HS2 PHASE 1 NORTH ENABLING WORKS CONTRACT (EWC)

HERITAGE & ARCHAEOLOGY

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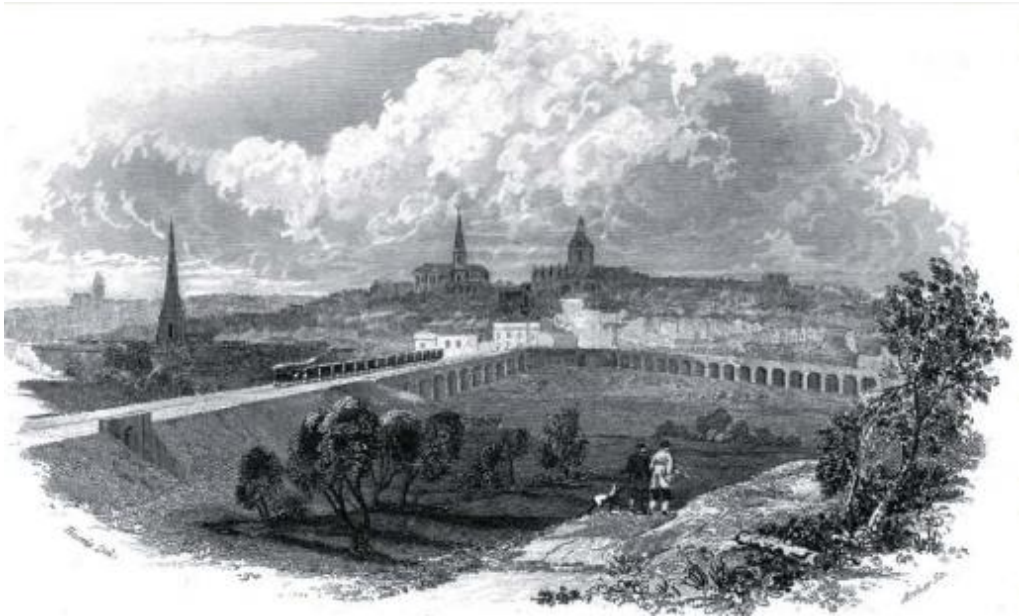
NON-INTRUSIVE SURVEYS

DETAILED DESK-BASED ASSESSMENTS

- DDBA has added little value for the prehistoric, Roman and early-medieval periods as there is no additional data to the 2013 ES

- The benefit of DDBA is for the historic periods, where further documentary research can enhance understanding in respect to HERDS objectives

- The DDBA's include:
  - Historic Settlement Landscape Study
  - Railway & Industry Landscape Study
  - Possible Civil War Battlefield DDBA



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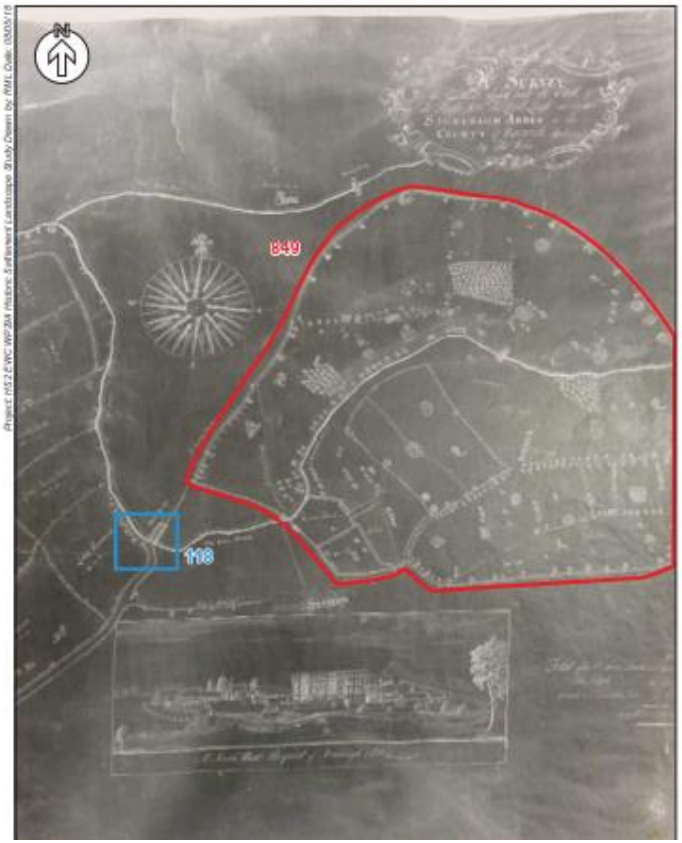
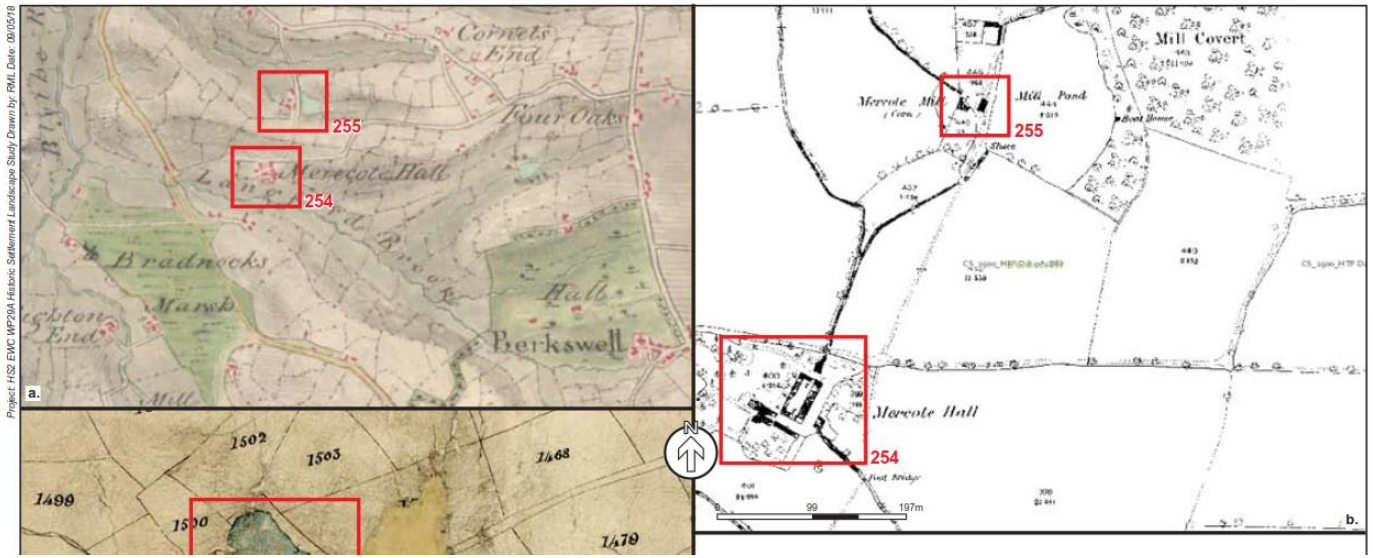
HISTORIC SETTLEMENT LANDSCAPE STUDY



- Allows a more detailed assessment of principal medieval and post-medieval settlements along the route, through:
  - Higher resolution historic maps
  - Place-name/documentary evidence
- Provides a greater understanding of changes in settlement patterns over time within different historic landscape zones
  - Addresses several HERDS objectives
- Allows a targeted programme of evaluation against the most significant assets



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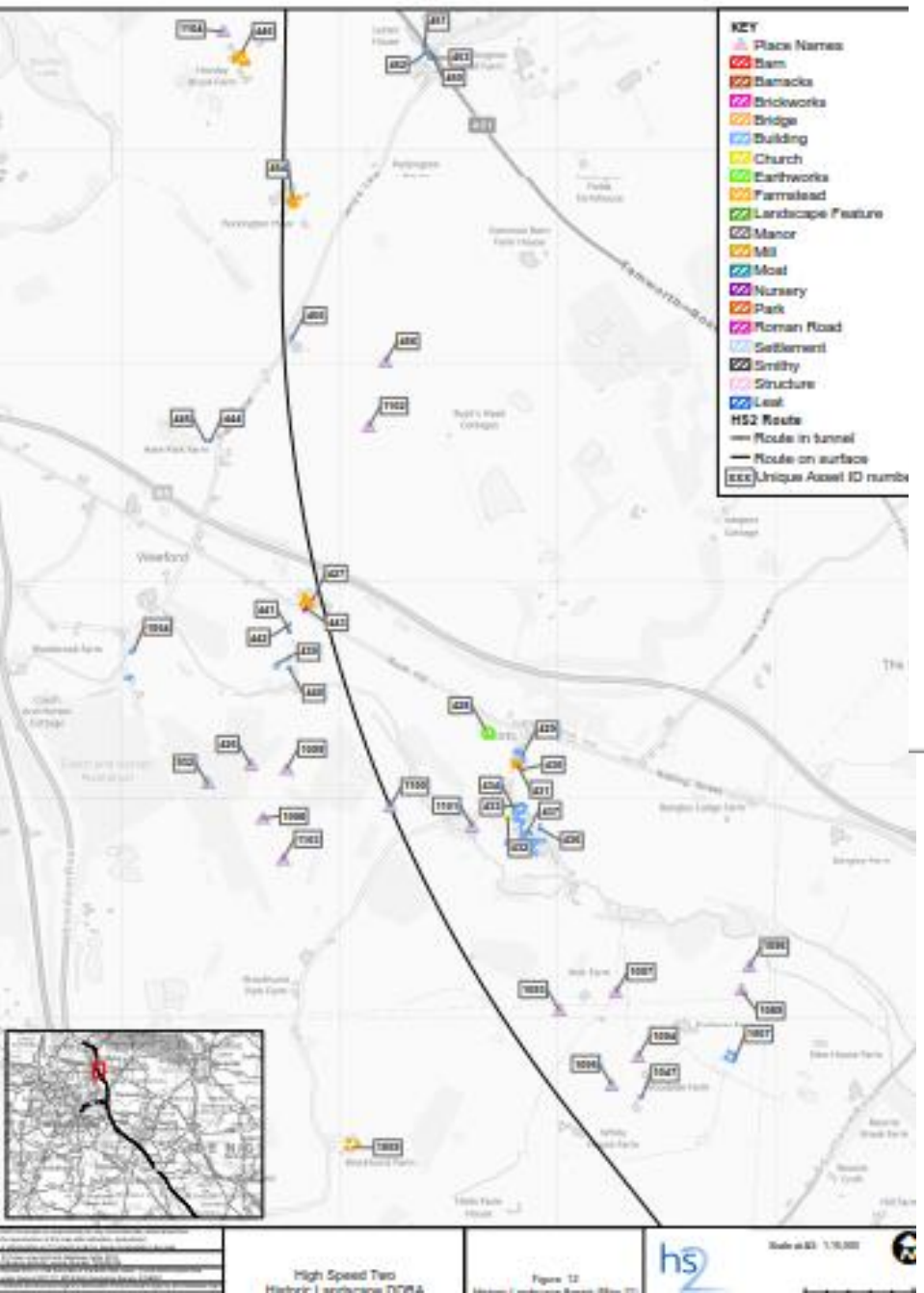
HISTORIC SETTLEMENT LANDSCAPE STUDY RESULTS



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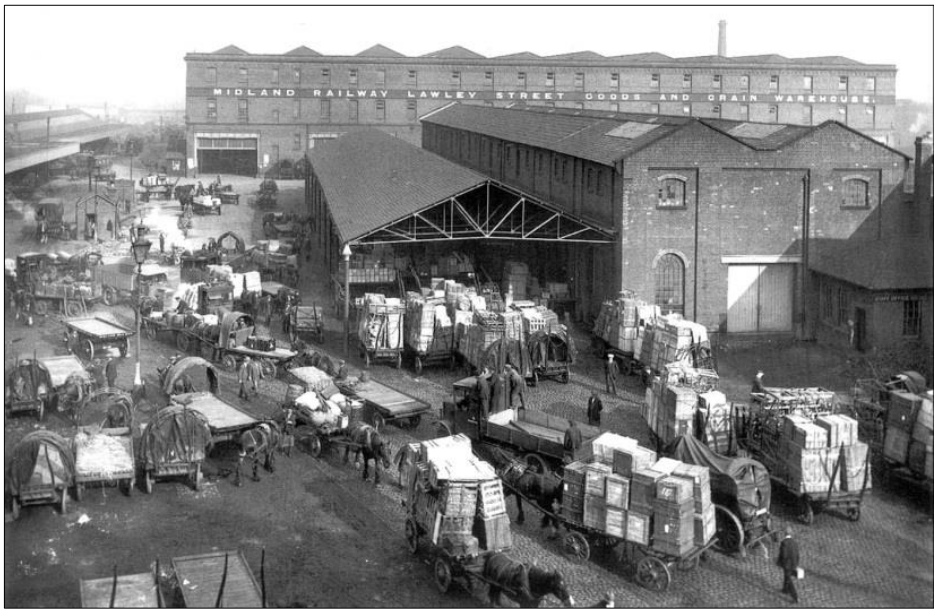
RAILWAY & INDUSTRY LANDSCAPE STUDY



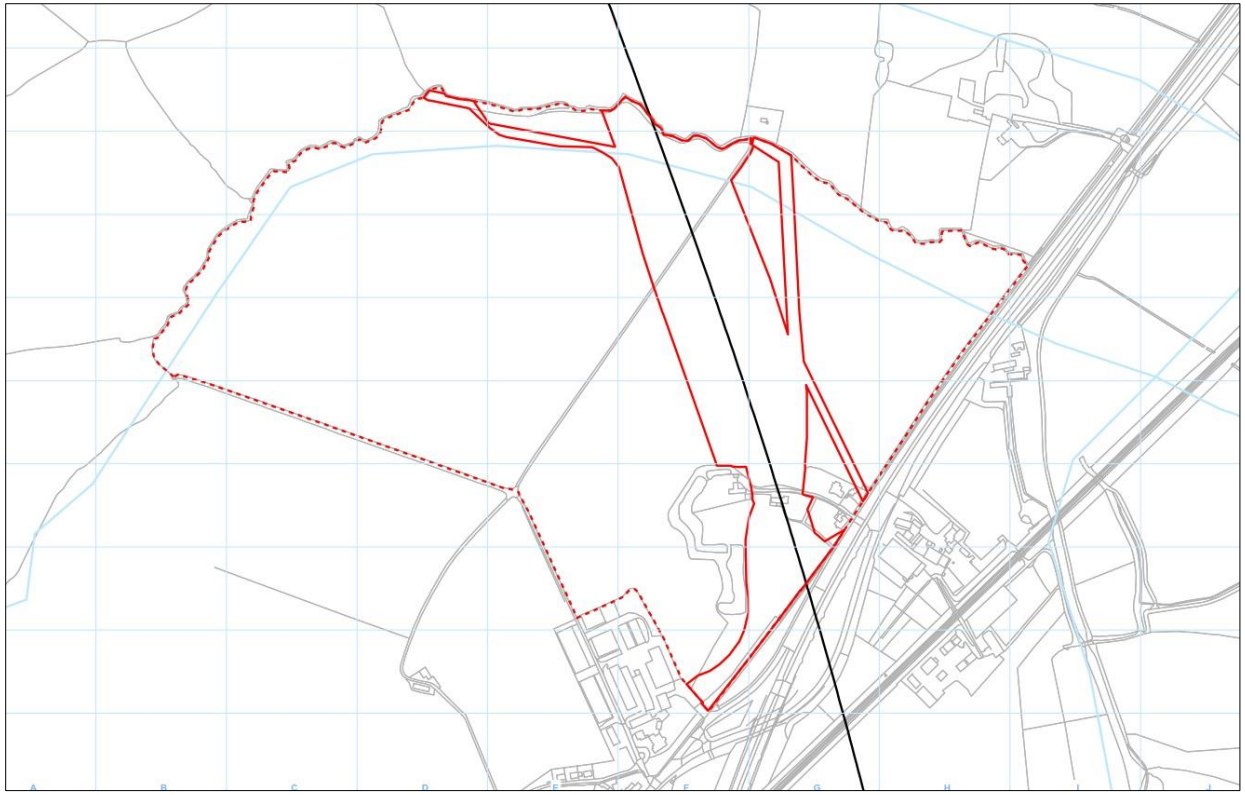
- HS2 route will be constructed alongside 9.6km of the existing historic Birmingham and Derby Junction Railway (B&DJR)
  - Opened in 1839
  - Engineered by Robert Stephenson
- B&DJR made major contributions to development of industry within and surrounding Birmingham (along with London and Birmingham Railway, and the Grand Junction Railway)
- Some associated historic structures remain extant, some of which are listed buildings
- Landscape study included detailed documentary and cartographic research, and site walkover inspections

DDBA: POSSIBLE CIVIL WAR BATTLEFIELD

- Documentary and cartographic research carried out by Civil War expert
- The presence of the putative battlefield was based on 'Civil War finds' recovered by metal detecting in the field north of Streethay Manor moated site
- The Siege of Lichfield was a pivotal moment in the Civil War – the moated house and the nearby fields may hold a strategic location adjacent to Ryknield Street (A38), the main approach into Lichfield

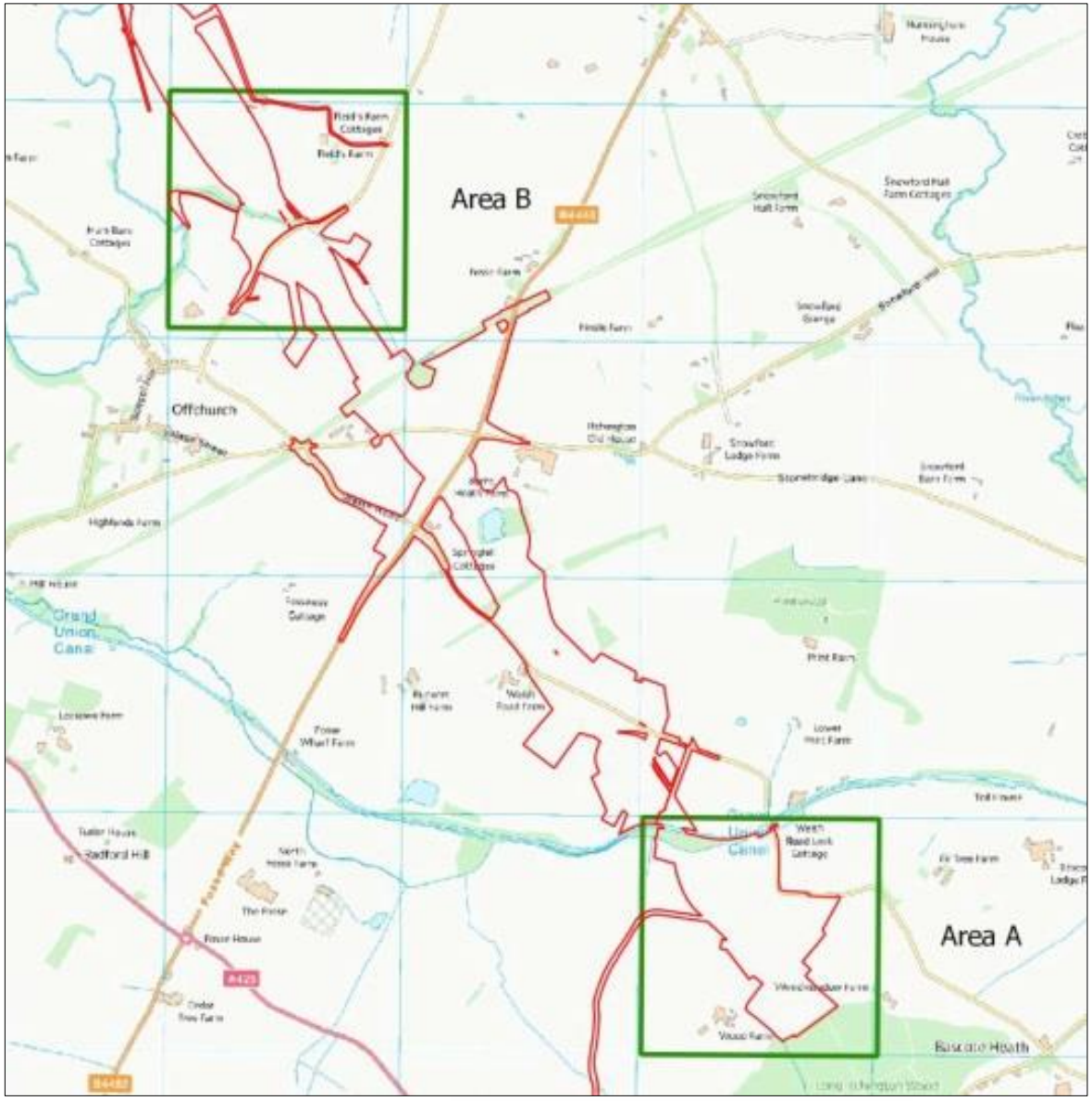
A new HERDS objective agreed with HS2 Historic Environment Team:

KC108: Investigate the location, extent, survival and significance of possible Civil War activity in the area surrounding Lichfield, with specific interest in the three sieges of Lichfield in March 1643, April 1643 and March-July 1646



LIDAR RE-ANALYSIS

- LiDAR is a valuable tool for identifying archaeological features
- Review of 2013 ES LiDAR data to maximise the information available.
- Used multiple visualisations and parameters (e.g. hillshade from multiple directions/angles)to increase chance of identifying features
- Focussed on two areas:
  Area A: Ufton Wood/Wood Farm
  Area B: Agricultural area NE of Offchurch



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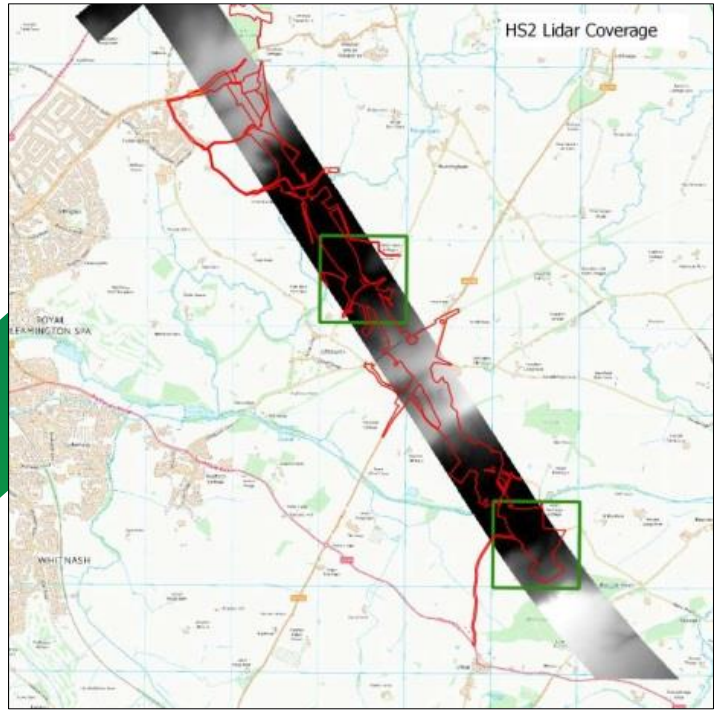
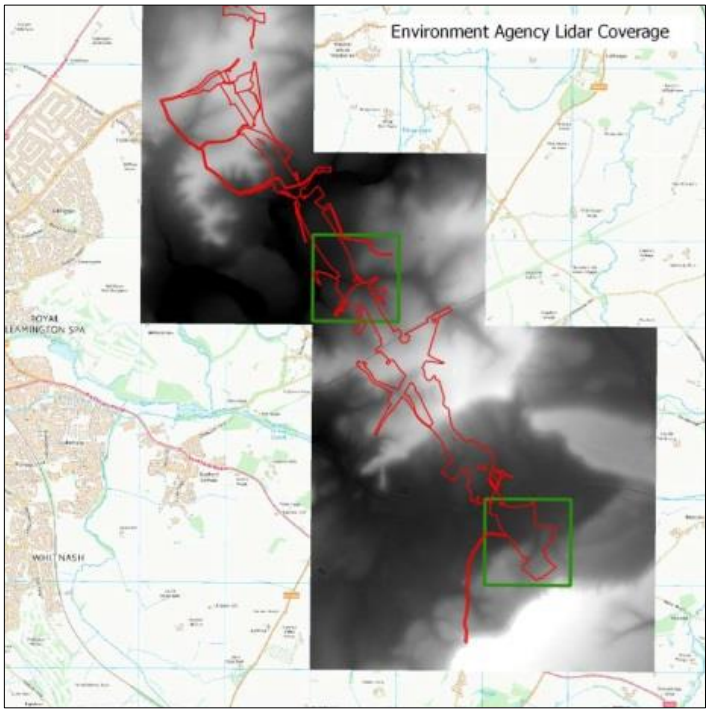
LIDAR RE-ANALYSIS RESULTS





- Incorporated wider coverage of Environment Agency (EA) archive data, which allowed greater interpretation of features despite lower resolution
- Most successful visualisation method was Location Relief Model (LRM)
- Number of new features identified: the majority of features relate to past agriculture (boundary banks, ridge and furrow), with some evidence of Second World War bomb craters
- Dense crops present in open fields at time of HS2 LiDAR capture masked features

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LIDAR RE-ANALYSIS RESULTS

e 4: Crops masking potential features in the HS2 capture when compared with the EA data which was captured in crop free conditions

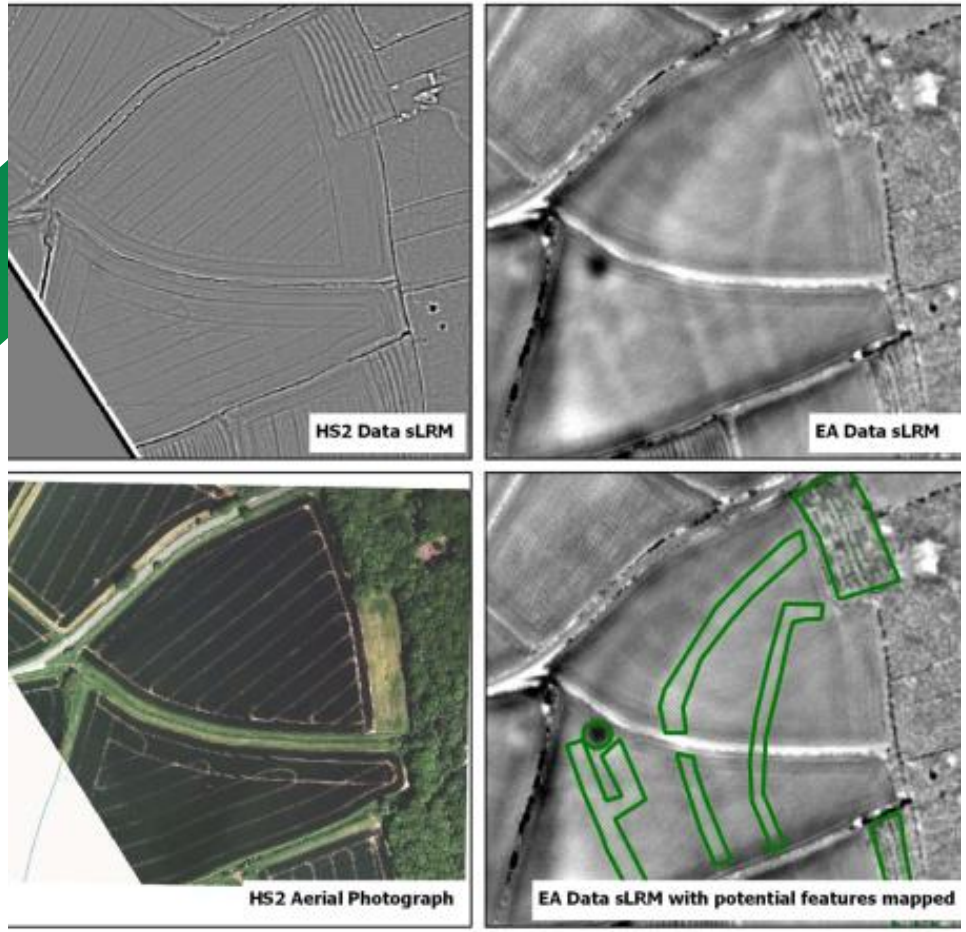
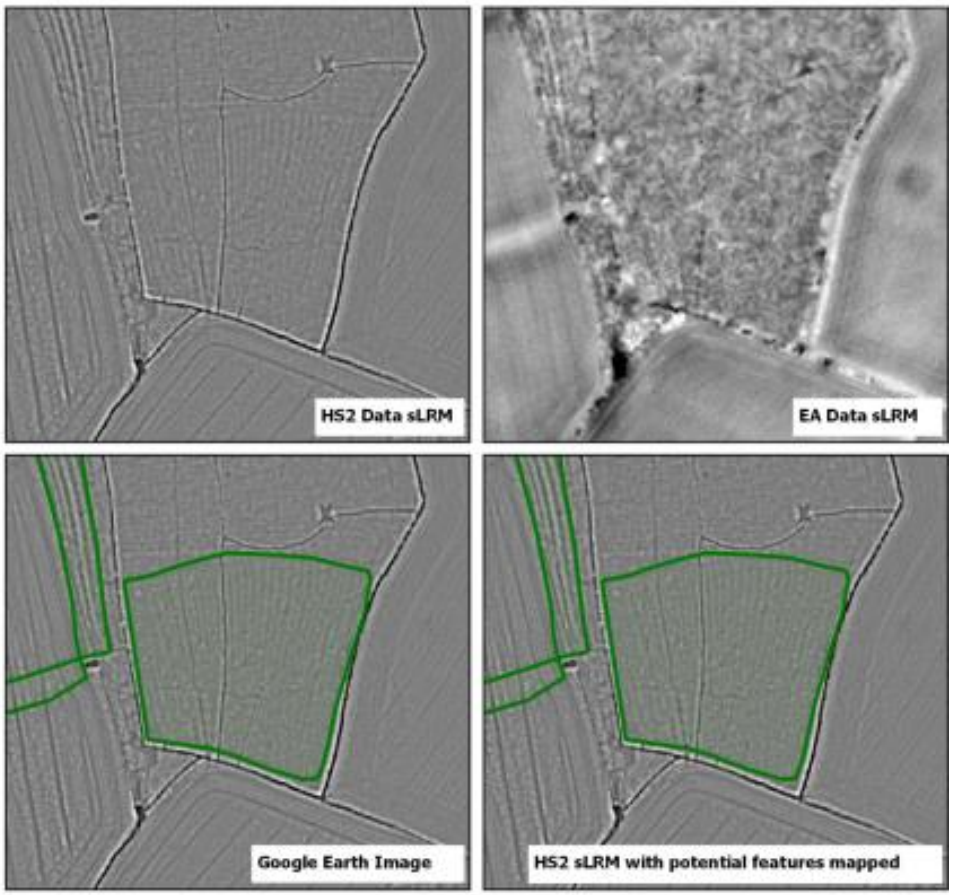


Figure 5: Features captured below the woodland canopy in the higher resolution model in the HS2 capture when compared with the EA data, South Cubbington Wood, SP352 684



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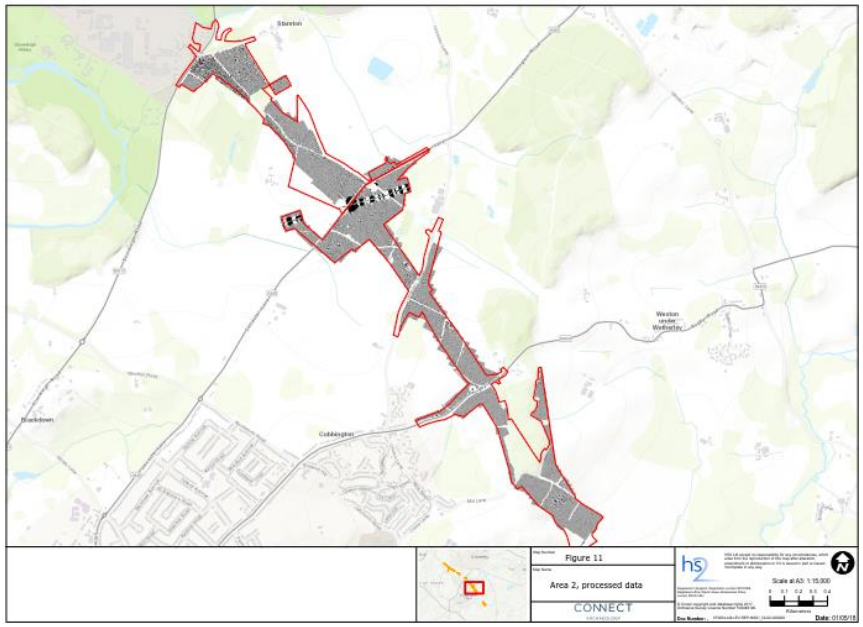
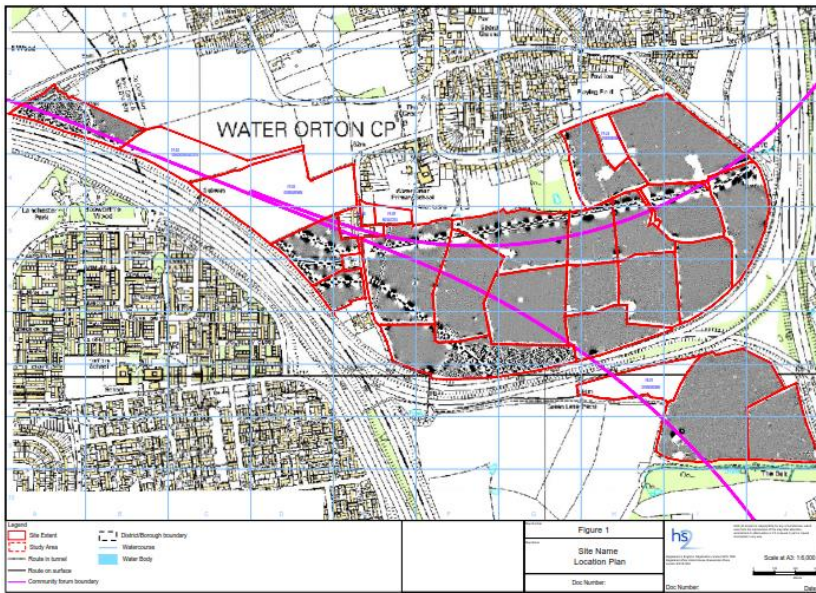
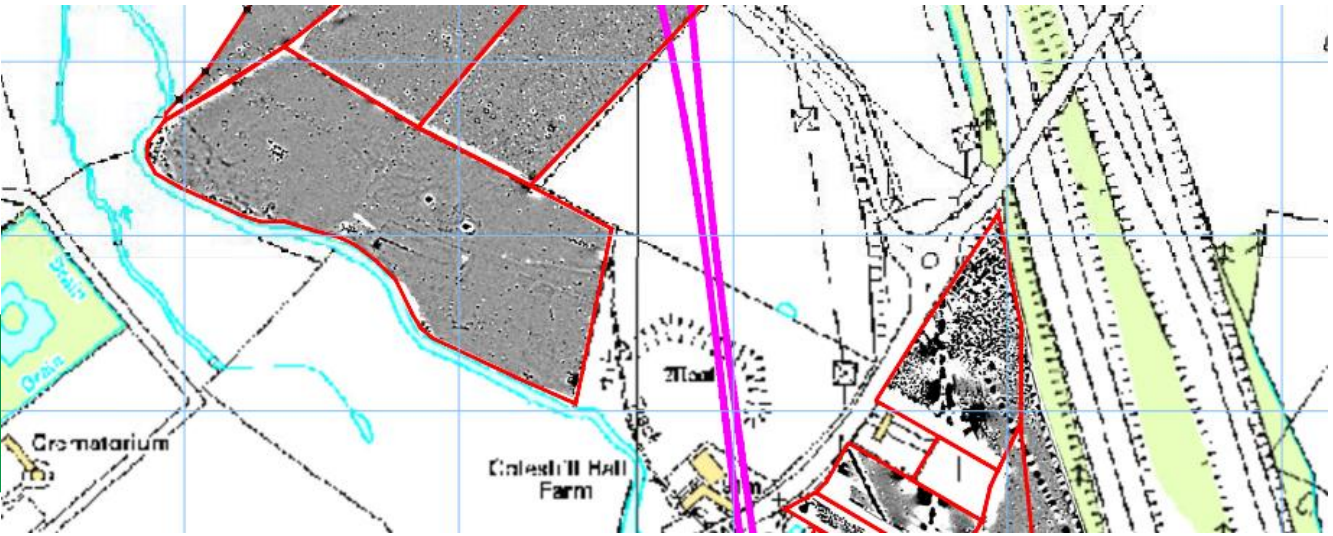
GEOPHYSICAL SURVEYS

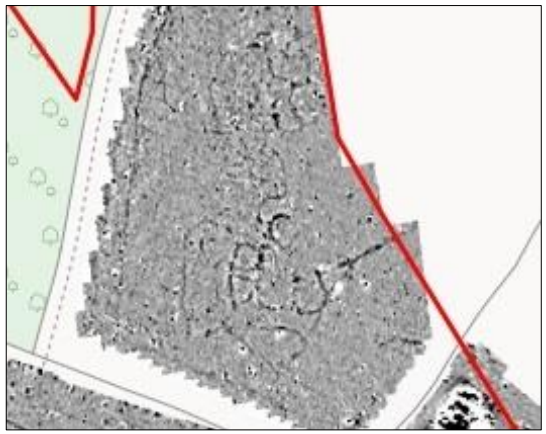
- Review of 2013 ES geophysical survey techniques
- Magnetometry the preferred prospection technique
- North section divided into 9 areas
- Blanket survey across previously unsurveyed c.1000 ha
- Works complete

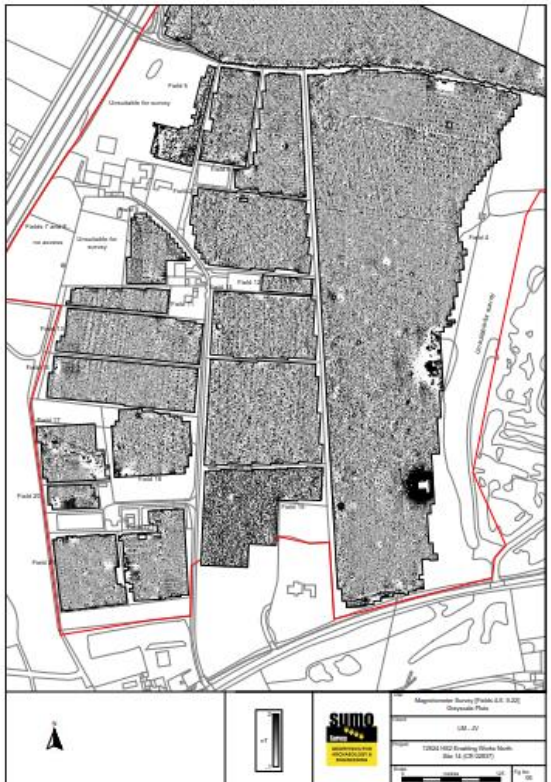


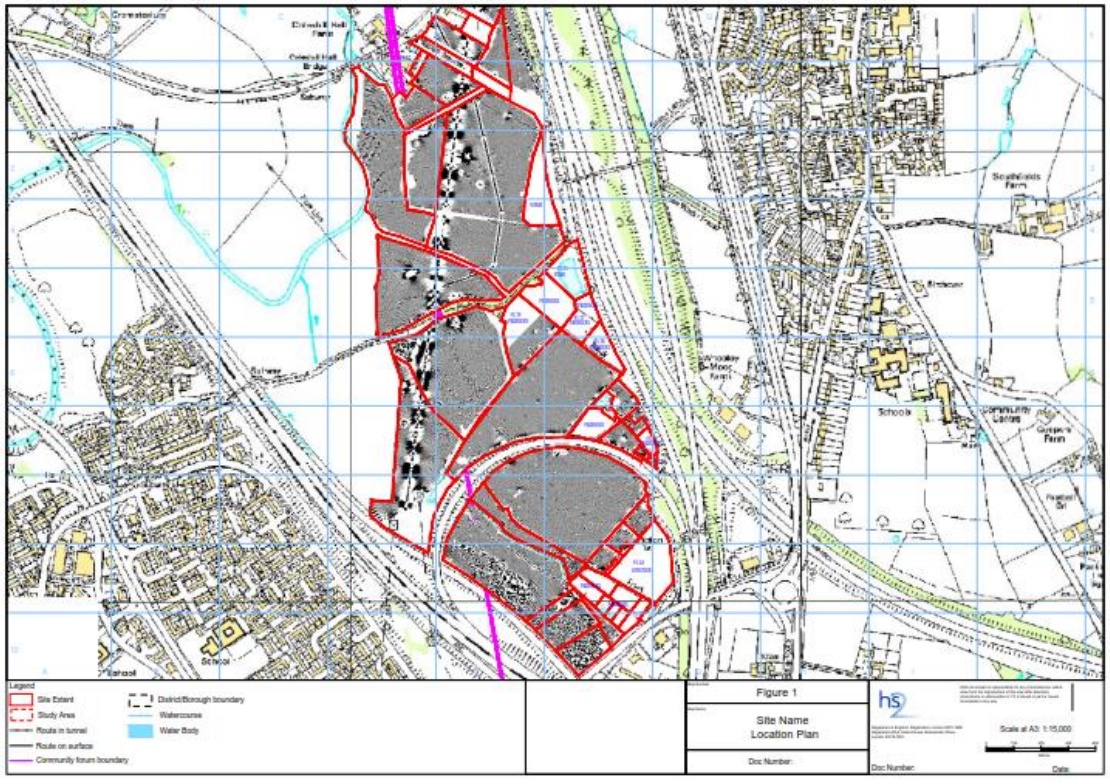


GEOPHYSICAL SURVEY RESULTS



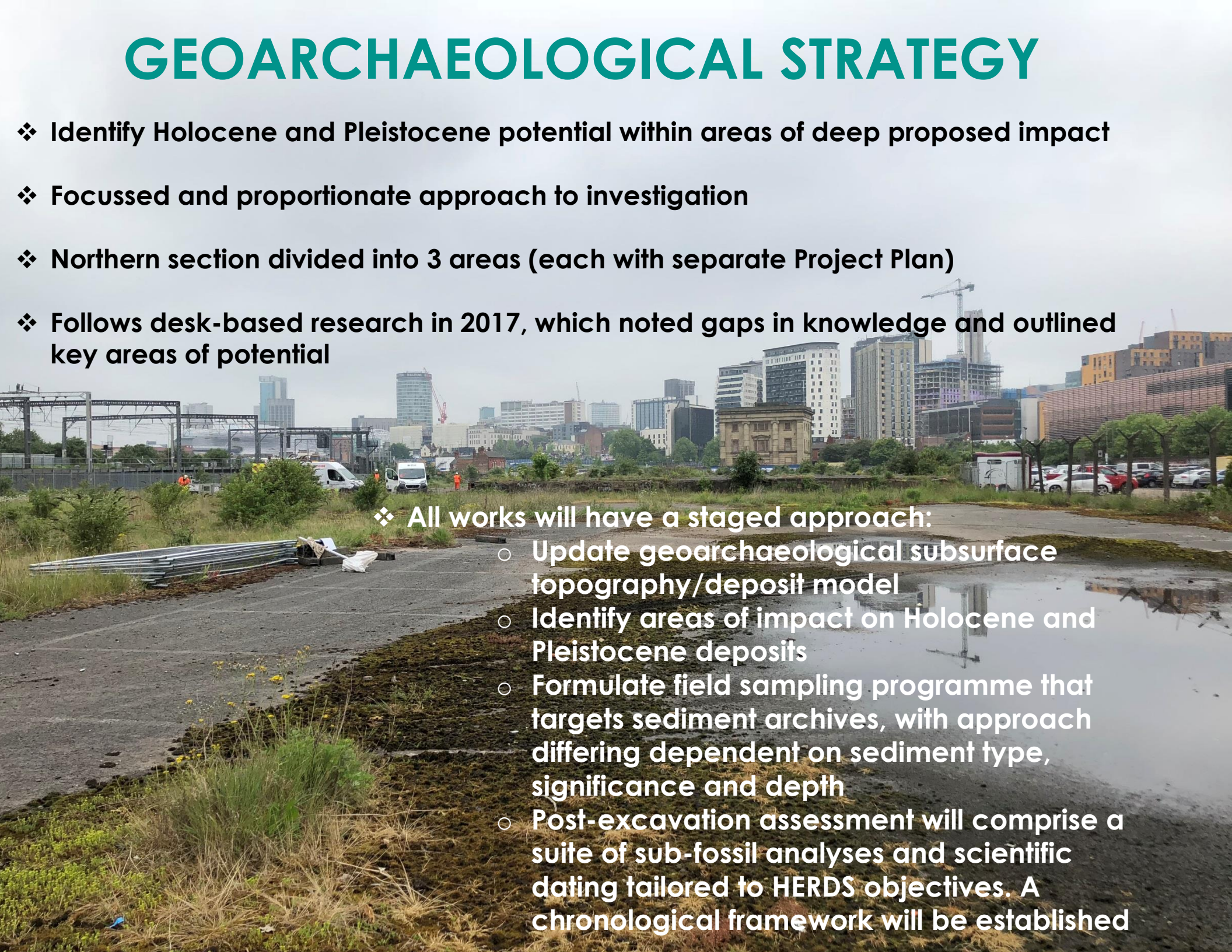






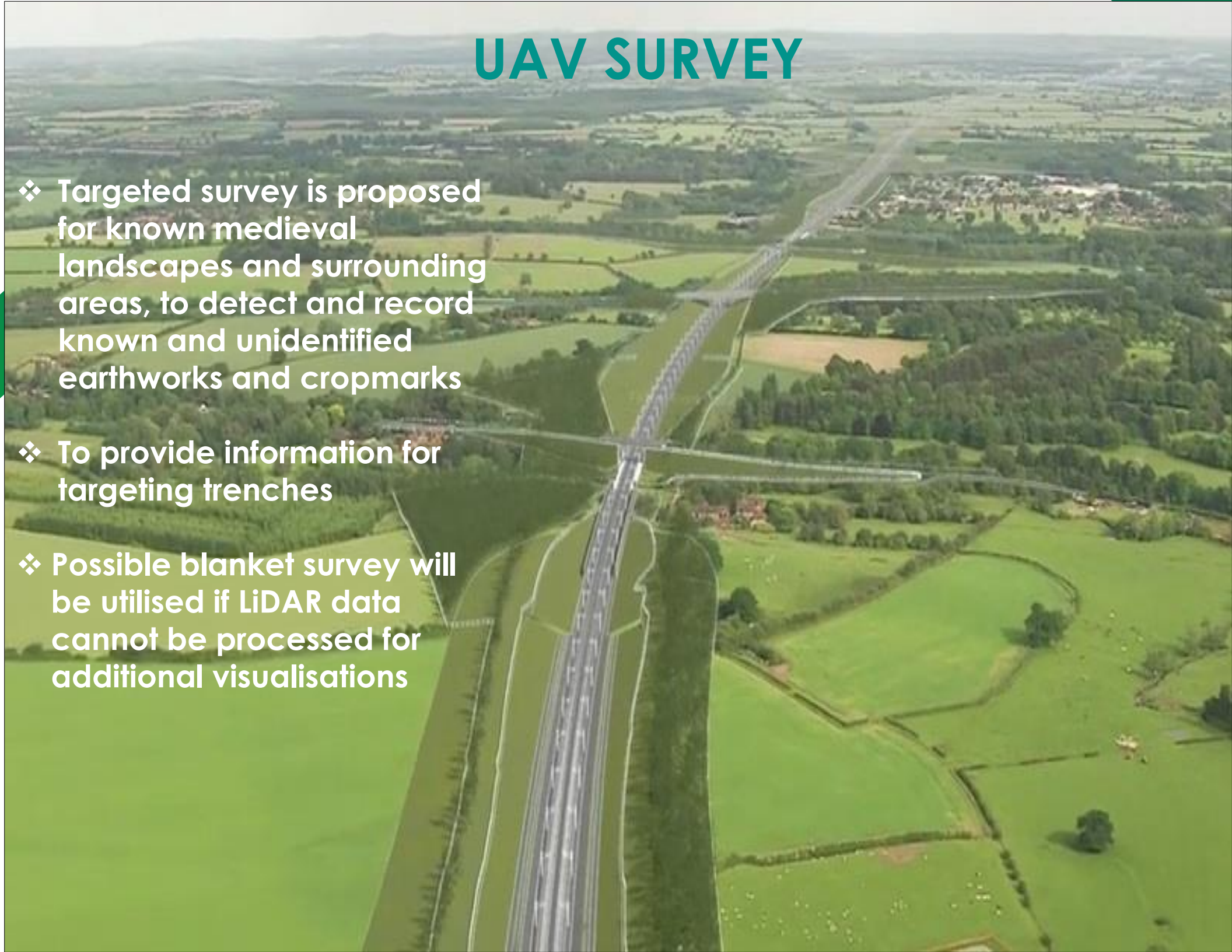
GEOARCHAEOLOGICAL STRATEGY

- Identify Holocene and Pleistocene potential within areas of deep proposed impact
- Focussed and proportionate approach to investigation
- Northern section divided into 3 areas (each with separate Project Plan)
- Follows desk-based research in 2017, which noted gaps in knowledge and outlined key areas of potential



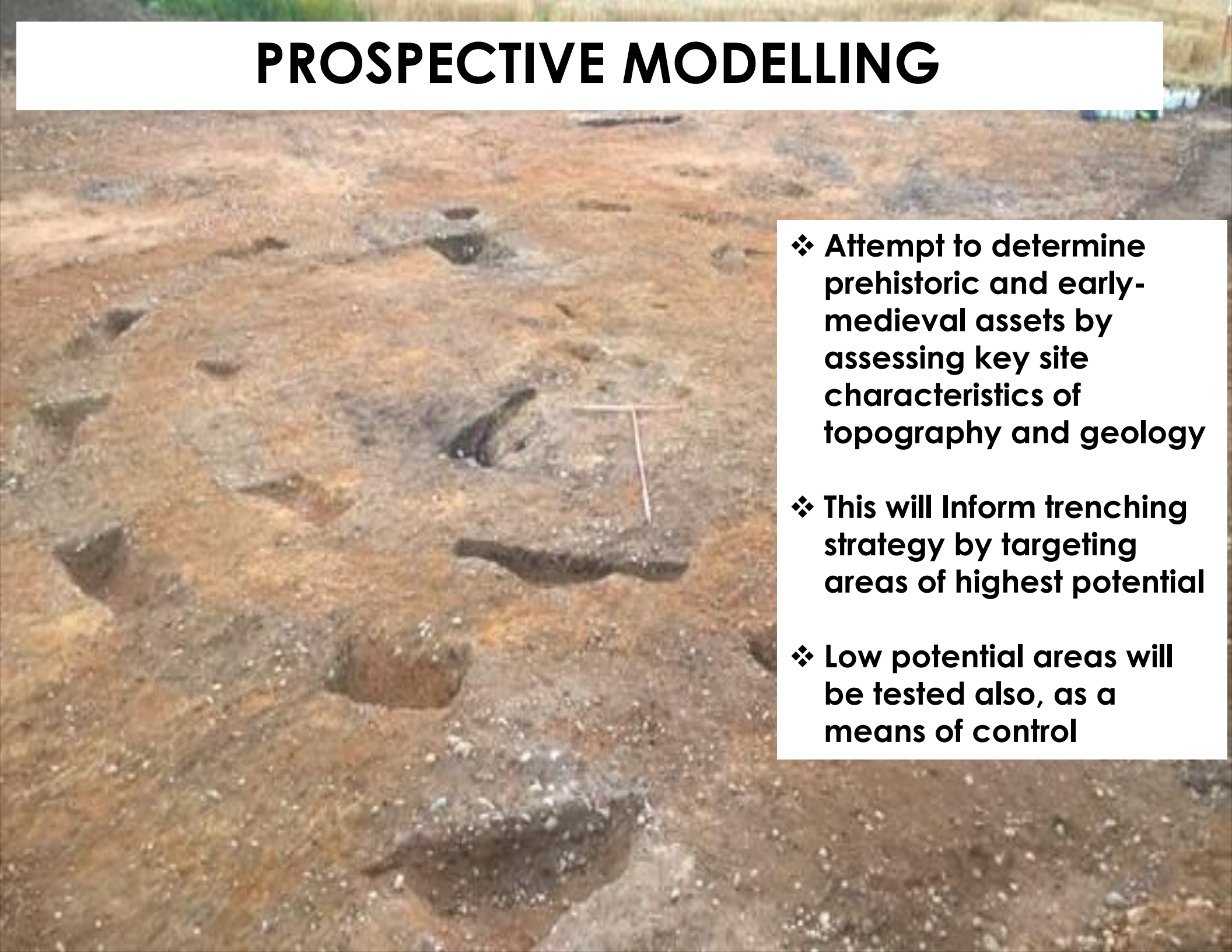
- All works will have a staged approach:
  - Update geoarchaeological subsurface topography/deposit model
  - Identify areas of impact on Holocene and Pleistocene deposits
  - Formulate field sampling programme that targets sediment archives, with approach differing dependent on sediment type, significance and depth
  - Post-excavation assessment will comprise a suite of sub-fossil analyses and scientific dating tailored to HERDS objectives. A chronological framework will be established

UAV SURVEY



- Targeted survey is proposed for known medieval landscapes and surrounding areas, to detect and record known and unidentified earthworks and cropmarks
- To provide information for targeting trenches
- Possible blanket survey will be utilised if LiDAR data cannot be processed for additional visualisations

PROSPECTIVE MODELLING



- Attempt to determine prehistoric and early-medieval assets by assessing key site characteristics of topography and geology
- This will Inform trenching strategy by targeting areas of highest potential
- Low potential areas will be tested also, as a means of control

INTRUSIVE SURVEYS

INFORMING THE TRENCHING STRATEGY

- The 2013 ES and risk model identifies 'Archaeological Character Areas' and considers topography, geology and known assets, to assess archaeological potential and significance within particular construction development zones.

- DJV strategy is to inform trench placement as effectively as possible against HERDS objectives, through:

  - Asset density mapping
  - Desk-based research
  - LiDAR re-analysis
  - UAV survey
  - Geophysical survey (blanket)
  - Geoarchaeological evaluation
  - Prospect modelling

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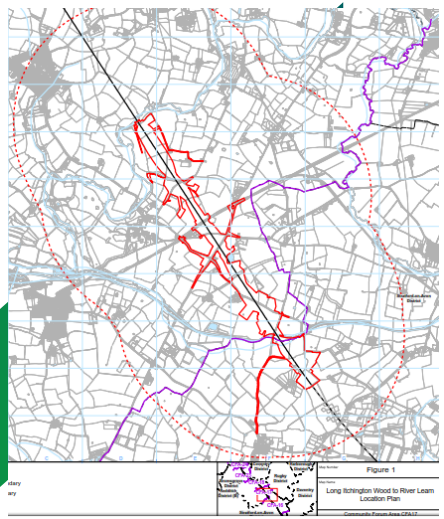
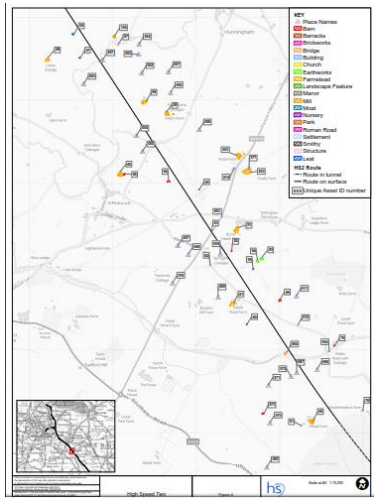
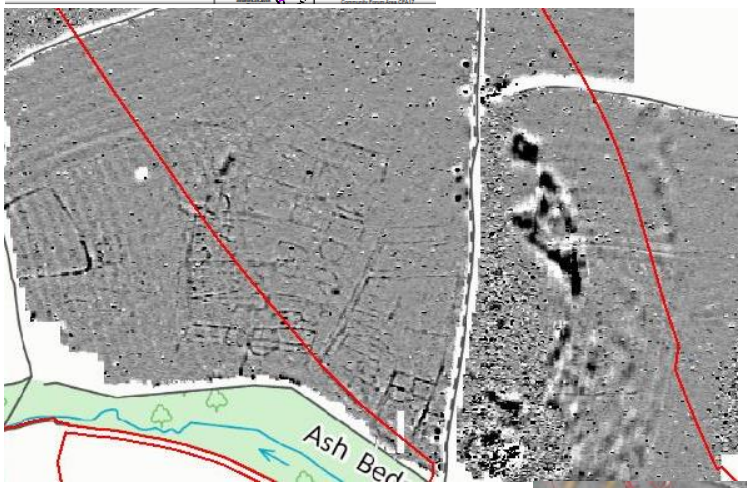
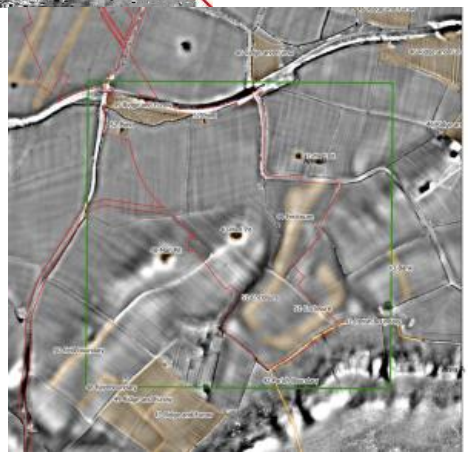
LONG ITCHINGTON WOOD TO RIVER LEAM









- Key trial trenching sites defined by potential to address specific HERDS objectives

Long Itchington Wood – River Leam

- Focus on Iron Age/Romano-British enclosed settlements detected through geophysical survey

KC19: The Romano-British period saw the beginning of a more established infrastructure network. Can we investigate the development of these routes, trackways and roads and the influence they had on landscape change?

KC21: Assess the evidence for regional and cultural distinctiveness along the length of the route in the Romano-British period, with particular regard to the different settlement types encountered along the route

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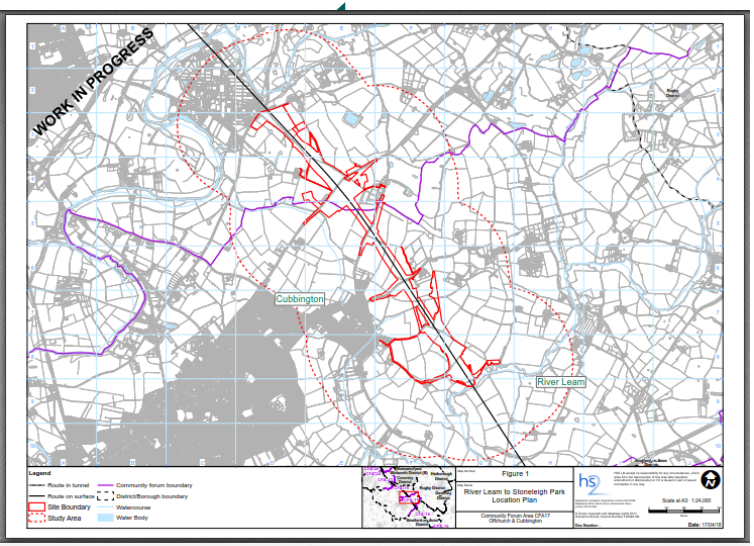
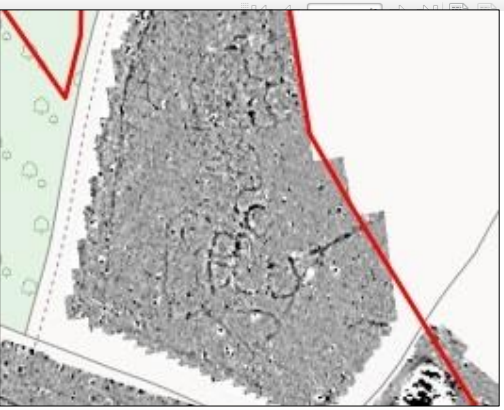
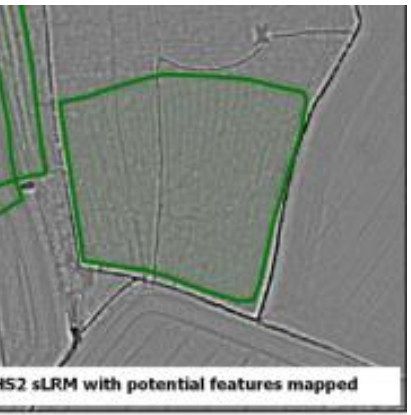
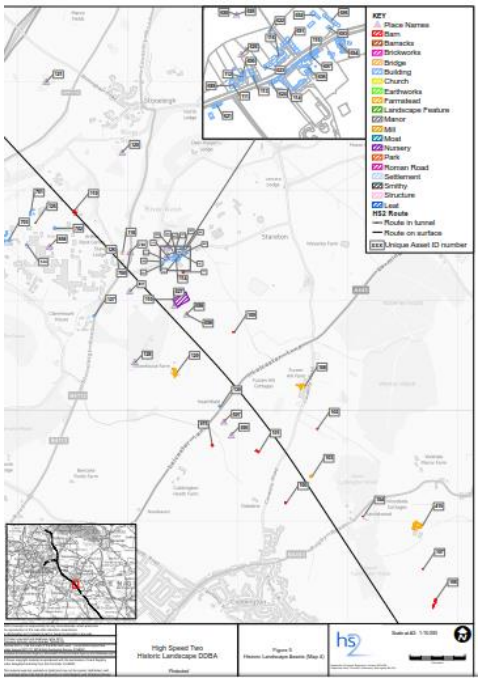
RIVER LEAM TO STONELEIGH PARK









- Key trial trenching sites defined by potential to address specific HERDS objectives

River Leam – Stoneleigh Park

- Focus on potential prehistoric settlement detected through geophysical survey and Lidar

KC9: Does a lack of visibility of Neolithic and Bronze Age monuments reflect genuine area distinctiveness, or is this due to variation in geology or investigative techniques?

KC15: Can we identify regional patterns in the form and location of Late Bronze Age and Iron Age settlements across the route, and are there associated differences in landscape organisation and enclosure?

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