumped occupation deposit lying directly beneath the topsoil at *c* 0.4m depth.

Appendix 3 - Gazetteer of collective layers

OA	FORM	Significance	PERIOD	DESCRIPTION
605	Core of the historic settlement of Botley	Local	Medieval, Post-Medieval and Modern.	Botley was first recorded in the 12th century and is thus a historic settlement of Medieval origin, focussed on a mill and farm. Most of the older buildings of the settlement have been removed although there is a core of Listed and non-Listed historic buildings. The village was adjacent to the Wytham Trackway, a possible prehistoric route.
607	Core of the historic settlement of South Hinksey	Local	Saxon, Medieval, Post-Medieval and Modern.	An historic settlement of Anglo-Saxon origin, South Hinksey is first recorded separately in the 13th century. The village includes various Listed and other non-Listed historic buildings dating to between the 13th and 19th centuries and is located on the first gravel terrace. The causewayed footpath-running north is very likely to be of medieval origin. As with North Hinksey, the setting of the village has been compromised by the A34 trunk road to the west but the meadows to the north form an important buffer between the village itself and the suburbs of Oxford. Medieval archaeology including findspots and domestic rubbish pits are recorded in the settlement.
608	Core of the historic settlement of Kennington	Local	Saxon, Medieval, Post-Medieval and Modern.	Kennington was first recorded as a distinct settlement in the mid 9th century, but unlike South Hinksey or Botley, it never grew beyond the size of a modest hamlet focused on a large farm. The settlement began expanding piecemeal early in the 20th century, following sale of the estate to numerous freeholders. The settlement is located on a 'spur' on the east edge of a gravel terrace. The settlement includes several Listed Buildings and recent excavation has shown evidence of Medieval occupation, including cess pits. The historic core of the settlement now sits in a setting primarily of mid and late 20th century origin, and is remote from it's origin's as a small rural community.
611	Core of the historic settlement of Sandford-on-Thames	Local	Saxon, Medieval, Post-Medieval and Modern.	Sandford is of Anglo-Saxon origin, and was first recorded in the early 9th century. It is located on the north side of a distinct island rising above the floodplain (underlain by Corallian Limestone), between the Thames to the west and the Littlemore brook to the north. Its history and form were dominated either by the river or by the medieval religious houses, who owned substantial property on the northern and eastern edges of the settlement. The village includes several listed

OA	FORM	Significance	PERIOD	DESCRIPTION
				and non-Listed buildings of historic interest, including mill workers cottages. The locks and weirs to the west of the settlement were important features in controlling the meadows and river access and use from the Medieval period up to the present day.
612	Core of the historic settlement of Iffley	Local	Saxon, Medieval, Post-Medieval and Modern.	Iffley is of Anglo-Saxon origin, and is located on a promontory of the second gravel terrace to the east of the Thames. The village includes a Conservation Area and several groups of Listed and non-Listed buildings of historic interest, including the 12th century church, a very fine example of Romanesque architecture. Originally a small village, the settlement expanded significantly in the late 18th century, and again in the 20th century. The setting of the historic core of the settlement includes views west to the river, which has been an important factor in the settlement from at least the 12th century, with a mill recorded at that time.
614	Medieval and post-medieval settlement near Hinksey Stream	Local	Medieval, Post-Medieval and Modern.	Although not a recognised settlement such as a village, the Medieval bridge over the Hinksey Stream attracted a minor focus of activity in the Medieval and Post-medieval periods including a tollhouse and a mill. Evaluation and Watching Brief works carried out by Oxford Archaeology in 2007 revealed preserved timbers probably related to water control structures for the medieval mill.
631	Medieval and post-medieval extramural suburb	Local	Saxon, Medieval, Post-Medieval and Modern.	This area comprises the extra-mural suburb south of the town walls and north of the Folly Bridge, known as St Aldates, which appears to have developed rapidly in the later 12th century, following re-construction of the Thames crossing ('grand pont') in the 11th century and a period of instability in the local hydrology (Dodd 2003, 53-56, 83). The new suburb may have been organised into regular tenements backing onto the complex pattern of streams that used to exist alongside the main course of the Thames. With the exception of some of the University properties on the north and east edge of this suburb, much of this area has been substantially re-developed in the late 19th century and the late 20th century, and only the street patterns survive as surface evidence of the medieval town's development.
632	Medieval and post-medieval development south of the Thames	Local	Medieval, Post-Medieval and Modern.	Development south of the main channel of the Thames developed piecemeal after the re-construction of the Grandpont Causeway in the 11th century (Dodd 2003, 53-56, 83, 87), and is likely to have been a 'ribbon' settlement in its earliest form. The settlement in the medieval period did not reach the size or status of a recognised suburb and the current form of the area is primarily of post-medieval

OA	FORM	Significance	PERIOD	DESCRIPTION
				appearance. The causeway itself is a Scheduled Monument and was a critical feature in the development of Oxford as a town from the 12th century onwards.
638	Grandpont Iron Age settlement	Local	Iron Age, Medieval	Iron Age settlement partially uncovered during an excavation by Oxford Archaeology on the site of the old football ground on Whitehouse Road in Grandpont in 1992. Evidence of Medieval activity was also revealed.
639	Grandpont Causeway	National	Saxon, Medieval, Post-Medieval and Modern.	The Thames was crossed just south of the Anglo-Saxon burh by a series of wooden bridges and fords, that also crossed the marshy meadows south of the Thames. The crossings were certainly in place by the late 9th century (Dodd 2003, 32). The Grandpont causeway was then built in the 11th century. It is possible that the southern end of the causeway (where it turns south-west) was aligned on a Roman road, itself crossing the Thames north of Iffley lock. The settlement near Hinksey Stream (OA 614) represents a node of activity along the causeway. The northern end of the causeway is a Scheduled Monument
640	Cropmarks identified from aerial photograph survey AP 06	Local	Medieval with possibly earlier or later components	Area of cropmarks/earthworks identified during 2008 survey of aerial photographs within FAS area. Medieval cultivation remains (ridge and furrow). Area also includes possible enclosure and drains of unknown dates (HER MOX8747/NMR 1201255).
641	Cropmarks identified from aerial photograph survey.	Local	Medieval	Area of cropmarks identified during 2008 survey of aerial photographs within FAS area. Area contains eroded ridge and furrow earthworks seen on aerial photographs.
642	Cropmarks identified from aerial photograph survey	Local	Uncertain, potentially prehistoric	Area of cropmarks identified during 2008 survey of aerial photographs within FAS area. Survey identified buried rectilinear ditched enclosure and linear ditch at this location. Also includes undated linear features (HER MOX12043) and cropmarks of a possible enclosures and a pit (NMR 1071692).
643	Cropmarks identified from aerial photograph survey	Local	Prehistoric	Area of cropmarks identified during 2008 survey of aerial photographs within FAS area. The area contains a buried round barrow. This feature is also recorded by the NMR as 1071689 and 661995.
644	Cropmarks identified from aerial photograph survey	Local	Uncertain, potentially prehistoric	Area of cropmarks identified during 2008 survey of aerial photographs within FAS area. Clear evidence on aerial photographs for a buried ditched rectilinear enclosure, ditches and pits. These features are also recorded as NMR 1095230, 1095232, 1095231 and HER MOX10956.

OA	FORM	Significance	PERIOD	DESCRIPTION
645	Cropmarks identified from aerial photograph survey	Local		Area of cropmarks identified during 2008 survey of aerial photographs within FAS area due to the presence of a circular feature on military aerial photographs.
646	Cropmarks identified from aerial photograph survey	Local		Area of cropmarks identified during 2008 survey of aerial photographs within FAS area. Eroded ridge and furrow earthworks seen on aerial photographs.
647	Cropmarks identified from aerial photograph survey	Local		Area of cropmarks identified during 2008 survey of aerial photographs within FAS area due to the presence of a group of heavily ploughed ring ditches. These are also recorded as HER MOX10951 and NMR 662007. Also contains clear ridge and furrow earthworks towards the southern end and three paddocks in the central area as seen by OA during the walkover survey.

Appendix 4 - Gazetteer of Designated sites, South Hinksey Area

OA Number	CLASS	GRADE	PERIOD	DESCRIPTION
300	Scheduled Monument & Listed Building	II*	Post-medieval	Well house. Built 1610 for Otho Nicholson.
301	Listed Building	II	Post-medieval	Hinksey Hill Farmhouse. Built c 1770-80.
302	Listed Building	II	Post-medieval	Barn at Hinksey Hill Farm. Dated 1776.
303	Listed Building	II	Post-medieval	Stables at Chilswell Farm. Built in the 18th century.
304	Listed Building	II	Post-medieval	Chilswell Farmhouse was built in the late 17th century.
305	Listed Building	II	Post-medieval	Barn at Chilswell Farm. Built in the late 17th or early 18th century.
306	Listed Building	II	Post-medieval	Stables and Granary at Chilswell Farm. Built in the 18th century.
307	Listed Building	II	Modern	Overshot is a private house built in 1937 by Godfrey Samuel and Valentine Harding for the art historian Ellis Waterhouse.

Appendix 5 - Gazetteer of non-designated sites, South Hinksey Area

OA Number	UID no	Significance	PERIOD	DESCRIPTION
400	MOX9042	Local	Early Neolithic to Late Bronze Age	Neolithic/Bronze Age Flint Flakes and Cores (NE of Pickett's Farm)
401	MOX9039	Local	Early Neolithic to Late Bronze Age	Neolithic/Bronze Age Flint Flakes (E of Pickett's Heath Farm)
402	MOX9043	Local	Early Neolithic to Late Bronze Age	Neolithic/Bronze Age Flint Flake and Core (SE of Chilswell House)
403	MOX9144	Local	Neolithic	Neolithic Arrowhead (between Hen Wood and Birch Copse, Chilswell House)
404	MOX9014	Local	Neolithic	Neolithic Scrapers (200 yards E of Chilswell House)
405	MOX9017	Local	Mesolithic	Mesolithic and Neolithic Collection
406	MOX9153	Local	Roman	Roman Pottery
407	MOX9195	Local	Bronze Age	?Bronze Age ?Ring Ditch
408	MOX9041	Local	Mesolithic	Mesolithic Flint Bladelets (SE of Powder Hill Copse)
409	MOX24174	Local	Neolithic	Possible flint factory NE of Picketts Heath Farm
410	MOX8665	Local	Post-medieval	Post-medieval Stone Quarry (site of)
411	MOX9040	Local	Early Neolithic to Late Bronze Age	? Neolithic/Bronze Age Flint Working Area (south east of Powder Hill Copse)
412	MOX9146	Local	Roman	Romano-British Pottery
413	MOX12092	Local	Bronze Age	Bronze Age Palstave
414	MOX9049	Local	Iron Age	Iron Age Pottery (SE of Powder Hill Copse)
415	MOX9203	Local	Early Iron Age to Roman	Prehistoric and Roman Features
416	MOX9150	Local	Roman	Roman Villa N of Bedswell Heath
417	MOX9022	Local	Mesolithic	Mesolithic Lithics (WSW of Chilswell Farm)
418	MOX9147	Local	Medieval	Medieval Pottery SW of Chilswell Farm
419	MOX9148	Local	Roman	Pottery associated with Roman Villa S of Chilswell Farm
420	MOX9136	Local	Medieval	Pre-Reformation Chapel (site of)
421	MOX9159	Local	Medieval	Medieval ? Monastic Grange (site of)

OA Number	UID no	Significance	PERIOD	DESCRIPTION
422	MOX9149	Local	Medieval	Medieval Coin S of Chilswell Farm
423	MOX8721	Local	Post-medieval	Post-medieval Boundary Stones, Raleigh Park
424	MOX9151	Local	Post-medieval	Post-medieval Boundary Stones
425	MOX9038	Local	Early Neolithic to Late Bronze Age	Mesolithic to Bronze Age Lithic Scatters (WNW of Chilswell Copse)
426	MOX12416	Local	Modern	Heavy Anti-Aircraft site
427	MOX9154	Local	Post-medieval	Site of Sunningwelll Brick Field
428	MOX9205	Local	Early Iron Age to Roman	Middle Iron Age to Roman Settlement
429	MOX9137	Local	Neolithic	Neolithic Polished Stone Axe
430	MOX9034	Local	Roman	Roman Pottery
431	MOX12406	Local	Post-medieval	Chilswell (limestone) Quarry
432	MOX10913	Local	Early Neolithic to Late Bronze Age	Neolithic/Bronze Age Lithic Scatter (ESE of Chilswell Copse)
433	MOX10886	Local	Post-medieval	Site of Post-medieval Stone Quarries
434	MOX10912	Local	Late Neolithic to Early Bronze Age	Neolithic/Bronze Age Lithic Scatter (NE of Chilswell Copse)
435	MOX10842	Local	Post-medieval	Post-medieval Clay Pit (site of)
436	MOX10914	Local	Early Neolithic to Late Bronze Age	Neolithic/Bronze Age Lithic Scatter (c.350m SE of Chilswell Copse)
437	MOX10961	Local	Early Iron Age to Roman	Iron Age/Romano British Settlement
438	MOX10919	Local	Post-medieval	Milestone
439	EOX3497	Negligible	Event	Evaluation, Lime Road, Botley, identified an undated pit and a buried soil horizon.
440	EOX3239	Local	Event	A magnetometry survey at Chilswell Farm identified a D shaped enclosure, trackway and possible kilns.
441	EOX468	Local	Event	Evaluation at Hinksey Hill Farm identified evidence of occupation between the Mesolithic and Roman periods.

Appendix 6 - Gazetteer of Designated sites, Radley Area

OA Number	CLASS	GRADE	PERIOD	DESCRIPTION
700	Scheduled Monument		Roman	Romano-British settlement site east of Goose Acre Farm.
701	Scheduled Monument		Prehistoric	The cropmarks of prehistoric or Roman settlement sites have been identified from aerial photographs north of Wick Hall.
702	Listed Building	II	Post-medieval	Doorway and wall north of Temple Farmhouse dated 1614.
703	Listed Building	II	Medieval	Temple Farmhouse was built in the 16th century or possibly earlier.
704	Listed Building	II	Medieval	Barn and farm building at Temple Farm. Largely dating to the 18th century but incorporating the remains of a 15th century Chapel.
705	Listed Building	II*	Medieval	The Church of St Andrew has fabric dating to the late 11th and 13th centuries.
706	Listed Building	II	Post-medieval	River View is a terrace of six cottages built *c* 1825.
707	Listed Building	II	Post-medieval	The Catherine Wheel public house was built in the late 18th or early 19th century.
708	Listed Building	II	Post-medieval	Basimore Cottage was built in the early-mid 17th century.
709	Listed Building	II	Post-medieval	Barn, stable and cowshed at Lower Farm. Built in the mid 18th century.
710	Listed Building	II	Post-medieval	Lower Farmhouse was built in the mid 18th century.
711	Listed Building	II	Post-medieval	Park End and the attached cottage were formerly a farmhouse built in the early 17th century.
712	Listed Building	II	Post-medieval	Barn at Park End. Built in the 18th century.
713	Listed	II	Modern	Memorial Arch at St Peter's College. Built in 1921 to designs by Sir TG Jackson.

OA Number	CLASS	GRADE	PERIOD	DESCRIPTION
	Building			
714	Listed Building	II	Post-medieval	Racquets Court at St Peter's College. Built *c* 1885.
715	Listed Building	II	Post-medieval	Cloister, upper dormitory, octagon and school room, St Peter's College. Built in the mid 19th century.
716	Listed Building	II	Post-medieval	Dining hall and cloister walks, St Peter's College. Built 1893-4.
717	Listed Building	II*	Post-medieval	Radley Hall now forms part of St Peter's College. Built 1721-7 by William Townsend and Bartholomew Peisley for Sir John Stonhouse.
718	Listed Building	II*	Post-medieval	Chapel at St Peter's College. Built 1893/4 by Sir TG Jackson.
719	Listed Building	II	Post-medieval	The Cottage at St Peter's College was built in the late 16th century.
720	Listed Building	II	Medieval	The Old Vicarage was built in the late 15th century.
721	Listed Building	II*	Medieval	The Church of St James was built in the 13th century with additions in the 14th and 15th centuries.
722	Listed Building	II	Post-medieval	A 17th century chest tomb in the churchyard of the church of St James.
723	Listed Building	II	Post-medieval	A barn and stable at Church Farm. Built in the late 18th century.
724	Listed Building	II	Post-medieval	Walnut Cottage was built in the 17th century.
725	Listed Building	II	Post-medieval	57 and 61 Lower Radley are two late 17th century cottages.
726	Listed Building	II	Post-medieval	Spinney's Cottage was built in the late 16th or early 17th century.
727	Listed Building	II	Medieval	46 and 48 Lower Radley were built as a house in the 15th century and remodelled in the 17th century.
728	Listed	II	Post-medieval	Lower Farmhouse was built in the early/mid 18th century.

OA Number	CLASS	GRADE	PERIOD	DESCRIPTION
	Building			
729	Listed Building	II	Post-medieval	The Farthings was built in the 18th century.
730	Listed Building	II	Post-medieval	82 and 84 Lower Radley were built in the 17th century.
731	Listed Building	II	Medieval	Bakers Close was built in the late medieval period and remodelled in the 17th. 18th and 20th centuries.
732	Listed Building	II	Post-medieval	Barn and stables at 87 Lower Radley. Built in the early 18th century.
733	Listed Building	II	Post-medieval	87 Lower Radley was built as a farmhouse in the late 16th century.
734	Listed Building	II	Post-medieval	An 18th century barn at 87 Lower Radley.

Appendix 7 - Gazetteer of non-designated sites, Radley Area

OA Number	UID no	Significance	PERIOD	DESCRIPTION
800	MOX12701	Local	Bronze Age	Bronze Age pit found on Abingdon Pipeline
801	MOX8525	Uncertain	Unknown	Undated Fishpond
802	MOX10878	Local	Medieval	Radley Park
803	MOX12702	Local	Early Medieval/Dark Age	Anglo Saxon pit on Abingdon pipeline
804	MOX8560	Local	Early Neolithic to Late Bronze Age	Neolithic to Bronze Age Flints (W of White's Lane)
805	MOX8537	Local	Later Prehistoric	Cropmarked complex (S of Peach Croft Farm)
806	MOX8400	Local	Roman	Possible Romano-British Settlement and Field System
807	MOX8558	Local	Early Neolithic to Late Bronze Age	Neolithic to Bronze Age Flint Flakes (N of Radley)
808	MOX8423	Regional	Early Medieval/Dark Age	Possible Christian/Anglo Saxon Cemetery at Radley
809	MOX8418	Local	Post-medieval	A mansion in Radley Park was built in 1575
810	MOX8424	Local	Early Bronze Age to Late Iron Age	Iron Age Settlement, Beaker Burial and Neolithic Flints and Pottery
811	MOX8539	Local	Roman	Roman and Undated Cropmarks (NE of Goose Acre Farm)
812	MOX8624	Local	Roman	Roman Ditch and Pottery
813	MOX8559	Local	Early Neolithic to Late Bronze Age	Neolithic to Bronze Age Flints (E of White's Lane)
814	MOX10898	Local	Early Neolithic to Late Bronze Age	Neolithic or Bronze Age Flint Flakes (E of Radley Little Wood)
815	MOX10893	Local	Early Iron Age to Roman	Iron Age/Roman Iron Arrowhead
816	MOX8580	Local	Late Mesolithic to Late Bronze Age	Mesolithic/Bronze Age Flakes and Cores (NE of Goose Acre Farm)
817	MOX8541	Local	Prehistoric	Prehistoric Ring ditches

OA Number	UID no	Significance	PERIOD	DESCRIPTION
818	MOX8426	Local	Medieval	Medieval Spearhead (Park Farm)
819	MOX10892	Local	Early Iron Age to Roman	Iron Age to Roman Arrowhead
820	MOX8540	Uncertain	Unknown	Site of Undated Trackway
821	MOX12700	Local	Middle Bronze Age to Late Bronze Age	Bronze Age pit on Abingdon pipeline
822	MOX8590	Local	Palaeolithic	Palaeolithic Handaxe (Goose Acre Farm)
823	MOX8578	Local	Early Neolithic to Late Bronze Age	Neolithic to Bronze Age Finds (SSW of Radley Station)
824	MOX8582	Local	Early Neolithic to Late Bronze Age	Neolithic to Bronze Age Flint Flakes (SE of Park Farm)
825	MOX10900	Local	Early Neolithic to Late Bronze Age	Neolithic or Bronze Age Flint Flakes (E of North Copse)
826	MOX12699	Local	Middle Bronze Age to Roman	Iron Age and Roman occupation site on Abingdon pipeline
827	MOX10899	Local	Early Neolithic to Late Bronze Age	Neolithic or Bronze Age Flint Flakes (E of Radley Large Wood)
828	MOX12614	Local	Roman	Roman pottery from Sandford Lane and Poplar Grove
829	MOX12207	Local	Early Iron Age to Post-medieval	Iron Age Settlement at Pumney Farm
830	MOX8709	Uncertain	Unknown	Undated Linear Features
831	MOX10845	Local	Roman	Romano-British Settlement Site
832	MOX10918	Local	Later Prehistoric	Prehistoric Flint Arrowheads and Scrapers
833	MOX8401	Local	Roman	Romano British Earthwork
834	MOX8629	Local	Palaeolithic	Palaeolithic Handaxe
835	MOX8588	Local	Early Neolithic to Late Bronze Age	Neolithic to Bronze Age Finds (E of Radley Station)
836	MOX8612	Local	Neolithic	Neolithic Miscellaneous Finds
837	MOX8551	Local	Later Prehistoric	Later Prehistoric Linear Features, Ditches
837	MOX8551	Local	Later Prehistoric	Later Prehistoric Linear Features, Ditches

OA Number	UID no	Significance	PERIOD	DESCRIPTION
838	MOX8561	Local	Early Neolithic to Late Bronze Age	Neolithic to Bronze Age Finds (NE of Radley Station)
839	MOX10911	Local	Early Neolithic to Late Bronze Age	Neolithic or Bronze Age Flint Flakes (c.350m W of River Thames)
840	MOX12697	Local	Later Prehistoric	Burned hearth and gully found along Abingdon Pipeline
841	MOX12698	Local	Early Mesolithic to Roman	Multi period features and Iron Age structure found on Abingdon pipeline
842	MOX10844	Local	Post-medieval	Sandford Lock and Turnpike
843	MOX8545	Local	Bronze Age	Possible Bronze Age Round Barrow (S of Lower Radley)
844	MOX8633	Local	Roman	Roman Well (timber lined)
845	MOX8544	Local	Bronze Age	Bronze Age Cropmarks and Finds (S of Lower Radley)
846	MOX8628	Local	Neolithic	Neolithic Flint Scatter
847	MOX8550	Local	Later Prehistoric	Later Prehistoric Enclosure with other Features
848	MOX10841	Local	Post-medieval	Water Mill and Paper Mill
849	MOX8428	Local	Medieval	Site of Medieval Cruck-Framed Building
850	MOX10882	Regional	Neolithic	Long Barrow & Romano-British Cremation Urn
851	MOX8549	Uncertain	Unknown	Undated Trackways
852	MOX8409	Local	Bronze Age	Bronze Age Round Barrow (S of Lower Radley)
853	MOX8543	Uncertain	Unknown	Undated Pits (along road from Pumney Farm to Lower Radley)
854	MOX8542	Local	Medieval	Medieval Field System
855	MOX8546	Uncertain	Unknown	Undated Pit Group (South of Lower Radley)
856	MOX8425	Local	Prehistoric	Prehistoric Ring Ditch
857	MOX8547	Uncertain	Unknown	? Undated 'Block' Marks
858	MOX10860	Local	Later Prehistoric	Prehistoric Bronze Implement
859	MOX10927	Local	Medieval	Medieval Shrunken Village
860	MOX12218	Local	Medieval	Silver-gilt late Medieval ring from Lower Farm
861	MOX8416	Local	Bronze Age	Bronze Age Round Barrow
862	MOX8568	Local	Early Neolithic to Late Bronze Age	Neolithic to Bronze Age Flint Flakes (W of the River Isis)
863	MOX8548	Uncertain	Unknown	Undated Linear Features

OA Number	UID no	Significance	PERIOD	DESCRIPTION
864	MOX8712	Local	Prehistoric	Later Prehistoric Enclosures
865	MOX10858	Local	Later Prehistoric	Possible Later Prehistoric Coins and Pottery
866	MOX10922	Local	Post-medieval	Site of Toll House
867	MOX8587	Local	Early Neolithic to Late Bronze Age	Neolithic to Bronze Age Flint Flakes (c.1400m E of Radley)
868	MOX10853	Local	Early Neolithic to Roman	Later prehistoric lithic scatter, Bronze Age ring ditch and Romano-British Pottery Production Site (Lower Farm)
869	MOX11234	Local	Bronze Age	Bronze Age Spearhead, Littlemore
870	MOX12703	Local	Early Iron Age	Intercutting Iron Age pits on Abingdon pipeline
871	EOX687	Negligible	Event	Evaluation at Thrupp Lane. No archaeological features were observed, although two prehistoric flint flakes were recovered.
872	EOX685	Negligible	Event	Evaluation at Gooseacre/Badgers Copse. Identified one undated pit.
873	EOX925	Negligible	Event	Watching brief on the Wootton Reline.
874	EOX1345	Negligible	Event	Undated ditch found during an archaeological evaluation on Stonhouse Crescent. Identified one undated ditch.
875	EOX1465	Local	Event	Programme of archaeological recording on the route of the Abingdon Pipeline. evidence from Neolithic to Roman periods, with occupation evidence most clearly for IA and Roman periods.
876	EOX1245	Local	Event	Excavation of Roman kiln site at Lower Farm, Nuneham Courtenay.

Appendix 8

Main Sources Consulted

Heritage Environment Record (HER), National Monuments Record (NMR) and Urban Archaeological Database (UAD)

The HER is a database of all known archaeological sites and findspots within the area, constructed from evidence supplied by archaeological investigation, early maps, aerial photographs and local knowledge. This is the prime repository of information on recorded archaeological remains within the Study Area.

The NMR is the national database of archaeological and architectural sites and buildings in England. Initially based on the Ordnance Survey field inspector's records it is updated from various sources, including the National Library of Aerial Photographs and any information received from the HERs of England.

The Oxford UAD is a database of all known archaeological sites within the city of Oxford. Containing data that was originally part of the Oxfordshire HER, it now contains all relevant archaeological data about the city of Oxford.

OA carried out an assessment of the records held by the SMR, NMR and UAD of the Study Area. The 2008 gazetteer was updated in 2015 to reflect the new shorter Study Area and the additional data. All sites have been allocated an OA number, added to the gazetteer of archaeology (Appendices 1 – 3), referred to in the text and marked on the GIS.

Designated Sites

Designated Sites comprise cultural heritage sites or features which are given specific protection in the planning process due to their designation as of special interest or significance. The principal cultural heritage designated sites are Scheduled Monuments, Listed Buildings, Registered Parks and Gardens and Historic Buildings. Sites are Designated by Department of Culture, Media and Sport (DCMS) on the advice of Historic England (formerly English Heritage) and records are maintained by Historic England. Conservation Areas (which are defined by Local Authorities rather than National bodies) are identified as Regionally or Locally Important sites.

Information upon Designated Sites was obtained from the National Heritage database, an on-line resource maintained by Historic England (formerly English Heritage). Information upon Conservation Areas were obtained from the Oxford City Council and Vale of White Horse District Council planning websites.

Published sources.

A range of published sources were examined in 2005, 2008 and 2015 to gain an understanding of the archaeological background of the area.

Previous Studies

As part of the 2008 study, separate studies of the aerial photographs of the route (undertaken by Waterman CPM) and the geoarchaeology (undertaken by ArcheoScape) were carried out. As part of their 2008 works OA were supplied with a draft version of the Waterman CPM report (without the detailed maps) and the accompanying GIS layers. This report and the GIS have been reviewed and information used in the current report. OA is attempting to obtain a copy of the final Waterman CPM report but to date this has not been obtained.

Previous Hydrogeological and geological surveys carried out as part of the ongoing Oxford FRM feasibility surveys have been obtained and reviewed. These include a 2008 hydrogeological review (Black and Veatch, 2009), the 2008 geoarchaeological

assessment (ArchaeoScape, 2008) and a 2014 Route Geology Assessment (Fugro, 2014).

Historic Mapping

OA reviewed historic Ordnance Survey (OS) mapping, from the First Edition Six Inch maps of the late 19th century to the latest coverage published in 2007. The majority of these historic maps were supplied to OA by Black and Veatch in the form of an Environcheck map collation document. Digital copies of the first edition OS maps were obtained in 2015 and these are reproduced in the report. Other historic OS maps were examined by OA at the Bodleian Map Library in Oxford.

The Oxfordshire History Centre was visited in May 2016 when a range of historic Tithe and Inclosure maps were consulted. A list of all of the historic maps both OS and manuscript is included within the Bibliography.

Field Inspection

A site inspection can provide further information on the archaeological potential of the Study Area based on topography, the nature of the existing buildings, current land use, and the extent of past ground disturbance. The 2008 survey involved a rapid walkover survey of all accessible parts of the then defined Study Area (which was larger than the current Study Area). Most of the areas were publicly accessible. The present survey did not repeat this walkover; however, the majority of the route corridor was inspected as part of a detailed survey carried out in advance of Ground Investigation survey. The walkover survey, which was carried out on 9th and 10th September 2015 examined the location of all the proposed test pits and boreholes to ensure that no significant archaeological earthworks were affected. It also took the opportunity to further examine the archaeological resource within the area to be crossed by the scheme and to identify extant archaeological earthworks.

A survey of the wider corridor was carried out in November 2015, primarily to examine potential short range and long range views during a time when tree and leaf cover was at its optimal lowest level and hence the visibility of the scheme was at its highest.

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Ordnance Survey 25" Map, Berkshire Sheet VI (15), 1899

Ordnance Survey 25" Map, Berkshire Sheet X (3), 1899

Ordnance Survey 25" Map, Berkshire Sheet X (4), 1899

Ordnance Survey 25" Map, Oxfordshire Sheet XXXIX (7), 1899

Ordnance Survey 25" Map, Oxfordshire Sheet XXXIX (12), 1899

Ordnance Survey 25" Map, Oxfordshire Sheet XXXIX (16), 1899

Ordnance Survey 25" Map, Berkshire Sheet X (3), 1912

Ordnance Survey 25" Map, Berkshire Sheet X (4), 1912

Ordnance Survey 25" Map, Berkshire Sheet VI (3), 1913

Ordnance Survey 25" Map, Berkshire Sheet VI (6), 1913

Ordnance Survey 25" Map, Berkshire Sheet VI (10), 1913

Ordnance Survey 25" Map, Berkshire Sheet VI (11), 1913

Ordnance Survey 25" Map, Berkshire Sheet VI (12), 1913

Ordnance Survey 25" Map, Berkshire Sheet VI (15), 1913

Ordnance Survey 25" Map, Berkshire Sheet VI (16), 1913

Ordnance Survey 25" Map, Berkshire Sheet VI (2), 1921

Ordnance Survey 25" Map, Berkshire Sheet VI (3), 1921

Ordnance Survey 25" Map, Berkshire Sheet VI (7), 1921

Appendix 9: Scheduled Monument description

Old Abingdon Road Culverts
List Entry Summary

This monument is scheduled under the Ancient Monuments and Archaeological Areas Act 1979 as amended as it appears to the Secretary of State to be of national importance. This entry is a copy, the original is held by the Department for Culture, Media and Sport.

Name: Old Abingdon Road Culverts

List entry Number: 1408790
Location

Medieval culverts: west and east Stanford Bridge culverts, Redbridge culverts 1 and 2, the west and east Mayweed culverts, the Lesser Mayweed Culvert and those parts of the causeway above, Old Abingdon Rd, Oxford

The monument may lie within the boundary of more than one authority.

County: Oxfordshire

District: Oxford

District Type: District Authority

Parish: Non Civil Parish

National Park: Not applicable to this List entry.

Grade: Not applicable to this List entry.

Date first scheduled: 05-Oct-2012

Date of most recent amendment: Not applicable to this List entry.
Asset Groupings

This list entry does not comprise part of an Asset Grouping. Asset Groupings are not part of the official record but are added later for information.
List entry Description
Summary of Monument

Culverts and part of a causeway, a continuation of the Grandpont (a Norman causeway), preserving the medieval and possibly Saxon southern approach to Oxford.
Reasons for Designation

The west and east Stanford Bridge culverts, Redbridge culverts 1 and 2, the west and east Mayweed culverts, the Lesser Mayweed culvert and those parts of the causeway above each are scheduled for the following principal reasons: * Rarity: they are a continuation of the already scheduled Grandpont and represent an example of a

medieval causeway (possibly with Anglo-Saxon origins), few of which now survive in their original form; * Survival: original fabric is visible in the culverts and will survive in those sections of the causeway above each culvert; * Potential: no recent disturbance or archaeological excavation has taken place in the vicinity of the culverts and the causeway. There is therefore the potential for the recovery of archaeological information and environmental evidence relating to the causeway and the landscape in which it was built; * Documentation: the causeway is considered to have its origins in the Saxon or Norman period and represents an important element in understanding the topography and development of early medieval and medieval Oxford. It is one of the few examples of this type of monument where both archaeological and documentary records are available.
History

Abingdon Road (A4144) runs south from Folly Bridge, on the southern edge of Oxford, to Redbridge further south. The road originally turned west to cross the Hinksey stream. This part of the Abingdon Road is now known as Old Abingdon Road, while Abingdon Road continues south. For 650m south of Folly Bridge Abingdon Road was built on top of a Norman causeway with more than 30 arches or culverts, called the Grandpont. The Grandpont is believed to be part of the 'Great Bridge' built by Robert d'Oilly who also built Oxford Castle in 1071, and the Old Abingdon Road, 1.4m to the south, is considered to be a continuation of this causeway and has seven culverts.

Single and multi-span culverts are structures of one or more arches supported on footings and abutments. They were constructed throughout the medieval period to carry a causeway allowing water to pass beneath, for the use of pedestrians and pack horses or vehicular traffic, crossing smaller rivers, streams and marshy areas, often replacing or supplementing earlier fords. During the early medieval period timber was used for such bridging structures, but from the C11 stone culverts became more common. Culvert arches may be pointed, semicircular or segmental. Where medieval culverts have been altered in later centuries, original features may be concealed behind later stonework, and timber structures may be preserved below the culverts. The causeway above the culverts may be of stone or earth.

Although a basic network of roads was already in existence as part of the Roman road system, new towns and communication needs led to the construction of an extensive network of new roads throughout England during the medieval period. This network, much of which has now been disturbed or obscured by the modern road system, included causeways, fords and bridges.

Old Abingdon Road approached Oxford from the south and provided a causeway over the Hinksey stream, a group of channels which are a tributary of the Thames. During the Iron Age and Romano British periods alluvial deposits formed a series of islands in the floodplain in the area of South Hinksey now occupied by Hinksey stream which is thought to have been traversed by bridges and fords in the mid Saxon period.

It is possible that the causeway on the line of the Old Abingdon Road may have its origins in the Saxon period since a Saxon crossing of the river in the South Hinksey area by way of two fords is referenced in charter evidence. Evidence for Saxon structures on the route of the Grandpont are also found north of Folly Bridge where a stone structure thought to be of mid-Saxon date has been interpreted as metalling of a crossing of the alluvial islands. Also north of Folly Bridge the timbers of a bridge were excavated and dated to between the mid-C7 and the early C10.

The Norman and medieval parts of the Old Abingdon Road culverts are, by comparison of materials and construction, contemporary with the Grandpont. These culverts with Norman and medieval phases have been extended and modified over time.

Cartographic evidence, from the New College Map of the Land in South Hinksey, a C16-C17 document, depicts the Old Abingdon Road with three round headed arches, and a road surface without a parapet. The road is labelled 'The Bridge or Horse way from Oxford to Abingdon'. The round headed arches are thought to be the Stanford, Mayweed and Lesser Mayweed bridges. Thus these bridges, in their original state, probably date from the C16 or C17, but have been much repaired and modified. The Inclosure map of 1814 suggests two flood relief arches at Mayweed Bridge, and possibly a similar arrangement at Stanford Bridge. In addition, another channel depicted is probably one of the Redbridge culverts.

The Great Western Railway Oxford to Didcot Branch Line was completed in 1844. The construction of a railway bridge which carries the Old Abingdon Road over the railway line involved building an embankment between the Mayweed and Stanford Bridges, and necessitated extensions to the Redbridge culverts, which lie just to the west of the railway bridge.

A Ground Penetrating Radar (GPR) Survey was undertaken by Waterman CPM in 2008 on areas of potential causeway survival, but this proved inconclusive. An archaeological investigation was conducted on the culverts in 2009 which was able to identify their date and fabric.

In 2011 a watching brief was conducted by Oxford Archaeology on the replacement of the old Abingdon railway bridge which extended to the carriageway either side of the railway bridge. Although work was done above the culverts, the depth of impact of groundwork did not extend to the culverts and only C19 and C20 deposits were affected

Details

The bridges and culverts on the Old Abingdon Road are, from west to east:

The Stanford Bridge culverts which lay either side of a main central bridge Redbridge Culvert 1 or west Redbridge Culvert 2 or east Mayweed Bridge culverts over Hinksey stream which comprises two culverts to the east of a main bridge Mayweed Lesser culvert

Each culvert has a number of phases of extension and modification. The spans of the culverts from abutment to abutment vary between 1.25 and 1.75m. The 2009 Archaeological Investigations Summary Report identifies the earliest phases of construction within each culvert as dating from the early medieval (Norman) to medieval periods and are described below.

STANFORD BRIDGE CULVERT These comprise two culverts one either side of Stanford Bridge. The earliest phase of each culvert lies on its south side.

The western culvert is about 4m wide north to south and the pointed arch on its northern side is more compressed on its south elevation. The culvert has dressed stones on the abutments, a rubble stone vault and limestone voussoirs. Beyond this early phase the culvert is constructed of rubble stone.

The eastern culvert is 3.9m wide. It has radiating voussoirs with fine joints and a coursed rubble stone vault. The voussoirs on the north side are weathered suggesting that this was once an outside face. There is tooling on the abutments of the east side and evidence of repair and modification on both north and south elevation.

The remainder of the culvert has phases of squared blocks with mortar joints and rubble stone construction.

REDBRIDGE CULVERT 1 (WEST CULVERT) The earliest part of this culvert, in two phases, lies in the middle of the culvert, flanking a later, narrow central section 1.65m wide. The earliest phase, 3.98m wide, is to the south of the centre of the culvert and has abutments extending from a stone footing 0.12m from the abutment face. There are two courses of masonry footings and the abutment above footing level comprises two courses of ashlar masonry with vertical striated tooling. Above this are two courses of rubble stone masonry which bear the springing of the barrel arched head of the culvert. The face of this section has limestone voussoirs and the head of the arch has longer and narrower blocks. The character of this part of the culvert is consistent with a positively identified Norman phase of the Redbridge 2 (eastern) culvert.

The second phase, to the north of the central section, is 3.2m wide and has squared abutments on a rubble stone footing. The rubble stone vault has limestone voussoirs.

REDBRIDGE CULVERT 2 (EAST CULVERT) The earliest phase of this culvert is again in the centre of the culvert and is 3.8m wide with a span of 1.75m. This phase has been securely dated to the Norman period. It has large ashlar masonry blocks with diagonal striated tooling and fine joints. The arch follows a shallow arc from a low spring point and terminates in a round head rubble stone arch.

The remaining phases are of rubble stone construction.

MAYWEED BRIDGE CULVERTS This comprises two culverts to the east of the main bridge span. The earliest phase of each culvert lies just to the north of the middle of each culvert.

The western culvert early phase, 4.1m wide, has large ashlar blocks abutments, rubble stone vaults and dressed stone voussoirs. Diagonal striated tooling was seen on the abutments and rubble stone vault.

The eastern culvert early phase is 4m wide and was identified as characteristic of the culvert construction of the Grandpont causeway. The barrel vault is of coursed rubble stone with voussoirs carved from shelly limestone and there is some striated tooling present.

The other phases of both culverts are of rubble stone construction without any dressings.

MAYWEED LESSER CULVERT There are five phases of construction here, but the two earliest phases are the two central sections. The abutment of the southern of these two sections is partly encased by the northern section which indicates that the southern section is the earlier.

The southern section is 2.8m wide and has squared masonry blocks with fine jointing from the springing to the apex of the barrel. There are similarities between this section of the culvert and the culverts at the northern end of the Grandpont.

The northern section is 4.12m wide and has roughly squared and coursed block abutments and dressed stone voussoirs. Striated and coarse tooling was seen on some of the stones.

The other phases of the culvert are of rubble stone construction without any dressings.

It is considered that the earliest, Norman, phases of culverts along this part of the causeway are the first phase of Redbridge 1, the Redbridge 2 culverts and possibly the southern phase of the Mayweed Lesser and the eastern of the Mayweed Bridge culverts. The other phases of the culverts described above are of medieval date, but extensions beyond these are of a later date.

The 2009 Archaeological Investigations Summary also indicates that by comparison with the Grandpont the surviving causeway on top of the culverts is about 0.3m thick.

EXTENT OF SCHEDULING The scheduling aims to protect the Norman and medieval phases of each of the culverts and the causeway above in each case. The maximum span (from culvert abutment to abutment broadly in the direction of the road) of the culverts is 1.75m, apart from the Mayweed west and east culverts which are so close together that it is more appropriate to include them in one area of archaeological protection which has a maximum span of 8m.

There are therefore six areas of archaeological protection: three of 4m wide (width is measured across the road) in the west and east Stanford Bridge culverts and in Redbridge Culvert 2; one of 9m wide in Redbridge Culvert 1, which includes the later central section of the culvert for ease of management; one of a maximum of 4.25m wide in the amalgamated West and East Mayweed Culverts respectively and one of 7m wide in the Mayweed Lesser Culvert.

As the causeway is considered to lie just above the culverts with a thickness of 0.3m, in order to protect the causeway and allowing for a 0.3m buffer to provide a margin for protection and maintenance of the causeway, the area of archaeological importance extends to 0.6m above the culvert soffits. In the case of the Lesser Mayweed culvert this will give very little clearance to the road surface as the distance from carriageway to soffit is 0.84 - 0.9m.

The tarmac surface and make-up of the road above the areas of archaeological importance is excluded from the scheduling but the ground beneath is included.
Selected Sources

Other
Jacobs ‘Old Abingdon Road Culverts, Archaeological Investigations: Summary Report’ July 2009.,
Jacobs Babtie ‘Old Abingdon Road, Oxford Archaeological Desk Based Assessment’ September 2006.,
Waterman CPM Environmental Planning & Design ‘Old Abingdon Road Bridge, Oxford Archaeology and Architectural Assessment’ July 2008.,

National Grid Reference: SP5165203697

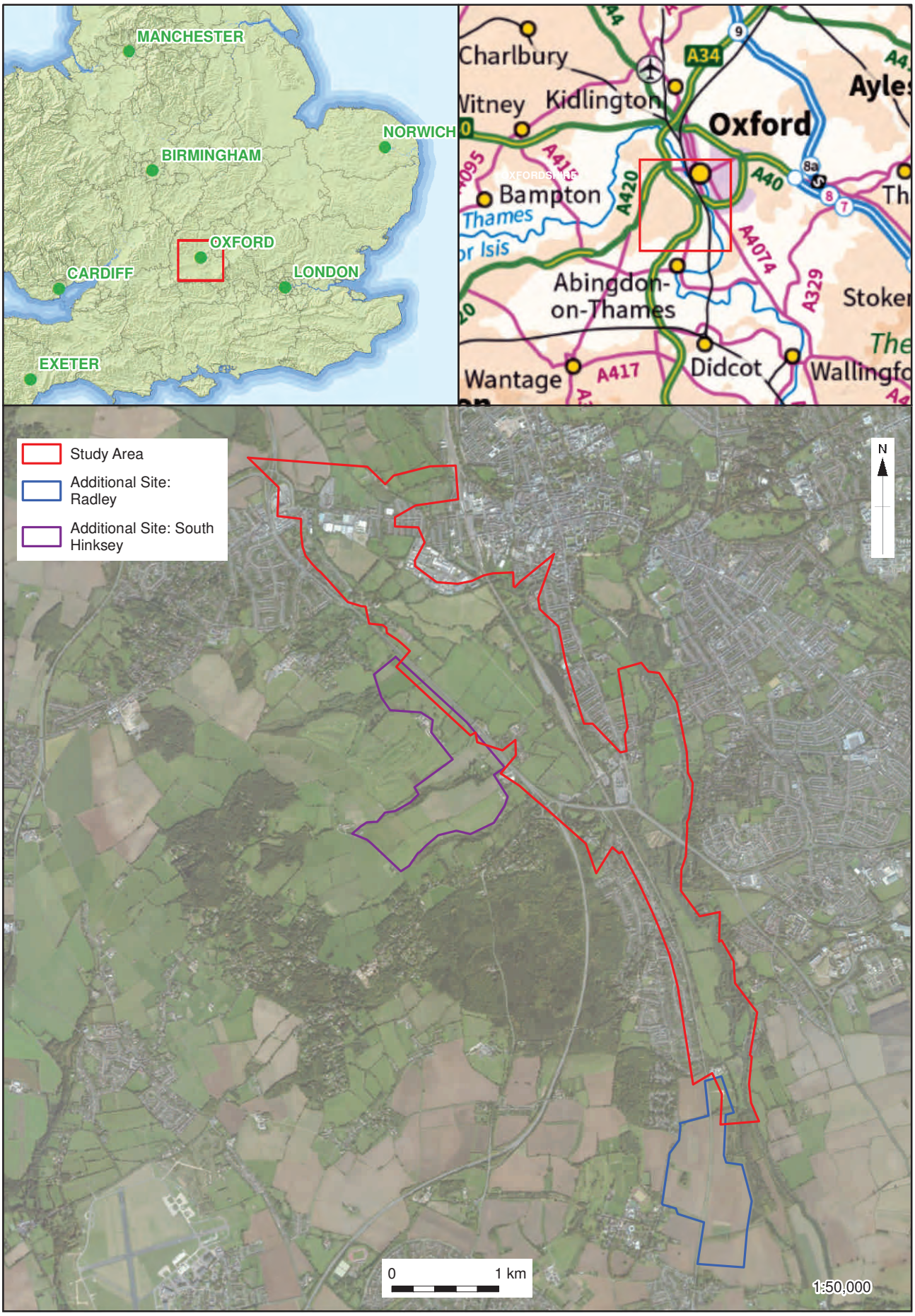

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Figure 1: Site location

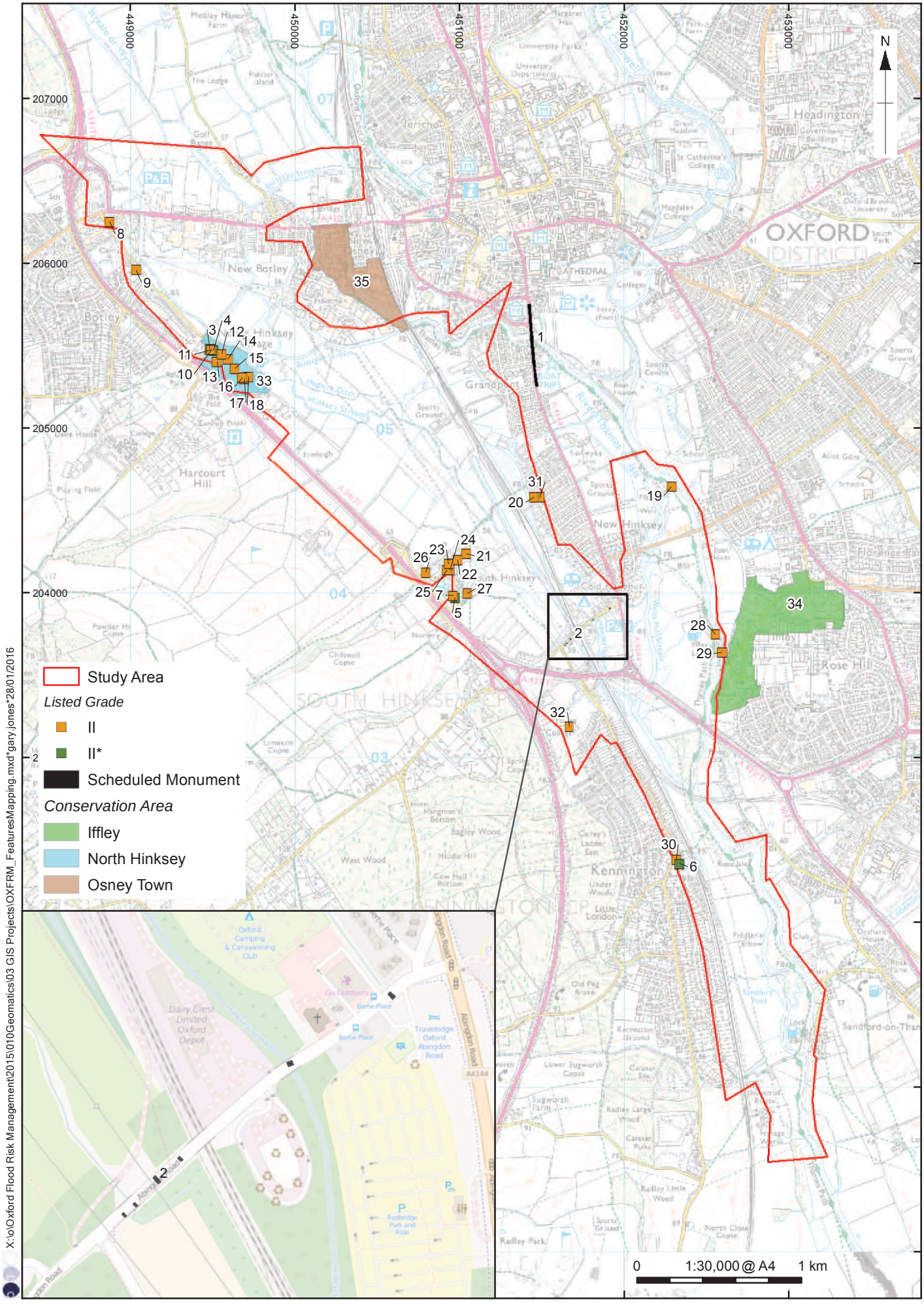

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Figure 2: Key Cultural Heritage Constraints