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**SENT BY EMAIL**

**Re: Lower Thames Crossing Preliminary Environmental Information Report Statutory Consultation 2018**

Thank you for consulting Heritage Conservation on the above PEIR consultation documents.

The documents including the outline PEIR, including Map Books and General Arrangements, Engineering Arrangements and outline environmental assessments including Chapter 7 on Heritage with associated drawings in Appendices.

**General comments**

The lower Thames estuary is rich in cultural heritage, a reflection of its role as a conduit for trade and transport throughout history and as an area rich in raw materials and other resources. As a result of its strategic role the River Thames has been important for defence of the realm throughout history which is demonstrated in the numerous designated and undesignated post-medieval fortifications situated along its banks. Many of these fortifications were designed to work together with important lines of sight across and along the Thames at various locations. The River Thames moved south to its current location during the Anglian glaciation so the area (including the Thames itself) contains important information on the Pleistocene geology and early human occupation of the southern British Isles.

The current PEIR assessment of the historic environment is inadequate in several key aspects:

- There is no assessment of the collective impact of the whole scheme on the integrated historic environment. The cultural heritage assessment covers individual components or heritage assets, not the whole.

The ES Chapter 7 on the historic environment provides a baseline description of heritage assets along the route and within vicinity. There is also a Table of potential effects and mitigation for designated heritage assets (Table 7.6). Although the baseline description includes designated and non-designated heritage assets there is no assessment of the collective impact of this scheme of the historic environment as a whole. Heritage assets have individual value but they are also key components of a much broader picture of interconnecting groups with complex interrelationships. These components make up the “place” and give the distinctive character of an area. The land which this scheme runs through has a distinctive character and unique history. This broader historic mosaic can be reflected through historic landscape assessments which describe heritage assets within their setting, both landscape and chronological settings. But the PEIR does not seem to include any assessment of the historic landscape of the route South of the Thames.

It is essential the Cultural Heritage assessment in the final ES includes assessment of the collective impact of a significantly larger transport link on the multi-dimensional historic environment as a whole, not just on individual heritage assets. For example, what is the historic relationship of medieval Cobham Hall and parkland to Shorne Wood and to the surrounding fields and local routeways, and what is the impact of the A2 LTC junction on this relationship? Another example, what is the impact of LTC on Gravesend Airfield heritage; not just the surviving structures but also on the relationship between the structures; on the understanding, awareness and appreciation of the airfield within the local community and national enthusiasts. The LTC is extending across open fields and is going to have a major impact visually, as well as in terms of noise and lighting, and the full range of impacts need to be described not just on individual heritage assets but also on the wider historic environment as a whole.

- The proposed historic landscape assessment of the land south of the Thames is not of sufficient depth

There are proposals to use the current Kent HLC but this is not detailed and very broad brush. There are also intentions to use the Hoo Peninsula data which does cover most of the LTC south of the Thames but there are a few areas, such as Jeskyns Wood, which are not covered. It would be beneficial to undertake a targeted HLC for the area south of the A2/LTC junction, for example around Jeskyns Wood, and to add the data to the Hoo Peninsula data.

However, HLC provides only a baseline and there is a need for a far more rigorous assessment of the landscape affected by the LTC scheme. Landscape evidence of Early Prehistoric activity is not likely to be on the surface but visual evidence and connections to later prehistoric activity through to 20<sup>th</sup> century use is present in the form of clusters of cropmarks, ancient field systems, historic woodland, routeways, field boundaries, military sightlines and runways etc. HL assessment should also include wider analysis of setting and key views, historic and literary associations and community value. The historical and literary associations of heritage assets should be considered e.g. use of certain buildings as models for locations or key events in Dicken’s novels and life.

Therefore I recommend that the historic landscape assessment uses and updates the Hoo Peninsula HLC but then provides an assessment of the prehistoric through to 20<sup>th</sup> century military, settlement and agrarian landscape as it can be perceived today and then how the LTC will impact on that understanding.

- The proposed mitigation is far too limited. It focuses on designated heritage assets and does not include all impacts from noise, light, vibration during construction and long term use. The mitigation needs to be proportionate and reasonable and it should also be inclusive and cover both individual heritage assets and the wider historic environment.

For example, mitigation should include measures to compensate for harm to Gravesend Airfield, through retention and conservation of individual structures wherever possible and establishment of a heritage trail, thereby raising awareness and appreciation of this WWII heritage. Another example of improving and broadening the mitigation measures could be recognition of the use of the ridgeway as a variety of distinctive routeways over 1000s of years, not just as the Roman Watling Street but as prehistoric trackways through to post medieval telegraph routes.

A variety of mitigation measures should be considered and should be informed by the nature and character of the heritage asset(s), including the perception of the wider landscape as certain viewpoints. Screening may be acceptable for some assets but unlikely to be appropriate for military sites and historic landscape elements unless woodland is a key component.

Mitigation should seek to include conservation measures wherever possible and identify opportunities for enhancement. This scheme does present opportunities to raise awareness and understanding of the historic environment through artwork or activities, which can provide some offset to unavoidable harm.

Mitigation for heritage needs to include all impacts, including impacts from ecological and SuDs measures. The consequences of all mitigation measures need to be fully understood and described. There may well be areas where mitigation for ecology will have an impact on archaeology, for example, establishing areas for environmental mitigation and/or translocation of soils, tree planting etc, will have impact on heritage assets and especially on buried archaeology. As such mitigation for heritage needs to be appropriately broad ranging and inclusive, in order to ensure suitable mitigation is appropriately integrated into construction programmes and long term land management and restoration programmes.

We welcome the opportunity to comment on the scheme details at this early stage but emphasise that our comments are based on the current heritage data, including the present HER, which may not necessarily highlight all significant heritage sites along the route.

The assessment data provided so far is arranged in a manner which is not entirely helpful in comparing details and assessing the impact of the chosen design on the currently known

heritage. The detail scheme plans are at a different scale to the heritage plans, making it challenging to consider the impacts on the heritage resource. It would be more helpful in the final ES data to have one section on Cultural Heritage (archaeology, historic buildings and historic landscapes) with a single plan showing all heritage constraints and the HER, then with another plan of showing the heritage data with the basic scheme superimposed on top. This would be more conducive to comparing the potential impacts on the historic environment. Therefore, we recommend that any forthcoming full EIA provides plans which clearly show the scheme impacts on one plan showing all known heritage assets, including an up to date HER.

In conclusion, there is a need for more in-depth and integrated assessment of the historic environment; archaeology, historic buildings and historic landscapes and their interrelationships, to ensure the ES reflects a sound understanding of the heritage assets affected by the LTC scheme. The assessment carried out so far is not sufficiently detailed to enable informed decisions on the mitigation for the chosen route. Although we understand the heritage assessment will include preliminary fieldwork, LiDAR, selected geophysical survey and other specialist assessments, etc, we are currently not aware of the range of the preliminary fieldwork nor viewed the results. The majority of the proposed route has not been subject to formal investigations and the data on the archaeological resource in particular is limited. Therefore, we would suggest there is potential for significant as yet unknown archaeology to survive and final decisions on preferred design options and mitigation should not be made until more detailed field assessments have been undertaken.

I hope these comments are helpful and I would be happy to discuss any of the above further.

Yours sincerely

Wendy Rogers

Heritage Conservation

## **Detailed comments on PEIR 2018 (KCC Heritage November 2018)**

Preliminary detailed comments are as follows:

### Chapter 2 Project Design

2.15 – provision of designed environmental mitigation such as earth bunds, balancing ponds, translocation of soils, landscaping, planting etc could have impact on heritage, particularly on buried archaeology. The archaeological consequences of environmental mitigation needs to be thoroughly considered at all stages of the scheme.

2.16 – temporary landtake and measures, such as site compounds, could have impact on heritage, particularly buried archaeology. Mitigation for heritage, particularly buried archaeology, needs to be thoroughly considered for even temporary measures.

2.17 – Services and utility diversions could have impact on heritage, particularly buried archaeology. Mitigation for heritage, particularly buried archaeology, needs to be thoroughly considered for all services and utility diversion works.

2.17 – enabling works and variations to scheme groundworks could have impact on heritage, particularly buried archaeology. Mitigation for heritage, particularly buried archaeology, needs to be thoroughly considered for all enabling and variation to scheme works

2.18.2 – archaeological investigations need to take place prior to groundworks in each particular area, including for utility diversions and for enabling works.

2.18.11 – the construction and use of site compounds need to be subject to full archaeological assessment and mitigation. The proposed Highways Construction Compound South of Thames and the South Portal Compound (fig 2.2a) overly many undated cropmarks and part of the Gravesend Airfield. Suitable archaeological mitigation is needed prior to these site compounds being established.

### Chapter 5: Environmental Assessment Methodology

Detailed comments are being provided to the LTC team and we welcome the direct liaison regarding the fieldwork proposed and the assessment as it progresses.

### Chapter 7: Cultural Heritage

The rural nature of this scheme significantly increases the risk of encountering as yet unknown archaeology which may be of importance. There are a number of cropmarks south of St Mary's Church which indicate the presence of an extensive multi-period occupation site and post-medieval brick kilns are thought to survive in the former Shorne brickfields. We recommend that fieldwork is needed to support any desk-based assessment for the EIA to clarify the potential for significant buried archaeology along the chosen route, especially of all the cropmarks known within the location of the two site compounds south of the Thames.

In general there is insufficient consideration of the Thames and Medway Canal, 20<sup>th</sup> century defensive lines and Gravesend Airfield, or the Milton Rifle Range; their settings, character and wider landscape context. It will be a requirement to clarify the impact of the scheme on the canal and other “larger heritage assets”, including the airfield and the full historic Cobham Parkland, not just the current designated area.

There is a need for broader and more detailed consideration of impact on historic landscape from lighting. This could be a major harm factor for a variety of receptors, including setting of designated heritage assets, especially listed buildings, and the Grade II\* Cobham Park. In addition, as this scheme runs through a rural area, lighting could have a wider impact on the historic character of the landscape, including the historic marshland and open field system south of the Thames. Mitigation should not just include adding more trees. There needs to be mitigation considered appropriate for open landscapes as “screening” is not necessarily going to be most appropriate and could be detrimental to the significance of some military heritage assets and historic long views from Cobham and Shorne.

Historic landscapes south of the Thames are not fully highlighted as a cultural heritage issue throughout this PEIR. There are considerations of landscape and visual impacts, covering ancient woodland etc, and the setting of Listed Buildings is raised but there is no clarity in how assessment of historic landscapes would be covered. We recommend assessment adheres to the DMRB Volume 11 and associated guidelines and to the 2013 GLVA (although there is a distinct difference between natural landscape assessment and historic landscape assessment.) In addition, the HLC for Kent is not of sufficient detail. We recommend that the assessment for historic landscapes includes a detailed HLC, as recommended by the DMRB. This is particularly needed in view of the green field and rural nature of the scheme.

We welcome the appreciation of the potential impact on marine archaeology from the bridge and immersed tunnel and the acknowledgement that there could be an impact on significant geoarchaeological deposits. We note the proposed programme of geoarchaeological assessment (PEIR chapter 7)

There is no mention of options to consider impact on Bluebell Hill from increased traffic to the M2 from the M20. We welcome this in terms of the potential reduction of impact on the historic environment but maintain that any off-line works to the A229 Bluebell Hill could have a major impact on the historic environment, especially the nationally important Medway Megaliths. The impact of increased traffic between the M20 and M2 as a direct result of the Lower Thames Crossing should be part of the assessment.

5.128 Requirement (p128) I note that the ES will include the results of suitable field evaluation. I would welcome clarification of what is “suitable” field evaluation. I welcome the proposals to undertake geophysical surveying but I recommend there is a need for targeted trial trenching and/or test pitting. Non-intrusive field techniques cannot always clarify date and nature of heritage assets, especially cropmarks. As such some intrusive archaeological fieldworks may be useful.

5.129 Requirement (p128) states that the DBA and Es will provide an assessment of the value of the heritage assets, including descriptions of the nature of their significance. Assessment of the “value” of the heritage assets needs to be based on Historic England national criteria.

7.4.9 The Dairy at Cobham Hall is currently subject to a planning consent for conservation and conversion to residential and works are underway.

7.4.15 There is mention of the Roman Watling Street but there is a need to consider earlier and later use of this routeway along the ridge. There are indications from formal investigations at the A2 Cyclopark, that this route may be of prehistoric origins. There are also indications of this route being important, named post medieval routes, eg telegraph and poll route. I recommend the need for both assessment of archaeological data and documentary data to clarify the multi-period and diverse use of this ridgeline routeway.

It is essential that documentary and cartographic assessment is thorough. Early maps from the Cobham Estate must be an essential information source.

7.5.2 It is essential that the walkover survey includes all the proposed mitigation areas as well as the main scheme. Creation of habitats and receptor site mitigation can have major implications for archaeological mitigation. As such mitigation for natural environment needs to be taken in to account throughout the heritage assessment.

7.5.3 It is not acceptable for the assessment of setting to simply focus on designated heritage assets. It is essential that the setting of all heritage assets is considered, especially in view of the range of heritage assets, from Gravesend Airfield to Historic England identified historic farmsteads. Assessment of the setting of historic assets may well merge with a suitable historic landscape assessment.

#### Table 7.6 Effects and mitigation of key heritage assets south of the River Thames

Receptor: Non-designated heritage assets within the Development Boundary: Potential mitigation south of the Thames will need to be covered by WSIs agreed with the County Archaeologist.

Receptor: Cobham hall registered park and garden – there needs to be consideration of impact beyond the existing northern edge of asset. It is believed Cobham Park extended north of A2 routeway and remains directly associated with the designated parkland, such as earlier park pales or access points, might require mitigation equivalent to its significance.

Receptor: Cobham Hall including Temple, Engine House, Aviary The Dairy The Mausoleum The Mount Bowl Barrow, Romano-British villa and 19<sup>th</sup> century reservoir are an extremely varied collection of heritage assets with different attributes and needs. Mitigation for these heritage assets should not be lumped together. Some of the historic buildings are at a distance and may just require mitigation for visual impact but the Romano British villa is very close to the scheme. There is high potential for associated archaeological remains which could be considered to be of equivalent importance. As such I recommend that the heritage assets within Cobham Hall are dealt with separately.

Receptor: Church of St Mary Chalk – the assessment needs to include impact from increased noise, vibration and lighting during construction and operation. Consideration of



visual screening only is not sufficient. This heritage asset is so close to major works including the tunnel entrance, there needs to be a comprehensive assessment of all possible short term and long term impacts.

Receptor: Tilbury Fort, Gravesend Blockhouse New Tavern Fort - assessment of these designated assets needs to thoroughly consider their function and especially the need for their visual relationships. Sight lines are a key factor in the significance of these assets and “visual screening” is likely to be more harmful.

Receptor: Coalhouse Fort Battery – again assessment needs to thoroughly consider function and especially the need for visual relationships. Sight lines are a key factor in the significance of these military assets and “visual screening” is likely to be more harmful.

Receptor: Cliffe Fort: assessment needs to thoroughly consider function and especially the need for visual relationships. Sight lines are a key factor in the significance of these military assets and “visual screening” is likely to be more harmful.

Other heritage sites requiring greater consideration:

St Thomas' Well – Cobham Park – conserved as part of HS1 works but may now be impacted by new scheme. Need appropriate details of mitigation for this heritage asset.

Chapter 7 baseline heritage assessment does not mention the Thames and Medway Canal, 20<sup>th</sup> century defensive lines or the Milton Rifle Range in sufficient detail. The immersed tunnel may well have an impact on the Thames and Medway Canal and Milton Rifle Range although the details of the impact are not clear at this stage.

In addition, there is no specific mention of historic landscapes assessment for the land south of the Thames in Kent. As this scheme runs through an open landscape there could be major impacts from built development. The landscape approaching the river is rich and distinctive with multi-period sites visible or close to the surface of green fields. This could potentially be highlighted as being of high sensitivity. We recommend the guidance in DMRB Volume 11 on historic landscapes is adhered to. In particular there should be consideration of cumulative impacts and post-operational or long term impacts on this open space east of Gravesend and west of Rochester.

WR Heritage Conservation KCC