

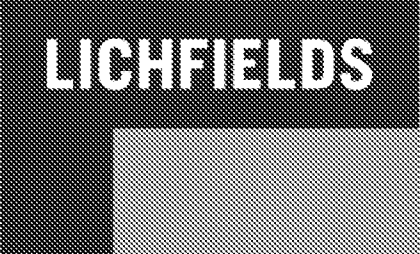
Land West of Bersted Environmental Impact Assessment Scoping Report

**Information to accompany a request for Arun
District Council to form a Scoping Opinion**

**Church Commissioners for England and Langmead Group,
represented by Landlink Estates Ltd**

May 2017

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1.0 Introduction

Purpose of document

- 1.1 This document provides information to assist Arun District Council in forming an Environmental Impact Assessment ('EIA') Scoping Opinion under Regulation 13 of the Town and Country Planning (EIA) Regulations 2011 (as updated by the Town and Country Planning (Environmental Impact Assessment) (Amendment) Regulations 2015) ('the Regulations (as updated)').
- 1.2 The Scoping Report is submitted on behalf of the Church Commissioners for England and the Langmead Group, represented by Landlink Estates Ltd, in respect of the proposed development of approximately 141 ha of land to the north-west of Bognor Regis, known as West of Bersted. The development will comprise up to 2,300 new homes, up to 10ha of employment land, a 3 Form Entry primary school, a local centre and associated infrastructure.
- 1.3 An outline planning application is being submitted and will be accompanied by an Environmental Statement ('ES'). The ES will report the findings from the EIA to which this Scoping Report relates.

Report structure

- 1.4 The report is structured as follows:-
- Background information about the need for the development and the requirement for EIA are provided in Section 2.0;
 - Section 3.0 provides a description of the site and surroundings;
 - the key elements of the development are described in Section 4.0;
 - Section 5.0 contains a review of the potential environmental effects of the proposals as a means of identifying those matters to be scoped into the assessment process; and
 - Section 6.0 summarises the proposed form and content of the ES and makes reference to a list of the other documents and material that will accompany the planning application.

2.0 Background

Requirement for an EIA

- 2.1 In accordance with Regulation 15 of the Town and Country Planning (EIA) Regulations 2011 (as updated), which sets out the procedure to facilitate the preparation of Environmental Statements, the Church Commissioners for England and Langmead Group (represented by Landlink Estates Ltd) confirms that they intend to submit an ES to Arun District Council with the outline planning application for development on land at West of Bersted, Bognor Regis.
- 2.2 The proposed development falls within Schedule 2 of the EIA Regulations, under Part 10(b) Urban Development Projects. Section 10(b) relates to urban development projects where the development includes more than 150 dwellings or is greater than 5ha. For Schedule 2 developments, the Regulations require that an EIA be undertaken where the development is *“likely to have significant effects on the environment by virtue of factors such as its nature, size or location”*.
- 2.3 In determining whether the development is likely to give rise to significant environmental effects, reference should be made to Schedule 3 of the Regulations. This identifies three categories of criteria:-
- 1 Characteristics of the development (such as size, cumulative effects, use of natural resources, production of waste, pollution and nuisances, and risk of accidents);
 - 2 Location of the development (by reference to the environmental sensitivity of the area); and
 - 3 Characteristics of the potential impact (having regard in particular to the extent of the impact, its transfrontier nature, magnitude and complexity, probability and duration, frequency and reversibility).
- 2.4 In the light of these, EIA will be required for Schedule 2 development in three main types of case:-
- 1 Major development which are of more than local importance;
 - 2 Developments located in particularly environmentally sensitive or vulnerable locations; and/or
 - 3 Developments with unusually complex and potentially hazardous environmental effects.
- 2.5 This development is considered to comprise EIA development because the land in question was the subject of a previous planning application, referred to as the Bognor Regis Eco Quarter, which was submitted to Arun District Council in 2009 (albeit subsequently withdrawn in 2014), and was accompanied by an ES due to the size of the development and its potential for significant environmental effects (application ref. BE/72/09). The ES had been scoped with Arun District Council at that time and the likelihood for significant environmental effects is not considered to have changed substantially since this time.
- 2.6 To assist Arun District Council and consultees in forming an EIA scoping opinion, this report provides as much information as possible at this stage on the West of Bersted development, the likely environmental effects and the suggested content of the ES. It includes information on:-
- 1 Site location and description;
 - 2 Description of the nature and purpose of the proposals;
 - 3 Possible environmental effects; and

4 Proposed form of the ES.

- 2.7 To further assist in its consideration, the remainder of this section provides information on the background and need for the proposed development.

Forthcoming amendments to EIA Regulations

- 2.8 It is noted that the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (“the 2017 Regulations”) were laid before Parliament in April 2017, and these Regulations will implement the European Directive 2014/52/EU into legislation. Paragraph 1(1) of the 2017 Regulations states that they will come into force on 16 May 2017, and paragraph 76 sets out the revocation and transitional provisions.
- 2.9 Paragraph 76(2)(a) of the 2017 Regulations confirms that the 2011 Regulations (as amended) will continue to apply where before the commencement of [the 2017] Regulations *“an applicant, appellant or qualifying body, as the case may be, has submitted an environmental statement or requested a scoping opinion”*.
- 2.10 Given the transitional arrangements, and noting the submission of this request for the Council’s formal EIA Scoping Opinion prior to 16 May 2017, this Scoping Report has been prepared in the context of the 2011 Regulations (as amended). The forthcoming Environmental Statement to accompany the proposed development will also be prepared in accordance with the 2011 EIA Regulations (as amended).

Applicants

- 2.11 The Church Commissioners for England owns approximately two thirds of the application site. The Langmead Group, represented by Landlink Estates Ltd, own approximately one third of the application site. Both landowners have been collaborating since at least 2009 with a view to realising the development potential of this site and more recently, they have been promoting the site through the Local Plan process.

Need for the development

- 2.12 The West of Bersted site is proposed by Arun District Council to be allocated for development by virtue of proposed Policy H SP2a in the Main Modifications to the Local Plan (April 2017). This policy seeks to support the sustainable growth of Bognor Regis and in relation to SD3 West of Bersted, it requires the following:

“Located to the north of Bognor Regis this largest allocation will provide at least 2,500 dwellings over the plan period. Development proposals will need to meet the following key design and infrastructure requirements;

- a. provide a new three-form entry primary school and nursery places,*
- b. provide a new 3G pitch facility to serve the west of the District,*
- c. incorporate two new sports pitches and facilities,*
- d. provide a Community Hub which includes;*
 - i. shops*
 - ii. provision for new healthcare facilities to serve West of Bersted (SD3) and Pagham South and North (SD 1 & 2)*
 - iii. provide a new Tier 7 library facility,*

- e. provide a road/pedestrian/cycle link between the A259 and Chalcraft Lane including facilitating the cycle route to Pagham and enhancing the A259 cycle route,*
- f. improvements to the A259 between Bersted and Drayton*
- g. take account of the proximity of Pagham Harbour SPA/Ramsar, and*
- h. incorporate planned new employment provision.”*

2.13 The proposed Main Modifications to the Local Plan are due to be submitted to the Planning Inspectorate shortly with an Examination in Public anticipated to take place in the autumn of 2017.

Consultation

- 2.14 The landowners are committed to appropriate consultation with the local community, businesses, statutory bodies and other stakeholders as part of the EIA and planning process.
- 2.15 Discussions have already commenced with a number of these stakeholders, including West Sussex County Council in relation to highway and social infrastructure matters.

Summary

- 2.16 The land was the subject of a previous planning application for 2,500 residential dwellings in 2009 for a development known as the Bognor Regis Eco Quarter. This planning application was withdrawn in 2014. The West of Bersted site is now a significant component of the proposed spatial strategy for meeting the housing needs of the District and is anticipated to deliver at least 2,500 new dwellings to support the sustainable growth of Bognor Regis.
- 2.17 The outline planning application will play a significant role in provision necessary infrastructure to meet the proposed Local Plan priorities, including the provision of a road/pedestrian/cycle link between the A259 and Chalcraft Lane including facilitating the cycle route to Pagham and enhancing the A259 cycle route, and improvements to the A259 between Bersted and Drayton.
- 2.18 The application will be accompanied by an ES. This document will set out the findings from an assessment of the likely significant effects of the development.
- 2.19 The remainder of this scoping report provides further detail on the site, the scheme and the matters to be assessed as part of the EIA.

3.0 **Site Description**

- 3.1 In accordance with the 2011 Regulations (as updated), Appendix 1 provides a plan which defines the maximum extent of land to which this EIA could relate. This area has been defined broadly at this time to allow flexibility in establishing the extent and form of development and associated infrastructure and to ensure that all possible land which may be affected has been considered as part of this scoping process. The site boundary that will be established through the subsequent planning application will be located within this broad maximum extent of development.

Location and surroundings

- 3.2 The site is located 2km to the north-west of Bognor Regis, close to the residential areas of North Bersted and Aldwick. The semi-rural site comprises arable farmland and includes Park Farm and associated reservoirs. The nearest conservation area is the North Bersted Conservation Area, approximately 1km east of the site. Several conservation areas in central Bognor Regis are also within 2.5km of the site. The nearest listed building is located at Morells Farm (Grade II). Neals Farmhouse and Lagnersh Farmhouse (both Grade II listed) are also within 1km of the western site boundary.
- 3.3 Beyond the site boundary lies the hamlet of Elbridge to the north and Morells Farm, comprising a Grade II listed building, to the south along the Lower Bognor Road. To the south-east of the site is the cemetery and to the north-east of the site is the Orchard Caravan Park. To the north of the Orchard Caravan Park, along the eastern boundary of the site, lies the A259 beyond which is farmland and some bungalows, and two storey dwellings along Babsham Lane. The south of the site is bound by the Lower Bognor Road (B2166), beyond which is farmland, and Chalcraft Lane, beyond is Aldwick, a residential area comprising bungalows and two storey dwellings.
- 3.4 There are six internationally designated sites within 15km of the site boundary and one Site of Special Scientific Interest (SSSI) (Bognor Reef) 2km south of the site. Pagham Harbour Special Protection Area (SPA)/Ramsar wetlands site lies approximately 3.6km south-east of the site boundary and therefore falls within the 5km zone of influence of this statutory designated site of nature conservation interest.
- 3.5 There are no Air Quality Management Areas in Arun District, however, there are three in Chichester District. Chichester (Stockbridge Roundabout) AQMA and Chichester (St Pancras) AQMA are the closest to the proposed development, located approximately 5.3 km and 5.2 km to the northwest of the site respectively.
- 3.6 The northwest of the site borders the A259 with Chalcraft Lane and Lower Bognor Road (B2166) enclosing the southwestern corner of the site. The nearest train station is Bognor Regis, approximately 2km southeast of the site, this is served by regular train services to London Victoria and Littlehampton (via Barnham). Buses run along the A259 to Portsmouth, Littlehampton and Brighton (indirect). The site is approximately 15 miles from the A3(M), 17 miles from the M27 and 37 miles from the M23.

The Site

- 3.7 The site comprises flat, actively farmed arable land that is subdivided into large irregular fields by hedgerows and ditches. The site includes three public rights of way; footpaths 137-1, 134-5 and 136-1. These generally follow the line of the hedgerows and ditches. A number of roads abut the site boundary, but none cross the site. An access track to Park Farm also runs along the site boundary to the west (see Appendix 1).

- 3.8 The site lies within the 'Strategic Gap' as defined in the Bersted Neighbourhood Plan (November 2014). There are neither policy nor ecological designations relating to the application site.
- 3.9 The Environment Agency (EA) flood maps show that the site is wholly situated outside of any Flood Zones and as such is not classified as being at risk of flooding by main rivers or tidal sources. There is a high water table and as such, there is a higher risk of groundwater flooding.
- 3.10 Agricultural land on site comprises predominately (65%) of sub-Grade 3a land with areas of Grade 2 (22%) and sub-Grade 3b (6%). The remainder of the site comprises of non-agricultural/other land which includes areas of farm buildings, tracks etc.
- 3.11 There are no scheduled monuments, conservation areas or Listed buildings within the site.

4.0

Proposed Development

Description of main works

4.1 The description of development is anticipated to be:

“Outline application, with all matters reserved except access, for mixed use development including residential, business, education facilities, retail, food & drink & financial & professional services, leisure & recreation uses, health facilities, community uses, open space, highway works & transport measures, landscaping, improvements to public realm & other ancillary works”

4.2 The proposal includes several connections to the local road network from the Lower Bognor Road, Chalcraft Lane and the A259 Chichester Road. A spine road will be provided within the site, extending the North Bersted Bypass to the western parts of Bognor Regis.

4.3 The red line included at Appendix 1 identifies the land within the applicants’ ownership. A Concept Masterplan is included at Appendix 2.

Form and scale of development

4.4 The proposed development would introduce up to 2,300 residential dwellings. The site would offer a variety of dwelling types, sizes and tenures providing a broad range of accommodation including affordable housing, housing for the elderly and family accommodation. Building heights would range from between one and three storeys. Up to 10ha of employment land is proposed, with a local centre and a 3 Form Entry primary school.

4.5 The Concept Masterplan shows how the site could accommodate the proposed development as described above. It shows the 10ha area of employment land to the north of the application site, and a local centre and a 3 Form Entry primary school in the centre of the site. The 2,300 residential dwellings are proposed elsewhere on the site connected by a network of Green Infrastructure incorporating drainage features and a substantial amount of open space along the western boundary of the site. The network of Green Infrastructure provides green linkages between the existing residential areas of North Bersted and Aldwick and the site and its central facilities (community hub and primary school) and with the open countryside beyond the site to the west.

Parking and access

4.6 A new spine road will be created through the site linking the Lower Bognor Road to the south with the A259 in the north. This new road will provide secondary road access to the new development. Access from Chalcraft Lane is also proposed. Throughout the site will be a network of pedestrian and cycle routes, including the existing public rights of way which will be retained.

Landscaping

4.7 The proposed network of Green Infrastructure would incorporate and retain habitats of value where appropriate, including some hedgerows, and introduce new habitats throughout the site.

Sustainability

4.8 The landowners’ are committed to placing sustainability at the heart of the design principles for the development. It is envisaged that the development will be designed to a high quality

standard, whilst protecting and enhancing the natural surroundings as far as is reasonably practicable.

Construction and sequencing

- 4.9 For the purpose of assessment it is assumed that the development will take approximately 11 years to build at a rate of between 150 and 200 dwellings per year, and assuming multiple development outlets. It is anticipated that development will commence in both the north and the south-east (close to the cemetery), then within the centre of the site, each phase delivery a section of the spine road through the site. Development to the west of the spine road will be implemented towards the latter part of the period and following the completion of the road. The ES will identify a programme of works for the purposes of assessment.
- 4.10 A Construction Environmental Management Plan will be prepared to ensure the implementation of measures to reduce any significant adverse effects during the construction process.
- 4.11 It is considered that sufficient information and construction parameters will be available to assess the likely significant effects arising during the construction of the development.

Alternatives considered

- 4.12 Schedule 4 of the Town and Country Planning (EIA) Regulations 2011 (as updated) requires a consideration of the main alternatives for the development which have been studied by the applicant and the main reasons for the choices which have been made, taking account of environmental effects.
- 4.13 It is a key parameter of this scheme to deliver a new community at the West of Bersted to respond to emerging local planning policy which identifies the site as a potential for new housing development. For this reason, the applicant has not given and will not be giving consideration as part of the EIA to other sites for the development of a similar development.
- 4.14 The EIA will include a review of:-
- 1 The likely effects in the event that the development does not come forward (the 'no development' scenario);
 - 2 Consideration of the evolution of the design of the scheme and whether alternative forms of development would achieve the same objectives.
- 4.15 The EIA team have been involved in the process of design iteration and emergence of the development. This process will be documented as part of the ES.

Other developments and cumulative effects

- 4.16 In accordance with the Town and Country Planning (EIA) Regulations 2011 (as updated), the EIA will include an assessment of any direct and indirect cumulative effects arising from the inter-relationships between different impacts arising from the development when considered alongside any other developments in the area surrounding the site. The objective is to identify whether combined effects from the development or impacts from several developments, and which individually might be insignificant could, when considered together, cause a further significant direct or indirect and cumulative impact requiring mitigation.
- 4.17 In relation to other development, best practice dictates that cumulative assessments of this nature should have regard to those schemes which are 'reasonably foreseeable' (i.e. usually those under construction or with planning permission). The assessment is only capable of being carried out based on the information available at the time of assessment.

- 4.18 The assessment should focus only where there is the potential for significant cumulative effects and, for this development, an initial review of potential developments requiring review has therefore focused on those developments which due to their proximity or scale are most likely to give rise to cumulative effects. Consideration has also been given to the areas within which cumulative effects are most likely.
- 4.19 The cumulative assessment will therefore include a review of the potential for effects when the scheme is considered alongside the following developments:-
- 1 P/6/17/OUT (Land north of Hook Lane) - Outline application with some matters reserved for construction of up to 300 No. new homes, Care home of up to 80 No. beds, D1 uses of up to 4000sqm including a 2 form entry Primary School, formation of new means of access onto Hook Lane & Pagham Road, new pedestrian & cycle links, the laying out of open space, new strategic landscaping, habitat creation, drainage features & associated ground works & infrastructure.
 - 2 P/140/16/OUT (Land South of Summer Lane & West of Pagham Road) - Outline application for access only - mixed use development comprising of up to 400 dwellings, a care home with up to 70 beds, a Local Centre comprising up to 2000 sqm of A1/A2/A3/D1/sui generis floorspace, provision of land for a 1FE primary school (with sufficient space to ensure that it is expandable to 2FE), provision of land for a scout hut, safeguarding of land to help link the site to the Pagham Harbour Cycle Route & other community uses including public open space & allotments with some matters reserved.
 - 3 P/134/16/OUT (Land North of Sefter Road, Pagham) - Outline application with some matters reserved for development of up to 250 dwellings (incl. affordable homes), provision of land for a replacement scout hut, land for an Ambulance Community Response Post facility & land for 1FE primary school. Primary vehicular access from Sefter Rd & demolition of 80 Rose Green Road & creation of pedestrian & emergency only access. Provision of public open space including childrens' play areas, landscaping, drainage & earthworks - Departure from the Development Plan. This application also falls within the parish of Aldwick.
 - 4 P/25/17/OUT (Church Barton House) - Outline application for the erection of 89 no. Dwellings, access roads, landscaping, open space & associated works.
 - 5 BE/77/16/OUT (Land West of New Barn Lane) - Outline application with all matters reserved for up to 50 residential units, landscaping, amenity space, car & cycle parking, roads, service & drainage infrastructure & other associated works.
 - 6 BE/142/15/OUT (Land West of New Barn Lane) - Outline application with some matters reserved for a mix of up to 90 No. residential units, associated open space, landscaping, access & car parking.
- 4.20 If the authority is aware of any other proposals that it considers will need to be assessed in terms of potential cumulative effects it would be appreciated if these could be identified as part of the EIA scoping opinion.

5.0 **Review of Potential Environmental Effects**

- 5.1 Regulation 13(2) of the Town and Country Planning (EIA) Regulations 2011 (as updated) establishes those matters which need to be provided to assist the relevant planning authority in forming an EIA Scoping Opinion. Accordingly, a summary of the likely issues, the potential effects and the proposed methodology of assessment for the identified areas of interest are set out in this section.
- 5.2 In considering the scope of the EIA, it is important to identify that the focus of Schedule 4 of the Regulations is the significant effects. Other lesser impacts need not be addressed as part of the EIA process.
- 5.3 Regard will be had to relevant national, strategic and local planning policy guidance.
- 5.4 The key issues set out below have been identified in the light of initial discussions with the authority and consultees and arising from initial site investigations. In addition, a summary is provided of other topics which have been reviewed but are considered should be scoped out of this EIA as they are unlikely to give rise to significant effects requiring assessment.
- 5.5 The development will be assessed during both the construction and operational phases of development; direct and indirect effects will be identified; as well as any secondary, cumulative, short, medium and long term, positive and negative effects of the development.
- 5.6 The range of sensitive receptors will be established by the assessments to be undertaken and many will cross over various topic areas (e.g. residential amenity will be assessed within the transport, noise, air and landscape and visual impact chapters, as well as the cumulative impact assessment where appropriate). The topic areas are considered below.

Transport

- 5.7 WYG will prepare the Transport chapter of the ES. This section identifies potential impacts with regard to transport that may occur during the construction and operation of the proposed development.
- 5.8 A Transport Assessment (TA) and Framework Travel Plan (TP) will also be undertaken and submitted as part of the planning application. A TA Scoping Report will be produced as a separate document to formally address the scope of this assessment and allow formal consultation with statutory consultees.
- 5.9 The chapter will provide a brief summary of relevant legislation, planning policy and guidance, and a description of the methodology adopted for the assessment. It will set out the relevant baseline conditions of the site and the surrounding area, and an assessment of the potential effects of the development during construction and once the development is completed and operational. Mitigation measures will be identified, where appropriate, to avoid, reduce or offset any adverse effects, following which, a summary of the likely significant residual effects of the development is provided, having regard to the mitigation adopted.
- 5.10 The Scoping Report and subsequent assessment of transportation issues will be carried out in accordance with both local authority and national guidance.

Existing baseline

- 5.11 A full description of the existing site and transport conditions in the study area will be provided including the following:
- Pedestrian Access;

- Cycle Access;
- Public Transport Access;
- Local Highway Network;
- Existing Traffic Flows;
- Highway Accident and Safety Review

5.12 Identification of the location of local bus stops, the standard of the bus stop infrastructure provided and the routing/frequency of services available there from.

Assessment methodology

5.13 An EIA Link Impact Assessment using IEMA guidelines will be reported in the transport chapter. The IEMA Guidelines for the Environmental Assessment of Road Traffic (1993) guidance identifies that the study area should include highway links where traffic flows will increase by 30% (vehicles or HGVs) and where flows increase by 10% in sensitive areas. The results of this assessment will form the study area for the assessment.

5.14 The data used for the study area will be derived from the transport material submitted to Arun District Council in the Local Plan Site Allocation Representation transport document (May 2017).

5.15 The IEMA Guidelines for the Environmental Assessment of Road Traffic identify the following transport aspects to be considered as part of the assessment:

- Effects on Traffic Flows;
- Severance;
- Driver Delay;
- Pedestrian Delay;
- Pedestrian Amenity;
- Fear and Intimidation; and,
- Accidents and Safety.

5.16 The assessment will consider the following scenarios:

- Construction Phase; and
- Operational Phase.

5.17 The IEMA Guidelines for the Environmental Assessment of Road Traffic document will be used to consider the sensitivity and significance of traffic changes. This includes guidance on how the sensitivity of receptors should be assessed. Using that as a base, professional judgement will be used to develop a classification of sensitivity for various receptors. This is summarised in Table 5.1.

Table 5.1 Classification of Receptor Sensitivity

Sensitivity Receptor	Negligible	Low	Medium	High
Location - Local Settlements	Individual dwellings or scattered settlements with no facilities	Small rural settlement, few community or public facilities or services	Intermediate sized rural settlement, containing some community or public facilities and services	Large rural settlement containing a high number of community and public services and facilities
Road network and associated users	Roads with no adjacent settlements including new strategic trunk roads that would be little affected by additional traffic and suitable for AILs	Little or no traffic calming or traffic management measures	Some traffic calming or traffic management measures	Traffic control signals, waiting and loading restrictions, traffic calming measures
Road structure and classification	New strategic trunk road junctions capable of accommodating AILs	Trunk or A-class road, constructed to accommodate significant HGV composition	Local A or B class roads, capable of regular use by HGV traffic	Minor rural roads, not constructed to accommodate frequent use by HGVs

5.18 The IEMA Guidelines identify the key impacts that are most important when assessing the magnitude of traffic effects from an individual development: Table 2.2 of Volume 11, Section 2, Part 5 of the Design Manual for Roads and Bridges (DMRB) entitled Assessment and Management of Environmental Effects sets out four levels against which the magnitude of change should be assessed - major, moderate, minor and negligible.

5.19 The criteria assessed will include Severance, Driver Delay, Pedestrian Delay, Pedestrian Amenity, Fear/Intimidation and Accidents and Safety. To determine the overall significance of the effects, the results from the receptor sensitivity and magnitude of change are correlated and classified using a scale set out in Table 2.4 of Volume 11, Section 2, Part 5 of the DMRB and summarised in Table 5.2.

Table 5.2 Significance of Effects

Sensitivity of the Receptor	Magnitude of Change			
	Major	Moderate	Minor	Negligible
High	Large	Large/Moderate	Moderate/Slight	Slight
Medium	Large/Moderate	Moderate	Slight	Slight/Neutral
Low	Moderate/ Slight	Slight	Slight	Slight/Neutral
Negligible	Slight	Slight/ Neutral	Slight/Neutral	Neutral

5.20 In terms of the EIA Regulations, effects would be considered to be of significance where they are assessed to be large or moderate. Where an effect could be one of large/moderate or moderate/slight, professional judgement would be used to determine which option should be applicable. Where mitigation is required, these measures will be identified and will include a Framework Travel Plan to set out the potential Travel Plan measures that could be considered appropriate for the development site during the operational phase. This is likely to include the provision of information covering non-car travel opportunities and other appropriate measures

in accordance with best practice guidance. During the construction phase, a Construction Traffic Management Plan (CTMP) will be developed as a framework document.

- 5.21 Within the TA, operational assessments will be undertaken at the key junctions using the Transport Research Laboratory's (TRL) PICADY and ARCADY junction modelling software, contained within the JUNCTIONS 9 package, at the priority and roundabout junctions within the agreed study area. The JCT Consultancy computer modelling package LinSig 3.1 will be used to assess the operational capacity of any signalised junctions within the agreed study area.
- 5.22 Should junction capacity need to be increased in order to cater for the traffic flows generated by the proposed development, or to cater for safe pedestrian/cycle movements, then 1:500 scale plans of appropriate highway improvements will be provided. Any amended junction arrangements will also be assessed to ensure that they are appropriate.

Consultation

- 5.23 Consultation undertaken to date includes formal discussions with:
- Arun District Council; and
 - West Sussex County Council;
 - Highways England.

Likely effects anticipated and receptors to be affected

- 5.24 Particular consideration will be given within the EIA assessment to changes to the local highway network traffic flows and associated implications for drivers, pedestrians and road safety.
- 5.25 Receptors will be identified within the chapter through the initial study area assessment (as set out in paragraph 5.14). The EIA assessment comprises the methodology set out within this chapter, with the results setting out the magnitude of change, sensitivity of receptor and the significance of effect on the local highway network, thereby detailing the environmental impact of the development in regards to road traffic.

Water Environment

- 5.26 WYG will prepare the Water Environment chapter of the ES. The purpose of this chapter will be to undertake an assessment of the potential impacts on water resources, to encompass surface water and groundwater quality, surface water and groundwater resources (in terms of water quality) and flooding issues on and within the vicinity of the site.
- 5.27 The principle piece of policy guidance of relevance to this discipline is PPS25, Development and Flood Risk. Further guidance issued by the Environment Agency will be consulted as well as any relevant UK legislation, namely Planning Policy Statement 25: Development and Flood Risk - Practice Guide (2008); Circular 04/06 (Communities and Local Government); the Town and Country Planning (Flooding) (England) Direction 2007.

Existing baseline

- 5.28 Publicly available environmental databases will be accessed to obtain information on water resources (abstractions, designations, discharge consents etc.) and identify existing biological and chemical surface water quality for any nearby water courses.
- 5.29 It will be determined from the Environment Agency, whether the site lies outside of the extent of the extreme flood and the chance of flooding each year.

- 5.30 Baseline environmental data searches will be carried out to show whether the site lies within a groundwater Source Protection Zone (SPZ) or within a Nitrate Vulnerable Zone (NVZ).
- 5.31 A BGS Solid and Drift Geology Map will illustrate soils underlying the site including leaching potential.
- 5.32 Surface and groundwater abstractions will be identified using the Envirocheck database.

Assessment methodology

- 5.33 The assessment will consider the potential effect on water resources (both surface and groundwater) and local hydrology, including tidal effects.
- 5.34 A Flood Risk Assessment (FRA) will be undertaken for the proposed development based on the requirements of Planning Policy Statement 25 Development and Flood Risk. The FRA will include:
- 1 Assessment of any flood defences already in place to protect the site;
 - 2 Details of historical flooding events;
 - 3 Details of local hydraulics;
 - 4 Speed and routes of flooding;
 - 5 Volume of displaced water and requirement for compensatory storage (if relevant);
 - 6 Volume of runoff likely to be generated and suitability of the site for SUDS;
 - 7 Sustainable Drainage Systems (SUDs) design concepts in accordance with PPS 25 (i.e attenuation requirements); and
 - 8 Climate change effects.
- 5.35 The FRA will include an appraisal of the feasibility of adopting SUDS. In accordance with PPS25, this will include a matrix setting out the SUDS measures that are considered feasible and conceptual design information on how SUDS techniques will be used to reduce runoff rates from the developed areas to an acceptable level.
- 5.36 The assessment of impact on the water environment will involve consultation with the Environment Agency and with relevant Ground Condition reports.
- 5.37 The methodology for carrying out baseline research involves the following steps:
- 1 review of previous reports;
 - 2 review of Landmark Envirocheck data for site and 2km radius;
 - 3 review of relevant planning policy;
 - 4 consultation with the Environment Agency;
 - 5 review of BGS Solid and Drift Geology Map; and
 - 6 review of Groundwater Vulnerability Map.
- 5.38 The assessment of the likely effects of the proposed development on water resources will be undertaken in accordance with current Government guidance and Environment Agency guidelines on EIA, surface water and groundwater quality and flood risk assessment.
- 5.39 The potential impacts of the proposals will be mitigated through a series of measures during both the construction and operational phases of the development and these will be identified in the ES.

5.40 Specific details of proposed mitigation measures including those relating to flooding, will be discussed and agreed with the Environment Agency.

5.41 Table 5.3 provides a scoping summary relating to water resources.

Table 5.3 Water Resources Impacts

Receptor	Impacts	Scoped In
Local Residents	The Proposed Development may have an effect on flooding	Yes
Groundwater and drinking water resources	Impact from sources of contamination ie chemical, waste, fuels on source protection zones if present	Yes
Surface Water	Impact from sources of contamination i.e. chemicals, waste, fuels	Yes

Likely effects anticipated and receptors to be affected

5.42 The EIA process will include the assessment of construction impacts on surface water and groundwater. It will focus on surface runoff calculations during construction and assess the proposed drainage design in the environs of the site. Operational impacts such as water consumption, changes in the rate and volume of runoff and the control of pollution will also be assessed in the EIA.

5.43 The following potential water resource impacts are considered pertinent to the site. Issues relating to potential contamination will be considered under a separate chapter.

During construction

- General site drainage;
- Change in the urban form which may have a subsequent effect on surface water drainage patterns; and
- Effects on water movement and potential for increased River sediment load and volume of water.

Operation

- Fluvial Flood Risk; and
- Site drainage.

Archaeology and Cultural Heritage

5.44 Cotswold Archaeology will prepare the Archaeology and Cultural Heritage chapter of the ES. The archaeological and heritage issues related to the proposed development will be considered in the context of the considerable amount of work already undertaken within the site. With regard to archaeology, previous archaeological investigations have already provided a good understanding of the resource and potential impacts. However, it cannot be ruled out that some further targeted investigation may be required to provide information for areas excluded from previous surveys or to fully understand the significance of some of the most sensitive remains. Further assessment will be required in relation to the settings of designated heritage assets in the vicinity of the site, as this has not previously been subject to detailed assessment.

Existing baseline

- 5.45 A desk-based assessment and a fairly extensive trial trench evaluation were undertaken across the site in 2008-2009. The results of the fieldwork were summarised in an Archaeological Sensitivity document (Cotswold Archaeology 2015), which highlighted nineteen discrete areas of high archaeological sensitivity. These include:
- 1 Pleistocene deposits, potentially associated with hominin activity, with a findspot of a Palaeolithic handaxe recorded in the vicinity;
 - 2 Early Neolithic remains;
 - 3 Late Bronze activity, including ditches, a burnt mound and other features indicative of nearby occupation, which has been identified in a number of discrete areas across the site. A ring ditch, which could represent a potential round barrow, has also been found although the internal feature was dated to the Roman period;
 - 4 Iron Age activity associated with occupation, including ditches, pits a holloway and other features;
 - 5 Roman period features associated with settlement activity, which focused on higher ground and included a hearth, pits and pottery, with further remains (incl. a waterhole) recorded further to the south; and
 - 6 An undated cremation burial.
- 5.46 Further prehistoric and later features (largely associated with agricultural activity), as well as WW2 remains, were also present (in areas of medium to low sensitivity).
- 5.47 With regard to designated heritage assets located within the environs of the site, it is considered that the majority of the remains, including Listed Buildings within North Bested Conservation Area, would not require a detailed assessment as these are separated from the site by modern built form and vegetation. The assessment will focus on Grade II Listed Buildings which are likely to have their settings altered by the proposed development, including Morells Farmhouse which is adjacent to the site, Neals Farmhouse, Lagnersh Farmhouse and, potentially, further buildings over 1km to the west of the site.

Assessment methodology

- 5.48 The assessment for the Archaeology and Cultural Heritage chapter will be undertaken in accordance with all relevant professional legislation, policy and guidance. This will seek to provide clear statements of significance ('what matters and why') for identified and potential heritage assets, and a sound understanding of the character of the change brought about by the proposed development. This will allow for a transparent articulation of the nature of any harm that might result from the development proposal proceeding.
- 5.49 For archaeological works the 'Standards and Guidance' published by the Chartered Institute for Archaeologists will be utilised. For undertaking assessment of significance the approach outlined in 'Managing Significance in Decision-Taking in the Historic Environment: Historic Environment Good Practice Advice in Planning: 2' (Historic England 2015) will be utilised and reference will be made to the English Heritage Conservation Principles (2008). For the settings assessment the approach set out in 'The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning: 3' (Historic England 2015) will be used.
- 5.50 It is considered that further surveys required to inform the ES chapter will include a settings assessment with regard to the identified Listed Buildings. The need for any additional archaeological surveys will be discussed with the archaeological advisor to the Local Planning Authority.

- 5.51 In undertaking the assessment, the methodology to be followed has moved away from the more traditional ‘scalar’, quantitative, matrix-led approaches; adopting a descriptive, qualitative presentation of the findings of assessment. The approach to be adopted will utilise best practice from the sector to ensure that the provisions of the National Planning Policy Framework are met. In particular it will seek to establish the ‘significance’ of the heritage assets affected and determine the level of harm that will result should the proposed scheme proceed. To ensure that the language used within the EIA Regulations is also incorporated within the assessment methodology it is considered that ‘substantial harm’ to any heritage asset (designated or not) would equate to a ‘significant effect’. ‘Less than substantial harm’ to designated heritage assets of the highest significance could also trigger the same ‘significant effect’, but no prescriptive criteria is proposed to prejudice this threshold, leaving it to professional judgement.

Consultation

- 5.52 It is proposed to undertake consultations with the archaeological and conservation advisors to the Local Planning Authority to agree on the sufficient level of information to inform the ES chapter. Requirements for any further fieldwork survey will be discussed as well as options for appropriate mitigation measures.

Likely effects anticipated and receptors to be affected

- 5.53 In all cases, the impacts resulting from the proposed development are judged against the potential harm to the significance of heritage assets identified.
- 5.54 Heritage assets of archaeological interest will be harmed directly as a result of the groundworks (incl. excavations, stripping or landscaping) associated with the development activity. It is anticipated that a mitigating strategy, involving investigation, recording, analysis and publication, will be appropriate, with the extent of works to be agreed through consultations with the archaeological advisor. In areas proposed to be retained as green open space, there would likely be no impacts upon the archaeological resource.
- 5.55 Significance of designated heritage assets, in particular Listed Buildings mentioned above, can be affected as a result of change the proposed development may introduce within their settings. This will require consideration as part of the assessment.

Socio-Economic

- 5.56 Lichfields will prepare the Socio-Economic assessment. This will consider the key socio-economic effects associated with the proposed development, at both the construction and operational stages.

Existing baseline

- 5.57 In order to assess the likely socio-economic effects of the proposal, the economic and labour market characteristics of the defined impact area will be examined, including the demographic profile, economic trends, indices of deprivation, unemployment rates, commuting patterns, income levels, skills levels of the work force and educational attainment. This will establish any strengths and weaknesses of the local economy that the proposals may affect. The current and future planned provision of community infrastructure will also be considered in terms of capacity to meet demand, relating to education, health and other community facilities.
- 5.58 This baseline will be established using a combination of data sources including nationally published statistics from Office of National Statistics (ONS), Department for Communities and Local Government (CLG) and Department for Business, Energy & Industrial Strategy (BEIS) as well as local data from Arun District Council and West Sussex County Council as appropriate.

Assessment methodology

- 5.59 The evaluation of effects of the proposals will be based on an assessment of the magnitude of the effect and the importance of the identified receptor. Effects will be identified on a matrix basis from major adverse through to major beneficial, representing the scale of effects above and beyond the baseline position. Where possible, the scale of effects will be quantified in relation to current conditions under each receptor.
- 5.60 Employment effects of the proposals will be assessed by estimating employment generation both from the construction and operational phases of the scheme. The effects will be quantified in gross and net terms.
- 5.61 The likely employment effects of the proposals during the construction phase will be assessed by estimating employment generation from the construction cost of the scheme. Appropriate employment multipliers will be applied to direct employment to estimate the indirect employment, taking account of expected expenditure by the operation and its employees in the local economy.
- 5.62 For operational employment, this will involve applying typical employment densities to the proposed amount of floorspace for the different components of the scheme. Appropriate employment multipliers will be applied to estimate the indirect and induced employment generated by the proposals. The significance of the overall employment effects on the local labour market will then be assessed, taking into account unemployment levels, economic activity rates, commuting patterns, the skills levels of workers available and any training initiatives available.
- 5.63 Impacts on local housing will be considered in the context of the published estimates of housing need in Arun District. For impacts on community infrastructure, these will be estimated based on the expected change in local population measured against capacity for education, health and other community facilities within defined catchment areas as appropriate. The significance of these impacts will be considered in the context of appropriate benchmarks for different infrastructure types and the nature of current and planned provision.

Consultation

- 5.64 It is anticipated that consultation will be undertaken with relevant statutory consultees and economic development officers within Arun District Council as necessary.

Likely effects anticipated and receptors to be affected

- 5.65 It is anticipated that the main socio-economic effects will relate to employment, the local labour market, housing needs and demand for community infrastructure.
- 5.66 The construction of the proposed development will result in direct construction jobs employed on site as well as indirect and induced jobs in supply chains and through associated expenditure in the local area.
- 5.67 The completed development will support net additional employment which will impact the local economy. The increase in the local labour force may generate increased expenditure in local shops and services. The new residential development will also contribute to meeting identified local housing needs in Arun District, and the increase in residential population may result in increased demand for a range of community facilities which will be assessed taking account of new provision included within the proposed development.

Landscape Character and Visual Impact

5.68 The Landscape Character and Visual Impact chapter of the ES will be prepared by FPCR.

Existing baseline

5.69 Published landscape character assessments have been prepared, covering the site and its context. At the national scale, the Site lies within Natural England's National Character Area (NCA) 126 'South Coast Plain'. This NCA stretches from the edge of Southampton in the west to Brighton and Hove in the east. The West Sussex Landscape Character Assessment (2003) characterises the area encompassing the Site as the Chichester to Yapton Coastal Plain Landscape Character Area (LCA). The site shares a number of key characteristics with this LCA, including low lying flat open landscape.

5.70 The Arun Landscape Study (2006) includes a landscape character assessment of the district. The study has attributed the following typologies to the area encompassing the site:

- L1b - Large scale open arable
- L2 - Medium/small scale arable
- U1 - Utilities

5.71 The Site lies within the following Landscape Character Areas:

- 6. Rose Green Coastal Plain (high landscape capacity)
- 7. Sefton Bottom-Elbridge Coastal Plain (low/medium landscape capacity)
- 8. North Bersted Matrix (medium/high landscape capacity)

5.72 The Landscape Capacity of Strategic Sites in Arun District (February 2017) study suggests that site has capacity to accommodate a carefully considered urban extension, but that this should be sensitive to the setting of the wider landscape – particularly to the west and north.

Site landscape

5.73 The site lies on the north-western edge of Bognor Regis. It consists of a number of agricultural fields, with large polytunnels located in the northern part of the site. Park Farm (in the north-west corner of the site) comprises a number of buildings, caravans, hardstanding, small reservoir and irrigation pond. A further caravan park is located just beyond the site, extending west from the edge of North Bersted. The smaller fields, which sit against the settlement edge of North Bersted, are used for pastoral farming (horse paddocks and sheep grazing), and tend to be more enclosed than the larger, arable fields. Despite being largely rural in nature, the site is significantly influenced by the adjacent urban edge, which abuts the southern and eastern boundaries. Agricultural use (comprising land, flat fields) extends northwards and westwards from the site.

Designations

5.74 The South Downs National Park is located over 6km to the north. In good weather, the rising landform of the South Downs can be seen in the distance to the north.

5.75 The Site lies within a Strategic Gap. This policy (Policy Area 10 of the adopted Local Plan) does not seek to protect valuable landscape, but instead seeks to retain a gap between settlements.

Assessment methodology

- 5.76 The LVIA will be undertaken in accordance with the principles set by the Landscape Institute and Institute of Environmental Management and Assessment in the Guidelines for Landscape and Visual Impact Assessment Third Edition (2013) and guidance on Landscape Character Assessment produced by the Countryside Agency (now Natural England) and Scottish Natural Heritage (2002). Viewpoint photographs will be prepared in accordance with the Landscape Institute's Advice Note 01/11 Photography and photomontage in landscape and visual impact assessment (2011).
- 5.77 Conclusions on effects, whether adverse or beneficial, are drawn from the separate judgements on the sensitivity of the receptors and the magnitude of the effects. This overall judgement involves a reasoned professional overview of the individual judgements against the criteria to make the final overall judgement.
- 5.78 For this assessment, the following descriptive thresholds will be used with regard to effects:-
- Major: An effect that will fundamentally change and be in direct contrast to the existing landscape or views;
 - Moderate: An effect that will markedly change the existing landscape or views but may retain or incorporate some characteristics/ features currently present;
 - Minor: An effect that will entail limited or localised change to the existing landscape/ views or will entail more noticeable localised change but including both adverse and beneficial effects and is likely to retain or incorporate some characteristics/ features currently present;
 - Negligible: An effect that will be discernible yet of very limited change to the existing landscape or views.
- 5.79 Finally, a judgement will be reached based on the assessment, whether an effect is significant or not.

Consultation

- 5.80 Natural England have already been consulted on the emerging proposals for Green Infrastructure on the Site, however this was primarily in relation to potential impact upon Pagham Harbour SPA.
- 5.81 As part of this scoping process, Arun District Council are being consulted on the location of proposed photo viewpoints (see Appendix 3), that will form the basis of the visual impact assessment.

Likely effects anticipated and receptors to be affected

- 5.82 There will be a number of landscape and visual receptors which could potentially be affected by proposed development on the site. Those identified to date are highlighted below. Further receptors may be identified as part of the ongoing assessment work.

Landscape impact

- The character of the landscape - on both a site wide and broader contextual basis. This will include consideration of any effects upon the existing key characteristics, as set out in published Landscape Character Assessment;
- Landscape features of the site, including trees and hedgerows.

Visual impact

- 5.83 The plan at Appendix 3 identifies the locations of proposed photo viewpoints, that will form the basis of the visual impact assessment. Receptors represented by these viewpoints are listed below:
- Residents - including principally those in properties within or surrounding the Site. This will include residents of properties:
 - near Babsham Farm (off A529);
 - on New Barn Lane;
 - on Winston Crescent;
 - at Orchard Caravan Park;
 - on/adjacent to Chalcraft Lane;
 - at isolated farmsteads;
 - on Lower Bognor Road; and
 - other residents of properties in the wider area with potential views towards the proposed development.
 - Users of Public Rights of Way (PROW) (including those within the Site) and any others with potential views towards the proposed development;
 - Visitors to Chalcraft Lane Cemetery;
 - Recreational users of Jubilee Playing Fields;
 - Users of existing employment and commercial facilities;
 - Users of the surrounding roads; and
 - Recreational users of the South Downs National Park. (Due to distance from the site, it is anticipated that any effects on visual amenity would be negligible).
- 5.84 All of these receptors and any other subsequently identified will be assessed by the impact assessment process.
- 5.85 The proposed development may give rise to environmental effects on landscape and visual amenity receptors within the LVIA study area. These impacts will be given consideration as part of the design process to ensure that significant effects are avoided or mitigated. The following landscape and visual effects are anticipated to occur during the construction and operation of the proposed development:
- Impacts on landscape character of the landscape features and elements (physical impact) of the local landscape within Chichester to Yapton Coastal Plain (and district-level Landscape Character Areas within this);
 - Impacts on the landscape character of Chichester to Yapton Coastal Plain due to changes in key characteristics, including landscape elements and features, and views within, in and out of the area.
 - Impacts on the character of the surrounding landscape character areas due to changes in views from these areas.
 - Changes in views experienced by people within the LVIA study area.
- 5.86 It is anticipated that no significant impact upon visual amenity beyond the immediate context of the site, due to a flat open landscape combined with the screening effect of the existing settlement edge in combination with existing and proposed vegetation.

Ecology and Nature Conservation

5.87 The Ecology and Nature Conservation chapter of the ES will be prepared by FPCR.

Existing baseline

5.88 In order to inform the Ecological Impact Assessment, baseline ecological information will be obtained from relevant statutory and non-statutory consultees for a zone of influence of up to 10km surrounding the site for statutory sites and 2km for non-statutory sites and species records. The assessment will also be based upon study area completed within the Project Area. Specifically, this includes the following:

- 1 Extended Phase 1 Habitat and Preliminary Protected Species survey following Natural England (Nature conservancy Council, 1993) guidelines¹.
- 2 Hedgerow surveys following methodology based on that outlined in the Hedgerow Survey Handbook, Defra (2007)² and The Hedgerow Evaluation and Grading System (HEGS) (Clements & Tofts, 1992)³. Also, assessed against the criteria of The Hedgerow Regulations, 1997, Statutory Instrument No: 1160⁴.
- 3 Badger survey following the methodology as outlined by Harris Cresswell and Jeffries (1991)⁵.
- 4 Habitat Suitability Index (HSI) survey using methods devised by Oldham et al (2000)⁶. Full aquatic presence/absence surveys were also undertaken where access was permitted. Natural England guidance was followed, as detailed in the Great Crested Newt Mitigation Guidelines (2001)⁷ and eDNA survey of all waterbodies on site and all those on third party land within 250m of the site to which access is permitted.
- 5 Comprehensive breeding and wintering bird surveys were undertaken over the Project Area following methodologies as outlined by Bibby *et al* (1992)⁸ and used by the British Trust for Ornithology (BTO)⁹.
- 6 Reptile surveys following methodology based on information provided in the Herpetofauna Workers Manual (2003)¹⁰ and the Froglife Advice Sheet 10: Reptile Survey (1999)¹¹.
- 7 Bat surveys, both automated and manual, undertaken across the site conforming to BCT (2016) guidelines¹².
- 8 Dormouse surveys were undertaken of suitable habitat across the Project Area following the methodology outlined in the Dormouse Survey Handbook 2nd ed, (2006)¹³. Survey effort was also scored using the standard method after Chanin & Woods (2003)¹⁴.

¹ JNCC, (2010), *Handbook for Phase 1 habitat survey - a technique for environmental audit*.

² DEFRA (2007) *The Hedgerow Survey Handbook*. 2nd Ed.

³ Clements, D.K. & Tofts, R.J. (1992) *Hedgerow evaluation and grading system (HEGS) - a methodology for the ecological survey, evaluating and grading of hedgerows*. Countryside Planning and Management. Cirencester.

⁴ DOE (1997) *The Hedgerow Regulations*. HMSO, London.

⁵ Harris, Cresswell and Jeffries (1991) *(Report) Surveying Badgers*. The Mammal Society, Bristol.

⁶ Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10 (4), 143-155.

⁷ Whitehurst (2001) *Great Crested Newt Mitigation Guidelines: Version August 2001*. English Nature, Peterborough.

⁸ Bibby, C.J., N.D. Burgess & D.A. Hill (1992): *Bird Census Techniques*. Academic Press, London.

⁹ <http://www.bto.org/survey/complete/wfbs/introduction.htm>

¹⁰ Gent, T & Gibson, S (2003) *Herpetofauna Worker's Manual*. JNCC, Peterborough.

¹¹ Froglife (1999) *Reptile Survey; an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife Advice Sheet 10. Froglife, Halesworth.

¹² Bat Conservation Trust (2016), *Bat Conservation Trust Guidelines*

¹³ Bright, Morris & Mitchell-Jones (2006) *The Dormouse Conservation Handbook*. English Nature, Peterborough.

¹⁴ Chanin & Woods (2003) *English Nature Report No. 524 on nest tube surveying*. English Nature, Peterborough.

- 9 Survey of all suitable habitats within the Project Area for the presence of evidence of riparian mammals (otter and water vole). Survey methodology followed that detailed in the Watervole Conservation Handbook (2006)¹⁵ and the New Rivers and Wildlife Handbook¹⁶

5.89 Where species specific surveys are considered necessary and cannot be completed prior to submission of the application, assumptions on the likely potential effects will be made and mitigation provided within the development proposals. In such instances, mitigation will be proportional to the perceived likely effect in line with British Standard 42020:2013 *Biodiversity - Code of practice for planning and development* that emphasises the importance of 'proportionality' stating:

"The work involved in preparing and implementing all ecological surveys, impact assessments and measures of avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development".

5.90 The main objectives of the Ecological Impact Assessment will be:

- 1 to describe and to describe and evaluate habitats and species present at the site and within the local area, and identify those considered to be Important Ecological Features ('IEFs');
- 2 to review habitats of nature conservation value in a local, regional and national context and within the context of current and emerging nature conservation policies;
- 3 to determine the sensitivity of IEFs present to the type of development proposed;
- 4 to identify and describe any changes arising from the project relating to existing nature and conservation resources. This is determined as the magnitude of change;
- 5 to identify and describe any mitigation measures to minimise the potential effect of development and where feasible to consider opportunities for additional habitat creation; and
- 6 to evaluate the significance of residual nature and conservation effects.

Assessment methodology

5.91 The Ecological Impact Assessment and assessment within the chapter will follow guidelines as set out in the Chartered Institute of Ecology and Environmental Management ('CIEEM') Guidelines for Ecological Impact Assessment (EcIA) in the UK and Ireland - Terrestrial, Freshwater & Coastal (2nd Edition) (January 2016). This includes an evaluation of habitats and species present within the Project Area and includes an assessment of their importance or sensitivity at the local, regional, national and international level.

5.92 The components of this Ecological Assessment will include: baseline studies; descriptions and details of onsite proposals and mitigation measures to be adopted as part of the scheme; the identification and description of likely effects arising from the proposals, and an assessment of the significance of these effects, with regards to the proposals.

5.93 The evaluation and assessment of IEFs and potential impacts on them is broadly based upon the guidelines as defined in CIEEM Guidelines for Baseline Ecological Assessment¹⁷ and Guidelines for Preliminary Ecological Appraisal¹⁸.

¹⁵ Strachan & Moorhouse (2006) Water Vole Conservation Handbook 2nd. Edition. WildCRU, Oxford

¹⁶ Ward D, Holmes N, Jose P (editors) (1994) The New Rivers and Wildlife Handbook. NRA, RSNCRSPB, Sandy, Bedfordshire.

¹⁷ Guidelines for Baseline Ecological Assessment. Chartered Institute of Environmental Assessment. Chapman & Hall, 1995.

¹⁸ Guidelines for ecological appraisal. Technical Guidance Series. Chartered Institute of Ecology and Environmental Management, 2013.

5.94 Impacts will be assessed in terms of their magnitude, extent, duration, reversibility, timing and frequency, confidence in predictions and whether they are positive or negative. Descriptions of these parameters is provided within the relevant guidance stated above.

5.95 In line with CIEEM 2016 guidelines, the assessment will only describe those characteristics relevant to understanding the ecological effect and determining significance.

Sensitivity

5.96 In assessing the sensitivity, the determined value of each receptor is considered in respect of its extent, diversity, rarity and local context of the study area and its surrounds. Therefore, whilst some species or habitats may have a high/medium geographic value resulting from the level of statutory protection afforded them, or their inclusion in S41 of the NERC Act (2006) or local BAP, their sensitivity may be considered to differ with the local context.

Ecological significance

5.97 Consideration of all of the above criteria feeds into a comprehensive assessment of ecological significance, allowing a final judgement as to whether the effect is significant or not.

5.98 Significance can be positive or negative. An ecologically significant effect positively or negatively alters the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a geographical area.

5.99 The value of any feature that will be significantly affected is that used to identify the geographical scale at which the impact is significant. The value relates directly to the consequences in terms of legislation, policy and/or development control at the appropriate level.

5.100 For this assessment, the following descriptive thresholds will be used:

- Major: an effect considered very important in the decision process;
- Major/Moderate: an effect that is considered material in the decision process;
- Moderate: an effect that is notable, but not material in the decision process;
- Minor: an effect that will be noticed but is not relevant to the decision process (not significant); and
- Negligible: an effect that will be discernible but of very limited consequence that is not relevant to the decision process (not significant).

Mitigation, compensation and enhancement

5.101 Avoidance, mitigation, compensation and enhancement measures, also referred to as the 'mitigation hierarchy' will be identified within the assessment and the sequential process of their adoption within the context of the scheme described. For the purpose of Ecological Impact Assessment, the impacts upon IEFs will be assessed in the absence of mitigation.

5.102 Regard will be given to the avoidance of impacts, where possible, through scheme design (often referred to as 'inherent' or 'embedded' measures) and/or regulation through aspects such as timing, storage of materials etc. (often termed 'actionable' measures). Where not possible, opportunities are sought to reduce the impacts as much as is feasible. If significant impacts cannot be avoided through mitigation, then compensation that is considered appropriate to offset the adverse impacts will be outlined.

Consultation

- 5.103 Consultations with both Natural England and Arun District Council regarding the mitigation and compensation measures for the likely potential effects of proposals upon the nearby Pagham Harbour Special Protection Area (SPA) and Ramsar site have been undertaken. Measures agreed through this dialogue will be included within the assessment.

Likely effects anticipated and receptors to be affected

Habitats and species

- 5.104 There will be a number of IEFs that have the potential to be affected by proposed development of the study area. Habitats within the site have been confirmed as supporting small populations of grass snake, low numbers of water vole, unremarkable numbers of common and widespread bat species all of which are considered of no more than local nature conservation value. It is considered that the likely potential effects upon these IEFs can be adequately mitigated for through inherent design of the project and/or through implementation of standard actionable measures of avoidance and mitigation.

Designated sites

- 5.105 With regard to environmental sensitivity and ecological matters, the proposed location of the development would be in close proximity to Pagham Harbour SPA, Ramsar SSSI and therefore it is regarded that the scheme is of significant scale and in close enough proximity to a designated site/qualifying environmentally sensitive location to require an EIA on ecological grounds under Regulation 2 of the EIA regulations.
- 5.106 In the context of the likely potential effects upon Pagham Harbour, within the assessment, focus will be on the following identified receptors:
- Pagham Harbour SPA/Ramsar/SSSI;
 - Wintering birds;
 - Breeding birds;
 - Arable fields.
- 5.107 The potential indirect impacts of increased recreational pressure have been fully assessed within the *Stage 2 Report Screening for Likely Significant Effects (April 2016) supplementary Work to the Habitat Regulations (HRA)* of the Arun Local Plan and the *Stage 3 Report: Appropriate Assessment (February 2017) supplementary work to the HRA* of Arun Local Plan with strategic mitigation measures subsequently incorporated into emerging Local Plan Policy ENV DM2.
- 5.108 The likely potential effects, avoidance, mitigation and compensation measures included in relation the Pagham Harbour in this assessment will be in line with relevant planning policy.

Agricultural Land

- 5.109 This section of the scoping report has been prepared by Kernon Countryside Consultants Ltd (KCC). KCC is a specialist consultancy advising farmers, landowners, developers and local authorities on farm business and farm diversification proposals, and the effects of non-agricultural development on agricultural assets. KCC is familiar with many different types of agricultural and horticultural enterprises and the planning policy framework governing such enterprises.

- 5.110 The agricultural chapter will consider the likely significant effects of the proposed development in terms of agricultural land quality and the agricultural businesses which operate within the site.

Existing baseline

- 5.111 The site extends to approximately 141 ha of predominately agricultural land on the northern edge of Bognor Regis.
- 5.112 The site has been the subject of a number of detailed Agricultural Land Classification (ALC) Surveys, all of which have been undertaken in accordance with the current MAFF Guidelines (1988).
- 5.113 The detailed ALC surveys identify the site to comprise predominately (65%) of sub-Grade 3a land with areas of Grade 2 (22%) and sub-Grade 3b (6%). The remainder of the site comprises of non-agricultural/other land which includes areas of farm buildings, tracks etc.
- 5.114 The land is all being actively farmed, predominantly by tenants, for arable purposes.

Assessment methodology

- 5.115 National planning policy guidance is set out in the National Planning Policy Framework, published in March 2012 (the NPPF). Paragraph 112 states:
- “Local planning authorities should take into account the economic and other benefits of the best and most versatile agricultural land. Where significant development of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land in preference to that of a higher quality.”*
- 5.116 Annex 2 of the NPPF defines “best and most versatile agricultural land” as “land in grades 1, 2 and 3a of the Agricultural Land Classification”. For the purposes of this assessment, best and most versatile agricultural land is henceforth referred to as ‘BMV’.
- 5.117 Local planning policy is set out in the saved policies of the Arun District Local Plan, adopted in April 2003. The Local Plan does not contain a saved policy regarding the protection of BMV agricultural land.
- 5.118 Emerging policy is set out in the Arun Local Plan 2011 – 2031 Publication Version October 2014 and accompanying, emerging policies maps. The emerging Local Plan recognises, at paragraph 11.1.4, that “most of the undeveloped coastal plain within the District is high grade agricultural land and falls within the Agricultural Land Classification Grades 1, 2 and 3a.”
- 5.119 Emerging Policy SO DM1: Soils states “unless designated by this Plan or a Neighbourhood Development Plan, the use of Grades 1, 2 and 3a of the Agricultural Land Classification for any form of development not associated with agriculture, horticulture or forestry will not be permitted unless the need for the development outweighs the need to protect such land in the long term”.
- 5.120 The “requirement to protect the best and most versatile land can be outweighed if it is demonstrated through sustainability and options appraisals that:
- a Preservation of land of lower quality has greater benefits in terms of ecosystem services (for example carbon storage, flood water retention, support of biodiversity);
 - b That any site preferred for development is demonstrated to be the best and most sustainable option, including but not limited to the terms of land quality, ecosystem services, infrastructure and proven need; and

- c The proposed development meets the requirement of the countryside policy and/or equine development proposal.”

- 5.121 Emerging Policy SO DM1 goes on to state that “where development is permitted it should, as far as possible, use the lowest grade of land suitable for that development” and “development will not be permitted unless:
- a The applicant has submitted sustainability and options appraisals, mitigation measures and a soil resources plan for the development site;
 - b Site appraisal documents submitted by the applicant must demonstrate that consideration has been given to DEFRA’s Soil Strategy for England;
 - c The productivity of the land is demonstrated using a methodology for assessing gross margins as contained in the Arun Soils and Agricultural Land Assessment Report¹⁹; and
 - d The applicant has submitted a comprehensive soil resources plan for the development site which demonstrates that care will be taken to preserve the soil resource, such that it can be incorporated into a Productive Green Environment following development.”
- 5.122 Supporting text to the emerging plan identifies that “some of the most significant impacts on soils can occur as a result of activities associated with construction” and goes on to recognise that the soil resource could be deployed off-site for continued agricultural uses (paragraph 11.1.3).
- 5.123 The site has already been the subject of several detailed Agricultural Land Classification Surveys. All of these surveys were carried out in accordance with current MAFF Guidelines (1988) and therefore their findings remain valid. Accordingly the existing survey findings will be used to inform the ES chapter.
- 5.124 The occupying farm businesses within the site will be identified and a representative of each business will be interviewed and a site visit will be undertaken. As part of the farm business assessment consideration will also be given to point f) of emerging Policy SO DM1.

Assessment methodology

- 5.125 The assessment of the effects on agricultural land and farm businesses will be carried out in three stages. Firstly the magnitude of the potential impacts will be considered. Secondly the importance/sensitivity of the receptor will be considered and, thirdly, the significance of effects will then be determined by the interaction of magnitude and sensitivity. The effects will be determined by the thresholds set out in Tables 5.4 – 5.6 below.

Table 5.4 Methodology for Determining Magnitude of Effect

Magnitude of Effect	Definition	
	Effects on Agricultural Land	Effects on Farm Businesses
High	The proposed development would directly lead to the loss of over 50 hectares of BMV agricultural land (Grades 1/2/3a).	The effect of the proposed development would render a full-time agricultural business non-viable or result in very significant changes to the day to day management and operation of the farm unit. Closure of a part-time farm business.

¹⁹ Reference to Appendix 1 of Arun Soils and Agricultural Land Assessment report prepared by Reading Agricultural Consultants, March 2013

Magnitude of Effect	Definition	
	Effects on Agricultural Land	Effects on Farm Businesses
Medium	The proposed development would directly lead to the loss of between 20 and 50 hectares of BMV agricultural land (Grades 1/2/3a).	The effect of the proposed development would require significant changes in the day to day management of a full-time agricultural business. Very significant effect on a part-time farm business.
Low	The proposed development would directly lead to the loss of less than 20 hectares of BMV agricultural land (Grades 1/2/3a) or the loss of any quantity of non-BMV land (Grades 3b, 4 or 5).	Only minor changes in the day to day management/structure of a full-time agricultural business or a significant effect on a part-time business.
Negligible	No permanent adverse effect on agricultural land.	Negligible changes to an agricultural business.

5.126 The methodology for determining the sensitivity of the receptors is set out in Table 5.5 below. Two receptors have been identified: agricultural land and farm businesses. The sensitivity of these receptors is defined by the quality of the agricultural land and the scale of the farm business. BMV agricultural land is of national importance whilst poorer quality agricultural land (non-BMV) and farm businesses are of local importance.

Table 5.5 Methodology for Determining Sensitivity

Sensitivity	Receptor
High	Land resources are matters of potentially national importance, as identified in the NPPF. The BMV agricultural land (Grades 1, 2 and 3a) is of national importance. There are no defined criteria against which to set thresholds. The effect on land resources is a combination of the quantum and quality of agricultural land affected, relative to both the national resource and the relative availability of land of that quality locally. Land resources of BMV quality should therefore be classified as being of high environmental value (sensitivity).
Medium	Land that is of poorer quality, Grades 3b, 4 and 5, are of less sensitivity and are afforded no special protection in the NPPF. They are nevertheless a finite resource of local importance and so are regarded of moderate sensitivity. Full-time farm businesses are of medium sensitivity, as the way that farms are operated will vary over time according to ownership, security of tenure and local and international economic factors. Farm businesses are tolerant of some change without detriment to their character.
Low	Part-time farm businesses are of low sensitivity. The way that farms are operated will vary over time according to ownership, security of tenure and local and international economic factors. Farm businesses are tolerant of some change without detriment to their character.

5.127 The significance of the effects of the development will then be determined by the interaction of the magnitude of the impact and the sensitivity of the receptor, as set out in the matrix at Table 5.6.

Table 5.6 Methodology for Determining Sensitivity

		Sensitivity/importance of receptor		
		High	Medium	Low
Magnitude of impact	High	Major Adverse/ Beneficial	Moderate Adverse/Beneficial	Minor Adverse/ Beneficial
	Medium	Moderate Adverse/ Beneficial	Minor Adverse/ Beneficial	Minor Adverse/ Beneficial
	Low	Minor Adverse/Beneficial	Minor Adverse/Beneficial	Minor Adverse/Beneficial
	Negligible	Negligible	Negligible	Negligible

5.128 In addition to the ES chapter, which will carry out an assessment of the impacts on agricultural land and businesses, a separate site appraisal document will be produced which will consider and include, as per emerging Policy SO DM1:

- A soil resource plan; and
- An assessment of the productivity of the land.

Consultation

5.129 Consultation will be undertaken with the farming occupiers and Arun District Council.

Likely effects anticipated and receptors to be affected

5.130 Agricultural land will be permanently lost as a result of the proposed development. The chapter will consider the quantum of “best and most versatile agricultural land” within the site to assess the likely significance of the proposed development.

5.131 Farm businesses will also be affected by the proposed development. The chapter will consider the quantum of agricultural land lost in relation to the occupiers’ farm size and structure and the continued viability of the business

Ground Conditions and Contamination

5.132 This chapter will be prepared by WYG and will provide the Ground Conditions and Contamination scoping assessment. The chapter provides a summary of the potential receptors and how these will be addressed in the EIA.

Baseline conditions

5.133 Baseline conditions have been assessed from the following data sources:

- Groundsure Report for the site dated June 2016
- Site walkover inspection undertaken by WYG on 5 April 2017
- JMP Consulting (2007). *Land North of Bognor Regis, Drainage Strategy*. July.
- White Young Green (2007a). *Desk Study Report, Bognor Regis, for Church Commissioners for England and David Langmead*. August.

- White Young Green (2007b). *Preliminary Geo-Environmental Ground Investigation Factual and Interpretative Report, Bognor Regis, for Church Commissioners for England and David Langmead*. November.
- Readily available data sources on line and held in house by WYG

Geology

- 5.134 The site's geology comprises topsoil site wide, underlain by River Terrace Deposits (characterised by relatively cohesive Brickearth) typically to 2.0mbgl over sands and gravels to typically 4.0mbgl. The underlying solid geology is characterised by three distinct areas; the northern part of the site is directly underlain by Upper Cretaceous Chalk; the central part of the site is underlain by Lambeth Group deposits of Clay, Silt and Sand; and at the southern end of the site the solid geology is identified as London Clay.

Hydrogeology

- 5.135 River Terrace Deposits and Lambeth Group strata are classified as Secondary A Aquifers whereas the Chalk is classified as a Principal Aquifer. The groundwater monitoring across the site suggests that depths to groundwater are typically in the region of 1-2.5m bgl but that shallow groundwater (<1.0m bgl), can occur seasonally or following high rainfall periods in areas of the site underlain by Chalk, Lambeth Group and London Clay. Site wide depths to groundwater are relatively consistent (even across different aquifer units) suggesting lateral and potentially vertical continuity.

Hydrology

- 5.136 The site lies approximately 1.5km to the south west of the southerly flowing Aldingbourne Rife which flows through the eastern part of Bognor Regis to the sea. There are several secondary and tertiary rivers within the northern portion of the site. This includes a ditch that marks the western and northern boundary of the Phase 7 area of proposed development and other connecting field boundary drains that tend to only intermittently contain standing water/or transmit surface water flow.

History

- 5.137 The site is characterised by agricultural land use since the earliest map reviewed (1876) until present day. However, for a period of approximately one year (1943-1944) the site was used by the RAF as an 'Advanced Landing Ground' comprising an air field with two runways and infrastructure that included, hangars and stores for ammunition, petrol, oil and rations. Following cessation of airfield activities, the site was returned to agricultural activities.

Ground quality

- 5.138 The WYG 2007 ground investigation on the site comprised 21 boreholes, 48 window sample holes, 8 dynamic probe tests, 30 trial pits, geotechnical and contamination testing and gas monitoring. WYG has re-evaluated the contamination test results against screening criteria relevant today (2016, including C4SLs and S4ULs) for residential land use and confirm there were no significant exceedences. Further investigation was undertaken by WYG in 2008 and comprised 3 boreholes, 3 window sample holes and 6 hand dug pits plus soil testing for potential contaminants. Comparison of test results with current screening criteria did not indicate any exceedences.
- 5.139 Unexploded Ordnance (UXO): BACTEC (2007) identified a risk of unexploded ordnance due principally to the presence of the Advanced Landing Ground in 1943 and 1944. No evidence of

bombing was identified in the area, however, BACTEC considered it possible that the site might have been subject to “tip and run raids. No UXO were detected during the WYG investigation works.

Further assessment and consultation

- 5.140 Further ground investigation may be undertaken on a phase by phase basis if required to confirm ground quality and geotechnical conditions (to facilitate foundation design) and the gas regime. A remediation strategy, if necessary will be developed from this and/or existing ground investigation data. Based on existing data, whereby no significant contamination has been identified, this is likely to comprise a reactive remediation strategy to address unforeseen deleterious ground conditions should such be uncovered during the construction works.
- 5.141 Consultation will be undertaken with the Environmental Health Officer at the local Council, the Environment Agency and NHBC. The existing ground conditions reports and assessments will be provided to these parties for review along with the proposed remediation strategy for agreement ahead of the works commencing.

Likely effects anticipated and receptors to be affected

- 5.142 Key receptors on and around the site include:
- Human health receptors: Future site users/occupiers (residential and public open space); construction workers, adjoining site users
 - Environment: Aquifers within the River Terrace Deposits, Lambeth Group and Chalk; surface waters (drainage ditches typically present as field boundary markers)
 - Infrastructure associated with the new development: Concrete, water supply pipes, gas/vapour ingress

Construction phase

- 5.143 The primary receptors to be considered during the construction phase are the construction workers and surrounding land users. These receptors are at potential risk from direct contact (or via wind-blown migration of dusts/fibres) with Made Ground during disturbance. However, significant contamination has not been identified in shallow soils and would be mitigated by use of appropriate Personal Protective Equipment (PPE) regardless. UXO risks will be further assessed ahead of any intrusive works. The water environment is also a key receptor and will be considered in the design and through controls implemented through a Construction Environmental Management Plan (e.g. bunded and covered fuel/materials storage away from surface water receptors).

Operational phase

- 5.144 It is not anticipated that the operation of the proposed development will have any significant impact upon ground conditions. Any fuels or chemicals stored on site will be undertaken in accordance with best practice to avoid uncontrolled release of such to the environment.

Noise & Vibration

Existing baseline

- 5.145 The baseline environment will be established by measuring ambient noise levels on and within the vicinity of the site. Where appropriate the survey will include operational and commercial noise sources. The closest existing residential receptors have been considered as part of a 7-day

noise monitoring survey which will include attended and unattended measurements. Full details of the noise monitoring survey will be presented within the report. Appendix 4 shows the monitoring positions of the proposed noise monitoring survey.

- 5.146 Morells Farmhouse (490757,100350) located on the south-western boundary of the site is a Grade II listed building, as such the potential effect of vibration will be considered in this location and along the site boundaries where sensitive properties are located within 40m of the site.

Assessment methodology

- 5.147 Within the context of the proposed development, NPPF, NSPE and PPG along with the appropriate guidance documents including the 'World Health Organisation Community Noise Guidelines' (1999), 'BS 8233 – Guidance on Sound Insulation and Noise Reduction for Buildings' (2014), 'BS 4142 – Methods for Rating and Assessing Industrial and Commercial Sound' (2014) and 'BS 5228-1+A1 – Code of Practice for Noise and Vibration on Construction and Open Sites – Part 1: Noise' (2014) will be used as a basis of this assessment.

Construction assessment

- 5.148 Operational noise levels will be compared against BS 5228-1+A1:2014 Code of Practice for noise and vibration on construction and open sites – Part 1: Noise. The assessment would determine the likely effect of the construction phase on existing receptors and will recommend mitigation measures as necessary.
- 5.149 The construction assessment will assess the noise levels associated with deliveries to the development site, staff parking and fixed/mobile plant. These levels will then be compared against baseline noise levels and the criterion noise levels given in the guidance document.
- 5.150 The results of the assessment will be able to used iteratively to feed into the design and mitigation strategy (height and locations of barriers/enclosures) together with a noise report including a CEMP which will be implemented during the construction phase.

Traffic assessment

- 5.151 The potential exists for noise from the development to impact upon nearby sensitive receptors. The likely sources of noise within the development are:
- Road traffic noise from development generated vehicles on the local road network
- 5.152 Where information is available, outline assessment will be undertaken with reference to percentage change in traffic flows in line with guidance from the Design Manual for Roads and Bridges, Volume 11, Section 3, Part 7, HD213/11 Noise and Vibration. Due to the nature of the development it is anticipated that a full traffic assessment for noise will be required.
- 5.153 In terms of off-site road traffic noise there is the likelihood that there will be both beneficial and adverse effects due to the proposals. This will be quantified within the report based on 'with' and 'without' development traffic flow data.

Operational assessment

- 5.154 Assessment of potential noise effects from the operation of the site will take into account the baseline noise survey and be undertaken using British Standards 4142:2014 and 8233:2014 with reference to the 1999 WHO document "Guidance for Community Noise" as appropriate.
- 5.155 Given the location of the site and the noise sources separating it from the closest existing noise sensitive receptors, it is not anticipated that significant adverse noise effects would arise as a

result of on-site noise generating sources. However, if necessary, effects can be mitigated through good design and consented conditions, so that significant adverse effects will not occur. The assessment will be reflective of the scheme layout and the level of detail available at the time of planning submission. Subject to evolving guidance and legislation over the development phasing, design criteria will be presented within the report. This will be appended within the technical report and will reference relevant guidance documents such as the WHO Guidelines, BS 8233 and BS 4142.

NPPF assessment

- 5.156 Noise intrusion from existing noise sources would be assessed for proposed receptors associated with the development which will take into account baseline noise survey and will be undertaken using British Standards 8233:2014 with reference to the 1999 WHO document “Guidance for Community Noise” as appropriate.

Consultation

- 5.157 Preliminary consultation will be undertaken with Arun District Council where relevant to agree the proposed approach of the noise survey methodology. Further consultation, with the local planning authority will be undertaken where necessary.

Likely effects anticipated and receptors to be affected

- 5.158 The closest residential receptors have been identified as those located on Chalcraft Lane, Orchard Caravan Park, Babsham Lane all of which are located adjacent to the site boundary. Additionally, the following individual properties have also been identified on the boundary, Park House, Park Lane Cottages, Morrells Cottage and Farm, Chalcraft Cottage. No ecological receptors have been identified on the boundary of the site, however the Bognor Regis SSSI is located approximately 1 mile from the closest site boundary
- 5.159 A further assessment to identify the location of additional sensitive receptors such as schools and hospitals, likely to be positioned at further distances from the site, will also be undertaken within the technical report. Such receptors along with residential properties are considered to be of high sensitivity.
- 5.160 Given the location of the site and the noise sources surrounding the closest proposed noise sensitive receptors, it is not anticipated that significant adverse noise effects would arise as a result of existing noise sources. However, if necessary, effects can be mitigated through recommended glazing configurations and barriers or site layout where appropriate, so that significant adverse effects will not occur.
- 5.161 If identified within the noise assessment, noise control measures will be incorporated within the scheme design.

Air Quality

- 5.162 This Section of the ES will consider the key air quality impacts associated with the proposed development. The assessment will be carried out by Air Quality Consultants Ltd.

Existing baseline

- 5.163 A search of the UK Pollutant Release and Transfer Register (Defra, 2017b) and Environment Agency’s ‘what’s in your backyard’ (Environment Agency, 2017) websites has not identified any significant industrial or waste management sources that are likely to affect the proposed development, in terms of air quality.

- 5.164 The proposed development site is located within Arun District, adjacent to the border with Chichester District. Both Arun District Council and Chichester District Council have investigated air quality within their respective districts as part of their responsibilities under the LAQM regime. Arun District Council has not found it necessary to declare any AQMAs, however, Chichester District Council declared three AQMAs within Chichester District in 2007, all of which are as a result of exceedances of the nitrogen dioxide annual mean objective. Chichester (Stockbridge Roundabout) AQMA and Chichester (St Pancras) AQMA are the closest to the proposed development, located approximately 5.3 km and 5.2 km to the northwest of the site respectively.
- 5.165 In terms of PM₁₀, both Arun District Council and Chichester District Council have concluded that there are no exceedances of the objectives in their respective districts (Arun District Council, 2016), (Chichester District Council, 2016). It is, therefore, reasonable to assume that existing PM₁₀ levels will not exceed the objectives within the study area.
- 5.166 In 2015, Arun District Council operated nitrogen dioxide diffusion tube monitoring sites at 15 locations within its district, and Chichester District Council operated two automatic monitoring stations and eleven diffusion tube monitoring sites. None of these sites are located in close proximity to the proposed development site. No exceedances of the nitrogen dioxide annual mean objective were measured at the Arun District monitoring sites in 2015. Five of the eleven diffusion tube monitoring sites in Chichester District measured exceedances of the annual mean objective in 2015, two of which are located in close proximity to the A27 (near to Stockbridge Roundabout). All measured concentrations were below 60 µg/m³, *therefore it is considered unlikely that any exceedances of the 1-hour mean objective occurred during this time period.*
- 5.167 One of the two automatic monitoring stations in Chichester District also monitors PM₁₀. In 2015, measured PM₁₀ concentrations at this site were well below the objectives.
- 5.168 There are no Defra-run monitoring sites within the study area with which to identify exceedances of the annual mean nitrogen dioxide limit value. The national maps of roadside annual mean nitrogen dioxide concentrations (Defra, 2017c), used to report exceedances of the limit value to the EU, do not identify any exceedances within the study area in 2015. Defra's mapping for 2020, which takes account of the measures contained in its 2015 Air Quality Plan (Defra, 2015), also does not identify any exceedances within the study area. Defra is in the process of updating its air quality plan and associated modelling, but it has not yet published its revised maps.

Consultation

- 5.169 The assessment will be discussed with Arun District Council's Environmental Health team in order to agree the precise methodology to be used.

Likely effects anticipated and receptors to be affected

- 5.170 The following impacts may be associated with the proposed development, and will be considered by the assessment:
- impacts of the operation of the proposed development on concentrations of nitrogen dioxide, PM₁₀ and PM_{2.5} from road traffic on existing sensitive human receptors in the proposed year of opening;
 - impacts of the operation of the proposed development on concentrations of nitrogen oxides and nitrogen deposition as a result of road traffic at designated ecological sites (if significant changes in traffic flow identified near to these sites);
 - impacts of existing sources on future residents of the proposed development itself; and

- impacts of the construction of the proposed development on dust soiling and concentrations of PM₁₀ during the construction period.

Road traffic

- 5.171 Road traffic emissions will impact on existing receptor locations (both human and ecological), and upon new residential locations within the development itself. Suitable receptor locations will be identified based upon detailed maps and photographs, and on plans of the scheme design. Consideration of the air quality impacts on existing receptor locations will be informed by the Transport Assessment (which will identify areas which have the potential for significant changes to traffic as a result of the proposed development), and will include consideration of areas adjacent to major nearby trunk roads, including the A27 Chichester and the A27 at The Causeway, if significant changes in traffic flow are identified along these routes.
- 5.172 There is potential for the proposed development to have an impact on concentrations of nitrogen oxides and nitrogen deposition as a result of road traffic at the Pagham Harbour SAC/SPA/Ramsar site, but only if significant changes in traffic flow are identified near to the site.

Construction dust

- 5.173 For construction activities, the assessment will consider the potential for impacts within 350 m of the site boundary and within 50 m of the routes to be used by construction vehicles up to 500 m from the site entrance.

Assessment methodology

- 5.174 A summary of all relevant national, regional and local policy guidance will be provided. Any specific local policies (e.g. Supplementary Planning Guidance) that are applicable to air quality will also be included.
- 5.175 Existing local air quality, the likely future air quality in the absence of the new development and the likely future air quality if the development goes ahead, will all be defined. The assessment of operational impacts will focus on the earliest year that the development is likely to be occupied. If it emerges that opening would occur in significant phases, making a single assessment year unrepresentative, a range of years will be assessed.

Road traffic impacts

- 5.176 The air quality impacts of road traffic emissions at the sensitive receptors will be determined using the ADMS-Roads dispersion model. The model has been widely used in the UK, and has been accepted by Defra for review and assessment purposes. The model requires a variety of inputs including road traffic data (flows, speeds and vehicle fleet composition) and meteorological data. Predictions will be carried out for nitrogen oxides, PM₁₀ and PM_{2.5}. Nitrogen dioxide concentrations will be calculated from nitrogen oxides using tools provided by Defra.
- 5.177 The assessment will include a sensitivity test for the prediction of nitrogen dioxide road traffic impacts to address elevated real-world nitrogen oxides emissions from certain diesel vehicles. This test will be carried out by applying adjustments to the 'official' emission factors, using AQC's CURED tool and will represent a reasonable worst-case upper-bound to the assessment.
- 5.178 Background pollutant concentrations in future years will be determined using data derived from the "year-specific maps" published by Defra.

- 5.179 Meteorological data will be taken either from Shoreham Airport or Thorney Island meteorological sites, depending upon the quality of each dataset, and taking into account any opinions of the Environmental Health Officer at Arun District Council.
- 5.180 An important element of the modelling study will be to verify the model output (i.e. to compare the predictions with actual measured results). This will be undertaken by identifying a roadside air quality monitoring location(s) that is suitably representative of conditions at the proposed development site.
- 5.181 Any roads within 100 m of the Pagham Harbour SAC/SPA/Ramsar site with significant changes in traffic flow will be identified. If any significant changes are identified, the ADMS-Roads model will be used to calculate the change in nitrogen oxides concentration and resultant impact on nitrogen deposition within the SAC/SPA/Ramsar site.

Construction dust impacts

- 5.182 The assessment of construction impacts will follow the methodology set out in the Institute of Air Quality Management Guidance '*Guidance on the Assessment of Dust from Demolition and Construction*' (IAQM, 2016).
- 5.183 The assessment of construction impacts will focus on the anticipated duration of the works.

Significance of impacts

- 5.184 The predicted concentrations will be compared with the relevant air quality objectives, as defined within the Air Quality Regulations 2000 and Amendments 2002 and any exceedences will be highlighted.
- 5.185 The significance of the impacts will be evaluated using criteria recommended by the Institute of Air Quality Management (IAQM) and endorsed by Environmental Protection UK (EPUK).

Daylight, Sunlight and Overshadowing

Existing baseline

- 5.186 The baseline, daylight, sunlight and shadow conditions currently experienced by neighbouring properties and open spaces will be quantified based on the model of the existing site and its context. The output from the baseline analysis will be a set of existing daylight, sunlight and shadow results against which the effects of the development can be tested.

Assessment methodology

- 5.187 The assessment will be based on the methodology and guidance set out in the Building Research Establishment (BRE) report "Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice" (2011).
- 5.188 The analysis of the development's effects on the daylight levels experienced by neighbouring properties will be assessed in terms of Vertical Sky Component (VSC).
- 5.189 The analysis of the development's effects on the sunlight levels experienced by neighbouring properties will be based on Annual and Winter Sunlight calculations.
- 5.190 The development's effects in terms of overshadowing will be assessed in terms of sunlight on ground based on the BRE two-hour sunlight contour analysis.
- 5.191 The analysis will be based on an accurate three dimensional CAD based assessment model of the site and its immediate surroundings as existing. The model will be constructed from a

topographical and photogrammetric survey of the site and surroundings. The daylight, sunlight and shadow levels experienced by neighbouring and proposed residential units and open spaces will be quantified based using Waldram Tools daylight and sunlight software (MBS Software Ltd).

Consultation

- 5.192 No additional consultation is required as part of this assessment beyond ongoing pre-application discussions with planning officers

Likely effects anticipated and receptors to be affected

- 5.193 The assessment is expected focus on the development's effects on a sample of existing residential properties to the south east and north east of the site.
- 5.194 Within the proposed development, a sample of windows within the lowest floors of residential accommodation will also be assessed in terms of daylight and sunlight levels. This will illustrate that the outline parameters provide an appropriate basis from which to develop well-lit accommodation at the reserved matters stage.
- 5.195 Areas of proposed open space and amenity space adjacent to and within the development will be assessed in terms of overshadowing.
- 5.196 Given the scale of the development, it is not envisaged that the development will give rise to any materially adverse daylight and sunlight effects. This will be demonstrated in the quantitative analysis of the sample of neighbouring receptors and proposed accommodation.

Matters to be scoped out

Sustainability, energy and climate change

- 5.197 The sustainable design principles of the West of Bersted development will be robustly tested within the various EIA chapters, including allowances for climate change in the flood risk management strategy, lighting, ground conditions, noise, transport and associated air quality impacts. As such, a separate chapter covering sustainability and energy is not considered appropriate therefore. A Sustainability and Energy Statement will accompany the planning application and draw together the findings of the various EIA chapters.

Waste

- 5.198 The construction and operation of the scheme will inevitably give rise to some waste but the strategy for the development is to ensure that it is managed in accordance with the Waste Hierarchy of prevent, prepare for re-use, recycle, recovery and finally disposal. Compliance with environmental and waste legislation is a minimum requirement when managing waste and will be a primary objective of the development. During the construction period, there will be a requirement to produce a Site Waste Management Plan ('SWMP') under the Site Waste Management Plans Regulations 2008 and will be prepared in relation to this development. The plan will demonstrate how materials resource efficiency will be improved and to ensure that a fully auditable trail of waste removed from the site is maintained.
- 5.199 During the operation of the site, the sustainable management of waste will be secured by ensuring that opportunities for minimising waste together with the correct storage, removal and management of all waste streams is addressed robustly. It is acknowledged that further consultation will be necessary in due course with officers of the Council. A Sustainability

Statement will be submitted for consideration with the planning application for the development.

- 5.200 The measures in place and integral within the scheme are of a nature that will ensure that there is no potential for significant environmental effects requiring assessment as part of an EIA.

Energy and utilities

- 5.201 A desktop review has highlighted existing utility services on the site. Existing gas services include a high pressure gas main which runs along the north of the site. This could be diverted or the development designed around it. Existing water services include two small private mains running through the south of the site, which the development will be designed around and reinforced where necessary to serve the development. The electrical infrastructure is likely to require upgrade to serve the development. Existing infrastructure will be designed around or diverted, and upgraded where necessary. Against this background, and other initial site assessments, it has been concluded that there are no onerous infrastructure constraints associated with gas provision and in relation to telecommunications that would require specific consideration as part of an EIA.

Summary

- 5.202 This section has reviewed the various environmental effects associated with the development and concludes that the following matters should be scoped into the EIA:-

- 1 Transport & Accessibility
- 2 Water Environment
- 3 Archaeology and Cultural Heritage
- 4 Socio-Economic
- 5 Landscape and Visual Impact
- 6 Ecology and Nature Conservation
- 7 Agricultural Land
- 8 Ground Conditions & Contamination
- 9 Noise & Vibration
- 10 Air Quality
- 11 Daylight, Sunlight, Overshadowing and Light Pollution

6.0 **Approach and Form of Environmental Statement**

Methodological approach to the EIA

- 6.1 The EIA will be prepared in accordance with the requirements of the Town and Country Planning (EIA) Regulations 2011 (as updated) and with reference to best practice including that published by the Institute of Environmental Management and Assessment ('IEMA'). All information required or reasonably required to identify the significant environmental effects of the development, as defined by Schedule 4 of the Regulations will be provided as part of the ES.
- 6.2 The assessment will also include a consideration of relevant policy and legislation of relevance as well as considering comments received by consultees during the pre-submission period.
- 6.3 Each technical assessment will follow a consistent approach and format and including:-
- 1 Brief review of relevant policy and legislative context;
 - 2 Confirmation of the detailed topic specific assessment methodology, consultation undertaken and confirmation on how the assessment relates to the standard significance criteria adopted for the EIA (see below);
 - 3 Consideration of Baseline Conditions including an identification of sources of information, site history, current environmental conditions and future trends/anticipated changes to current conditions that could be anticipated without the scheme;
 - 4 Identification of the potential effects including a summary of those resources/receptors likely to be affected, the sensitivity of those receptors to accommodate change; the degree of change resulting from the proposal; the change of events or pathways linking cause to effect and a prediction of the significance of effects in terms of nature, extent and magnitude including whether it is direct/indirect, short/long term, permanent/temporary, beneficial/adverse;
 - 5 The scope for incorporating mitigation measures to avoid, reduce, remedy or compensate for any identified effects; and
 - 6 Identification of any effects remaining after mitigation.
- 6.4 The effects of individual environmental matters will be transcribed against a common list of significance criteria for the EIA which will comprise:-
- 1 Substantial²⁰ beneficial
 - 2 Moderate²¹ beneficial
 - 3 Minor²² beneficial
 - 4 Neutral/negligible
 - 5 Minor³ adverse
 - 6 Moderate² adverse
 - 7 Substantial¹ adverse

²⁰ Substantial - considerable effects (by extent, duration or magnitude) or of more than local significance or breaching identified standards or policy

²¹ Moderate - limited effects which may be considered significant

²² Minor - slight, very short or highly localised effects

- 6.5 The ES will include a clear description of the likely significant environmental effects on the environment including direct/indirect effects, secondary, cumulative, short/medium/long term, permanent/temporary and beneficial/adverse effects arising from the development.

Structure and format of the Environmental Statement

- 6.6 The findings of the EIA will be set out in the ES which will comprise three volumes as follows:-

- Volume 1: Main Technical Studies
- Volume 2: Appendices and Figures to the Main Technical Studies; and
- Volume 3: Non-Technical Summary

- 6.7 The following documents will be included in the ES as appendices:-

- Transport Assessment
- Framework Travel Plan
- Flood Risk Assessment
- Ecology surveys
- Foul and Surface Water Drainage Strategies
- Phase 1 Geo-Environmental Desk Study

- 6.8 The Environmental Statement will be submitted to assist Arun District Council in its consideration of the application for West of Bersted.

Associated application

- 6.9 Notwithstanding the authority's view on the scope of the EIA, the application submission will also provide a range of information including scheme plans, a Design and Access Statement, a Planning Statement, a Sustainability and Energy Statement, an Energy and Utilities Statement and a Statement of Community Involvement.

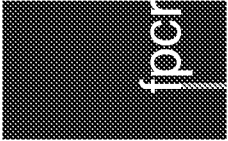
Appendix 1: Site Location Plan



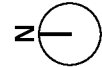
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Site Boundary



client Church Commissioners for England &
Landlink Estates
project West Bersted
Bognor Regis
drawing title SITE LOCATION PLAN



scale 1:25,000 @ A3
drawing / figure number
7096-L-WB-05
down / checked TGE / DH
issue date 25 April 2017
rev B

Appendix 2: Concept Masterplan



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Aerial Imagery © 2015 Bluesky, DigitalGlobe, Getmapping plc, Infoterra Ltd and Bluesky. Map data © 2015 Google

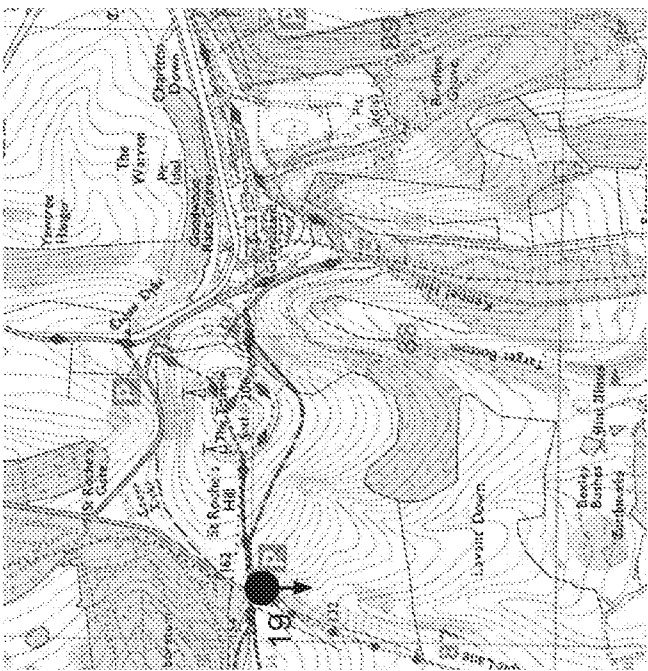
	Potential Allocation Boundary	141ha
	Arun District Council Strategic Site Boundary	163.6ha
	Potential Residential Area (up to 2,300 dwellings)	62.35ha
	Potential Employment	10.0ha
	Potential 3 FE Primary School (Playing fields shown as green hatch)	2.5ha
	Potential Local Centre	1.1 ha
	Green Infrastructure (circa 40% of site area)	
	Potential Drainage Feature	
	Potential Equipped Play Area	
	Potential Sports Pitches	
	Potential Allotments	
	Potential Structural Planting to reinforce and connect existing vegetation and habitats	
	Potential Site Access	
	Potential Residential Spine Road	
	Potential Internal Road Routes	
	Existing Public Footpath Network	
	Gas Main	
	Potential Future Development	
	Land Promoted by Others	
	Land Controlled by Others	
	Parish Boundary	
	Proposed Pumping Station	

DRAFT

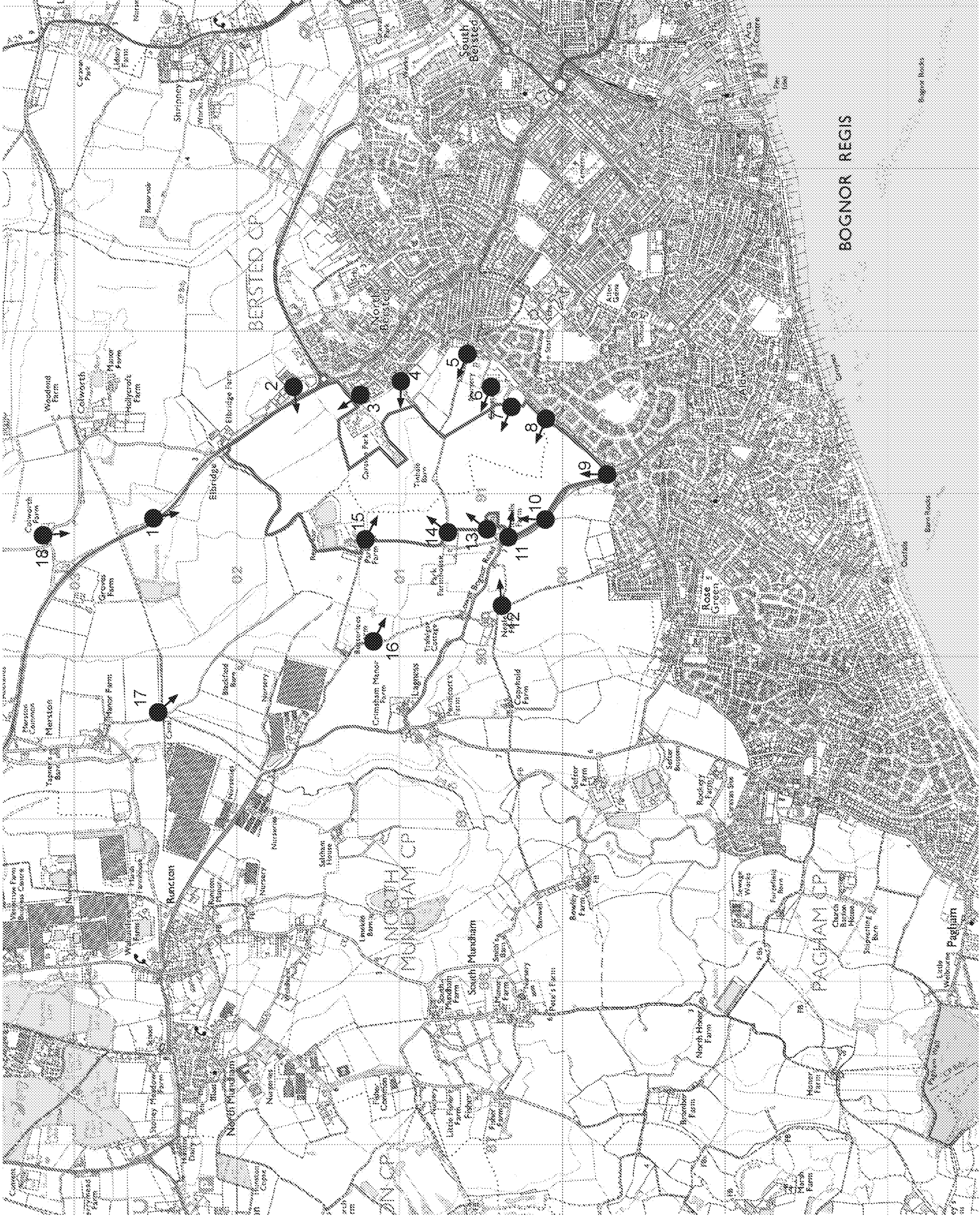
Appendix 3: LVIA Viewpoint Location Plan

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Inset Plan (The Trundle, South Downs)



Client Church Commissioners for England &
Landlink Estates
project West Bersted
Bognor Regis
drawing title PHOTOVIEWPOINT LOCATION PLAN

scale 1:25,000 @ A3
drawing / figure number
drawn / checked MDP / DH
issue date 05 May 2017
rev -

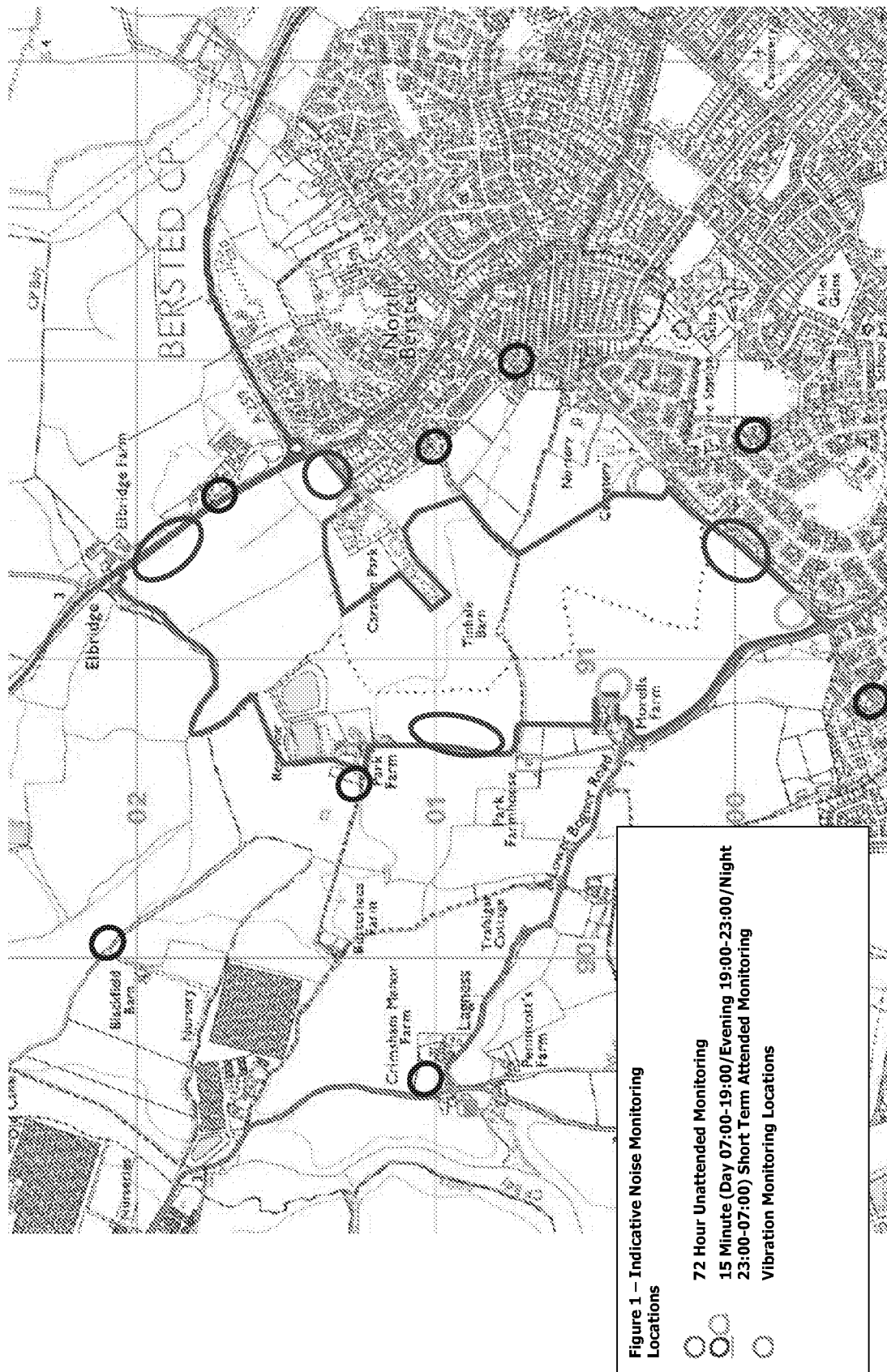


Figure 1

Appendix 4: Noise Monitoring Survey Locations



Figure 1 Noise Monitoring Survey Locations



Bristol
0117 403 1980
bristol@lichfields.uk

Cardiff
029 2043 5880
cardiff@lichfields.uk

Edinburgh
0131 285 0670
edinburgh@lichfields.uk

Leeds
0113 397 1397
leeds@lichfields.uk

London
020 7837 4477
london@lichfields.uk

Manchester
0161 837 6130
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Newcastle
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