

The Lake Lothing (Lowestoft) Third Crossing Order 201[*]



Lake Lothing
**THIRD
CROSSING**

Document 6.3: Environmental Statement Volume 3 Appendices

Appendix 9A

Cultural Heritage Desk Based Assessment

Lake Lothing, Lowestoft: Third Crossing

Cultural Heritage Assessment

Prepared by



St John's House
2-10 Queen Street
Manchester
M2 5JB

T 0161 832 4542
W www.mouchel.com

Prepared for:



Endeavour House
8 Russell Road
Ipswich
IP1 2BX

W www.suffolk.gov.uk

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1 Introduction

1.1 Project background

- 1.1.1 The third crossing of Lake Lothing ('the Proposed Scheme') comprises construction of a new road crossing at Lake Lothing, a large saltwater lake which opens into the North Sea. The lake measures c.180m at its widest point, and forms the inner harbour of the Port of Lowestoft. Three option alignments for the new crossing have been identified, they are described in Section 7 of this document and are referred to as options C11, W4 and T3.
- 1.1.2 The project is at early stages of development and detail of the design and construction methods of the proposed crossings is not currently available.
- 1.1.3 In recent years the area bordering Lake Lothing has suffered greatly from the decline of shipbuilding and other heavy industry, and it has been identified as a key area for regeneration. The Proposed Scheme would support this regeneration by improving access between the south and north of the town and by relieving congestion in, and around the town centre.

1.2 Site location

- 1.2.1 Lake Lothing separates the north and south of Lowestoft. The A12 forms a north-south route on the eastern (seaward) side, crossing Lake Lothing by means of a bascule bridge. Another north-south route is provided by the A146 and A1177, which crosses Lake Lothing to the west near Oulton Broad by means of a lifting bridge at Mutford Lock.
- 1.2.2 The two north-south routes are linked by the A1144 and Denmark Road (north of Lake Lothing) and a section of the A146 (south of Lake Lothing).

1.3 Topography and Geology

- 1.3.1 Lake Lothing is an artificial channel which connects the River Waveney to the North Sea; it is located at the base of a broad, shallow, east-west aligned valley.
- 1.3.2 The area of the Proposed Scheme lies broadly level at c.3.6m AOD. However, this height is largely artificial, resulting from reclamation and levelling which was completed in the 19th and 20th centuries to form dockside. The levelling deposits overlie deep deposits of Holocene alluvium, including remnants of peat, which was laid down over Pleistocene river sands and gravels.
- 1.3.3 The solid geology of the Lowestoft area is Jurassic Chalk. A thick deposit of Tertiary London Clay lies above the chalk, the clay is capped by Pliocene and Early Pleistocene sands of the Crag Group, which is capped in turn by a succession of glacial till comprising the Happisburgh Formation (formerly Corton Formation) and the Lowestoft Formation. In the immediate environs of Lake Lothing the till is overlain by marine deposits, river sands and gravels, and peat of Holocene age.

2 Aims and Objectives

2.1 The principal aims and objectives of this report are to:

- Establish the historical and archaeological background of the study area as far as possible through desk based research;
- Map any previously unrecorded features and areas of archaeological potential which may be identified through desk based research or site walkover;
- Assess the archaeological significance of the site, where possible;
- Understand the impact of the proposed scheme upon heritage assets;
- Make recommendations for further archaeological mitigation, where necessary.

2.2 The cultural heritage assessment forms the first stage of an iterative process, which will consider cultural heritage alongside wider scheme issues during development of the Proposed Scheme design. As part of the detailed design process, further archaeological investigations may be required to assess the extent, character and significance of buried remains.

3 Legislative Context

3.1 National and Regional Planning Policy

- 3.1.1 The requirement for an assessment of heritage is outlined in Policy 128 of the National Planning Policy Framework (NPPF) which outlines the need to identify and assess all heritage assets, their significance and the impact the proposals may have upon them (where possible). The following national and regional legislation, policies, plans and guidelines have been taken into account as part of this study.

Ancient Monuments and Archaeological Areas Act, 1979

- 3.1.2 This legislation sets out guidance and policy for protecting nationally important monuments through scheduled status. Consent must be obtained from English Heritage for all works on Scheduled Ancient Monuments.

Planning (Listed Building and Conservation Areas) Act 1990

- 3.1.3 This Act makes provision for the protection and conservation of historic buildings and areas by way of a process of listing and designation. Identified buildings are classified as being Grade I, Grade II* or Grade II by English Heritage and historic areas are designated Conservation Areas by the Secretary of State upon recommendation from the local authority. Once listed, Listed Building consent must be obtained from the local planning authority before works to demolish, alter or extend a Listed Building can be carried out. Similarly, consent must be obtained for the demolition of buildings in a Conservation Area. New developments in a Conservation Area are also expected to adhere to strict design criteria to ensure the character of the area is maintained or enhanced. Developments within proximity of a Conservation Area should also reflect the character of the area.

National Planning Policy Framework (NPPF) 2012

- 3.1.4 Section 12 of the NPPF sets out policies relating to the conservation and enhancement of the historic environment. Policies include the requirement to assess heritage assets as part of development schemes and to record assets that cannot be conserved as part of the works. This includes both designated and undesignated assets.

Suffolk County Council Environment Policy

- 3.1.5 Suffolk County Council is committed to the sustainable management of the local and global environment to support Suffolk's communities and growth in the local economy. The Council will strive to achieve the ambition to create the greenest county by tackling the issue of a changing climate, reducing our carbon emissions, and protecting and enhancing the natural and historic environment. In delivering services, the Council is committed to meeting all relevant regulatory, legislative and other requirements, and to the continual improvement of environmental performance

3.2 Local Planning Policy

Waveney Local Development Framework

- 3.2.1 Waveney District Council adopted the Waveney Local Development Framework in 2009; the framework contains the following policies which address cultural heritage assets:

Core Strategy: Built and Historic Environment. Policy CS 17

- 3.2.2 The District Council will work with partners and the community to protect and enhance the built and historic environment in the District. Proposals for development are expected to conserve or enhance the character and setting of the following:

- Conservation Areas:- Lowestoft (North and South), Beccles, Bungay, Halesworth, Southwold, Southwold Harbour, Holton, Homersfield, Somerleyton, Wangford, Wissett, Wrentham, and Walberswick (part);
- Listed buildings and locally listed buildings;
- Scheduled ancient monuments;
- Sites of archaeological interest and their settings; and
- The local distinctiveness of existing non-designated built environments.

3.2.3 In particular, proposals in conservation areas will be assessed against the relevant Conservation Area Appraisals and Management Plans.

Lowestoft Lake Lothing and Outer Harbour Action Plan: Heritage Assets. Policy EHC2

3.2.4 New development will reflect, protect and enhance the historic character of Lowestoft as illustrated in Figure

3.2.5 Development within the Lowestoft North and South Conservation Areas will be required to be of high standards of urban design that is complementary to the heritage environment. The character and setting of listed buildings within the Area Action Plan (AAP) will be enhanced and protected by development.

3.2.6 Development proposals should seek to retain and re-use existing listed or locally listed buildings unless it can be demonstrated that demolition would produce substantial benefits for the community in accordance with policy guidance set out in Planning Policy Statement 5 (PPS5: since superseded by the National Planning Policy Framework, NPPF). A historic building appraisal conducted by an individual with appropriate expertise should inform development proposals which potentially affect the setting or appearance of heritage assets.

3.2.7 Proposals involving the demolition of non-listed buildings within the Conservation Areas will be considered if proposals will enhance the overall quality of the Conservation Areas and bring about positive socio-economic benefits.

3.2.8 The redevelopment of the Strategic Sites identified within the Action Plan will require archaeological desk-based assessment, trial trenching and palaeo-environmental assessment, in order to establish the full archaeological implications of any proposals prior to the determination of planning applications. The results of this work will enable the archaeological resource (both in quality and extent) to be accurately quantified.

3.3 Standards and Guidance

3.3.1 The archaeological assessment has been undertaken in accordance with the Standards and Guidance for Historic Environment Desk Based Assessments set by the Chartered Institute for Archaeologists (CIfA) (rev 2014).

3.3.2 The assessment has been undertaken using appropriate methods and practices to satisfy the stated aims of the project, which comply with the Code of Conduct, Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology, and other relevant by-laws of the CIfA.

4 Methodology

- 4.1** The desk-based study was undertaken to investigate, as far as is reasonable and practical, the nature and extent of any known or potential archaeological and historical assets within a study area encompassing a 500m buffer from the Proposed Scheme alignments. For designated assets, such as Listed Buildings, the study area was also 500m.
- 4.2** The following were consulted during preparation of this document:
- Historic England (Inspector of Historic Buildings and Areas);
 - Suffolk County Council (Senior Archaeological Officer); and
 - Waveney District Council (Design and Conservation Officer).
- 4.3** The assessment has been informed by a review of all available archaeological records; historical documentary evidence; cartographic evidence and photographic material. This has involved a consultation of the following sources:
- Suffolk Historic Environment Record (HER) – for all records relating to known heritage assets and secondary source material including archaeological reports;
 - Suffolk Record Office – for all historic maps, and other documentary evidence; and
 - Historic England Archive.
- 4.4** Ordnance Survey (OS) maps from the 1st edition to the present, and any additional relevant historic maps such as tithe and enclosure maps have been examined.
- 4.5** The solid and drift geology for the site has been identified based on that recorded by the British Geological Survey/Geological Survey of Great Britain Maps.
- 4.6** A site walkover was conducted, where access and health and safety allowed, to allow for a consideration of the study area, the possible identification of landscape and archaeological features and factors that may have had an impact on buried remains. The site walkover was undertaken on 20th November 2015. Photographs were taken using a digital camera.
- 4.7** A brief appraisal of designated built heritage assets present within the study area was also undertaken. This involved a visual inspection of the exterior of the buildings.
- 4.8** All features identified through the research have been located on a site plan in GIS (Figure 1, Appendix B). The site numbers shown on the plan correspond with the reference numbers allocated in the gazetteer (Appendix A).
- 4.9** An Online Access to Index of Archaeological Investigations (OASIS) project record will be composed following approval of the final report.

5 Historical and Archaeological Background

5.1 Introduction

- 5.1.1 The study area examines Heritage Assets recorded by the Suffolk Historic Environment Record (HER) within 500m of the Proposed Scheme alignments and designated assets recorded by the Historic England Archive (HEA) within a 500m radius of the Proposed Scheme alignments. A small number of designated and undesignated heritage assets outside the study area have been included in the following sections if they enable better understanding of the heritage context.
- 5.1.2 The heritage asset data is supplemented with information derived from the Lowestoft URC Area, Cultural Heritage Assessment (Scott Wilson, 2006), the South Lowestoft Conservation Area Character Appraisal (Waveney District Council 2007) and other readily available documentary sources.
- 5.1.3 A total of 54 heritage assets and 10 previous archaeological investigations (events) are examined in this report, the majority are situated within the study area, but a small number are located slightly to the east and south of the study area boundary. Numbers in bold within the report text refer to identification number assigned to the assets in a gazetteer presented in Appendix A and are also shown on Figure 1 (Appendix B).

5.2 Designated Heritage Assets

- 5.2.1 There are no World Heritage Sites, Scheduled Monuments, Registered Battlefields or Registered Park and Gardens within the study area.
- 5.2.2 There is one Listed Building within the study area
- The Beeches: Grade II
- 5.2.3 One Conservation Areas area is located within the study area:
- Lowestoft South.
- 5.2.4 Two other Conservation Areas are located in relatively close proximity to the study area:
- Lowestoft North, c.600m northeast;
 - Oulton Broad, c.850m west.

Both of the above conservation areas are screened from the Proposed Scheme by the existing built environment and topography and neither is considered in this report.

5.3 Historic Landscape Characterisation

- 5.3.1 Historic Landscape Characterisation (HLC) has been completed for Suffolk (Suffolk County Council, 2008 V3).
- 5.3.2 The broad character immediately adjacent to Lake Lothing is current industrial.
- 5.3.3 Areas of modern leisure and a small parcel of unimproved land are located at the west of the study area. The remaining character comprises the built up area of the post medieval and modern town.

5.4 History and Archaeology

- 5.4.1 Heritage assets within the study area are described in the context of a timeline of archaeological periods from prehistoric through to modern.

The time periods discussed can be broadly divided as follows:

- Prehistoric:
 - Palaeolithic c.800,000 – 10,000 BC
 - Mesolithic 10,000 – 4,000 BC
 - Neolithic 4,000 – 2,500 BC
 - Bronze Age 2,500 – 700 BC
 - Iron Age 800 BC – AD 43
- Roman AD 43 – 410
- Early Medieval AD 410 – 1066
- Medieval AD 1066 – 1540
- Post-Medieval AD 1540 – 1900
- Modern AD 1900 – present

Palaeolithic

- 5.4.2 The Palaeolithic era was a period of cold glaciations interspersed with warm interstadials and interglacials. The successive glaciations have removed all archaeological evidence of this period in many parts of Britain, but rare scatters of flint tools and isolated finds of the early part of the period (Lower Palaeolithic) have been discovered in East Anglia.
- 5.4.3 Investigations of the Cromer Forest Bed Formation (part of the Crag Group) at Pakefield, c.2.5km to the south of the centre of Lowestoft, recovered Lower Palaeolithic worked flints, associated palaeoenvironmental material and animal bone, dated to c.700,000 years BP (Parfitt et al.2005). Other significant sites in East Anglia include Hoxne (c.400,000BP; Stringer et al. 1993), High Lodge, Mildenhall (c. 500,000 years BP; Ashton et al. 1992) and c.800,000 BP human footprints discovered in 2013 at Happisburgh Beach, Norfolk.
- 5.4.4 One Lower Palaeolithic findspot is recorded in the study area; in the 19th century five early Palaeolithic flints, including one possible handaxe (**63**), were recovered from 'Cannon-shot' gravels at Normanston.
- 5.5.5 Britain was connected to the rest of Europe by a land bridge in the latter part of this period. Relatively few Upper Palaeolithic sites have been identified in Suffolk although Late Upper Palaeolithic artefacts dated to between c.8,800 and 8,300 BC have been found at Sproughton near Ipswich, (Wymer and Rose 1976)
- 5.4.6 There is no recorded Upper Palaeolithic evidence within the study area.

Mesolithic

- 5.4.7 Temperature increased after the end of the last glaciation and the environment gradually changed from tundra to temperate grassland, then open woodland and finally mixed deciduous oak forest. Mesolithic people had a hunting, gathering and fishing economy; their former presence is usually evidenced by scatters of flint tools. The remains of the ephemeral types of structure used by Mesolithic hunter-gatherers are very rarely discovered.
- 5.4.8 The Mesolithic landscape of the study area is poorly understood, but much of it may have been fen or marshland, an environment suitable for wildfowling and seasonal gathering of other resources. The study area was subject to two episodes of marine transgression during later periods and evidence of transient Mesolithic activity may have been preserved

within or under marine, alluvial and peat deposits, which lie at c.3m-15m below ground level.

- 5.4.9 However, the study area was subject to extensive medieval and post medieval peat cutting and this may have removed any Mesolithic evidence that was present in the vicinity of Lake Lothing. No evidence of this period is recorded within the study area.

Neolithic

- 5.4.10 The Neolithic saw the development of agriculture and a more sedentary society. Areas of woodland were cleared for growing crops, animals were domesticated, pottery began to be used, ceremonial and communal funerary monuments were constructed.
- 5.4.11 Evidence for human activity remains relatively sparse, often comprising scatters of flint tools, such as those found within the study area at Victoria Road, Lowestoft (2) and Heath Road, Oulton (55). Isolated pits are sometimes found, such as an example found at Walton Road, Lowestoft (11), and evidence of small scale burning and woodland clearance is sometimes identified during palaeoenvironmental studies.
- 5.4.12 The study area saw an episode of marine transgression during the latter part of this period and any early Neolithic evidence located at the lower lying areas will have been buried by marine, alluvial and peat deposits.
- 5.4.13 Neolithic activity during the marine transgression may have been limited to exploitation of marine and wetland resources at the majority of the study area. This activity may have involved the construction of wooden trackways, use of dugout canoes and fish traps, but medieval and post medieval peat cutting and recent land reclamation may have adversely affected the survival of remains of this period at the majority of the study area.

Bronze Age

- 5.4.14 The Bronze Age marks the beginning of metallurgy in Britain. Woodland clearance intensified while pastoral and arable farming became the mainstay of the economy. A hierarchical society developed and this is reflected in the construction of individual funerary monuments such as round barrows and cairns. Many lowland barrows have been ploughed out, but they remain the most visible monument of this period.
- 5.4.15 Bronze Age human activity is often represented by isolated worked flints or flint scatters, but none has been discovered in the study area. Settlement evidence remains relatively rare nationally, but undated cropmarks which may locate Bronze Age features have been identified at slightly higher ground within the study area to the north of Lake Lothing (38) and immediately to the south (45) of the study area. The southern area of cropmarks includes a possible ring ditch of a Bronze Age burial mound and Bronze Age worked flint has been recovered at this location.
- 5.4.16 A marine transgression continued to affect the study area during the earlier part of the Bronze Age and human activity at much of the study area was probably limited to exploitation of marine, estuarine and subsequent wetland resources.
- 5.4.17 A marine transgression during the late Iron Age and Roman periods may have buried and preserved any Bronze Age evidence located at lower lying parts of the study area, but extensive medieval and later peat cutting will have adversely affected its survival.

Iron Age

- 5.4.18 The study area lay within the tribal territory of the Iceni during the Iron Age. Prevalent monument types include small, sometimes enclosed farmsteads and large hillforts.

- 5.4.19 A few small towns or “Oppida” developed in the latter part of the period and East Anglian examples are present at Saham Toney, Thetford and Caistor St Edmund.
- 5.4.20 The majority of the study area probably remained as wet, marginal land until the end of this period when a second marine transgression began. The use of the majority of the study area was probably limited to exploitation of wetland, estuarine and marine resources.
- 5.4.21 Archaeological remains of the period could be preserved under and within marine and alluvial deposits, but extensive medieval and post medieval peat cutting will have adversely impacted their survival.
- 5.4.22 No Iron Age features or find spots are recorded at the study area.

Roman

- 5.4.23 The Romano-British era began with the invasion of the south east of Britain in AD 43. The following four centuries saw the establishment of roads, forts, villa estates, and towns, all supporting a central administration which cemented the Roman occupation of Britain.
- 5.4.24 A marine transgression affected the study area throughout this period and activity at the majority of the study area may have been limited to exploitation of marine and estuarine resources with some use of marginal drier land at the north and south.
- 5.4.25 The River Waveney is known to have been used as a communication and trade route, but it is unclear whether the river could be reached from the study area during this period. A possible Roman road from Colchester to Burgh Castle is said to have passed through Lowestoft and archaeological remains tentatively interpreted as part of this road, or an associated bridge, were found during 19th century excavation of peat in the vicinity of the current Bascule Bridge. The evidence comprised several large tree trunks, 10-12 feet in length, laid out parallel and approximately two feet apart.
- 5.4.26 Five find spots of coins (**1, 3, 4, 53, 64**) are recorded within or very close to the study area. A coin hoard, a possible cremation urn and the skeletons of a number of horses was found during the 19th century c.200m north east of the study area, at a part of Lowestoft now known as “Roman Hill”.

Early Medieval

- 5.4.27 The Early Medieval period began as the Romans left Britain in AD 410. The early part of the period is often difficult to detect as the prevailing Anglo Saxon settlement pattern was dispersed, short-lived and unenclosed farmsteads, which often focussed on river valleys.
- 5.4.28 The middle part of the period saw the establishment of longer lived settlements and the latter part saw the establishment of many historic English villages. The majority of the villages surrounding the study area, including Lowestoft and Kirkley, are recorded in the Domesday survey of 1086 (Williams and Martin 2003) and will have been founded by the latter part of this period.
- 5.4.29 The early focus of Lowestoft is thought to have been located some distance away from the present town centre, perhaps c.900m north of the study area in the vicinity of St Margaret’s church. Limited agricultural activity may have been carried out at the north and south of the study area but it is probable that the majority will have remained as marginal land exploited for estuarine and wetland resources
- 5.4.30 No archaeological evidence of this period is recorded in the study area.

Medieval

- 5.4.31 Until the latter part of this period the core of Lowestoft may have retained its focus around St Margaret's church, approximately 900m north of the study area. The Domesday Survey of 1086 records rent for land being paid in herrings, which suggests that fishing already formed a significant part of the village economy.
- 5.4.32 Lowestoft was granted markets in 1308 and 1445 and by the end of the medieval period Lowestoft was a significant fishing port and the most important settlement in the area. The core of the town had moved east by this time to the area of the modern High Street. The southern edge of the medieval town (5) was located c.700m to the northeast of the study area.
- 5.4.33 Lake Lothing is a remnant of a turbary (13) - an extensive area of medieval peat cuttings. The speed of the peat cutting and the development of Lake Lothing is currently uncertain, but the eastern end of Lake Lothing including Kirkley Ham inlet was open to the sea by the 14th century (Oppenheim 1907). The northern side of this end of Lake Lothing was known as the Inner Harbour by this time and ships were being constructed on the southern side to the east of Kirkley Ham inlet.
- 5.4.34 Kirkley Ham inlet and its immediate environs may have been the most important harbour at this part of the coast for a brief part of the 14th century, but the inlet began to silt during the 15th century and by the end of the medieval period the importance of the port at Kirkley had been superseded by that of Lowestoft (Morely 1928).
- 5.4.35 Archaeological investigations at land located in the vicinity of Kirkley Ham inlet (12, 15, 16, 57, 59) have not revealed evidence of medieval activity in the study area and medieval evidence has not been discovered elsewhere.

Post-Medieval

- 5.4.36 In the post medieval period the port and town of Lowestoft continued to expand and in 1679 the town was granted Port Status, with certain specified rights of export and import. By the beginning of the 18th century up to 25% of men were involved in the fishing industry. The main catch of the fishing fleet comprised herring.
- 5.4.37 At the end of the 18th century Lowestoft was a moderately sized market town and fishing port with a population of about 2,300. Lowestoft had doubled in size by 1841 and by 1871 the population was over 13,000.
- 5.4.38 The focus of the port moved to the seaward beaches from 1712 when the mouth of Lake Lothing was closed to the sea by drifting sand. Occasional flood tides broke through the sand bar until 1717, but the lake then remained separated from the sea until harbour works including construction of a customs office known as The Port House (60) were completed in 1832.
- 5.4.39 The government forced the sale of the harbour in 1842 after the harbour works proved ineffective and a loan could not be repaid. The harbour was eventually sold to Sir Samuel Morton Peto in 1844 after which further harbour works were carried out. Mooring for 1000 boats was provided at the outer harbour and permanent access to the Inner Harbour at Lake Lothing was established.
- 5.4.40 In the latter half of the 19th century Sir Samuel Morton Peto played a leading role in the expansion of the town. He opened a rail link between Lowestoft and Norwich in 1847, with the station located just to the north of the Bascule Bridge. He subsequently built several other railways linking Norwich and Lowestoft to Ipswich and is credited with establishing

Lowestoft as a holiday resort. The investment in the town stimulated the expansion of the town to the south of Lake Lothing and the construction of many grand Victorian buildings including the Grade II* listed Royal Norfolk and Suffolk Yacht Club (61).

- 5.4.41 The study area contained dispersed farms and remained agricultural land until the latter part of the 19th century when the expanding town, port, industry and infrastructure of Lowestoft began to encroach. A manorial survey of 1618 (Butcher 1997) illustrates that the majority of the arable, meadow and heathland had been enclosed by the early 17th century.
- 5.4.42 A great house surrounded by parkland (54) was built at Normanston during this period. It is first shown on 18th century mapping and is named “Normanston Court” on 19th century Ordnance Survey maps. The house and surrounding parkland appear to have remained intact during the first half of the 20th century, but the area of its grounds fronting Normanston Drive began to be developed after the Second World War and the parkland was put to recreational use. The great house may have survived until the late 1960s or early 1970s when it was demolished to make way for housing development.

Modern

- 5.4.42 Lowestoft continued to see success and expansion into the early part of the 20th century with the fishing fleet, boat building and associated trades being the mainstay of its economy. By 1911 the population had reached 37,886, which reflects the peak in production for the British fishing industry.
- 5.4.43 Three bulwarks equipped with batteries of cannon had been constructed along the coastline to defend Lowestoft in the early 16th century, but it was 20th century which saw the zenith of military activity at the town.
- 5.4.44 The First World War saw some of the more capable local boats requisitioned by the Admiralty for patrolling and minesweeping. The town was bombed on a number of occasions, and on 25th April 1916, the German High Sea Fleet shelled the town and harbour leaving forty houses destroyed, two hundred damaged and four people killed.
- 5.4.45 During the inter war period the fishing industry and the town suffered a decline, but the start of the Second World War saw the town transformed into an important naval base with an all-round defensive perimeter of trenches, pillboxes and dense belts of barbed wire (e.g. 6-10, 18-37, 48). None of the defences now survive but many of their locations have been recorded by the HER and the Defence of Britain project.
- 5.4.46 Lowestoft was extensively bombed during the Second World War and much redevelopment was necessary during the post war period.
- 5.4.47 During the latter part of the 20th century the port remained a focus of shipbuilding and developed as a focal point for operations of the oil and gas industries in the southern North Sea.

6 Archaeological Potential

6.1 Palaeoenvironmental

- 6.1.1 Very little palaeoenvironmental work has been undertaken within the study area, but limited evidence (GgMS 2013) suggests that peat deposits may survive at either side of Lake Lothing.
- 6.1.2 Any surviving areas of peat may have been truncated by medieval peat cutting and where preserved it will be located beneath levelling and alluvial deposits at depths of between 3m and 15m below ground level. The peat is likely to preserve evidence of the environment, and could preserve archaeological remains, of the later prehistoric periods.

6.2 Palaeolithic

- 6.2.1 There is limited evidence of Palaeolithic activity within the study area. However, well preserved evidence of the period (c.700,000 BP) has been discovered at Pakefield c.2.5km to the south within the Cromer Forest Bed Formation. This formation is likely to be present beneath the study area, but will be deeply buried beneath alluvial, marine and glacial deposits.
- 6.2.2 The proposed development could impact Palaeolithic archaeological remains at spatially constrained areas where deep excavations would be necessary, e.g. where bridge piers would be constructed, but this is unclear with the current level of geological information. The potential for the presence of archaeological remains of this period is **uncertain**.

6.3 Mesolithic to Iron Age

- 6.3.1 The only definitive evidence for the Mesolithic, Neolithic, Bronze Age or Iron Age periods within the study area are two find spots of Neolithic worked flint and one Neolithic pit. However, activity associated with the exploitation of marine, estuarine and marginal drier environments is likely to have occurred within the study area during all of these periods.
- 6.3.2 Any evidence may have been destroyed by subsequent extensive medieval peat cutting, or by recent construction of quay sides, industrial buildings and infrastructure. The potential for the presence of archaeological remains of the prehistoric periods is **low**.

6.4 Roman

- 6.4.1 Roman settlement activity is evident in the wider area and it has been suggested that a Roman Road crossed the eastern end of Lake Lothing in the vicinity of the current Bascule bridge. The River Waveney is known to have been used as a communication and trade route, but it is uncertain if the river could be reached from the vicinity of Lowestoft. Three find spots of Roman coins are recorded within the study area, but other types of evidence have not been identified.
- 6.4.2 The area was subject to a marine incursion during this period and activity in the vicinity of the alignment options may have been limited to exploitation of marine, estuarine and marginal drier environments. Any such evidence may have been destroyed by medieval peat cutting; recent construction of quay sides, industrial buildings and infrastructure. The potential for the presence of archaeological remains of the Roman period is **low**.

6.5 Early Medieval

- 6.5.1 Archaeological remains of this period have not been identified within the study area, but the villages of Lowestoft and Kirkley are mentioned in the Domesday Book and evidence

associated with exploitation of marine, estuarine and marginal drier environments could survive at the proposed crossing alignments.

- 6.5.2 However, any such evidence may have been destroyed by medieval peat cutting, by construction of quay sides, modern industrial buildings and infrastructure. The potential for the presence of archaeological remains of the early medieval period is **low**.

6.6 Medieval

- 6.6.1 The evidence for this period is limited. The eastern end of Lake Lothing was in use as a harbour by the end of the period, in particular the area near Kirkley Ham may have been the focus of a port and settlement during the 14th century. The majority of the study area was agricultural land and the central part of the study area was subject to extensive peat cutting. The lower lying land is also likely to have been exploited for freshwater fish, shellfish, wildfowl, reeds and pasture / water meadow.
- 6.6.2 The construction of quay sides, modern industrial buildings, infrastructure and housing will have adversely impacted archaeological remains of this period, and the potential for the survival of medieval remains in the vicinity of the proposed crossing alignments is **low**.

6.7 Post-medieval

- 6.7.1 The town and port of Lowestoft saw significant growth during the 19th century and the conurbation eventually expanded to the south of Lake Lothing. The eastern end of the lake was used as a harbour, with boat and ship building yards, fish processing, ancillary and manufacturing industries located along each side.
- 6.7.2 The majority of the study area remained agricultural land, although the great house, "Normanston Court" was built c.250m to the north west of the area where alignments W4 and T3 tie in to Peto Way. The historic parkland and agricultural character of the study area suggests that the potential for the presence of post medieval remains is **low**.

6.8 Modern

- 6.8.1 Interest in this period relates mainly to the Second World War when Lowestoft was transformed into a naval base with a surrounding defensive perimeter. The above ground evidence for the defences has been removed, but truncated subsurface remnants may survive. The proposed alignments avoid the majority of recorded defences and the potential for the discovery of Second World War archaeological remains is **moderate**.

7 Site Visit

7.1 Introduction

The following is a description of the areas of the alignment options as determined from a site walkover.

7.2 Option C11

7.3.1 The option ties into an existing roundabout on Waveney Drive then extends northward to cross modern commercial and industrial development located to the south of Lake Lothing. At the northern side of the lake it traverses dockside, a railway line and a modern commercial area before tying in to a new roundabout at Denmark Road. Short sections of new road are proposed within the modern development to the south of the lake and upgrades to existing sections of road would also occur.

7.3.2 The area of this option is predominantly industrial, transport and commercial in character (Plate 1, Appendix C) although limited residential buildings are located to the north and south.

7.4 Option W4

7.4.1 The option ties into the existing road network to the south of Lake Lothing at Waveney Drive. From here it traverses land located between a large industrial development and a playing field, then crosses an area of undeveloped reclaimed ground (Plate 2, Appendix C) situated at the southern side of Lake Lothing.

7.4.2 To the north of Lake Lothing it crosses an area of dockside containing late 20th century office and industrial buildings (Plate 3, Appendix C), the railway line, and then enters an area of undeveloped land located at the side of an artificial lake known as Leathes' Ham before tying in to Peto Way at a new roundabout located partly on Normanston Park Sports Ground (Plate 4, Appendix C: formerly parkland of Normanston Court).

7.5 Option T3

7.5.1 The option has a very similar alignment to W4. It ties into the existing road network to the south of Lake Lothing at Waveney Drive. From here it traverses land located between a large industrial development and a playing field, then crosses an area of undeveloped reclaimed ground at the southern side of Lake Lothing.

7.5.2 To the north of Lake Lothing it crosses an area of dockside containing late 20th century office and industrial buildings, the railway line, and then enters an area of undeveloped land before crossing the north east side of an artificial lake known as Leathes' Ham, and subsequently tying in to Peto Way at a new roundabout located on Normanston Park Sports Ground (formerly parkland of Normanston Court)..

8 Cartographic Evidence

8.1 Early Mapping

Early mapping of the Lowestoft area such as Hodskinson's Map of 1783 and Robert Barnes Map of 1830 (Figure 2, Appendix B) show the focus of the town located to the north of the study area and provide some detail of the road layout and villages surrounding Lowestoft. With the exception of the presence of the great house and parkland at Normanston Court, little detail is illustrated at the study area, which suggests that it was undeveloped agricultural, common or marginal land. The Lowestoft (1841), Carlton Colville (1842) and Kirkley Ham (1841) tithe maps show much of the study area as enclosed agricultural fields bisected by two railway lines.

8.2 1885 Ordnance Survey map

The town expanded slightly to the west and to the south across Lake Lothing during the early - mid 19th century. However the study area remained mostly agricultural land; the central option (C11) is situated at an area of enclosed fields located slightly to the west of industrial development at the edge of the town. The eastern options (W4 and T3) are located in the agricultural hinterland of the town except at the north where they are located in the parkland of "Normanston Court" (Figure 3, Appendix B).

8.3 1886 - 1960 Ordnance Survey maps

An additional railway line was constructed to the west of Lowestoft during the late 19th century. The northern part of Lowestoft remained little changed, but Normanston, Mutford Lock and the southern half of the town saw housing and industrial development during the first half of the 20th century (Figure 4, Appendix B). The area of the alignment options remained mostly agricultural land.

8.4 1961 - Modern Ordnance Survey maps

The 1960s mapping (Figure 5, Appendix B) shows that the area between Lowestoft and Normanston had almost completely infilled with housing. Industrial development had also expanded along the southern side of Lake Lothing. "Normanston Court" had been demolished and Lowestoft had reached its modern size by the mid-1970s although limited infill development and regeneration has subsequently occurred.

9 Built Heritage

9.1 Introduction

The following sections use Historic England list entry information, observations made during the site visit, and the South Lowestoft Conservation Area character appraisal (Waveney District Council 2007) to summarise the built heritage situated in proximity to the alignment options and to enable assessment of setting.

9.2 South Lowestoft Conservation Area

The south east of the study area includes a part of the South Lowestoft Conservation Area which encompasses the part of the town which was constructed during its 19th century expansion. The area developed following the establishment of a harbour and river access through Lake Lothing in the early 19th century and grew into a pleasure resort from the mid-19th century onwards. The buildings of the conservation area comprise commercial premises which are focussed at the north around Lake Lothing, large townhouses and villas to the south along the seafront, with areas of lower status terraced housing to the west. The area has a largely linear street plan, laid out parallel to the shore.

9.3 Listed Buildings

9.3.1 There is one Listed Building within the study area:

- The Beeches: Grade II (Plate 5, Appendix C)

It is screened from the alignment options by the existing built environment.

9.3.2 The setting of two other listed buildings would be affected by alignment option C11 and these are:

- The Royal Norfolk and Suffolk Yacht Club: Grade II* (Plate 6, Appendix C); and
- The Port House: Grade II (Plate 7, Appendix C).

9.3.3 The Royal Norfolk and Suffolk Yacht Club was built in 1903 by G & F Skipper, influenced by the arts and crafts style, with rendered and asymmetrical elevations, establishing a high level of architectural quality to the open space (Royal Plain) to its south. The views of the option alignments from the Yacht Club would be limited by the three storey Pier Terrace located slightly to its west, but it is probable that alignment C11 would be clearly visible from its upper floors.

9.3.3 The Port House was constructed in 1831 as the port customs house. Built in gault brick, with slate roofs. It comprises a long south facing two storey range containing sash windows, with a central transept.

9.4 Undesignated Buildings

9.4.1 The setting of a small number of historic buildings of local interest located on the northern side of Lake Lothing would be affected by alignment option C11:

- 3 – 11 Station Square (Plate 8, Appendix C);
- Terraced Houses fronting the north side of Commercial Road from its junction with Station Square (Plate 9, Appendix C);
- A two storey brick built 20th century industrial building located on the north side of Commercial Road (Plate 10, Appendix C); and

- A one storey brick built 20th century industrial building and an iron railway footbridge located on the north side of Commercial Road at the entrance to Associated British Ports land (Plate 11, Appendix C).

9.4.2 The setting of one historic building of local interest located south of the bascule bridge and to the west of the Royal Norfolk and Suffolk Yacht Club would be affected by alignment option C11:

- Pier Terrace (Plate 12, Appendix C).

10 Statement of Significance

10.1 Palaeoenvironmental

There has been limited work on palaeoenvironmental deposits in the study area, which has suggested that there is potential for encountering palaeoenvironmental deposits beneath or within estuarine, marine sands, alluvial or reclamation deposits. The ability to determine the formation processes, sequence and date of such deposits would be of **local** or **regional** importance. Palaeoenvironmental deposits associated with occupation sites would be of particular significance.

10.2 Early Prehistoric

The geology of East Anglia favours the presence and survival of in situ early prehistoric archaeology. Any deposits associated with the Palaeolithic period could be of national or international significance.

10.3 Later Prehistoric

There is limited evidence for the prehistoric periods in the study area. However, peat, marine and alluvial sediments may cover well preserved prehistoric sites. The remains of wooden trackways, platforms, and inter-tidal sites and features, such as boats, fish-traps and salterns could be present. Sites or finds of this nature are likely to be of regional significance.

10.4 Roman

Limited evidence for Roman activity has been discovered within the study area. The discovery of settlement evidence of this period would be of **local** or **regional** significance. The River Waveney was used for river transport in the Roman period and it is possible that evidence for Roman river and sea trade, or military naval activity may be located within the study area. The discovery of such remains would be of **regional** or **national** significance.

10.5 Early Medieval

Lowestoft is mentioned in the Domesday Book but there is no archaeological evidence of this period within the study area. Discovery of remains of this period would be of **local** or **regional** significance.

10.6 Medieval

Evidence related to medieval port activity would be of **regional** or **national** significance, and answer key questions within the regional research agenda regarding the chronological development of the medieval ports of Lowestoft and Kirkley Ham. Recovery of significant assemblages of pottery would contribute to the development of a regional pottery typology (Brown and Glazebrook 2000, 27-29).

10.6 Post-medieval

Evidence related to river and sea transport, the port and railways and discovery of industrial archaeological deposits within the study area would be of **local** or **regional** significance. Archaeological evidence for the chronological development and expansion of the town and agrarian practice would be of **local** significance.

10.7 Modern

Evidence relating to defences of the two World Wars would be of **regional** significance according to the regional research agenda (Brown and Glazebrook 2000, 34).

11 Statement of Impact

11.1 Introduction

The assessment has identified a number of heritage assets close to the alignment options including scattered Neolithic and Roman find spots, commercial and industrial buildings of the late post medieval period and demolished defensive structures of Second World War date. The examination of impact in the following sections is based on the known cultural heritage of the study area.

11.2 Early Prehistoric

There is remote potential for the presence of Lower Palaeolithic evidence. The evidence would be deeply buried and the majority of groundwork during construction of the Proposed Scheme would have no impact on remains of this period. However, areas of deep excavation into or through the Cromer Forest Bed Formation, which may lie above the London Clay, could have a major adverse impact on remains of this period.

11.3 Later Prehistoric

The later prehistoric periods are poorly represented at the study area with only two find spots of Neolithic worked flint and discovery of one Neolithic pit recorded. Remnants of peat containing palaeoenvironmental evidence and archaeological remains of the periods may be present, but is likely to have been removed or have been heavily truncated across much of the area during the medieval period. The limited later prehistoric evidence suggests that the options are unlikely to cause significant adverse impact to sub-surface heritage assets of this period.

11.4 Roman

Known evidence is restricted to a few find spots of coins, which suggests that the options are unlikely to cause significant adverse impact to sub-surface heritage assets of this period.

11.5 Early Medieval

There is no evidence for the early medieval period in the study area. The options are unlikely to cause significant adverse impact to sub-surface heritage assets of this period.

11.6 Medieval

There is no securely dated evidence of this period in the study area and the options are unlikely to cause significant adverse impact to sub-surface heritage assets of this period.

11.7 Post-medieval

Little post medieval evidence has been discovered in the study area and the options are unlikely to cause significant adverse impact to heritage assets of this period.

11.8 Modern

Significant evidence of the modern period would be restricted to the structural remains of Second World War defences and naval bases. The majority of the defensive positions and structures were demolished during the second half of the twentieth century. Any truncated remnants of these features would probably be relatively shallow and groundwork which encountered such remains would have a major adverse impact.

11.9 Built Heritage

Option C11 would impact the setting of The Royal Norfolk and Suffolk Yacht Club (Grade II*), The Port House (Grade II) and a small number of historic buildings of local interest

focussed along Commercial Road and around the bascule bridge. A moderate adverse impact would occur to the setting of the Port House and minor adverse impact to the setting of the Yacht Club. The impact on the setting of some buildings of local interest would be minor adverse although slight beneficial impact could occur where traffic would be diverted away from the eastern end of Commercial Road and the current bascule bridge.

12 Recommendations

- 12.1** A geoarchaeological deposit model should be compiled to determine the presence or absence and depth of any surviving Cromer Forest Bed Formation deposits, and of peat, marine and alluvial sediments at the option alignments. The results of the deposit modelling should inform the selection of a preferred option
- 12.2** The impact of the options on the setting of designated and undesignated built heritage should be considered during the option selection and design process.
- 12.3** Mitigation of the impact of the proposed development would be required in advance of and during construction of a selected option. The scope of the mitigation should be informed by the geoarchaeological deposit model and consideration of the impact on setting and significance of designated and undesignated built heritage.

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Appendix A - Gazetteer of Cultural Heritage Assets

The following table lists the sites and monuments listed in the Suffolk Historic Environment Record and the National Monuments Record as identified through historical references, archaeological investigation, cartographic evidence and aerial photographs. The gazetteer includes all designated and undesignated sites within 500m buffer around the proposed alignments.

* Primary Record Number (PRN) – Suffolk Historic Environment Record

** NMR Reference – National Monuments Record Reference

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
1.	Roman Coin. The Fairfield. Roman Hill	LWT007		TM 5415 9335	Findspot		Third brass of Constantine I (AD307-337)	Low
2.	Neolithic flint. Victoria Road.	LWT016		TM 5285 9225	Findspot		Scatter of small flakes, scrapers and flake from chipped axe	Low
3.	Roman Coins. 108 Bevan Street.	LWT024		TM 5475 9305	Findspot		Four Roman Coins	Low
4.	Roman Coins. Roman Road	LWT027		TM 5450 9327	Findspot		Roman coins found 1877	Low
5.	Lowestoft Medieval Town Core	LWT040		TM 5515 9375	Settlement		Area of archaeological importance defining area of medieval and post medieval town core	High
6.	WWII Anti tank Defences	LWT045		TM 5214 94	Military		The site of an extensive World War Two anti-tank defensive system, consisting of anti-tank	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							cubes, barbed wire obstructions and scaffolding, is visible on aerial photographs surrounding the northern perimeter of Lowestoft, from the Lowestoft Denes to Lake Lothing and Oulton Broad. Now demolished.	
7.	Three WWII road blocks	LWT103		TM 5447 9294	Military		Three World War II road blocks to the north of Lowestoft Docks	Low
8.	WWII road block	LWT104		TM 5400 9296	Military		A road block of World War II date is visible in Hervey Street, Lowestoft on aerial photographs from 1944 (S1). The roadblock is visible as 2 rows of 'dots' which represent the caps covering holes/slots into which posts were slotted to block	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
9.	WWII air raid shelter	LWT105		TM 5403 9293	Civil Defence		Air raid shelter of World War II date, south of Denmark Road, near Lowestoft Docks	Low
10.	WWII air raid shelter	LWT106		TM 5440 9290	Civil Defence		Air raid shelters of World War II date, located south of Denmark Road, close to Lowestoft Docks	Low
11.	Walton Road Neolithic pit	LWT137		TM 5451 9321	Ritual / domestic		Neolithic pit revealed in evaluation in 2002	Low
12.	Former Crown Works shipbuilding and engineering site	LWT151		TM 5424 9254	Event		Photographic survey of extant structures undertaken of the former Crown Works shipbuilding and engineering site in Lowestoft, followed by monitoring, no significant archaeological remains	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							were revealed.	
13.	Lake Lothing	LWT154		TM 5272 9296	Turbary		Lake Lothing, possible remnant of Medieval turbary.	Low
14.	Barnard's Meadow eval	LWT166		TM 5344 9329	Event		Negative evaluation trenching	Low
15.	Land off Clifton Road, Lowestoft; St Matthews Church	LWT176		TM 5436 9216	Event		Site of windmill, buildings and large Mission church (St Matthew's). Evaluation revealed three early modern ditches, one undated ditch associated with site drainage, area of desiccated peat and several large modern pits.	Low
16.	Horn Hill, Lowestoft/Kirkley Drive	LWT180		TM 5429 9238	Event		Negative evaluation trenching	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
17.	St Mary's Water treatment works evaluation	LWT190		TM 5384 9249	Event		Negative evaluation trenching	Low
18.	Site of WWII barrage balloon, air raid shelters and a possible operational building	LWT210		TM 5445 9303	Military		The site of World War Two barrage balloon, earthen-covered air raid shelters and a possible operational building are visible on aerial photographs.	Low
19.	Site of WWII emergency water tank and air raid shelter	LWT211		TM 5414 9297	Military		The site of World War Two emergency water tank and an earthen-covered air raid shelter are visible on aerial photographs.	Low
20.	WWII emergency water tank and road blocks	LWT214		TM 5397 9325	Military		The site of World War Two emergency water tank and road block	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
21.	WWII military buildings and shelters	LWT220		TM 5422 9336	Military		The site of a group of World War Two military buildings, possibly largely accommodation, but potentially also operational buildings are visible on aerial photographs. Large numbers of entrances to sub-surface air raid shelters are also visible.	Low
22.	WWII barrage balloon site	LWT230		TM 5396 9266	Military		The site of World War Two barrage balloon mooring and associated structures is visible on aerial photographs.	Low
23.	WWII barrage balloon site and public air raid shelters	LWT231		TM 5342 9206	Military		The site of a World War Two barrage balloon mooring and public air raid shelters in the grounds of Kirkley High School is visible on	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							aerial photographs	
24.	WWII emergency water tank	LWT232		TM 5336 9222	Civil Defence		The site of a World War Two emergency water tank is visible on aerial photographs	Low
25.	WWII civil defence	LWT233		TM 5309 9231	Civil Defence		The site of a possible World War Two ARP warden's post	Low
26.	WWII pillbox	LWT234		TM 5350 9270	Military		The site of a World War Two a type 22 MSX27408 pillbox is visible on aerial photographs.	Low
27.	WWII defended fuel store	LWT235		TM 5361 9255	Military		The site of a probable fuel storage tank, surrounded by World War Two structures and barbed wire defences, is visible on aerial photographs from 1944-45. Earlier wartime	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							photography indicates that a pillbox and/or gun emplacement stood on this site and a number of slit trenches were visible within this area.	
28.	WWII pillbox	LWT236		TM 5289 9301	Military		The site of a World War Two a type 22 pillbox is visible on aerial photographs.	Low
29.	WWII pillbox and slit trench	LWT237		TM 5308 9284	Military		The site of a World War Two a type 22 pillbox and slit trench is visible on aerial photographs	Low
30.	WWII gun battery	LWT245		TM 5272 9326	Military		The site of World War Two gun battery is visible on aerial photographs camouflaged within a quarry. The rear two gun houses are disguised as huts in 1945. The site	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							consists of four angular 'lozenge' shaped gun emplacements that may have contained field guns. Alongside the battery is large range of buildings, which appear to be largely pre-World War Two in date, with some military structures in amongst them, suggesting that the site is being used for wartime purposes. A raised platform of land, in front of the main building range, has either a trench shelter or an entrance to a sub-surface shelter leading into it. See LWT 280 and LWT 306-307 for similar arrangements of guns protecting Lowestoft.	

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
31.	WWII air raid shelters	LWT246		TM 5346 9315	Civil Defence		The site two World War Two earthen covered air raid shelters, partially camouflaged within allotments, is visible on aerial photographs	Low
32.	WWII barrage balloon site, camouflaged factories and air raid shelters	LWT247		TM 5369 9327	Military		The site of a World War Two barrage balloon mooring, substantial earthen covered communal air raid shelters and an extensive area of camouflaged factories at the Nobel Chemical Finishes Eastern Coach Works are visible on aerial photographs on the site of the North Quay retail park. An unusually long curved profile hut is located along the western side of the factory complex. It	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							is assumed that this has a specialised function, potentially to do with the manufacturing and finishing items or equipment associated with the war effort.	
33.	Probable WWII gun emplacements alongside railway	LWT248		TM 5361 9347	Military		The site of probable World War Two gun emplacements or similar features are visible on aerial photographs alongside railway line.	Low
34.	WWII pillbox and other defensive structures	LWT249		TM 5358 9362	Military		The site of a former World War Two type 22 pillbox and other defensive structures and temporary training activity are on aerial photographs. These formed part of the wider system of defences recorded under LWT	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							045.	
35.	WWII pillbox	LWT250		TM 5345 9355	Military		The site of a former World War Two a type 22 pillbox is visible on aerial photographs. The pillbox is located near to the barbed wire system to the north of Lowestoft (LWT 045) and forms part of this defensive system (LWT 309	Low
36.	WWII huts and camouflaged buildings	LWT252		TM 5268 9307	Military		The site of an area of World War Two huts, potentially nissen huts, and camouflaged buildings are visible on aerial photographs near the slipways and quayside alongside Lake Lothing. Although the camouflaged buildings may be industrial or associated	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							with the workings of the port and shipping, it is possible that they be serving a military or naval function.	
37.	Possible WWII pillbox	LWT255		TM 5394 9338	Military		The site of a World War Two a type 22 pillbox is visible on aerial photographs	Low
38.	Cropmarks of multi-phase ditches and boundaries	LWT285		TM 5342 9340	Cropmarks		The cropmarks of a fragmentary and multiphase ditches and boundaries of unknown date, but potentially including elements of late prehistoric, Roman and medieval to post medieval date, are visible on aerial photographs. Although it must be noted that some of the cropmarks could feasibly relate to	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							non-archaeological subsurface features such as geology and/or drainage	
39.	WWII bomb craters	LWT292		TM 5315 9322	Military		The site of a pair of probable World War Two bomb craters are visible on aerial photographs within Leathes' Ham	Low
40.	WWII Naval Base, HMS Myloden	LWT297		TM 5289 9265	Military		The site of World War Two Naval Base, HMS Myloden, to the south of Lake Lothing Lowestoft, is visible on aerial photographs. The base, which undertook Landing Craft Training for RM Commandos and Combined Operations, was located within the site of the old Silk Factory which is located	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							alongside the waterfront. Practical training was carried out at sea with craft regularly in transit on exercise between the base, Great Yarmouth and HMS Wolverstone, another landing craft training establishment on the Orwell	
41.	WWII bomb craters	LWT298		TM 5305 9267	Military		The site of a probable World War Two bomb craters is visible on aerial photographs. These may relate to aerial bombardment of the docks or the Naval site to the immediate west (LWT 297).	Low
42.	WWII bomb craters	LWT299		TM 5357 9184	Military		A line of World War Two bomb craters is visible on aerial photographs.	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
43.	World War Two pillbox and possible civil defence site	LWT300		TM 5394 9243	Military		The site of a World War Two type 22 pillbox and another structure is visible on aerial photographs. The second structure is square with a possible associated blast wall and may have been in use as a defensive structure or a check point. It is however visible on an oblique aerial photograph taken in 1928, indicating that it pre-dates the Second World War, but may have been added to during this period.	Low
44.	World War Two air raid shelters and other possible military/civil	LWT301		TM 5398 9195	Military		The site of a World War Two air raid shelters, and other possible military/civil defence structures, is visible on	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
	defence structures						aerial photographs	
45.	Cropmarks of multi phase ditches	LWT304		TM 5280 9176	Cropmarks		The cropmarks of a dispersed group of multiphase ditches and field boundaries are visible on aerial photographs. The date of these features could potentially range from the later prehistoric to medieval to post medieval period. See LWT 308 for possible Bronze Age round barrow within area of the site.	Low
46.	WWII gun battery	LWT306		TM 5282 9217	Military		The site of World War Two gun battery is visible on aerial photographs, partially camouflaged within a quarry and area of	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							rough ground. The site consists of two angular 'lozenge' shaped gun emplacements that are likely to have contained field guns. Similar sites in other parts of the country were constructed out of sandbags filled with concrete and with a concrete roof placed on the top). It is impossible to tell from the aerial photographs whether these are of a comparable construction. This site, along with the nearby LWT 307, formed a line of defence on the south side of Lowestoft. Another two arrangements of guns (LWT 245, LWT 280)	

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							protect the north.	
47.	WWII gun battery	LWT307		TM 5303 9191	Military		The site of World War Two gun battery is visible on aerial photographs, partially camouflaged within areas of rough ground, cultivation and extraction. The site consists of at least two angular 'lozenge' shaped gun emplacements that are likely to have contained field guns. An additional three rectangular structures are suggested by the aerial photographs, although they are not as conclusive, as the more characteristic gun houses, and may be temporary shelters.	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							Similar batteries in other parts of the country were constructed out of sandbags filled with concrete and with a concrete roof placed on the top. It is impossible to tell from the aerial photographs whether these are of a comparable construction, although they do appear to be of fairly temporary construction, judging by the appearance of the site immediately post-war. This site, along with the nearby LWT 306, formed a line of defence on the south side of Lowestoft. Another two arrangements of guns (LWT 245, LWT 280) protect the north.	

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
48.	WWII defensive system	LWT309		TM 5278 9295	Military		A major World War Two defensive system, consisting of anti-tank ditch system, barbed wire obstructions, antitank scaffolding and lines of anti-tank cubes, and associated defences, including pillboxes, gun emplacements, slit trenches and weapons pits, is visible on aerial photographs encircling Lowestoft and running along this section of the East Coast from Corton to Pakefield. The defence is split into two sections, with Lake Lothing and Oulton Broad forming a natural break in the defensive line. The northern section surrounds the	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							northern perimeter of Lowestoft, from the Lowestoft Denes to Lake Lothing and Oulton Broad (LWT 045) and then runs south from Oulton Broad Lowestoft to Pakefield (LWT 284).	
49.	Possible post medieval remains	LWT318		TM 5356 9307	Settlement		The slight earthworks and possibly low structural remains and/or exposed foundations of probable post medieval date may be visible on aerial photographs. The Ordnance Survey First Edition map indicates possible structures in this vicinity and it was therefore decided that these features probably related to ephemeral post medieval	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							structures, perhaps relating to industrial or horticultural activity and were therefore not mapped	
50.	WWII bunker	LWT319		TM 5386 9304	Military		The site of a World War two structure surrounded by a substantial blast wall, and some other structures and trenches, are visible on aerial photographs to the north of North Quay. Although it is possible that this is a large, well protected air raid shelter, it seems more likely that this represented an important operational building for either military or civil defence.	Low
51.	Land at the	LWT330		TM 5280 9260	Event		Negative evaluation	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
	former Sanyo site, School Road						trenching	
52.	Polished flint axe	LWT333		TM 5296 9245	Findspot		-	Low
53.	Roman coins	LWT334		TM 5442 9312	Findspot		-	Low
54.	Normanston	LWTMisc		TM 5315 9355	Domestic: Manor House		Great House shown on Bowen's 1755 (S1) and Hodskinson's 1783 maps (S2)	Low
55.	Heath Road, Oulton	OUL013		TM 5296 9245	Findspot		Probably related to Mouchel Ref No: 52. Drawing of butt half of a Neolithic polished axehead with description. Found in 1996. (S1).	Low
56.	Former Brook Marine Site	ESF21504		TM 5304 9288	Event		Desk based assessment	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
57.	Marstons Pub, Horn Hill	ESF21518		TM 5428 9238	Event		Negative monitoring	Low
58.	Land off Canning Road	ESF22240		TM 5376 9257	Event		Negative evaluation	Low
59.	Southern Relief Road. SCCAS Monitoring	ESF19727		TM 533 914	Event		Negative monitoring of southern relief road	Low
60.	Port House, North Quay		1292511	TM 5472 9275		Grade II	Offices, formerly Customs house. 1831. Gault brick. Slate roofs. 2 storeys. Long range facing south with a central transept. Transept lit through one 6/6 sash each floor to south and similar fenestration to east and west returns. Hipped roof. To right of transept are 5 ground-floor 6/6 sashes, two C20 ones in blocked doorways.	Medium

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							<p>Three 6/6 sashes to first floor. All sashes have gauged skewback arches. Three 6/6 sashes to first floor left of transept, some replaced. Central doorway flanked by one 6/6 sash either side to ground floor. Shallow hipped roof with 5 stacks, all set to the left. The east return forms the entrance: 4 bays. Late C20 gabled porch in second bay (from left), with a pediment. One 6/6 sash left, 2 right, all with gauged skewback arches. 4 identical first-floor sashes. INTERIOR. Open well staircase at the west end: 2 turned balusters to each tread,</p>	

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							moulded handrail and heavy turned newels with ball finials. Interior otherwise modernised for office use.	
61.	Royal Norfolk And Suffolk Yacht Club, Royal Plain		1207043	TM 5480 9261		Grade II*	Purpose-built yacht club. 1902-3 by G & F Skipper of Norwich. Rendered and whitewashed brick under plaintile roofs. Very advanced design for its date. L-shaped, with an engaged tower in the inner angle opposing a square observation room at the top of the outer angle. 2-3 storeys. The south front is composed of a 3-storey, 3-bay square block with the observation room at the top. In the centre is a	High

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							low entrance porch with a panelled and glazed door flanked by a 3-light semi-circular window with glazing bars either side. The windows above are casements of varying design. At the first floor is a moulded brick panel with a sailing ship moulded in high relief brick. The observation room is glazed all round under a copper dome. To the right is a 2-storey wing under a half-hipped roof with a further semi-circular-headed casement to the ground floor and three windows to the first floor: 2 round-headed casements with balconies and, to the left, a canted bay	

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							<p>window. The east elevation is lit through a large segmental sash with 18/18 glazing bars, and the upper storey through 3 circular windows with casements. The hip of the roof is pierced by a triangular sash with glazing bars. The north side has, between the arms of the L, a curved and glazed single-storey bow. Behind it rises the 3-storey engaged round tower illuminated through casements to the first floor and a band of brick-dressed lights at the second floor. The hipped northern arm of the L has casements with glazing bars.</p> <p>INTERIOR. The</p>	

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							entrance leads into a square central hall partly top-lit from an open ceiling well into the first floor. A concave wall separates the hall from the bar to the north-east, which is entered through bowed double doors with glazing. The restaurant in the north-west corner has double muntin doors with leaded and glazed upper panels and a segmental overlight. The closed-string staircase has tall square newels tapering above the handrail and terminating in saucer finials, in a style being developed by Voysey. Reeded balusters. The first floor has an octagonal open	

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							well looking into the ground-floor hall and protected by a reeded balustrade. The doors to the 2 principal rooms are of muntin type with stained glass panels. The north room also has a fireplace with a 3-panel overmantel. (Goodey C: 120 Years of Sailing: Beccles: 1980-: P.12).	
62.	The Beeches, 16 High Beech		1207021	TM 5362 9388		Grade II	Formerly known as: The Beccles Normanston Drive. House, now flats. Early C19. Gault brick, rendered to returns and rear. Double-depth plan with slate to the front range and pantiles to the rear. Facade is to the south. 2 storeys in 3 bays. Central full-height	Medium

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							<p>bow opened to the ground floor to form a porch defined by a pair of fluted Greek Doric columns. The door is C20 half-glazed under a rectangular overlight. Above the door is a 6/6 curved sash under a gauged skewback arch. One similar, though flat, sash to each floor either side of the bow. Projecting eaves. Gabled roof over which shows a pair of gault-brick stacks set in the valley between the 2 piles. The left-hand (west) stack reduced in height following gale damage 1987. Against the east and west returns are C20 single-storey extensions. The</p>	

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							rear elevation is irregular: C20 glazed door right of centre, one early C19 6/6 sash ground-floor left, another first-floor right, remainder are C20 sashes or casements. Dentil eaves cornice. INTERIOR. Open string stick-baluster staircase with a ramped and wreathed handrail. The rear section has chamfered bridging beams.	
63.	Palaeolithic handaxes from Cannon Shot gravels	MSF15299		TM 53 93	Flintspot		Normanston: In his review of Palaeolithic implements of East Suffolk, W A Dutt (1908) illustrates five flints from 'Cannon-shot' gravels at 27m OD, found in a pit a few 100m north of the	Low

Mouchel Reference Number	Site Name	PRN*	NMR Reference**	Grid Reference	Site Type	Designation	Description	Value
							main road from Lowestoft to Oulton Broad. These have not been traced, but from the drawing they appear genuine, one possibly a hand-axe. Some were rejected, but others were accepted by W G Clarke and A S Kennard	
64.	Roman coin found at Normanston Park	-	-	-	Findspot	-	Findspot of Roman coin recorded in Proceedings of the Suffolk Institute of Archaeology 1975 (33)	Low

Appendix B – Figures

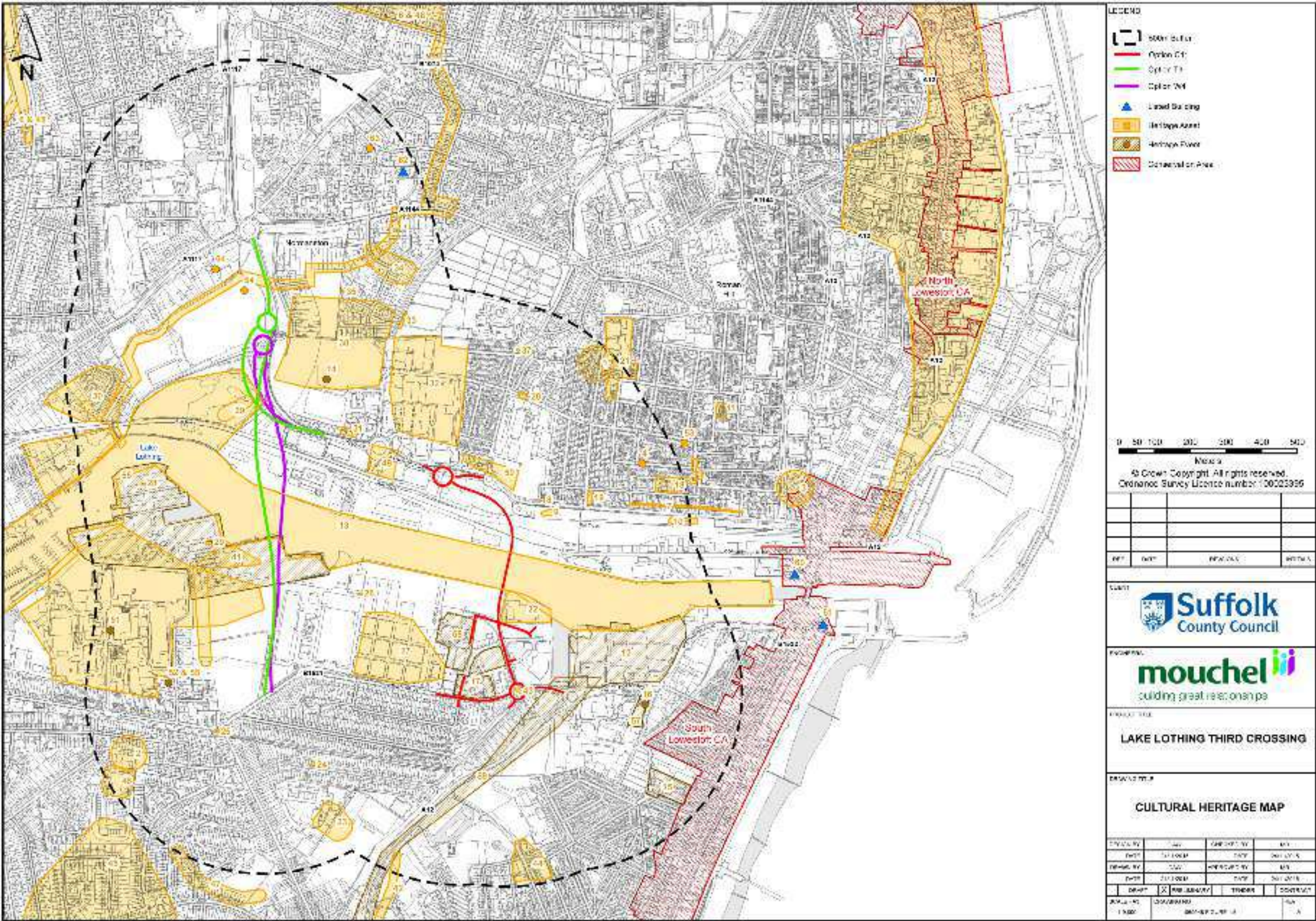


Figure 1: Location of heritage assets and events

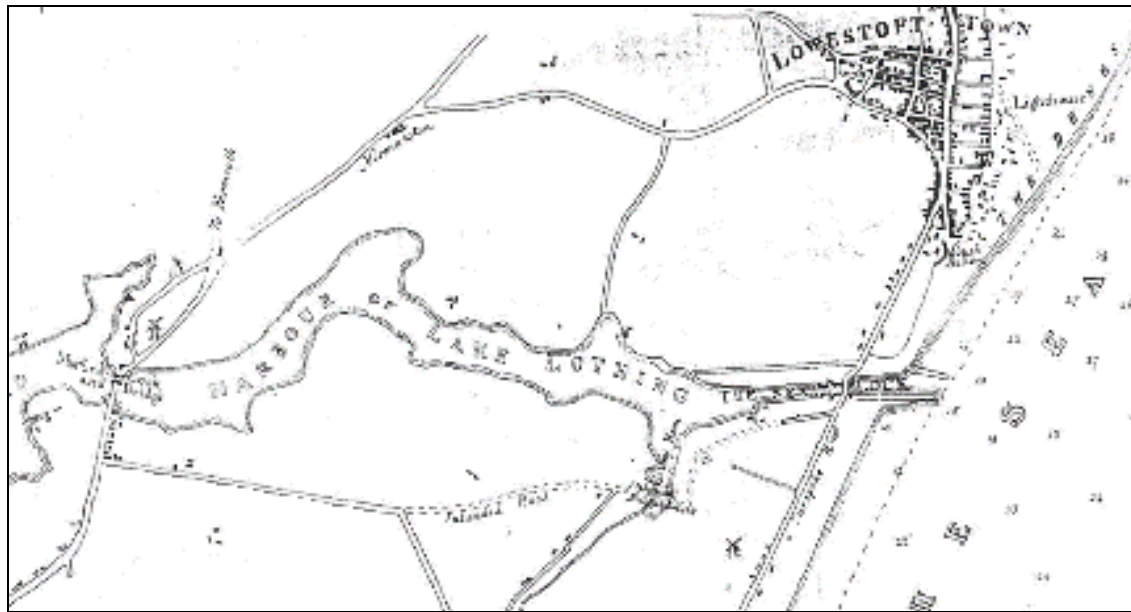


Figure 2: Extract from Map of 1830 by Robert Barnes



Figure 3: Extract from 1885 Ordnance Survey Map



Figure 4: Extract from 1906 Ordnance Survey map



Figure 5: Extract from 1964 Ordnance Survey map

Appendix C - Plates



Plate 1: Lake Lothing, looking west from vicinity of option C11



Plate 2: Lake Lothing, looking south west to reclaimed ground from area of option W4 and T3



Plate 3: Lake Lothing, looking north from vicinity of option W4 and T3



Plate 4: Lake Lothing, looking north west to Normanston Park from area of option W4 and T3



Plate 5: The Beeches: Grade II



Plate 6: The Royal Norfolk and Suffolk Yacht Club: Grade II*



Plate 7: The Port House: Grade II



Plate 8: 3 – 11 Station Square



Plate 9: Terrace at north side of Commercial Road



Plate 10: Two storey 20th century industrial building on north side of Commercial Road



Plate 11: One storey 20th century industrial building on north side of Commercial Road



Plate 12: Pier Terrace