East Sussex Highways

EXCEAT BRIDGE REPLACEMENT: NON-STATUTORY ENVIRONMENTAL ASSESSMENT REPORT

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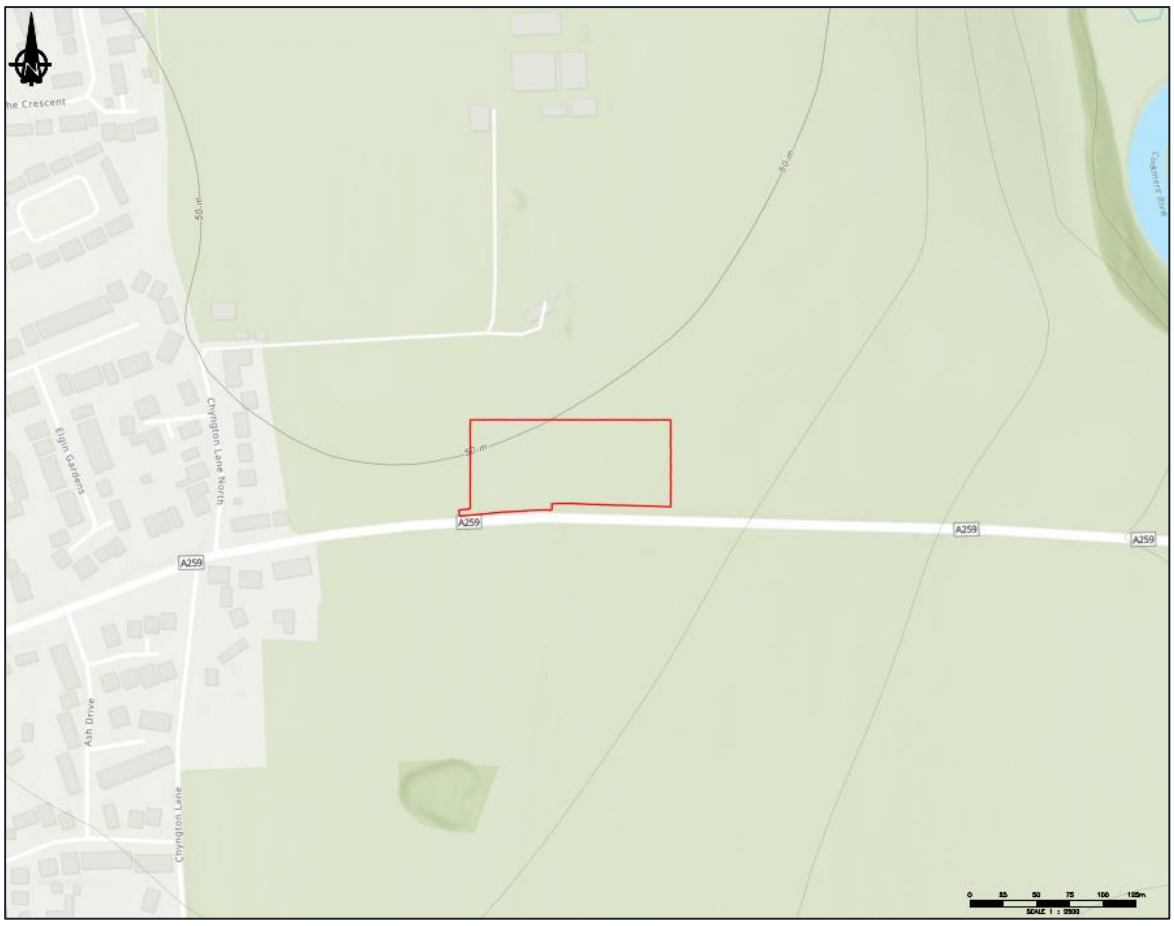
1 INTRODUCTION

1.1.1. The planning application for the construction compound associated with Exceat bridge replacement (Reference: SDNP/21/02342/FUL) was approved July 2023. The initial Environmental Statement (ES) (2021), located the construction compound just west of Seaford, identified as the 2021 Construction Compound (Option A). Subsequently, an ES Addendum (2022) assessed the location of Option A as well as an additional proposed construction compound located adjacent to the Cuckmere River, closer to the Exceat Bridge, named the 2022 Construction Compound (Option B). Following discussions with the landowner of Dymock Farm, the location of Option A was amended and a planning proposal submitted (Reference: SDNP 23_04375), which has now been withdrawn. Further to additional discussion with the landowner of Dymock Farm, the current proposal is for a new alternative location for the construction compound within the same field and closer to the 2021 Option A proposal.

1.1.2. New planning permission is sought for a construction compound proposed to be located approximately 700m northwest of the Exceat bridge, adjacent to the A259 Eastbourne Road. This location has been planned post discussions and preference of the Dymock Farm. The new alternative construction compound location is shown in Figure 1-1.

Figure 1-1 - Location of new alternative construction compound (see drawing 70113821-WSP-GEN-AS-DR-T-3101 P02)



This report is supported by the following appendices:

- Appendix A – Assessment Methodologies taken from the ES (2021);
- Appendix B – Air Quality Assessment;
- Appendix C – Ecology Letter; and
- Appendix D – Biodiversity Net Gain (BNG) Report.

2 PURPOSE OF THIS REPORT

2.1 PURPOSE

2.1.1. Post the publication of ES Addendum (2022), a new separate Planning Application was submitted for an alternative compound location in 2023, the location is further away from Seaford. The approved Planning Application has been withdrawn, and the current proposal is for an alternative construction compound shown in Figure 2-1.

2.1.2. This current Planning Application is for new alternative compound location, closer to the location proposed in ES Addendum.

2.1.3. Having regard to the selection criteria in Schedule 3 of the Environmental Impact Assessment (EIA) Regulations[1], specifically the location, which is very sensitive to change, the types and characteristics of the potential impacts, in particular the nature, complexity, and the spatial extent of those impacts, the South Downs National Park Authority (SDNPA) has adopted the opinion that the new compound does require a level of EIA assessment and consideration.

2.1.4. This technical note documents any changes to the baseline, the impacts and potential significance of effects associated with the compound where not originally captured in the ES Addendum (2022). This note does not intend to duplicate baseline material or assessment aspects captured in the previous assessments. Rather, it will present any deviations identified in the baseline, potential significance of effects and identified mitigation.

2.2 STRUCTURE

2.2.1. The structure of this report following the previous ES (2023) and ES Addendum (2022) and is set out as follows:

- Site Location;
- Overall assumptions the assessments have been founded upon;
- Environment aspect sections which present assessment methodology, baseline conditions, potential effects and their significance of the 2023 compound, mitigation and any residual effects is reported. This report will include the following topics:
    - Geology and Soils;
    - Air Quality;
    - Archaeology and Cultural Heritage;
    - Biodiversity;
    - Climate;

[1] The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (https://www.legislation.gov.uk/uksi/2017/571/contents).

    - Landscape and Visual;
    - Lighting;
    - Noise and Vibration; and
    - Population and Human Health;
- Summary and Conclusions; and
- Supporting Appendices.

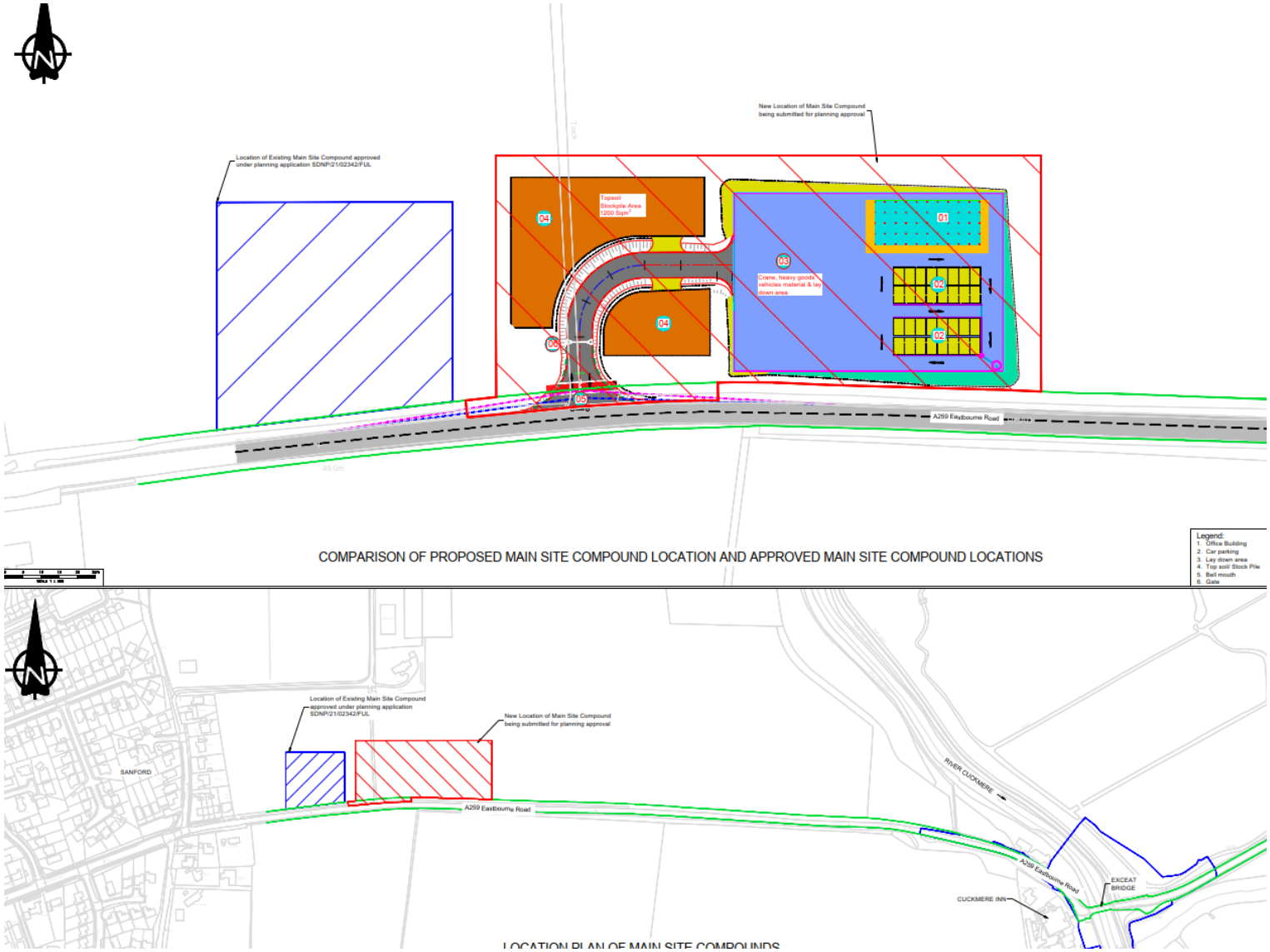


Figure 2-1 - The 2025 revised site for the temporary construction compound location (see drawing 70113821-WSP-GEN-AS-DR-T-3104 P04)

3 SITE LOCATION

3.1.1. The current (2025) site compound is located west of the Exceat bridge and adjacent north of the A259, Eastbourne Road. The compound is situated on arable agricultural land within Dymock farm. The terrain in this location is fairly flat, within South Downs National Park (SDNP) and west of the Cuckmere River and Seaford to Beachy Head Site of Special Scientific Interest (SSSI). A Red Line Boundary (RLB) of the compound is presented in Figure 2-1.

3.1.2. This size is well within the thresholds of Part 10f of Schedule 2 of The Town and Country Planning (Environmental Impact Assessment) Regulations 2017, herein referred to as the EIA Regulations 2017[2].

[2] The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (legislation.gov.uk)

4 ASSUMPTIONS

4.1.1. The assumptions identified for this specific site and assessment are as follows:

- This assessment only considers the potential environmental impacts in regard to the 2025 construction compound. It is assumed all other elements of construction for the wider scheme echo that reported in the ES Addendum (2022) and will not be repeated here.
- The environmental commitments included in the Construction Environmental Management Plan (CEMP) submitted with the ES Addendum (2022) remain valid and unchanged and therefore will not be repeated here. The CEMP has been produced for the entire scheme, however, includes information specific to measures which should be implemented for the site compound construction and temporary operation and decommissioning. Any further measures are detailed within this Environmental Assessment Report.
- The Planning Policy Context outlined in the Environmental Statement, 2021 Section 3.2 remains valid therefore, will not be repeated in this report.
- The baseline conditions documented in the ES Addendum are considered fit for purpose and relevant.
- The assessment methodologies documented in the ES (2021) are considered applicable for this smaller element of the wider scheme. Refer to the ES Sections 7, 8 and 10 for topic specific assessment methodologies and criteria. See Appendix A for details of these assessment methodologies. Assessment methodologies for Landscape and Visual, Noise and Vibration, and Population and Human Health are not within the Appendix as they have been amended for this report.
- The 2025 compound size and arrangement are similar to those compounds assessed in the ES Addendum (2022).

5 GEOLOGY AND SOILS

5.1 BASELINE CONDITIONS

5.1.1. The screening and scoping report[3] provided a summary of the geological and soil conditions for the original scheme boundary. This section updates pertinent information for the revised temporary construction compound location.

SOILS

5.1.2. Provisional agricultural land classification data for the site indicate the land to be of Grade 3 (good to moderate) quality, with no site-specific post-1988 data available. Soilscapes data (Cranfield Soil and Agrifood Institute, 2023) indicate shallow lime-rich soils over chalk or limestone to be present.

GEOLOGY

5.1.3. The following summary is based on a review of the published geology maps (1:50,000 Series mapping, Sheet 319/334 Lewes and Eastbourne (2006)), BGS Geoindex and the Exceat Bridge Ground Investigation Report (GIR) written by Jacobs (report no. 3520000-CH2-EGN-SY2-0129-DO-CE-0001).

5.1.4. The BGS maps indicate that there are no superficial deposits underlying the new proposed site. This concurs with the GIR that encountered Alluvium on the western side of the river but indicates thinning of the Alluvium towards the east, however, the BGS maps are only indicative and there may be Alluvium present. Based on the GIR the Alluvium comprises cohesive and granular deposits with occasional flints and recorded a typical level of top of stratum at 3.7 mAOD (metres Above Ordnance Datum) on the western side of the river, however, the new proposed site location is considerably higher in elevation than this, at approximately 49-50 mAOD. Therefore, it is anticipated that Alluvium will not be encountered at the site compound.

5.1.5. It is anticipated that a thin layer of Made Ground/head deposits will be encountered. This is likely to comprise the constituent of weathered Chalk and clay. There may be a weathered zone and presence of marl bands and beds of flint nodules in the chalk

5.1.6. The solid geology on site is shown to be Newhaven Chalk Formation overlying the Seaford Chalk Formation. The Newhaven Chalk is anticipated to be recovered as a weathered chalk comprising white silty subangular to rounded gravel and cobbles.

5.1.7. The Seaford Chalk Formation that was encountered in the GIR at -1.5 mAOD on the western side of the river and recovered as structureless chalk followed by weathered structured chalk.

GROUNDWATER

5.1.8. The Newhaven Chalk Formation is designated as a Principal Aquifer. This type of aquifer is described as layers of “rock that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow

[3] East Sussex Highways, 2018: Environmental Screening and Scoping Report, SY2-0129. Costain-Jacobs JV, Ringmer.

on a strategic scale". In most cases, Principal Aquifers are aquifers previously designated as major aquifer. The site is not located within a groundwater source protection zone.

5.1.9. Groundwater monitoring data and data from drilling presented in the GIR indicates that the groundwater lies approximately 1.0 mBGL (m Below Ground Level) or 2.5 mAOD and notes that the groundwater level will be affected by tides.

5.1.10. It can be expected that groundwater is lower than 1.0 mBGL at the site location, and if there are any granular superficial deposits on site that perched groundwater may be present.

LAND CONTAMINATION

5.1.11. The geotechnical Preliminary Sources Study Report (PSSR)4 and subsequent ground investigations were prepared based on the original scheme boundary and did not cover the revised temporary construction compound location. However, small-scale historical mapping within the PSSR did include the revised construction compound location, and this indicated that the site has been in agricultural use since the late 1800s, with a low likelihood of potential contamination.

5.1.12. No historical or authorised landfills have been identified within the vicinity of the site either. Notwithstanding, there remains the potential for unexpected contamination from past agricultural activities or localised infilling of land.

UNEXPLODED ORDNANCE

5.1.13. Preliminary and detailed Unexploded Ordnance (UXO) threat and risk assessments were undertaken by 6 Alpha Associates (October 2017 and January 2019) as part of the PSSR and in advance of the 2019 Ground Investigation works. Both assessments found the risk level posed by UXO to be very high. Potential threat sources identified include:

- Abandoned Explosive Ordnance (AXO), Land Service Ammunition (LSA) and Small Arms Ammunition (SAA) associated with former World War II (WWII) military training areas which could be encountered in previously undisturbed ground to approximately 2m below ground level. The possibility of deeper encounters was raised as a result of the potential for removal and replacement of river sediment from tidal action;
- WWI and WWII sea mines;
- German High Explosive (HE) bombs and Incendiary Bombs (IB); and
- British Anti-Aircraft Ammunition.

5.1.14. It is noted that the preliminary and detailed UXO threat assessments were undertaken prior to the identification of the location for the temporary construction compound. Given the very high risk from UXO in the general area of Exceat Bridge, it is probably that a similarly very high risk would apply to the location of the temporary construction compound.

[4] A copy of the PSSR can be provided on request being held by Jacobs.

5.2 POTENTIAL CONSTRUCTION AND OPERATIONAL IMPACTS

5.2.1. The following potential effects could arise as a result during the construction phase due to the formation and operation of the revised temporary construction compound:

- Degradation of soil quality during trafficking, handling and reinstatement.
- Harm to human health and controlled waters arising from the disturbance and mobilisation of unforeseen contamination.
- Harm to human health due to the potential disturbance of UXO.

5.3 MITIGATION

5.3.1. To manage the potential risks identified above, a programme of ground investigations will be carried out to gain certainty on the extent of any contamination and the potential for unstable ground or other ground hazards that could result in adverse effects on resources or receptors (identified above) or affect the design or working methods of the Project. The assessment will include a full risk assessment of UXO. Mitigation measures will be identified to either avoid or reduce any adverse effects or risks identified to an acceptable level. These will be reported in full in a Ground Investigation Report and carried through into Project design, the working methods specification or the CEMP.

5.3.2. The following mitigation measures would be applied to manage the potential risks identified above:

- A further detailed UXO threat assessment should be undertaken where the new construction compound will be carried out[5].
- Suitable construction methods and procedures shall be identified in advance of construction to address any residual risks from UXO.
- An unexpected contamination plan should be developed and implemented on site.
- Protective measures should be put in place to prevent contamination of surface waters or groundwater from run-off or accidental spillages.
- Any contaminated material not suitable for re-use on site should be sent to a suitably licensed waste facility.
- Access routes and construction areas shall be defined in advance and demarcated on site to prevent potential damage to soils and agricultural land within and surrounding the construction compound site.
- The Contractor shall produce and implement a Soil Resource Plan, with soil handling works to be undertaken in accordance with the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites and the Good Practice Guide for Handling Soils in Mineral Workings.
- The rainfall and soil moisture criteria set out in Good Practice Guide for Handling Soils in Mineral Workings shall be adopted to ensure that soils are only handled when they are in a suitable condition. This includes soil moisture tests to determine when soil handling can be carried out.

[5] See CEMP Mat061

- Soils shall be handled using excavators rather than dozers to reduce the potential for compaction. All plant and machinery must be maintained in a good working condition to ensure that soils are stripped correctly.
- The main cause of soil compaction is the traversing of soils with earth-moving machinery and the inherent increased likelihood of adverse soil compaction is the weight (i.e. the contact pressure) of the machinery. To reduce the potential for soil compaction, it is anticipated that the Delivery Partner would utilise the lightest machines as is practicable to undertake all soil stripping and soil handling activity.
- Topsoil and subsoil shall be stripped and stored separately to avoid cross- contamination.
- The soil handling environmental management clauses shall be communicated to all personnel involved in ground works through appropriate toolbox talks setting out the principles of good practice in soil management, the site constraints and objectives, as well as the contents of the Soil Resource Plan.
- The Contractor shall produce and implement a ground reinstatement programme, to return the land to its baseline agricultural quality post-construction.

5.3.3. The unexploded ordnance mitigation, soil resource plan and unexpected contamination plan would be specified by the Delivery Partner to the satisfaction of the SDNPA.

5.4 RESIDUAL EFFECTS

5.4.1. It is considered that with an appropriate CEMP implemented, there will be no significant residual effects on geology and soils during the construction phase of the Project, including the construction compound.

6 AIR QUALITY

6.1.1. An Air Quality Assessment has been undertaken to establish the potential effects of the Project on the air quality at sensitive human health and ecological receptors. The assessment includes the baseline conditions, methodology, potential construction and operational impacts, mitigations and residual effects.

6.1.2. This Air Quality Assessment is appended to this report as Appendix B.

7 ARCHAEOLOGY AND CULTURAL HERITAGE

7.1 BASELINE CONDITIONS

7.1.1. The archaeology and cultural heritage baseline conditions have been updated to incorporate the information for the proposed 2025 compound. The replacement compound is located approximately 40m east of the compound location assessed in the original Heritage Assessment and EIA. The 2025 compound location falls within the wider study area for which archaeological baseline has been established through the previous assessment.

CONSULTATION

7.1.2. The Archaeological Advisor to the Local Planning Authority ('LPA') was consulted by WSP in February through September 2024 requesting the archaeological requirements for the planning permission for the Exceat Bridge Replacement compound location. The LPA Archaeological Advisor has confirmed that the Historic Environment Data submitted under SDNP/21/02342/FUL is sufficient in this instance to inform the heritage baseline of this application (Griffin, N., 23/05/2024, pers. comms.). The LPA confirmed that a programme of archaeological works, required in advance of the construction compound, was secured through pre-commencement conditions 15 and 23 of the consent granted under SDNP/21/02342/FUL and that the following requirements would still apply:

- Archaeological Evaluation taking the form of an archaeological evaluation consisting of a 5% sample of the site.
- Archaeological Evaluation report, publishing a report on the findings and archiving the material generated by the project with the local museum.
- Based on the results of the archaeological evaluation archaeological mitigation may be required prior to the construction of the compound
- WSP undertook further consultation with the LPA Archaeological Advisor in May 2024 in which it was confirmed that geophysical survey was not suitable for a site of this scale and that 6 No. archaeological trial trenches, equivalent to 5.6% evaluation coverage, would sufficiently characterise the archaeological potential of the site and remove the need for a geophysical survey (pers. comms.). The LPA Archaeological Advisor confirmed in September 2024 that the written scheme of investigation, (WSI), could be secured through condition and was not a determination requirement of the application (Griffin, N., 05/09/2024, pers. comms.).

BUILT HERITAGE ASSETS

7.1.3. No further Built Heritage Assets have been identified or designated within the study area. The baseline conditions previously described remain unchanged.

ARCHAEOLOGICAL REMAINS

7.1.4. The baseline conditions of archaeological potential for the replacement compound remain consistent with the assessment undertaken for the initial EIA. The Site has moderate potential for archaeological remains dating to the prehistoric, Roman, medieval, post-medieval and modern periods. This remains unchanged.

7.2 POTENTIAL CONSTRUCTION AND OPERATIONAL IMPACTS

BUILT HERITAGE ASSETS

7.2.1. The construction compound will not have physical impacts on any designated or non-designated Built Heritage Assets.

7.2.2. The EIA has assessed that the construction and operational of the construction compound will result in no change to the setting or significance of the Listed Buildings within the study area. The change of location of the construction compound 40m east of the original location does not change this assessment and therefore the construction and operational of the construction compound will result in no change to the Listed Buildings within the study area.

ARCHAEOLOGICAL REMAINS

7.2.3. There will be no effect on any Scheduled Monument by the Project. There is one Scheduled Monument within the study area, which is sufficiently removed from the Project such that there will be no change to its setting or significance. This remains unchanged.

7.2.4. Impacts from the Project on non-designated archaeological remains are most likely to occur from groundwork in areas of new land take. This will comprise construction activities related to the creation of the construction compound and potential impacts on archaeological remains:

- The construction compound will be stripped of topsoil and a small amount of subsoil prior to laying down a geotextile material and a working surface of crushed stone. It is unlikely that this work would fully expose or remove any archaeological remains which may be present but damage to underlying archaeological remains may occur through partial exposure/removal during works or compaction.
- No archaeological remains are recorded at the proposed construction compound location but there is the potential for groundworks to impact unknown archaeological remains, if present. Any activity that results in the complete truncation or removal of archaeological remains will constitute a major impact. Where this results in less than total removal of the remains this will constitute a moderate impact.

7.2.5. The magnitude of effect of construction impacts will be contingent on the heritage value of any remains present. The heritage value of any potential archaeological remains within the construction compound is contingent on their character, age and survival. Any unknown archaeological remains would have to be of moderate heritage value for a moderate magnitude of effect, and therefore significant effect in EIA terms.

7.3 MITIGATION

BUILT HERITAGE ASSETS

7.3.1. As no significant effect is anticipated to designated or non-designated heritage assets no mitigation is required.

ARCHAEOLOGICAL REMAINS

7.3.2. The LPA has approved a programme of archaeological trial trench evaluation to assess archaeological potential and characterise any as yet unknown remains. This will allow an appropriate strategy to be put in place to mitigate the impact of the construction compound should

remains of sufficient significance be present. The archaeological evaluation would be delivered through compliance with Written Scheme of Investigation (WSI) that sets out this scope and method for the investigation. The WSI and the required archaeological investigation will be secured through planning conditions as was the case for the previous consent. The following programme has been approved by the LPA:

- Archaeological trial trenching of the construction compound consisting of 6no 30m x 1.8 trenches equivalent to 5.6% of the site. This archaeological evaluation will be undertaken sufficiently in advance of the construction to allow for subsequent mitigation, if required, to be completed in advance of construction commencing.
- The scope of the archaeological evaluation and reporting will be defined in a WSI to be submitted to the East Sussex County Archaeologist for approval in advance of the archaeological evaluation.

7.3.3. The following will be secured through compliance with the CEMP to ensure minimal impact in the construction phase:

- Construction plant: The use of low compaction plant over areas of wet ground.
- Fencing: Areas outside the footprint of the works would be temporarily fenced to demarcate the works boundary.

7.4 RESIDUAL EFFECTS

BUILT HERITAGE ASSETS

7.4.1. The construction compound will result in no change any designated or non-designated built heritage assets, either through physical impact or change to setting. Therefore, no significant residual effects on Built Heritage assets are anticipated.

ARCHAEOLOGICAL REMAINS

7.4.2. There will be no residual effect on the Scheduled Monument.

7.4.3. Impacts from the construction compound resulting from groundworks are anticipated to range from partial removal, a moderate impact, and total removal, a major impact. The programme of archaeological evaluation will allow the characterisation of the heritage value of any potential archaeological remains and mitigate the impact of construction through preservation by record. While the loss of any remains will still represent an impact, the severity of the impact will be reduced. It is anticipated that the residual effects on archaeological remains will be minor to moderate, contingent on the value of any remains encountered.

8 BIODIVERSITY

8.1.1. An ecological assessment has not been undertaken for the new Exceat Bridge Compound location. This is because the habitat and zone of influence[6] identified in the approved planning application SDNP/21/02342/FUL is the same for this proposed location. For further information please refer to the Ecology letter in Appendix C.

8.2 BIODIVERSITY NET GAIN METRIC

The requirement for Biodiversity Net Gain (BNG) was introduced to the development planning system under Part 6 of the Environment Act 2021 and is further required under the National Planning Policy Framework (NPPF). This Project has undertaken the requirement to ensure a provision of betterment. The requirement for this planning application has arisen from the relocation of construction compound associated with the Exceat Bridge Replacement development, which has been subject to a previous planning application.

The location of the 2021 construction compound featured in the Exceat Bridge Replacement development application and the 2025 compound are within the same field, but proposing to take the similar area and habitat types of the same condition and distinctiveness. See Appendix D for the BNG report for the new compound location.

[6] the 'zone of influence' has been defined as an area over which ecological features may be affected as a result of the construction compound and associated activities
during construction or operation. The zone of influence varies for different impacts and may extend beyond the construction compound boundary.

9 CLIMATE

9.1 BASELINE CONDITIONS

9.1.1. The Met Office data for Southern England details the baseline climate conditions for the area around Exceat Bridge. The mean annual temperatures along the coast is 9.5 ºC, and January is the coldest month. July is the warmest month in the region with average temperatures of 21 ºC. Extreme maximum temperatures occur in July and August and are often associated with heat waves that last several days. A high of 35.4 ºC was recorded in North Heath, West Sussex on 26 June 1976. In winter, coastal areas are milder than inland but can have cold winds and gale conditions. The south coast is one of the sunniest places in the UK, with average annual sunshine durations exceeding 1,800 hours with the highest hours recorded in Eastbourne. The South Downs have an average rainfall of 950 mm per year and periods of prolonged rainfall can cause localised flooding, as can be seen in the area surrounding Exceat Bridge.

9.1.2. It is anticipated that as a result of global climate change, the weather in the Project area will become gradually warmer and wetter with more frequent extreme weather events over time.

9.1.3. The Project is located within a Flood Zone 3. This indicates that the land has been assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.

9.1.4. The Flood Risk Assessment carried out for the Project notes that there have been 28 flood alerts for the River Cuckmere in the last 5 years, with flooding being present for several months in some years. Fluvial and coastal flooding are the primary sources of flooding in this area.

9.1.5. It is anticipated that flooding is likely to increase locally as a result of climate change, as reflected in the EA flood management strategy, Natural England aspirations for the SSSI and SDNP management aspirations for the Seven Sisters Country Park, all of which encompass a change towards a more naturally functioning flood plain in the lower reaches of the Cuckmere valley.

9.2 POTENTIAL CONSTRUCTION AND OPERATIONAL IMPACTS

9.2.1. The development of Exceat Bridge requires a construction compound to facilitate the works safely. Therefore, the overall climate and carbon assessments need to be considered as a whole. The proposed location and scale of the construction compound in the ES (2021) has changed, therefore this section provides an assessment of Greenhouse Gas (GHG) emissions and impacts associated with the updated design of the construction compound.

CONSTRUCTION GREENHOUSE GAS EMISSIONS

9.2.2. The ES Addendum (2022) retained observations from the ‘April 2021 ES’ for development of Exceat Bridge, which reported that approximately 62% of GHG emissions would be associated with the transport of materials and construction plant. Whilst operational emissions would amount to 38%. The ES recorded the following estimated emissions:

- Construction transport: 424 tCO2e
- On-site operations: 266 tCO2e
- Total: 690 tCO2e

9.2.3. The pre-construction carbon assessment presented in Appendix 10 of the ES (2021), was also referenced in the ES Addendum (2022), which assessed the design of the bridge in terms of materials to be used as 1,189 tCO2e. The combined carbon emissions from construction traffic and the raw materials used for construction of the Project was calculated to total approximately 1,880 tCO2e. Based on the criteria used to determine significance for GHG emissions in the ES (2021), this is both less than 1% of the UK national carbon budget of 1,950 million tCO2e and less than 25,000 tCO2e in any year, thereby constituting an impact of low magnitude, which was identified as not significant.

Revised Construction Compound Location

9.2.4. For the updated construction compound location there would be no change to the GHG emissions identified for construction traffic or on-site operations in the ES Addendum (2022); however, it is noted that the pre-construction carbon assessment for the bridge design (Appendix 10 of the ES (2021)) does not refer to materials used for the construction compound. Therefore, as a precautionary approach additional assessment of GHG emissions for construction and decommissioning of the updated construction compound is provided here, based on the following assumptions:

- An indicative area for the construction compound of 9,000 m2, including the access road.
- A high-level estimate of material quantities used in construction, consisting of granular fill from 0.4 m to 0.7 m depth (for the access road and compound area respectively), geotextile membrane liner and an approximate thickness of asphalt for the access road of 0.3 m depth.
- Excavated material will be retained and used to restore the location of the construction compound to its former state after the construction phase for the Project is complete.
- On completion of the Project construction phase, the construction compound will be decommissioned and materials used for its construction will be removed and disposed in landfill (excluding temporary buildings on-site assumed to be reused on other projects), noting also that the majority of the associated waste material is considered to be inert with limited GHG emissions other than transportation for disposal.

9.2.5. The following is an estimate of the additional GHG emissions for the updated construction compound:

- Materials for construction: 90 tCO2e
- Transport and disposal of decommissioned materials: 120 tCO2e
- Total for Construction Compound: 210 tCO2e

9.2.6. Accounting for the additional GHG emissions estimated for the construction compound at the revised location, the combined GHG emissions for the construction phase of the Project would total 2,090 tCO2e (for construction traffic, on-site operations, materials for the bridge and construction/decommissioning of the construction compound). This remains less than 1% of the national carbon budget of 1,950 million tCO2e and less than 25,000 tCO2e in any year, so there would be no change in relation to the assessment criteria that GHG emissions for the construction phase of the Project constitute an impact of low magnitude, identified as not significant.

CLIMATE CHANGE VULNERABILITY

9.2.7. The construction compound would be located beyond the floodplain and is not considered unduly vulnerable to climate change. On site construction operations would however be more vulnerable to climatic factors. Consequently, there would be no storage of materials beyond that for immediate use within the floodplain7.

9.3 MITIGATION

9.3.1. While there are no specific mitigation measures identified to reduce GHG emissions in relation to the construction compound, the following measures identified in the ES Addendum (2022) are considered relevant to reducing the effect of GHG emissions for the overall construction phase of the Project, which are set out in the CEMP:

- Power generation: Alternatives to diesel would be sought by the delivery partner[8] which would include:
  - Grid connection for the provision of power to site welfare and facilities.
  - An off-grid power supply integrating solar and battery with back-up diesel.
  - Hybrid generators with supporting battery.
- Welfare: Low carbon alternatives to traditional diesel generator powered welfare facilities would be determined by site requirements and constraints[9], with a preference to utilise hydrogen, solar or grid power over diesel. An example includes the Ecosmart ZERO CO2 welfare unit which utilises solar energy.
- Lighting: Where possible, site and task lighting would be provided by non-diesel sources[10] with solar tower lighting being a preferred solution although hybrid tower lighting could be used.
- Electric vehicle charging points: At least one electric vehicle charging station would be provided[11] in accordance with SD22.2 and SD48.3 regulations from SDNPA. A standard 7.2 kW pedestal charger is recommended.
- Plant and power tools: Where feasible and allowable within the constraints, electric (or hydrogen where commercially available) plant and equipment would be selected[12].
- Clean Heavy Goods Vehicles for transport: The use of zero (BEV or FCEV) or low emissions (hybrid) transport for materials would be used where commercially available. The supply chain would be made aware of this requirement during the procurement process[13].
- Biodiesel: The delivery partner would be expected to encourage the supply chain to maximise use of blended diesel with the highest possible content of biodiesel (high grade) for all construction plant and equipment where there is not a commercially available low-carbon alternative[14].

[7] See CEMP clause Wat008
[8] See CEMP clause Glen033
[9] See CEMP clause Gen034
[10] See CEMP clause Gen035
[11] See CEMP clause Gen036
[12] See CEMP clause Gen037
[13] See CEMP clause Gen038
[14] See CEMP clause Gen039

- Transport logistics: Materials would be locally sourced to reduce vehicle journey time where commercially acceptable. Similarly, licensed waste disposal contractors from the local area would be used where commercially acceptable[15].
- Carbon reduction plan: The delivery partner would be required to develop a carbon reduction plan and direct their supply chain to:
  - Reduce energy use and associated GHG emissions.
  - Select low carbon materials.
  - Reduce the amount of virgin materials used in operations.
  - Reduce waste arisings including the amount sent to landfill.
  - Monitor fuel use on site.
  - Train plant operatives in fuel efficient driving techniques[16].

9.3.2. The materials with the greatest influence on GHG emissions are steel, concrete and hot rolled asphalt. As the selection and procurement of materials are commercial matters for the delivery partner, the carbon reduction plan would address how to lower the temperature of asphalt and use a lower carbon cement and GEOfoam for example.

9.3.3. The delivery partner would be requested to provide a baseline estimate of carbon emissions associated with construction of the proposed Project and then record in the CEMP those actions taken to reduce the amount of carbon emissions by 10%.

9.3.4. Table 9-1 below provides a list of potential carbon reduction measures identified in the ES Addendum (2022) that the delivery partner would explore and record their contribution towards achieving the target reduction in carbon emissions during construction works. The delivery partner would be requested to submit this table as part of the CEMP to demonstrate its commitments to reduce carbon[17].

9.3.5. While the National Highways carbon reporting tool is intended for National Highway Schemes, the delivery partner would be requested to provide six monthly returns to East Sussex Highways Authority to demonstrate progress in reducing carbon emissions.

[15] See CEMP clause Mat067
[16] See CEMP clause Gen038, Gen039
[17] See CEMP clause Gen040, Gen041

Table 9-1 - Potential carbon reduction measures

Objective		10% reduction from baseline			
Baseline		<XX> t/CO_2e/km <XX> t/CO_2e/£M		**Target**	<XX> t/CO_2e/k <XX> t/CO_2e/£
Carbon reduction measures					
Action	**Adopt**	**Targeted savings** t/CO2e/km	**Targeted savings** t/CO2e/£M	**Owner**	**Assumptions, uncertainties a risks to delive**
Reduced sheet steel piling	<Y/N>				
Reuse of steel	<Y/N>				
Reduced use of concrete	<Y/N>				
Use of gabions as retaining walls	Not permitted				
Reduce excess procurement	<Y/N>				
Local sourcing of materials	<Y/N>				
Use of recycled plastic products	<Y/N>				
Use of GEOfoam alternative to piling	<Y/N>				
Community re-use of surplus materials	<Y/N>				
Local recycling of materials	<Y/N>				
Local waste disposal	<Y/N>				
Onsite concrete crushing	<Y/N>				
Procurement of green energy	<Y/N>				
Compound energy management system	<Y/N>				
Compound solar energy	<Y/N>				
Compound flywheel energy storage	<Y/N>				
Electric site vehicles	<Y/N>				
Electric site plant	<Y/N>				
Hydrogen site plant	<Y/N>				
Driver behaviour	<Y/N>				
Foam mix tarmac	<Y/N>				
Low temperature tarmac	<Y/N>				
Low carbon flood lighting	<Y/N>				
Environmental Monitoring and Inspections					
Action		**Frequency**		**Owner**	**Reporting**

9.4 RESIDUAL EFFECTS

9.4.1. The construction compound at the revised location does not give rise to significant impacts from GHG emissions.

10 LANDSCAPE AND VISUAL

10.1 ASSESSMENT METHODOLOGY

10.1.1. The assessment methodology has been developed from DMRB LA 107 Rev 2 Landscape and visual effects (Highways England, 2020b) and the 'Guidelines for Landscape and Visual Impact Assessment (GLVIA) Third Edition, Landscape Institute (LI) and Institute of Environmental Management and Assessment (IEMA and LI, 2013). The Landscape and Visual Impact Assessment (LVIA) has identified and assessed the significance and the effects of change from the proposed construction compound on the landscape as a resource, and people's views and visual amenity.

10.1.2. For this study, Table 10-1and Table 10-2 present the definitions of the sensitivity of the landscape to change and the magnitude of impact on landscape respectively. Table 10-3 present the definitions of the sensitivity of views to change, and the magnitude of impact on views. Table 10-4 presents the significance of effect based on value of receptor and magnitude of impact.

Table 10-1 - Landscape sensitivity and typical descriptions ere

Landscape sensitivity	Typical description
Very high	Landscapes of very high international/national importance and rarity or value with no or very limited ability to accommodate change without substantial loss/gain (i.e. national parks, internationally acclaimed landscapes – UNESCO World Heritage Sites)
High	Landscapes of high national importance containing distinctive features/elements with limited ability to accommodate change without incurring substantial loss/gain (i.e. designated areas, registered parks and gardens, country parks)
Medium	Landscapes of local or regional recognition of importance able to accommodate some change (i.e. features worthy of conservation, some sense of place or value)
Low	Local landscape areas or receptors of low to medium importance with ability to accommodate change (i.e. non-designated or designated areas of local recognition or areas of little sense of place)
Negligible	Landscapes of very low importance and rarity able to accommodate change

Table 10-2 - Magnitude and nature of impacts on the landscape and typical descriptions

Magnitude of impact		Typical description
Major	Adverse	Total loss or large-scale damage to existing landscape character or distinctive features or elements; and/or addition of new uncharacteristic, conspicuous features or elements
	Beneficial	Large scale improvement of landscape character to features and elements; and/or addition of new distinctive features or elements, or removal of conspicuous elements
Moderate	Adverse	Partial loss or noticeable damage to existing landscape character or distinctive features or elements; and/or addition of new uncharacteristic, noticeable features or elements
	Beneficial	Beneficial Partial or noticeable improvement of landscape character by restoration of existing features or elements; or addition of new characteristic features or elements or removal of noticeable features or elements
Minor	Adverse	Slight loss or damage to existing landscape character of key features and elements; and/or addition of new uncharacteristic features and elements
	Beneficial	Slight improvement of landscape character by the restoration of key existing features and elements; and/or the addition of new characteristic features
Negligible	Adverse	Very minor loss, damage or alteration to existing landscape character of one or more features and elements
	Beneficial	Very minor noticeable improvement of character by the restoration of one or more existing features and elements
No change		No noticeable alteration or improvement, temporary or permanent, of landscape character of existing features and elements

Table 10-3 - Visual sensitivity (susceptibility and value) and typical descriptions

Visual sensitivity	Typical description
Very high	• Static views from and of major tourist attractions • Views from and of very important national/international landscapes, cultural/historical sites (e.g. National Parks, UNESCO World Heritage sites) • Receptors engaged in specific activities for enjoyment of dark skies
High	• Views by users of nationally important Public Rights of Way (PRoW) / recreational trails (e.g. national trails, long distance footpaths) • Views by users of public open spaces for enjoyment of the countryside (e.g. country parks) • Static views from dense residential areas, longer transient views from designated public open space, recreational areas • Views from and of rare designated landscapes of national importance
Moderate	• Static views from less populated residential areas, schools and other institutional buildings and their outdoor areas • Transient views from local/regional areas such as public open space, scenic roads, railways or waterways, users of local/regional designated tourist routes of moderate importance • Views from and of landscapes of regional importance
Low	• Views by users of main roads or passengers in public transport on main arterial routes • Views by indoor workers • Views by users of recreational/formal sports facilities where the landscape is secondary to enjoyment of the sport
Negligible	• Quick transient views such as from fast moving vehicles • Views from industrial area, land awaiting re-development • Views from landscapes of no importance with no variety or distinctiveness

Table 10-4 - Significance of effects based on value of sensitivity of the receptor and the magnitude of impact

Magnitude of visual impact	Sensitivity				
	Very high	High	Medium	Low	Negligible
Major	Very large	Large/ Very large	Large/ Moderate	Slight/ Moderate	Slight
Moderate	Large/ Very large	Large/ Moderate	Moderate	Slight	Slight/None
Minor	Large/ Moderate	Moderate/Slight	Slight	Slight/None	Slight/None
Negligible	Slight	Slight	None/Slight	None/Slight	None
No change	None	None	None	None	None

10.2 BASELINE CONDITIONS

10.2.1. The proposed Exceat Bridge 2025 compound lies north of the A259 within an arable field, being located approximately 150m East of the properties on Chyngton Lane and 700m West from the current bridge over the Cuckmere River.

LANDSCAPE CHARACTER

10.2.2. For the purposes of this assessment, the landscape has been further broken down into local landscape character units (LCUs). The proposed 2025 compound falls within the South Downs National Character Area (NAC 125). On a local level the proposed construction compound sits entirely under landscape character unit (LCU) 4 valley sides – arable which is characterised by thicker soils on the shallow valley sides which support predominantly arable farmland, comprising large, 20th century fields. The fields represent extensive re-organisation of the landscape from the historic pattern. The sensitivity of LCU4 is considered to be low.

LANDSCAPE ELEMENTS

10.2.3. The construction compound is located within the SDNP. National Parks are recognised as landscapes of exceptional beauty, fashioned by nature and the communities which live in them. Therefore, the sensitivity of the SDNP to change is very high.

10.2.4. The Seven Sisters Country Park is made up of chalk cliffs, the meandering River Cuckmere valley and open chalk grassland. It is a popular place for outdoor activities including walking, bird watching, cycling, canoeing and paddle boarding, therefore, the sensitivity of the Country Park is high.

PERCEPTUAL QUALITIES

10.2.5. The construction compound is located within large, 20th century arable fields which represent extensive re-organisation of the landscape from the historic pattern. Therefore, it is considered that for this location time depth has a low sensitivity.

10.2.6. In May 2016 the SDNP became an International Dark Sky Reserve (IDSR). The construction compound lies within the Transition Zone of the dark night skies area therefore is considered to have a high sensitivity.

10.2.7. The busy nature of the Exceat area, and the noise and visual intrusion of the traffic on the A259, contrasts with that of the surrounding area. It is the hub from which paths radiate out into the surrounding, quieter landscape. The tranquillity of the compound area therefore has low sensitivity to change.

VISUAL BASELINE CONDITIONS

10.2.8. For people in vehicles and buses using the A259 there are partial and oblique views of the compound, due to scrub growing along the side of the road. Drivers are primarily interested in getting to their destination rather than appreciating their surroundings. Passengers, particularly on the top deck of buses, have more time to look around and appreciate their surroundings. People in vehicles and buses therefore have low to medium sensitivity to change.

10.2.9. Cyclists on National Cycle Route 2 have views of the construction compound largely enclosed by vegetation with glimpses and broader views of the wider landscape from some locations, mostly during winter and so they have a medium sensitivity to change.

10.2.10. Residents of the Chyngton Lane North (eastern side), Dymock Farm and Hill House live on the suburban edge of Seaford will experience long distance views across a farmed rural landscape towards construction compound. Residents are likely to be living in the location at least partly because of the setting and therefore have a high sensitivity to change.

10.3 POTENTIAL CONSTRUCTION AND OPERATIONAL IMPACTS

LANDSCAPE CHARACTER

10.3.1. During the 18-24 months (Commencing September 2025) of the works, large construction plant, site fencing, site facilities and stored materials will be apparent in the landscape at the construction compound which is located in an area of relatively flat arable land north of the A259.

10.3.2. The construction compound although located in an open arable field and partially hidden from view by the roadside hedge and landform will create noticeable damage to the existing landscape

character having a moderate impact on the landscape character unit, which has a Low sensitivity to change resulting in an effect of slight adverse significance for 18-24 months.

LANDSCAPE ELEMENTS

10.3.3. The construction compound will affect a very small part of the National Park and Country Park for a limited period of 18-24 months, because of the introduction of urban elements into the rural landscape. Therefore, it is envisaged that the construction compound will have an impact of negligible magnitude on the National Park as a whole, which has a very high sensitivity to change resulting in an effect of slight adverse significance.

10.3.4. The construction compound will have an impact of negligible magnitude on the Seven Sister Country Park, which has a high sensitivity to change resulting in an effect of slight adverse.

PERCEPTUAL QUALITIES

10.3.5. The construction works will only have a duration of 18-24 months and so have an impact of Negligible magnitude on the landscape, resulting in an effect of none/slight adverse significance.

10.3.6. The construction compound will be present only temporally and the works will be taking place during the daytime except for the lifting of the main girders of the bridge. The lighting requirements for the construction compound will have an overall negligible impact on the dark night skies that has a high sensitivity, resulting in a slight adverse effect. It will sit along the busy and noisy A259 and will have a negligible impact on tranquillity that has a low sensitivity, resulting in a none/slight adverse effect.

POTENTIAL VISUAL CONSTRUCTION IMPACTS

10.3.7. Vehicle users will have a glimpse of the construction compound for short periods only as the traffic moves past. The magnitude of the impact will be negligible adverse on users who have low to medium sensitivity to change resulting in an effect of none to none/slight adverse.

10.3.8. Cyclists along NCR2 will have a glimpse of the construction compound for short periods only as the traffic moves past. The Magnitude of the impact will be negligible adverse on users who have medium sensitivity to change resulting in an effect of none/slight adverse.

10.3.9. Residents of Chyngton Lane North, Dymock Farm, Hill House will have views where the construction compound would be a noticeable feature of the view which is readily apparent to the receptor, therefore the magnitude of effect will be minor-moderate adverse. The high sensitivity of the residents combined with a minor-moderate magnitude of impact results in a slight-moderate adverse effect.

POTENTIAL LANDSCAPE AND VISUAL OPERATION IMPACTS

10.3.10. It is envisaged that when the works have been completed the area where the 2025 compound is located will be reinstated to its original condition. There will therefore be no landscape and visual operational impacts.

10.4 MITIGATION AND RESIDUAL EFFECTS

The approach to the Project design has been to incorporate enhancement measures, and to design-out the need for mitigation wherever possible by incorporating ways to eliminate, reduce or manage adverse impacts within the Project design for example to locate the construction compound away from receptors, minimising the need for mitigation. Therefore, there are no significant construction or

operation adverse effects associated with the construction compound of Exceat Bridge Replacement project.

11 LIGHTING

11.1 ASSESSMENT METHODOLOGY

11.1.1. The management of lighting should ensure any lighting proposed during construction complies with SDNP requirements and / or industry best practice, whichever is more stringent at the time of writing. The impact of artificial light at night (ALAN) should be minimised on the SDNP during construction.

11.1.2. The Dark Skies Policy is seen as one of the perceptual qualities of the landscape where it was recognised as being of high sensitivity to change.

11.2 POTENTIAL CONSTRUCTION AND OPERATIONAL IMPACTS

11.2.1. As the proposed Project is situated within the SDNP and as poorly directed lighting can have an adverse effect upon local ecology, reflecting upon the SSSI status of the works site, controls would be placed upon construction lighting via the CEMP for the main works. Refer to CEMP Cl Land053.

11.2.2. The construction compound is anticipated to operate between 08:00 and 18:00 during which time plant maintenance and possibly small-scale fabrication works may take place to minimise fabrication tasks within the works site.

11.2.3. Consequently, the illumination of the construction compound is anticipated to be a matter to be agreed between the delivery partner and the SDNPA in accordance with the CEMP for the main works. Refer to CEMP Cl Land051.

11.3 MITIGATION

11.3.1. It is envisaged that the lighting around the perimeter of the compound shall be low level bulkhead lighting where required for safety and security purposes. Task lighting will likely be spotlights attached the offices/welfare units. During winter low light hours, temporary lighting towers may be used to illuminate the working area and the relevant areas of the compound. Lighting will be located strategically to illuminate only the areas required up to 18.00, lighting after this time will be agreed with the LPA.

11.3.2. The lighting shall be designed in accordance with the Institution of Lighting Professionals Guidance Note 01 ‘The Reduction of Obtrusive Light’. An E1 Environmental Zone shall be used as the baseline design parameter to reduce the effects of ALAN (Artificial Light at Night) associated with external lighting for the works compound. E1 zone is applicable due to the works compound being located within the SDNP

11.3.3. The following basic lighting equipment measures shall be applicable to all external lighting associated with the works compound where practicable:

- Have a ULR (Upward Light Ratio) of zero and be downward pointing to minimise skyglow and reduce the spread of light outside of the compound boundary
- Be of a colour temperature of 3000k or less
- Be the minimum levels of illumination required by the relevant British Standards and for the safety of site personnel

11.3.4. To achieve the ecological and Dark Skies Area objectives the following controls will be placed on the lighting design for the Main compound.

- All lighting to be orientated so that illumination of the Cuckmere River and SSSI beyond the compound is restricted to that which is absolutely necessary for workforce safety
- All work site lighting to be extinguished before 08:00 and 18:00 Some lighting may be required during winter low-light hours for security purposes however, consideration will be given to the site being in a Dark Skies Area to ensure the impact of light pollution is minimised impact.
- A lighting strategy plan will be prepared and submitted to SDNPA for approval prior to the commencement of works in accordance with the CEMP for the main works. Refer to CEMP Cl Land051.
- The Environmental Manager is to inspect the location and orientation of the construction lighting prior to its deployment to ensure the above objectives have been met.
- Weekly inspection of the location and orientation of the lighting shall be undertaken by the Environmental Manager to address any inadvertent or temporary repositioning of the equipment in accordance with the CEMP for the main works. Refer to CEMP Cl Land051.

12 NOISE AND VIBRATION

12.1 ASSESSMENT METHODOLOGY

12.1.1. The elements covered and the assessment methodologies used for the noise and vibration assessment of the construction compound are summarised in Table 12-1.

Table 12-1 - Construction compound assessment methodologies

Topic	Methodology
Construction compound noise	Design Manual for Roads and Bridges, LA 111 revision 2, Highways England, May 2020 (LA 111); and British Standard BS 5228-1:2009+A1:2014, *Code of practice for noise and vibration on construction and open sites – Part 1: Noise*, BSI (BS 5228-1)
Construction compound vibration	LA 111; and British Standard BS 5228-1:2009+A1:2014, *Code of practice for noise and vibration on construction and open sites – Part 2: Vibration*, BSI (BS 5228-2)

12.1.2. Further details for each methodology are set out in the following sections.

12.1.3. A summary of the magnitude of the impacts, identified mitigation measures and resulting significance of residual effects, is provided at the end of this Chapter.

POLICY

National Planning Policy Framework (NPPF), 2023

12.1.4. A revised version of the 2012 NPPF document was published in December 2024, which sets out the Government's planning policies for England and supersedes a number of previous Planning Policy Guidance Notes and Planning Policy Statements. Whilst the reference to noise within the NPPF is minimal, there are references to noise in section 15 entitled Conserving and Enhancing the natural environment.

12.1.5. Relevant to noise and the development proposals, the document states:

191. Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and

c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation

See Explanatory Note to the Noise Policy Statement for England (Department for Environment, Food & Rural Affairs, 2010)."

Noise Policy Statement for England (NPSE)

12.1.6. The Noise Policy Statement for England (NPSE) was published on 15 March 2010. It sets out the long-term vision of government noise policy, to promote good health and a good quality of life through the management of noise.

12.1.7. The policy ensures that noise issues are considered at the right time during the development of policy and decision making, and not in isolation. It highlights the underlying principles on noise management already found in existing legislation and guidance. The NPSE should apply to all forms of noise including environmental noise.

12.1.8. It sets out the long-term vision of Government noise policy as follows:

"Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development."

12.1.9. This long-term vision is supported by the following aims:

"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- *avoid significant adverse impacts on health and quality of life;*
- *mitigate and minimise adverse impacts on health and quality of life; and*
- *where possible, contribute to the improvement of health and quality of life."*

12.1.10. To assist in the understanding of the terms "significant adverse" and "adverse", the NPSE acknowledges that there are two concepts that are currently being applied to noise impacts, for example, by the World Health Organisation (WHO). They are:

- NOEL - No Observed Effect Level - This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.
- LOAEL - Lowest Observed Adverse Effect Level - This is the level above which adverse effects on health and quality of life can be detected.

The NPSE introduces a third concept that it describes as a significant observed adverse effect level:

- SOAEL - Significant Observed Adverse Effect Level - This is the level above which significant adverse effects on health and quality of life occur.

Planning Practice Guidance Noise

12.1.11. Last updated on 9th May 2019, this web-based resource was issued for use by the Department for Communities and Local Government (DCLG). The purpose of this guidance is to complement the NPPF and provide advice on how to deliver its policies.

STUDY AREA

12.1.12. In accordance with LA 111, the study area for construction noise covers a distance of 300m from the construction compound red line boundary.

12.1.13. For construction vibration, the study area covers a distance of 100m from the construction compound red line boundary.

BASELINE DATA COLLECTION METHOD

12.1.14. The methods contained in BS 7445-1:2003: 'Description and measurement of environmental noise: Guide to quantities and procedures' (BSI, 2003), which sets out the requirements of the noise measurement equipment for environmental noise surveys, the type of location to be used for environmental measurements and the requirement to record the environmental conditions under which measurements are taken, has been followed for the measurement of baseline environmental noise.

CONSTRUCTION NOISE ASSESSMENT METHOD

12.1.15. The methods of BS 5228-1 have been used for the assessment of construction noise, as advised for use in LA 111.

12.1.16. BS 5228-1 presents the 'ABC' method for evaluating the significance of effects of construction noise based on the existing noise level. The ABC method criteria have been reproduced from Table E.1 in Annex E of the standard in Table 12-2.

Table 12-2 - ABC method criteria for assessing construction noise from BS 5228-1:2009+A1:2014

Period	Category A (dB)	Category B (dB)	Category C (dB)
Daytime weekday (07:00-19:00) and Saturdays (07.00-12.00)	65	70	75
Evenings weekday (19:00-23:00), Saturdays (13:00-23:00) and Sundays (07:00-23:00)	55	60	65
Night-time (23:00-07:00)	45	50	55

Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are less than these values.

Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are the same as category A values.

Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are higher than category A.

Note: If the ambient noise level exceeds the Category C threshold values given in the table (i.e. the ambient noise level is higher than the above values), then a potential significant effect is indicated if the total $L_{Aeq,T}$ noise level for the period increases by more than 3 dB due to site noise.

12.1.17. In relation to construction noise, the daytime period is 07:00 to 19:00, evening is 19:00 to 23:00 and night is 23:00 to 07:00. The construction of the compound will be undertaken during weekdays. The operation of the compound will also mainly be weekdays, however, two night- shifts between 21:00 and 05:00 are proposed for the positioning of the bridge girders and it is possible that under exceptional circumstances, some works may occur during the evening. The compound would be in use during these evening and night periods. All three periods have, therefore, been considered in the assessment.

12.1.18. Although the criteria in Table 12.2 from BS 5228-1:2009+A1:2014 only apply to residential receptors, it is considered suitable to apply them to other sensitive receptor categories with lower sensitivities.

12.1.19. In line with the guidance in LA 111, the LOAEL has been set at a level equal to the existing baseline noise level at each receptor location and the SOAEL has been based on the ABC Method from BS 5228-1in Table 12-3.

Table 12-3 - LOAEL and SOAEL values adopted for construction noise

Period	LOAEL (dB) [1]	SOAEL (dB)
Daytime weekday (07:00-19:00)	56 (at The Boathouse) 62 (at The Cuckmere Inn) 57 (at Blackberry Cottage)	65
Evenings weekday (19:00-23:00)	54	60
Night-time (23:00-07:00)	49	55

[1] Numbers are rounded to the whole number. The LOAEL has been considered to be the measured $L_{Aeq,T}$ at the relevant time period at the receptor location.

12.1.20. Noise levels measured during the day at the three monitoring locations indicate that the SOAEL is 65 dB as the existing measured noise levels are all below 65 dB (when rounded to the nearest 5dB). The existing measured daytime noise levels vary slightly between locations. The noise levels measured at The Boathouse covering the entire daytime period (i.e. 07:00-19:00) are considered to be the most representative for construction noise assessment and also the most conservative as they were the lowest obtained between the three monitoring locations. Therefore, this level of 56 dB, indicated in Table 12-3, is used as the LOAEL for all assessment locations.

12.1.21. The evening and night-time LOAELs and SOAELs have been obtained from the long-term noise survey also undertaken at The Boathouse. These are considered to be representative and apply to the other sensitive receptors included in the construction noise assessment.

The magnitude of impact scale for construction noise has been determined in accordance with LA 111, as presented in Table 12-4.

Table 12-4 - Magnitude of impact – Construction noise (LA 111)

Magnitude of impact	Construction noise level	Noise level criteria (dB)		
		Day	Evening	Night
Major	Above or equal to SOAEL +5dB	Greater than or equal to 70	Greater than or equal to 65	Greater than or equal to 60
Moderate	Above or equal to SOAEL and below SOAEL +5dB	Greater than or equal to 65 and less than 70	Greater than or equal to 60 and less than 65	Greater than or equal to 55 and less than 60
Minor	Above or equal to LOAEL and below SOAEL	Greater than or equal to 56 and less than 65	Greater than or equal to 54 and less than 60	Greater than or equal to 49 and less than 55
Negligible	Below LOAEL	Less than 56	Less than 54	Less than 49

CONSTRUCTION VIBRATION ASSESSMENT METHOD

12.1.22. The methods of BS 5228-2 have been used for the assessment on construction noise, as advised in LA 111.

BS 5228-2 provides assessment criteria for ground borne vibration in terms of both 'human perception' and 'building damage', in terms of peak particle velocity (PPV), mms^{-1}. These assessment criteria are duplicated in Table 12-5 and Table 12-6 respectively.

Table 12-5 - Guidance Criteria for the Assessment of Vibration (BS 5228-2) – Human Perception

Vibration PPV (mms^{-1})	Effect
0.14	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.
0.3	Vibration might be just perceptible in residential environments.
1.0	It is likely that vibration of this level in residential environments will cause complaint but can be tolerated if prior warning and explanation has been given to residents.
10.0	Vibration is likely to be intolerable for any more than a very brief exposure to this level in most building environments.

A) The magnitudes of the values presented apply to a measurement position that is representative of the point of entry into the recipient.

B) A transfer function (which relates an external level to an internal level) needs to be applied if only external measurements are available.

C) Single or infrequent occurrences of these levels do not necessarily correspond to the stated effect in every case. The values are provided to give an initial indication of potential effects, and where these values are routinely measured or expected then an assessment in accordance with BS 6472-1 or -2, and/or other available guidance, might be appropriate to determine whether the time varying exposure is likely to give rise to any degree of adverse comment.

Table 12-6 - Guidance Criteria for the Assessment of Vibration (BS 5228-2) – Transient Vibration – Building Damage (Cosmetic)

Assessment Category and Threshold Value Period	Peak component Particle Velocity in Frequency Range of Predominant Pulse	
	4 Hz to 15 Hz	**15 Hz and above**
Reinforced or framed structures Industrial and heavy commercial buildings	50 mms^{-1} at 4 Hz and above	50 mms^{-1} at 4 Hz and above
Unreinforced or light framed structures Residential or light commercial buildings	15 mms^{-1} at 4 Hz increasing to 20 mms^{-1} at 15 Hz	20 mms^{-1} at 15 Hz increasing to 50 mms^{-1} at 40 Hz and above

Note 1: Values referred to are at the base on the building.

Note 2: At frequencies below 4 Hz, a maximum displacement of 0.6 mm (zero to peak) is not to be exceeded.

12.1.23. It can be seen that the assessment criteria for human perception are lower than those associated with the onset of cosmetic building damage. The difference in the criteria confirms that concerns over ground borne vibration can be raised at levels significantly below those required to give rise to any actual building damage (even cosmetic such as hair line plaster cracks).

12.1.24. In line with LA111, where the need for further assessment has been established, the LOAEL and SOAEL for construction vibration are set as follows in Table 12-7:

Table 12-7 - LOAEL and SOAEL values adopted for construction vibration

Period	LOAEL (mms^{-1} PPV)	SOAEL (mms^{-1} PPV)
All time periods	0.3	1.0

12.1.25. The magnitude of impact scale for construction vibration has been determined in accordance with LA 111, as presented in Table 12-8.

Table 12-8 - Magnitude of impact – Construction vibration (LA 111)

Magnitude of impact	Construction noise level	Vibration criteria (PPV)
		All time periods
Major	Above or equal to 10 mms-1 PPV	Greater than or equal to 10 mms-1
Moderate	Above or equal to SOAEL and below 10 mms-1 PPV	Greater than or equal to 1.0 mms-1 and less than 10 mms-1
Minor	Above or equal to LOAEL and below SOAEL	Greater than or equal to 0.3 mms-1 and less than 1.0 mms-1
Negligible	Below LOAEL	Less than 0.3 mms-1

ASSESSMENT OF MAGNITUDE AND SIGNIFICANCE

12.1.26. This section summarises how the proposed magnitude of an environmental impact has been determined and categorised, and how that has then been used to determine the significance of effect.

Magnitude of impact

12.1.27. The magnitude of the impact for noise and vibration from the construction and operation of the construction compound is defined in Table 12-9.

Table 12-9 - Criteria for classifying the sensitivity of receptors

Element	Criteria	Magnitude of impact			
		Negligible	Minor	Moderate	Major
Construction noise	Predicted daytime noise level is:	Less than 56 dB	Greater than or equal to 56 and less than 65 dB	Greater than or equal to 65 and less than 70 dB	Greater than or equal to 70 dB
	Predicted evening noise level is:	Less than 54 dB	Greater than or equal to 54 and less than 60 dB	Greater than or equal to 60 and less than 65 dB	Greater than or equal to 65 dB
	Predicted night time noise level is:	Less than 49 dB	Greater than or equal to 49 and less than 55 dB	Greater than or equal to 55 and less than 60 dB	Greater than or equal to 60 dB
Construction vibration	All periods:	Less than 0.3 mms^{-1} PPV	Greater than or equal to	Greater than or equal to	Greater than or equal to 10

	0.3 mms^{-1} and less than 1.0 mms^{-1} PPV	1.0 mms^{-1} and less than 10 mms^{-1} PPV	mms^{-1} PPV

Significance of effect

12.1.28. The EIA regulations requires the determination of whether each identified impact gives rise to an effect that is significant or not. The 'significance' of an environmental effect is a function of the 'sensitivity' of the receptor and the 'scale' or magnitude of the impact.

12.1.29. The significance of effects has been assessed as a function of the 'sensitivity' of the receptor and the 'scale' or 'magnitude' of the impact according to the matrix presented in Table 12-10.

Table 12-10 - Derivation of Effect significance based on value/sensitivity of receptor and magnitude of impact

Magnitude of Impact (+/-)	Sensitivity/Value of receptor				
	Very High	**High**	**Medium**	**Low**	**Negligible**
Major	**Very large**	**Very large**	**Large**	Moderate	Slight
Moderate	**Very Large**	**Large**	Moderate	Slight	Slight
Minor	**Large**	Moderate	Slight	Slight	none
Negligible	Slight	Slight	None	None	None

12.1.30. Environmental impacts from construction noise and vibration are categorised as adverse only. This assessment has considered that a significant adverse environmental effect from noise or vibration is likely to occur as a result of a 'Very large' or 'Large' significance of effect as highlighted in bold in. 'Slight' and 'None' effects are deemed not significant.

12.1.31. In addition to the significance matrix in Table 12.10, the significance of effects associated with construction noise and vibration has been assessed in accordance with the LA111 guidance, which states that a significant residual adverse effect is likely to occur from construction noise or vibration where it is determined that a major or moderate magnitude of impact will occur for a duration exceeding:

- 10 or more days or nights in any 15 consecutive days or nights
- a total number of days exceeding 40 in any 6 consecutive months

12.2 ASSUMPTIONS AND LIMITATIONS

BASELINE

12.2.1. A baseline noise survey was undertaken in June 2019 to support of the noise and vibration assessment. It is considered that the locations selected for the baseline noise survey are representative of the closest noise sensitive receptors to the Project. In line with LA 111, baseline noise monitored levels have been used in the assessment of construction noise to set out the LOAEL and SOAEL and inform the appraisal of potentially significant effects. The operational assessment uses the results from the Do Minimum 2024 noise modelling scenario to determine the operational noise baseline as advised in LA 111.

12.2.2. The vibration assessment is independent, based on absolute criteria so a baseline vibration survey is not required.

CONSTRUCTION

12.2.3. The assessment has been based on the construction programme provided by the contractor. Professional judgement and conservative assumptions have been used to assign typical plant and equipment from similar schemes. The noise emission data or plant and equipment reported in Annexes C and D of BS 5228-1 has been used in the assessment.

12.2.4. In line with the construction programme, the predictions have considered working shifts within Monday to Friday between 08:00 to 18:00, with the exception of the activity associated with the erection of the two main bridge girders is anticipated to require two night shifts likely to be between 21:00 to 05:00. However, only the offices will be in use within the compound. No works will be undertaken during weekends or Bank Holidays.

12.3 BASELINE CONDITIONS

12.3.1. Baseline noise conditions have been established from the results of a noise survey carried out at the closest noise sensitive receptors to the Project.

12.3.2. The noise climate in the immediate vicinity of the Project is dominated by noise from traffic using the A259. Away from the A259, levels of road traffic noise are reduced due to distance attenuation, whereas other noise sources such as local residents' activities and natural sources such as birdsong may then become more dominant. There are no other major noise sources identified in the area.

RECEPTORS AND SENSITIVITY

12.3.3. Noise and vibration sensitive receptors identified within the respective study areas are listed in Table 12-11 together with the associated sensitivity.

Table 12-11 - Sensitivity of identified receptors

Receptor	Sensitivity
Construction noise	
Residential properties: • Residential property at Dymock Farm, approximately 80m to the north of the construction compound. • Residential properties on Chyngton Lane N. The closest properties are located approximately 160 m to the west of the construction compound.	High
Other sensitive receptors Hill House Bed & Breakfast on Eastbourne Road A259 at approximately 170m to the west of the construction compound.	High
Construction vibration	
Residential property: Residential property at Dymock Farm, approximately 80m to the north of the construction compound.	High

BASELINE NOISE SURVEY

12.3.4. The baseline noise survey was conducted between the 03 and 04 June 2019 to reflect the residential locations (and representative of others approximately equidistant) likely to be affected by the construction and/or operation phases of the Project. Three noise sensitive locations were selected for the baseline survey.

12.3.5. Although the locations are further away from the revised construction compound location, the baseline measurements are still considered to be representative of the noise environment at the closest sensitive receptors to the construction compound.

12.3.6. A combination of short term and long-term surveys were undertaken. Two short-term attended noise surveys were undertaken during daytime hours at The Cuckmere Inn and Blackberry Cottage. A long-term unattended 24-hour survey was undertaken at The Boathouse. The baseline noise monitoring locations and noise monitoring periods are presented in Table 12-12.

Table 12-12 - Baseline noise monitoring locations

Location No.	Location name	Coordinates	Noise survey period	Microphone position
1	The Boathouse	50°46'28.02"N 0° 8'42.39"E	Long-term 24-hour between: 3 June 2019 13:00 to 4 June 2019 13:00	Free field position at approx. 10m from the dwelling façade facing the river to the north west from Exceat Bridge. The A259 is located to the south west of the microphone at approx. 20m distance.
2	The Cuckmere Inn	50°46'25.00"N 0° 8'45.00"E	Short-term 20-minute (3 samples) taken on 3 June 2019 at: • 13:18 to 13:38 • 13:39 to 13:59 • 14:01 to 14:21	Free field position at approx. 4m from the dwelling façade. Microphone facing the A259 and Exceat Bridge at approx. 5m from the road. Located to the west of Exceat Bridge.
3	Blackberry Cottage	50°46'26.00"N 0° 8'43.00"E	Short-term 3-hour on 4 June 2019 between 10:40 to 13-40	Free field position at approx. 4m from the dwelling façade. Microphone located to the south west of A259 at approx.15m distance.

12.3.7. Table 12-13 shows the results from the baseline noise survey. The relevant noise indices; LAeq,T, LA10 and LA90 have been reported together with the noted noise sources.

Table 12-13 - Baseline noise survey results

Loc No.	Measurement period	L_{Aeq},T dB	LA_{90} dB	LA10 dB	Noted Noise sources
1	Daytime, 16hr (07:00-23:00)	52.1	45.2	54.4	Road traffic on the A259 at approx. 20m from the microphone location is the main noise source noted. Bird song, tree leaves and water motion due to the wind are part of the background sound at the location.
	Daytime, 12hr (07:00-19:00)	52.5	46.8	54.5	

	Evening, 4hr (19:00-23:00)	50.7	34.0	53.9	
	Night-time, 8hr (23:00-07:00)	46.4	18.9	50.2	
2	Sample 1, 20min	61.1	49.5	61.4	Road traffic on the A259 at approx. 5m from the microphone location is the main noise source noted. People walking in and out the pub also contributed to the measured levels together with birdsong.
	Sample 2, 20min	59.2	52.9	61.7	
	Sample 3, 20min	59.1	52.6	61.3	
3	Sample 1, 3hr	54.4	49.2	56.2	Road traffic on the A259 at approx. 15m from the microphone location is the main noise source noted. Local residents walking by, bird song and tree leaves motion due to the wind are part of the background sound at the location.

12.4 POTENTIAL CONSTRUCTION AND OPERATIONAL IMPACTS

12.4.1. Construction activities have the potential to adversely affect the noise and vibration sensitive receptors identified within the study areas. These would be temporary impacts and are likely to be controlled by standard mitigation measures, such as best practicable means.

12.4.2. The construction activities for the compound will include site preparation works and the installation of offices and welfare rooms. This would be undertaken during the weekday daytime only.

12.4.3. The operation of the compound would mainly involve the delivery and storage of materials and the use of site offices, and this would mainly be undertaken during the daytime. However, the work on the main bridge deck is estimated to require two night-time shifts, and the compound would be in use during this period.

12.5 EMBEDDED MITIGATION

12.5.1. Construction noise will be controlled by the application of Best Practicable Means (BPM) as defined in Section 72 of CoPA 1974 and the good practice mitigation measures detailed in BS 5228 Part 1: Noise (BSI, 2014) throughout the construction period and are secured within the CEMP. The general principles include:

- All materials will be handled in a manner which minimises noise. This includes minimising drop heights into hoppers and lorries;
- All staff and operatives will be briefed on the requirement to minimise nuisance from site activities;
- Audible reversing warning systems used on mobile plant and vehicles of a type, whilst still giving proper warning, will have a minimum noise impact on persons outside the site boundaries;

- Normal working hours will be restricted to 08:00 and to 18:00 on weekdays with no working on weekends or bank holidays, as far as practicable;
- Any work outside of normal working hours will be agreed with the EHO at SDNP and notice will be given prior to the works to the local residents; and
- A representative will be available on site during working hours to answer queries or address any concerns expressed by members of the public.

12.5.2. The majority of the above measures are considered standard good practice measures, which Local Authorities are likely to require as part of a 'best practicable means' approach. These measures are included within the SEC as presented in Section 17 and have been included within the CEMP.

12.5.3. The proposed construction compound includes a wooden hoarding around the main operation part of the site. This has been included in noise calculations for operation of the site.

12.6 RESIDUAL EFFECTS

CONSTRUCTION NOISE

12.6.1. This section presents an assessment of the likely noise effects from the construction and operation of the construction compound.

12.6.2. Noise generated in the establishment and operation of the construction compound have been divided into the activities detailed in Table 12-14.

12.6.3. A complement of main plant and equipment has been listed for each activity.

Table 12-14 - Noise generating activities associated with the construction compound

Activity	Plant / Equipment	BS5228 reference	On-time
Establishment of construction compound	Tracked excavator	C.02 #21	50%
	Vibratory roller	C.05 #27	50%
	Dump truck (tipping fill)	C.02 #30	25%
Asphalt paving access road	Asphalt paver (+ tipper lorry)	C.05 #33	50%
	Vibratory roller	C.05 #27	50%
Operation of compound (Daytime)	Diesel generator	C.04 #79	100%
	Lorry with lifting boom	C.04 #53	50%
Operation of compound (Evening / Night time)	Diesel generator	C.04 #79	100%

Lorry with lifting boom	C.04 #53	20%

12.6.4. The predicted noise levels from these activities are presented in Table 12-15. These have been determined applying the calculation procedures setup in BS5228-1.

Table 12-15 - Predicted construction noise levels

Activity	Working period	No. days	Calculated Noise Level ($L_{Aeq,T}$ dB)		
			Dymock Farm	Properties on Chyngton Lane North	Hill House Bed & Breakfast
Receptor sensitivity			**High**	**High**	**Low**
Site compound establishment	Day		54	51	50
Asphalt paving access road	Day		52	45	44
Site compound operation	Day	Full duration	51	45	45
	Evening / Night	Full duration	48	42	41
Impact Magnitude – Daytime			**Negligible**	**Negligible**	**Negligible**
Impact Magnitude – Evening			**Negligible**	**Negligible**	**Negligible**
Impact Magnitude – Night			**Negligible**	**Negligible**	**Negligible**

12.6.5. During the establishment of the construction compound daytime construction noise levels would be below the daytime SOAEL of 65dB, and also below the LOAEL of 56dB. The magnitude of impact is therefore Negligible, corresponding to a Slight adverse effect at Dymock Farm, dwellings on Chyngton Lane North and Hill House B&B. These effects are not significant.

12.6.6. During construction compound operation a diesel generator will provide the power and will likely run continuously during the two evening and night-time working shifts, as well as during the typical daytime construction working shifts. Predictions have also accounted for occasional HGV/plant movements in and around the compound during the daytime, evening and night time periods. The design of the compound includes a wooden hoarding surrounding the operational area of the site, which will afford some attenuation of noise levels. The estimated noise levels during the operation of the construction compound would be below both SOAEL and LOAEL for all time periods. The magnitude of impact is therefore Negligible, corresponding to a Slight adverse effect at Dymock Farm, dwellings on Chyngton Lane North and Hill House B&B. These effects are not significant.

CONSTRUCTION VIBRATION

12.6.7. BS 5228-2 provides both a database of historic ground borne measurements for a variety of different construction plant/operations, as well as ground borne vibration calculation methods. Using this information, calculations have been undertaken to determine the possible distances at which the assessment criteria detailed in Table 12-16 (human perception) may be registered, based on a specified confidence limit where applicable. Calculations have been undertaken for a sample of activities likely to be adopted as part of the compound construction works.

Table 12-16 - Predicted ground borne vibration levels applicable to typical vibration generating site preparation, earthworks and construction activities

Operation	Confidence Limit	PPV (mms-1)	Distance (m)
Vibratory Rollers - start-up and end[1]	95	0.3	60
	95	1.0	23
Vibratory Rollers - steady state[1]	95	10	3
HGVs[2]	N/A	0.3	35
	N/A	1.0	8
	N/A	10	0.35

[1] Assumes 2 rollers, 0.4 mm amplitude, drum width of 1.3 m, e.g. heavy-duty ride-on roller.

[2] Assumes a maximum height/depth of surface defect of 75mm, a maximum speed of 30 km/h and that the defect occurs at both wheels.

12.6.8. Dymock Farm is the nearest receptor, approximately 80m to the north of the construction compound, and the only receptor within the vibration study area for the site. Based on the data in Table 12-17 vibration levels will be less than 0.3 mms-1 for all activities.

Table 12-17 - Predicted construction vibration levels

Activity	Working period	No. days	Estimated vibration level (mms^{-1} PPV)
			Dymock Farm
Receptor sensitivity			**High**
Site compound establishment	Day		Less than 0.3 mms^{-1}
Site compound operation	Day/Evening /Night	Full duration	Less than 0.3 mms^{-1}
Impact Magnitude – Daytime			**Negligible**

12.6.9. The largest anticipated vibration impact is likely to be the use of vibratory rollers for site establishment and would occur on start-up and shut-down of the plant. The distance at which significant effects are likely to be experienced would be 23m, which is far less than the closest receptor. As such, all vibration impacts will be below the SOAEL and LOAEL for human perception of vibration. The magnitude of impact is therefore Negligible, corresponding to a Slight adverse effect at Dymock Farm. All other receptors are outside the study area for vibration. These effects are not significant.

12.7 SUMMARY OF RESIDUAL EFFECTS

12.7.1. A summary of predicted residual effects from noise and vibration during the construction and use of the construction compound is presented in Table 12-18.

Table 12-18 - Summary of noise and vibration residual effects from the construction compound

Impact	Magnitude of impact	Mitigation	Residual effect
Construction noise and vibration			
Construction noise Noise impacts from the worst-case activities during the construction and operation of the compound.	Negligible	None required.	**No significant adverse effects** from construction noise.
Construction Vibration Vibration impacts from the worst-case activities during construction and operation of the compound.	Negligible	None required	**No significant adverse effects** from construction vibration.

13 POPULATION AND HUMAN HEALTH

13.1 INTRODUCTION

13.1.1. This Appraisal considers the impacts on population and human health associated with the relocation of the construction compound required for the proposed Exceat Bridge development, and any potential significant effects.

13.1.2. A statement of community involvement was prepared and was provided in Section 6 of the Planning Statement (East Sussex County Council, 2021) and is not repeated here.

13.2 APPRAISAL METHODOLOGY

13.2.1. This Appraisal draws on the Design Manual for Bridges (DMRB) LA 112 Population and Human Health guidance, which provides a basis for determining the significance of potential population and human health impacts. The IEMA Guide to: Determining Significance for Human Health in Environmental Impact Assessment has informed the health assessment.

13.2.2. The DMRB LA112 guidance advises a study area of 500m surrounding a project boundary for the land use and accessibility (non-human health) elements of an assessment, which is appropriate for this Appraisal. The study area for health is defined by the extent and characteristics of the construction compound, and the communities directly and indirectly affected. For the purpose of the Appraisal, the study area is therefore comprised of the communities closest to the construction compound, whose populations are most likely to experience changes to their health outcomes.

13.2.3. Tables 3.11 and 3.12 of the DMRB LA 112 guidance outline the relevant sensitive receptor and magnitude of impact criteria relevant to this Appraisal. The Appraisal has also considered the IEMA Guide to: Determining Significance for Human Health in Environmental Impact Assessment in relation to health impacts.

13.3 BASELINE CONDITIONS

13.3.1. As the site compound would be relocated west of the site compound presented in the 2022 ES Addendum, it is anticipated that the baseline conditions presented in the 2022 ES Addendum would remain the same. However, for completeness key receptors within the study areas have been reported below.

13.3.2. Significant changes to the baseline in terms of population and human health resources have not been identified that would alter the sensitivity of population and human health receptors.

PRIVATE PROPERTY AND HOUSING

13.3.3. There are private properties located within 500m of the construction compound, located to the east of Seaford, west of the construction compound. Dymock Farm is also located to the north of the proposed construction compound.

13.3.4. All land outside the urban boundary of Seaford is protected as part of the South Downs National Park from further development and there are no known proposals for further residential development at the time of reporting. Therefore, there is no residential development land within the 500m study area.

COMMUNITY LAND AND ASSETS

13.3.5. There are no community land or assets defined as common land, village greens, open green space, allotments and sports pitches within 500m of the proposed construction compound.

13.3.6. Community assets within 500m of the proposed construction compound include:

- Cuckmere House School, located approximately 400m south west of the compound.
- Playpark off Walmer Road, located approximately 460m north west of the compound.
- St Luke's Church, Seaford, located approximately 460m north west of the compound.

DEVELOPMENT LAND AND BUSINESSES

13.3.7. There are no employment sites allocated for development within 500m of the proposed construction compound.

13.3.8. Businesses within 500m of the proposed construction compound include:

- Hill House in Seaford Bed and Breakfast, south side of A259, located on the eastern edge of Seaford, approximately 130m to the west of the compound.
- Premier Convenience Store and Chyngton Estate Post Office, located approximately 460 north west of the compound.

AGRICULTURAL LAND HOLDINGS

13.3.9. The proposed compound is located within an agricultural land holding of Dymock Farm, which is currently used for arable crop production.

WALKERS, CYCLISTS AND HORSE-RIDERS (WCH)

13.3.10. There are no public rights of way (PRoW) routes that intersect the proposed construction compound but there are PRoW within Seaford and to the south of the compound. Additionally, the National Cycle Network (NCN) Route 2 is a long-distance coastal cycle route which runs along the A259 immediately south of the proposed construction compound. NCN Route 2 runs along the A259 from the eastern edge of Seaford either via the road or via a bridleway that departs from Seaford to the north of Chyngton Farm accessing the existing Exceat Bridge from the south at Cuckmere Inn.

13.3.11. There are also several well used paths and routes utilised by walkers, cyclists and horse-riders in and around Exceat Bridge. However, these are outside of the 500m study area and, therefore, not considered further.

HEALTH, EMPLOYMENT AND LOCAL ECONOMY

13.3.12. The proposed construction compound falls within the jurisdiction of East Sussex County Council. The Public Health England profile for East Sussex County Council indicates that the health of people

in this administrative area is broadly in line with the England average18. Life expectancy and mortality rates for both men and women are better in East Sussex than in England and instances of emergency admissions and deaths from diseases are lower. However, the percentage of people living with a limiting long-term illness or disability is higher in East Sussex when compared to the England average.

13.3.13. There are no health facilities in the study area. Local facilities providing employment are those described above including Dymock Farm Shop and Market Garden and Hill House in Seaford Bed and Breakfast as well as businesses located in Seaford itself. Facilities within the vicinity of the proposed construction compound but outside of the study area include the Seven Sisters visitor centre, which is open daily year-round with opening hours varying during the winter, the tearoom, the Cuckmere Inn, the Cuckmere Canoe Club. These contribute to the local economy and more widely to that of the surrounding villages.

13.4 POTENTIAL CONSTRUCTION AND OPERATIONAL IMPACTS

13.4.1. The following potential impacts could arise during the construction phase due to the formation and operation of the revised temporary construction compound:

- Construction traffic associated with the Proposed Scheme would travel to and from the proposed construction compound, which could disrupt access to properties, community assets/facilities and local businesses outlined in the baseline. However, relocating the construction site would not change the frequency and type of traffic movements that were assessed in the 2022 ES Addendum.
- Increased construction traffic also has the potential to impact users of the NCN Route 2, making it less desirable to cyclists as a result of potential adverse impacts on amenity and increased fear associated with construction traffic. However, there is an alternative route on the NCN Route 2 where the route follows a bridleway that departs from Seaford to the north of Chyngton Farm accessing the existing Exceat Bridge from the south at Cuckmere Inn. If NCN Route 2 users were to use this alternative route they would not need to travel along the A259 south of the proposed construction compound.
- Temporary land take is required at Dymock Farm for the construction compound.
- Activities associated with the construction compound could lead to a reduction in amenity. For the purposes of this Appraisal, amenity is considered to be a combination of air quality, noise and visual amenity.
- The construction traffic and activities associated with the construction compound could impact access to community facilities, as well as impact on the following health determinants; air quality; visual amenity; noise; water; and opportunities for physical activity.

[18] Office for Health Improvement and Disparities (2022) 'Local Health'. Available at: https://www.localhealth.org.uk/#c=home

13.5 MITIGATION

13.5.1. The Construction Environmental Management Plan (CEMP) previously prepared alongside the 2022 ES Addendum remains relevant for mitigation measures and would be implemented to reduce impacts related to population and human health.

13.5.2. The agricultural land used for the construction compound will be re-instated once the compound is no longer required. The landowner would be compensated for the use of Dymock Farm for the construction compound.

13.5.3. A Traffic Management Plan will be implemented during construction to minimise effects on vehicular travellers and their access on the surrounding road network.

13.5.4. Mitigation measures recommended for other environmental topics (e.g. air quality, landscape, noise and vibration as well as road drainage and the water environment) will also be implemented during construction which should reduce adverse effects on population and human health.

13.6 RESIDUAL EFFECTS

13.6.1. The construction compound will be located within the Dymock Farm agricultural land holding. The Applicant has been in dialogue with the landowner regarding the proposed construction compound location. The landowner has agreed to the new position and size of the proposed construction compound.

13.6.2. It is considered that with an appropriate CEMP implemented, there will be no significant residual effects on population and human health as a result of the relocation of the construction compound. It is anticipated that the outcomes of the 2022 ES Addendum remain unchanged.

14 SUMMARY AND CONCLUSIONS

14.1.1. This Non-Statutory Environmental Assessment Report has been produced to support the planning application for the proposed construction compound to facilitate the Exceat Bridge Replacement development, which is located within the South Downs National Park, following a decision to relocate the construction compound site from the original application site. The construction compound is situated within arable agricultural land of Dymock Farm, north of the A259, Eastbourne Road. This application is separate to the previous ES and ES Addendum however, where assessment methodologies echo these previous reports, they have not been repeated and can be referred to in those previous reports and the Appendices where applicable.

14.1.2. The change in the location of the construction compound is not expected to create significant adverse effects on the environment. Following construction of Exceat Bridge, the land will be returned to agricultural use and reinstatement and enhancement of hedgerow resulting in no residual effects and biodiversity net gain in the location.

14.1.3. Mitigation measures will be adopted to prevent impact on the environment during the construction, operation and decommissioning of the compound site. Where possible, measures should be undertaken to create a net benefit to the environment, which will be driven through competent contractor input and management.

14.1.4. The construction compound will facilitate the construction of Exceat Bridge Replacement development, which will help to create a location at Exceat that can offer an enhanced experience for all users in the long term that aligns with the aims and objectives of the SDNPA and other bodies with responsibilities for managing and safeguarding the area.

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