ARCADIS Design & Consultancy for natural and built assets

OTTERPOOL PARK

Environmental Impact Assessment Scoping Report 2020

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VERSION CONTROL

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02	27/3/2020	Various	Updated text with consultation included in scoping report
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ABBREVIATIONS AND GLOSSARY

2019 Scheme	The Otterpool Park application proposals submitted in 2019
AADT	Annual Average Daily Traffic
Agricultural Land Classification (ALC)	The system of grading land quality for use in land use planning purposes. This divides farmland into five grades according to the degree of limitation imposed upon land use by the inherent physical characteristics of climate, site and soils. Grade 1 land is of an excellent quality, whilst Grade 5 land has very severe limitations for agricultural use.
Agri-environment scheme	Government programmes set up to help farmers manage their land in an environmentally-friendly way.
Alluvium	Sand, silt, clay, gravel, or other material deposited by flowing water, for example in floodplains.
AMR	Annual Monitoring Report
AOD	Above Ordnance Datum
APIS	Air Pollution Information System
AQ	Air Quality
AQMA	Air Quality Management Area
AQS	Air Quality Strategy
Arable	Growing and harvesting crops such as cereals, potatoes etc.
AURN	Automatic Urban and Rural Network
BAP	Biodiversity Action Plan
Baseline Environment	The environment as it appears (or would appear) immediately prior to the implementation of the proposed Development together with any known or foreseeable future changes that will take place before completion of the project.
BBS	Breeding Bird Survey
Best and most versatile land	Grades 1, 2 and 3a under the Agricultural Land Classification system.
BGS	British Geological Survey
BH	Built Heritage
BMV	Best and Most Versatile
BOA	Biodiversity Opportunity Area
BoCC	Birds of Conservation Concern
BPEO	Best Practicable Environmental Option
BPM	Best Practice Measures
BRE	Building Research Establishment
BRES	Business Register and Employment Survey
BS	British Standard
C&D	Construction and Demolition
C&I	Commercial and Industrial Waste
Calcareous soil	Soils containing calcium carbonate, usually derived from the underlying rocks (such as limestone or chalk).
CD&E	Construction, Demolition and Excavation
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CL:AIRE	Contaminated Land: Applications in Real Environments
Clayey soil	Soil comprised predominantly of clay-sized particles.
CLEA	Contaminated Land Exposure Assessment

CMP	Conservation Management Plan
CoCP	Code of Construction Practice
Code of Construction Practice	The Code of Construction Practice contains a series of measures and standards of work to be applied to the construction of a project ensuring a consistent approach to the management of construction activities.
Construction Environmental Management Plan	A Construction Environmental Management Plan sets out the intended methods of the effective management of potential environmental impacts arising during the construction of a project.
CoPA	Control of Pollution Act 1974
CRTN	Calculation of Road Traffic Noise
CS	Countryside Stewardship
CSM	Conceptual Site Model
CVNP	Construction Noise and Vibration Management Plan
CWS	County Wildlife Site
DDC	Dover District Council
Defra	Department for the Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges
EA	Environment Agency
EcIA	Ecological Impact Assessment
EFT	Emissions Factor Toolkit
EHO	Environmental Health Officer
EIA	Environmental Impact Assessment
ELS	Entry Level Stewardship
Environmental Assessment	A method and a process by which information about environmental effects is collected, assessed and used to inform decision-making. Assessment processes including Environmental Impact Assessment.
EPR	Environmental Permitting Regulations
ES	Environmental Statement
EU	European Union
Future baseline	Baseline conditions in future years without the proposed Development in place
FE	Further Education
GCN	Great Crested Newt
GI	Green Infrastructure
GIS	Geographical Information Systems
GP	General Practitioner
Ground borne vibration	Vibrations that travel through the ground from a source and produce a noise as a result
Groundwater	All water which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil
HCA	Home and Communities Agency
HDV	Heavy Duty Vehicle
HE	Historic England
Heavy Goods Vehicles	European Union term for any vehicle with a gross combination mass of over 3500kg
HGV	Heavy Goods Vehicles
Highways England	HE
HLC	Historic Landscape Characterisation

HLS	Higher Level Stewardship
HMSO	Her Majesty's Stationery Office
HRA	Habitat Regulations Assessment
HUDU	Healthy Urban Development Unit
IAN	Interim Advice Note
IAQM	Institute of Air Quality Management
IER	Important Ecological Receptors
JNCC	Joint Nature Conservation Council
KCC	Kent County Council
KHER	Kent Historic Environment Record
KJMWMS	Kent Resource Partnership, Kent Joint Municipal Waste Management Strategy
LAEI	London Atmospheric Emissions Inventory
Land drainage	Drainage of agricultural land, either through surface ditches or sub-surface pipes, to reduce the wetness of the soil.
LAQM	Local Air Quality Management
LB	Listed Buildings
LDV	Light Duty Vehicle
Limestone	A rock type comprised of calcium carbonate.
LLFA	Lead Local Flood Authority
LNR	Local Nature Reserve
LOAEL	Lowest Observed Adverse Effect Level
Loamy soils	Soils composed of a mix of sand and silt with a smaller proportion of clay particles.
LPA	Local Planning Authority
LTTE6	Long Term Trends projections from HA IAN 170/12v3
LWS	Local Wildlife Site
MH	Municipal Household
MPA	Marine Protected Areas
MSW	Municipal Solid Waste
Mudstone	A fine-grained sedimentary rock whose original constituents were clays or muds.
MUGA	Multi-Use Games Area
NARRS	National Amphibian and Reptile Recording Scheme
NBN	National Biodiversity Network
NE	Natural England
NEA	National Ecosystem Assessment
NERC (Act)	Natural Environment and Rural Communities Act
NMUs	Non-motorised users
NNG	Night Noise Guidelines
NO_2	Nitrogen Dioxide
NOEL	No Observed Effect Level
NO_x	Nitrogen Oxides
NPPF	National Planning Policy Framework
NPSE	Noise Policy Statement for England
NRMM	Non-road mobile machinery
NSRI	National Soil Resources Institute
OffPAT	Office of Project and Programme Advice and Training

ONS	Office of National Statistics
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PM_{10}	Particulate matter less than 10 microns in aerodynamic diameter
$PM_{2.5}$	Particulate matter less than 2.5 microns in aerodynamic diameter
PPC	Pollution Prevention and Control
PRoW	Public Right of Way
RAF	Royal Air Force
RNR	Roadside Nature Reserve
SAC	Special Area of Conservation
Sandstone	A coarse-grained sedimentary rock whose original constituents were sands.
F&HDC	Folkestone & Hythe District Council
Sensitive Receptor	Receptors which are potentially sensitive to noise and vibration. Examples include dwellings, hospitals, schools, community facilities, designated areas (e.g. AONB, National Park, SAC, SPA, SSSI, SAM), and public rights of way.
SERTM	South East Regional Traffic Model
SFRA	Strategic Flood Risk Assessment
Site Waste Management Plan (SWMP)	A document that outlines how the Scheme will reduce, manage, and dispose of its solid waste.
SM	Scheduled Monument
SMP	Soil Management Plan
SNRHW	Stable Non-Reactive Hazardous Wastes
SOAEL	Significant Observed Adverse Effect Level
Soil erosion	The displacement of the upper layer of soil by water or wind action.
Soil structure	The way sand, silt and clay are organised into larger units within a soil.
Soil texture	The proportions of sand, silt and clay which make up a soil.
SPA	Special Protection Area
SPZ	Source Protection Zones
SSSI	Site of Special Scientific Interest
Statutory Organisations	Any principal council for the area where the land is situated, Natural England, English Heritage, the Environment Agency; and any other public authority which has environmental responsibilities and which the Secretary of State considers likely to have an interest in the project.
Study Area (SA)	The spatial area within which environmental effects are assessed (i.e. extending a distance from the project footprint in which significant environmental effects are anticipated to occur). This may vary between the topic areas.
Subsoil	The layer of soil under the topsoil on the surface of the ground, lacking in the levels of organic matter found in topsoil.
SuDS	Sustainable Drainage Systems (SuDS) are water management solutions designed to reduce the impact of surface water runoff from new and existing developments to the natural environment. The purpose of such systems is to improve water quality and store or reuse surface runoff to reduce the discharge rate to the watercourse.
Surface Water	Water that appears on the land surface that has not seeped into the ground, i.e. lakes, rivers, streams, standing water, ponds, precipitation.
Swale	Shallow, broad and vegetated channels designed to store and/or convey runoff and remove pollutants.
SWMP	Site Waste Management Plan
TA	Transport Assessment
TG	Technical Guidance

Toolbox talk	An informal meeting that is part of an organisation's overall programme of information sharing on safety, environmental issues etc.
Topsoil	The uppermost layer of soil, usually with the highest concentration of nutrients, organic matter and microorganisms.
TPO	Tree Preservation Order
TRICS	Trip Rate Information Computer System. A type of transport modelling database that calculates future trip generation from new developments.
TEMPro	Trip End Model Presentation Program. TEMPRO is an industry standard tool for estimating traffic growth when assessing the traffic impact of a development on the local highway network.
UXB	Unexploded Bomb
UXO	Unexploded Ordnance
VISSIM	A microscopic multi-modal traffic flow simulation software derived from Verkehr In Städten – SIMulationsmodell i.e. (Traffic in cities- simulation model)
WDA	Waste Disposal Authority
WCA	Wildlife and Countryside Act
WCS	Water Cycle Study
WDA	Waste Disposal Authority
WEEE	Waste Electrical and Electronic Equipment
WFD	Water Framework Directive
WHO	World Health Organisation
WRAP	Waste Resources and Action Programme
WS	Walkover Survey
WSE	Waste Strategy England
WTSs	Waste Transfer Stations
ZoI	Zone of Influence. The land area capable of being affected by development whether by way of its construction or operation.
ZTV	Zone of Theoretical Visibility.

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1 Introduction

1.1 Purpose

1.1.1 Folkestone & Hythe District Council (F&HDC) intends to develop 586ha hectares (ha) of land in the vicinity of Otterpool Park (hereafter referred to as the site) within the administrative area of F&HDC in Kent to develop a new garden town. The new garden town (the 'proposed Development') is proposed as part of the UK government's nationwide initiative to deliver new housing stock across the country, including the Garden Cities, Towns and Villages programme and was announced by the DCLG in 2016.

1.1.2 The application for planning permission relates to an outline planning application that has already been submitted under planning reference Y19/0275/FH, and which was the subject of environmental impact assessment (EIA) and submitted to F&HDC as local planning authority ('the LPA'). Following updates to the scheme, the LPA is being asked to state in writing their opinion ('the Scoping Opinion') as to the scope level and detail of the information to be provided in an updated environmental statement for the forthcoming amended planning application. It should be ned that that F&HDC formally changed its name from Shepway District Council (SDC) on 01 April 2018. Whilst references may be used interchangeably, SDC and F&HDC are the same local authority.

1.1.3 This Environmental Impact Assessment (EIA) updated Scoping Report provides the information required by regulation 15(2) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations') to enable the LPA to issue an updated formal Scoping Opinion.

1.1.4 The purpose of this report is to establish the scope of the proposed updated Environmental Impact Assessment to ensure that potential impacts that could give rise to 'likely significant effects' are appropriately and proportionately addressed in the updated Environmental Statement. It aims to provide the LPA and other consultees with sufficient information to form an updated opinion of the adequacy of the proposed assessments.

1.1.5 A scoping report and accompanying scoping opinion request was previously submitted in April 2018 under scoping reference Y18/0001/SCO. The updated EIA will follow the updated Scoping Opinion and an updated ES will be submitted alongside the suite of updated planning application documents.

1.2 Need for EIA

1.2.1 The European Union (Withdrawal Agreement) Act 2020 came into force on 31 January 2020 and confirms the departure of the UK from the European Union. There is currently a transitional" period to 31 December 2020 during which time the existing EU Directives that informed the UK EIA legislation still apply. The planning application for Otterpool Park is expected to be submitted in 2020 and therefore be subject to the same existing UK EIA Regulations cited in para 1.1.3.

1.2.2 EIA is mandatory for developments of a type falling within Schedule 1 of the EIA Regulations and may be required for developments of a type falling within Schedule 2, dependent on factors such as size, location, nature, or likelihood of generating significant environmental effects. The proposed Development is not of a type described in Schedule 1. However, it can be described as an 'urban development project' as defined under paragraph 10(b) of Schedule 2 of the Regulations, and, given that the proposals are for up to 8,500 homes, far exceeds the threshold of 150 residential units cited in 10(b)(i).

1.2.3 The screening criteria provided in Schedule 3 of the EIA Regulations are used to determine whether developments falling within Schedule 2 are 'EIA development' and hence require EIA to be undertaken. The criteria include the characteristics of the development, its location and the characteristics of the potential impact. Further details of the proposed Development and its location are provided in Sections 2 and 3 of this report respectively and the potentially significant environmental impacts are described in subsequent Sections 5 to 17. However, it is clear from the proposed scale of the development, its location and the potential impacts that may arise will generate significant environmental effects and therefore that EIA will be required.

1.2.4 As required by Regulation 15 of the EIA Regulations, this Scoping Report includes the following information in order for F&HDC to provide a formal Scoping Opinion:

- A plan sufficient to identify the land (Figure 2-1);
- A brief description of the nature and purpose of the development (Section 3), including its location and technical capacity (Section 2);
- An explanation of the likely significant effects of the development on the environment (Section 5 - 17); and
- Such other information or representations as the person making the request may wish to provide or make (Figure 3-1 showing further illustrative information on the emerging development proposals within the site).

1.2.5 This report therefore constitutes a revised request for a Scoping Opinion from F&HDC under Regulation 15 of the EIA Regulations.

1.3 Structure of Report

1.3.1 This scoping report provides the following:

- An overview of the site context and surrounding areas (Chapter 2);
- Description of the proposed Development(Chapter 3);
- An overview of the proposed EIA methodology (Chapter 4);
- A topic-by-topic basis (Chapters 5 to 17) of:
  - Baseline overview and key issues;
  - Potential impacts;
  - Proposed surveys and assessment methodologies that would be used in the EIA to establish the baseline conditions and sensitive receptors and the significant effects;
  - A summary of those EIA topics which have been scoped in and out of the EIA. The report also seeks to ensure that the EIA is proportionate to the topics and would reference those which are scoped out of the EIA due to lack of significant effects; and
- Proposed structure of the ES (Chapter 18).

2 The Site and Surrounding Area

2.1 Site Location

2.1.1 The site of the proposed Development is located on 586ha of land directly south-west of Junction 11 of the M20 motorway, and south of the Channel Tunnel Rail Link (CTRL) in the administrative area of F&HDC in Kent (see Figure 2-1). The site is centred around National Grid Reference TR112 365 in the general area of Otterpool Manor buildings. Much of the site is greenfield in nature and is predominantly occupied by agricultural uses and associated farm holdings, as well as some residential and light commercial uses. A range of historic land uses associated with both rural and commercial/industrial activities have been present on the site.

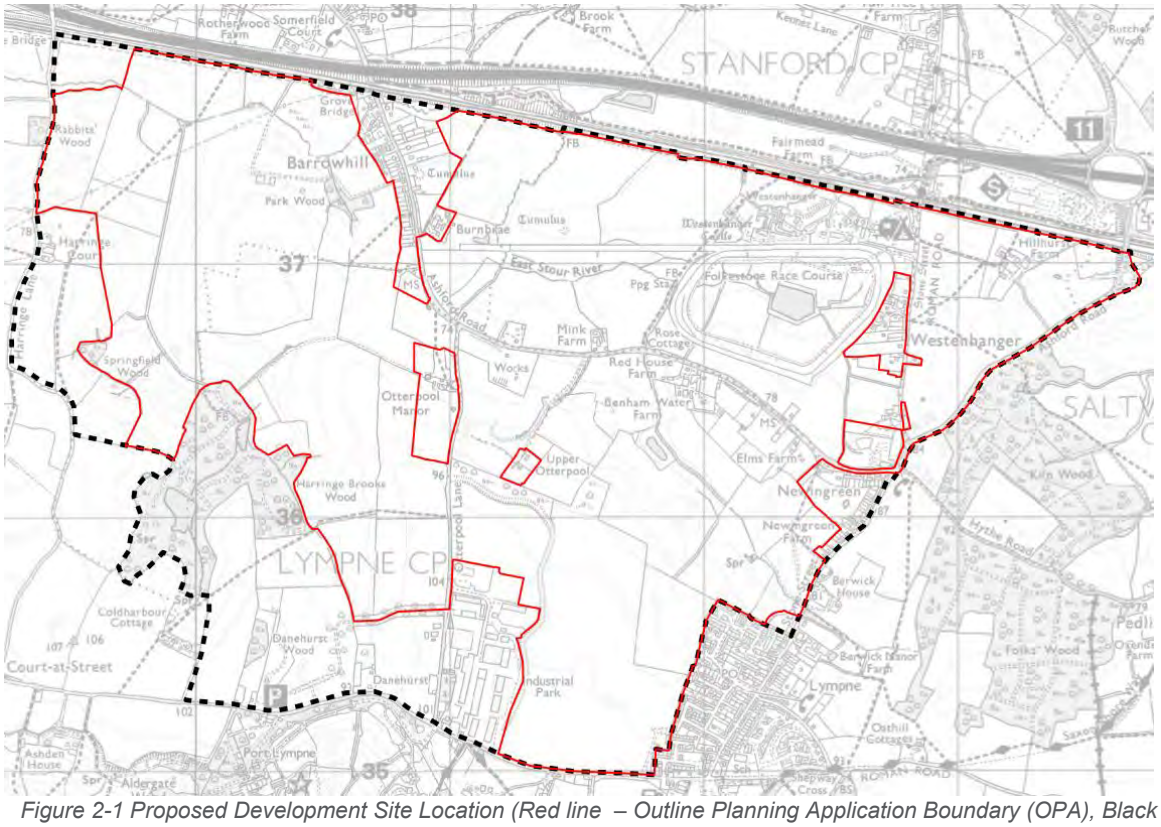

Figure 2-1 Proposed Development Site Location (Red line – Outline Planning Application Boundary (OPA), Black – Framework Masterplan Boundary)

2.1.2 The site is located within an area that has been formed from the geological development of the Kent North Downs. The site topography generally slopes downwards from the south toward the north-west where the East Stour River traverses the site from west to east, with variable undulating landforms present across the central parts. Site levels range from 57m above ordnance datum (AOD) in the north-west to 107m AOD in the south.

2.1.3 The site is linked off-site to the north-west and south-east via the A20 Ashford Road that traverses the central part of the site (Figure 3.1, Appendix A). The site is bounded by a section of Harringe Lane and farmland to the west and Harringe Brooks Woods and more farmland to the south-west. The southern boundary wraps around Lympne industrial estate and either side is surrounded by farmland. The south-eastern and eastern boundary is bordered by the settlements of Lympne and Newingreen and further north the eastern boundary runs parallel with the A20 before terminating at the intersection of the A20 (Ashford Rd) with the CTRL (HS1) line. The northern site boundary runs largely parallel with and adjacent to the CTRL line, and the settlement of Sellindge. Within the main site area the site boundary excludes parcels of land at Otterpool Manor and Upper Otterpool.

2.1.4 The site is characterised by the East Stour River that flows from east to west across the northern part of the site and to which a number of smaller tributaries and drainage channels are connected. The majority of these water courses flow from east and south to the north and west. The site has some

associated flood risk associated with the East Stour River and its tributaries, as discussed in Section 15.

2.1.5 There are a number of existing land uses on the site although a large proportion of the site area is occupied by farmsteads and associated agricultural land for a mixture of arable and livestock breeding purposes. Westenhanger Castle, a Grade 1 listed scheduled monument with associated grounds is located within and adjacent to, the northern site boundary.

2.1.6 It should be noted that in terms of the application site boundary, the inclusion of Westenhanger Castle and its grounds to be within the site boundary is the main key difference between the originally submitted application and the current proposals.

2.1.7 There are farmsteads located at Somerfield Court Farm (west of Barrow Hill, Sellindge), Farm (east of Barrow Hill Sellindge), Hillhurst Farm (east of Westenhanger) and several smaller practices located adjacent to the A20 in the area of Newingreen.

2.1.8 Land within the site that lies to the north of the A20 is mainly occupied by a mixture of agricultural land, the East Stour River watercourses, and a man-made lake in the centre of the former Folkestone Racecourse which is now closed. Hillhurst Farm lies in the north-eastern corner of the site and Westenhanger Castle is designated as a Scheduled Monument lies at the north east end of the application site to the south of the M20 and becomes a focal point that helps define the character of the wider settlement. Barrow Hill Farm lies 50m east of the northern stretch of the A20 that runs through Barrow Hill, Sellindge. Close to the intersection of the A20 and Otterpool Lane is a café and small lorry parking area, beyond further north of which lies Barrow Hill Farm. At the eastern end of the A20 within the site lies Holiday Extras corporate office and a farm building.

2.1.9 To the south of the A20, the land east of Otterpool Lane is predominantly occupied by farmland and a number of small holdings along the A20 itself including a nursery. Part of the East Stour traverses the site from south to north, and disused quarry workings south of the A20 form a designated a geological Site of Special Scientific Interest.

2.1.10 Land to the west of Otterpool Lane and the northern stretch of the A20 is occupied mainly by agricultural land and the East Stour. Other features in the area include Park Wood and Somerfield Court Farm located west of Barrow Hill, Sellindge, and Springfield Wood located adjacent to the western site boundary.

2.2 Surrounding Area

2.2.1 The surrounding area is occupied by a mainly agricultural land uses and to a lesser extent, light industrial, commercial and residential uses. Much of the northern site boundary is bordered by the CTRL line, beyond which lies the M20 motorway that connects London with the Kent coast and ultimately Europe via the Channel Tunnel. The strip of land located between the CTRL line and the M20 consists of agricultural land, Westenhanger railway station and a motorway service station adjacent to junction 11 of the M20. Further to the north from the M20 lie the villages of Stanford and Sellindge, set within mainly agricultural land.

2.2.2 Land to the east of the site is occupied by predominantly agricultural uses and wooded areas in the north, and the settlements of Newingreen and Lympne further southward. The eastern site boundary is largely abutted by the Kent Downs Area of Outstanding Natural Beauty (AONB) which extends to areas north and south of the site

2.2.3 To the south of the site, land uses comprise farmland with other notable features such as Lympne Industrial Estate, Port Lympne Wildlife Park and Harringe Brooks Woods, the latter being designated as ancient woodland. The Kent AONB boundary lies approximately 300m from the southern boundary at its nearest point. The AONB is this area forms an E-W orientated south-facing escarpment and is occupied by farmland, a number of woodlands and Lympne Castle. Further south of this lie Romney Marsh and the town of West Hythe.

2.2.4 Land to the west of the site is mainly in agricultural use with some interspersed woodland areas. Harringe Court is present approximately 50m from the site on Harringe Lane and comprised of residential and farm buildings. Partridge Farm is present approximately 400m west of the site and a solar farm is located directly north-west of it. To the north of the solar farm between the CTRL and the

M20 is a converter station and sewage works which are approximately 500m north-west of the site boundary.

3 The Proposed Development

3.1 Need for the Proposed Development

3.1.1 The need for the development of a new garden settlement can be identified in the context firstly of national planning policy (in the National Planning Policy Framework, 2019 and later statements of Government policy) and secondly the evidence base that is being prepared by the planning authority relating to quantifying housing needs in F&HDC up to 2037.

3.1.2 At national level, the current NPPF (February 2019) aims to deliver a sufficient supply of homes which states (at paragraph 59) that '*to support the Government's objective of significantly boosting the supply of homes, it is important that a sufficient amount and variety of land can come forward where it is needed, that the needs of groups with specific housing requirements are addressed and that land with permission is developed without unnecessary delay'*

3.1.3 The NPPF states " the *supply of large numbers of new homes can often be best achieved through planning for larger scale development, such as new settlements or significant extensions to existing villages and towns, provided they are well located and designed, and supported by the necessary infrastructure and facilities*" (paragraph 72).

3.1.4 The recognition that new settlements following garden city principles could make a significant contribution to housing supply on a national basis was pursued by the Government in 2016 who asked for expressions of interest from local authorities in providing new garden settlements in their areas. F&HDC, having carried out an initial assessment of the potential capacity of its area to accommodate such a settlement, submitted an expression of interest to pursue a new settlement of up to 12,000 houses in the Otterpool Park area. The Government announced in November 2016 that F&HDC had been successful in its expression of interest and therefore supports the Council in further considering the potential for a new settlement to be accommodated in this area.

3.1.5 Further national support for the principle of new garden settlements was put forward in the 2017 Housing White Paper entitled "Fixing our Broken Housing Market". This document refers in paragraphs 1.35 and 1.36 to the potential for new garden settlements to make a significant contribution towards boosting housing supply across the country in the long term. Paragraph 1.36 states "*The Government is already supporting a new wave of garden towns and villages and will work with these and any future garden communities to ensure that development and infrastructure development are as closely aligned as possible*".

3.1.6 F&HDC has prepared the evidence base to support the Core Strategy Review. The Council has reviewed the District's minimum annual housing need figure using the NPPF standard method. This found that there is an annual minimum housing need of 738 new homes a year for the district. Applying this figure from the current year (2019/20) to the end of the Core Strategy Review plan period (2036/37), means a total minimum figure of 13,284 new homes. The Council considers that this this requirement will be delivered by development of the new garden settlement, other strategic sites, sites with planning permission and a number of small- to medium-sized site allocations in the Places and Policies Local Plan.

3.1.7 Lichfields has prepared the employment evidence base work and is reviewing employment options for the Otterpool Park area. F&HDC has also published a Charter for Otterpool Park that sets out F&HDC 's aspirations for the garden town. It expands on the principles set out in the Expression of Interest submitted to the Government in 2016 to provide more detailed guidance and advice on how the new settlement should be planned, built out and delivered so as to create the foundations for a truly sustainable new community.

3.2 Proposed Otterpool Park Garden Town 2020

3.2.1 The proposed Development that forms the basis of the EIA is located on 586ha of land within the site planning application boundary as shown in Figure 3-1 (Appendix A). The Figure includes an illustration

of the emerging garden town character areas or "districts". The amended development proposals are to be resubmitted in outline for a new garden settlement of up to 8,500 dwellings and other uses including commercial, retail, education, health, community and leisure facilities, parking, landscaping, and public open space. A summary of the approximate maximum floorspace areas for each land use type is shown in Table 3-1.

3.2.2 This scoping report accompanies the submission of a revised Scoping Opinion request for Otterpool Park, to reflect the updates that are being made to (i.e an amendment to) application Y19/0257/ FH by ensuring the proposals are deliverable across the lifetime of the development, and also as referred to in para 2.1.6 by considering additional land included within the application site boundary to include Westenhanger Caste and its grounds. The application site boundary is otherwise unchanged from that submitted in 2019. Whilst the mix of uses is the same, the development quantum has increased slightly as shown in the comparison in Table 3-1.

Table 3-1 Proposed Development

Land Use/Class	Development Quantum (Gross External Area m^2/ unit numbers) – **2019 Scheme**	Development Quantum (Gross External Area m^2/ unit numbers) – **proposed Development 2020**
Residential (C2, C3)	Up to 8,500 residential units	Up to 8,500 residential units
Hotel (C1)	120 rooms (7,700m^2)	Up to 8,000 m^2
Commercial (B1)	73,700 m^2	Up to 74,000 m^2
Light Industrial (B2)	13,200 m^2	Up to 13,500m^2
Retail (A1-A4)	28,875 m^2	Up to 29,000m^2
Education (D1)	5 primary, 2 secondary schools and 10-11 nurseries (22,500m^2)	Up to 46,000m^2 comprising primary schools, secondary schools and nurseries.
Health, Community Centres (D1)	20,500 m^2	Up to 21,000m^2
Leisure (D2)	8,250 m^2	Up to 8,500m^2
Outdoor sport-related recreation	c. < 30ha	c. < 30ha

3.2.3 The proposed land uses are described further below:

3.2.4 Character areas are anticipated to be created across the site (named Town Centre, Westenhanger, Riverside, Otterpool Slopes, Woodland, Hillside, and Valley & Woodland Edges). Refer to Figure 3.1 which illustrates the location of these areas.

3.2.5 The Town Centre and Westenhanger area is proposed to provide residential uses as well as education, employment, retail, transport, health, leisure facilities and community uses. The Riverside, Otterpool Slopes, Hillside and Woodland areas are proposed to provide residential, small scale retail, community, health and education uses.

3.2.6 A network of formal and informal public open space will be provided across the site including parks, wooded areas and pitches for sport, recreation and leisure use.

3.2.7 The designation of strategic areas of public open space will take into account the need to preserve or enhance the setting of listed buildings within the site and to minimise the harm caused to heritage

assets, notably Westenhanger Castle adjacent to and north of the site and Otterpool Manor in the southern/central part of the site.

3.2.8 A series of public footpaths and cycleways will be provided through the proposed Development to allow access for residents of the scheme without use of the private car. New highway and access routes for vehicles (including public transport) will also be provided focusing on the sustainable transport opportunities provided by the presence of Westenhanger Station.

3.2.9 Three new road bridge crossings over the River Stour are proposed to connect the Riverside area to the south.

3.2.10 An Energy Centre for the purposes of district heating and cooling is considered unlikely to be required. However, if assumptions change the effects of it would be assessed in the EIA .

3.2.11 A new sustainable drainage system (SuDS) will be proposed which makes use of the existing River East Stour as part of a 'blue corridor'. The SuDS strategy will take account of the capacity of existing watercourses and include proposals to designate land for landscaped flood alleviation purposes whilst enhancing the role and amenity of existing watercourses through the site. Opportunities will be taken to maintain important hedgerows and trees on the site, provide new planting and enhance biodiversity.

3.2.12 A new business park is proposed in the north east closest to Junction 11 of the M20. Employment floorspace will be provided outside the main business park to provide more localised employment opportunities. These would be included predominantly within the Town Centre, with a lower level of employment uses in the Local Centres in Woodland and Hillside Settlement areas. The total amount of B1 floorspace that could come forward in these locations would be up to 74,000m^2. The total amount of B2 floorspace that could come forward is 13,500m^2.

3.2.13 The retail uses will be targeted on meeting the needs of the residents within the settlement rather than wider retail needs from elsewhere in the District. There will be a concentration of retail (including food and drink) uses in the Gateway adjacent to Westenhanger Station. A small amount of retail will be provided within the local centres within the Riverside, Hillside and Woodland and Otterpool Slopes areas. The total amount of A1 to A4 use of retail floorspace proposed is 29,000m^2, which includes shops, professional and financial services, restaurants and cafes, and drinking establishments.

3.2.14 The requirements of education provision for the Development is being discussed with Kent County Council and appropriate provision for primary and secondary schools will be provided. Similarly, appropriate levels of local health care facilities will be provided to serve the proposed Development. Sports facilities will be provided settlement in accordance with discussions with Sport England and recognising the potential for the dual use of school playing fields.

3.2.15 In line with the concept of the proposed Development as a 'new garden settlement', a high proportion of the site will either be retained open land or comprise new formal and informal open space provision. The strategy seeks to enhance the character of existing spaces on the site as well as providing new areas for such use as parks, allotments, playing spaces and amenity purposes. Approximately 40% of the land area within the proposed Development will comprise strategic open space without accounting for any incidental areas within the designated housing areas. Open areas will be maintained between the proposed Development and the existing settlements at Barrow Hill, Sellindge and Lympne.

3.2.16 With respect to access, the proposals for the Development are based upon a retention of the A20 on its current route running through the site which will then serve urban and rural parts of the new settlement. The need for highway improvements to the existing network including to Junction 11 of the M20 arising from the proposals is being considered. The proximity of Westenhanger Station and the potential that offers for increased rail usage by existing and proposed resident is under investigation.

3.2.17 The proposed Development will comprise a mixture of higher, medium and lower densities of residential provision throughout the new settlement, reflecting a range of housing types. The more urban parts of the development located to the north of the A20 including along the proposed High Street will be more dense and taller. In contrast, the rural parts of the settlement lying in the south and western parts of the site will mainly consist of lower density, two storey conventional housing.

3.2.18 The high density areas (Riverside and Town Centre) will have a greater proportion of apartments extending to a maximum height of five storeys. Medium density areas (Westenhanger and Otterpool Slopes) will have a lower proportion of apartments with the maximum height being restricted to four

storeys, whilst low density areas (predominantly Hillside and Woodland Settlements) will have a smaller proportion of apartments and the height limited to three storeys.

3.2.19 The maximum heights of the employment, education, community and sports facilities are not anticipated to exceed those of the residential or employment building heights.

3.3 Framework Masterplan

3.3.1 The Framework Masterplan (FM) for the development of the full Garden Town has been published, and which forms the aspiration for the proposed Development. The additional land represented by the wider FM boundary (see Figure 3.1) would include a further 1,500 residential units and other uses to deliver up to 10,000 homes. The Framework Masterplan will be considered as part of a wider assessment of cumulative effects (see Section 4.8 for committed developments in the vicinity).

4 EIA Methodology

4.1 EIA Process

4.1.1 The EIA would be consistent with the EIA Regulations. The ES reporting the results of the EIA would be prepared to comply with the requirements of the EIA Regulations. The EIA would be undertaken in accordance with the Institution of Environmental Management and Assessment (IEMA) guidelines for EIA. Assessments for the environmental topics would be undertaken in accordance with the relevant Government, professional institution, or best practice guidelines.

4.1.2 The aim of EIA is to protect the environment by ensuring that the decision maker, when deciding whether to grant permission for a project, which is likely to have significant effects on the environment, does so in the full knowledge of the likely significant effects, and takes this into account in the decision-making process. In general terms, the main stages in the EIA are as follows:

- Data Review - drawing together and reviewing available data;
- Scoping - identifying significant issues and determining the subject matter of the EIA, including issues that are not deemed significant;
- Baseline surveys - undertaking baseline surveys and monitoring to identify existing baseline conditions;
- Consultation - seeking feedback from technical consultees and the general public in relation to key environmental issues, design responses and methodologies to be adopted for the EIA;
- Assessment and iteration - assess likely effects of the proposed Development, evaluate alternatives, provide feedback to design team on any adverse impacts, incorporate mitigation and assess the effects of the mitigated Development; and
- Preparation of the ES and the Non-Technical Summary (NTS).

4.1.3 Additionally, during the EIA process opportunities to deliver enhancements would be explored in consultation with appropriate stakeholders.

4.2 Consultation

4.2.1 Consultation with technical stakeholders and the general public has been, and will continue to be, key to the evolution of the proposed Development. Consultation would continue as part of the EIA process, to allow those with an interest in the proposed Development to participate in the decision-making process, obtain relevant baseline information and help further inform the design. The following organisations have been consulted in relation to the proposed Development:

- Folkestone & Hythe District Council;
- Kent County Council;
- Environment Agency;
- Historic England;
- Natural England;
- Network Rail;
- Kent County Wildlife Trust;
- Canterbury City Council;
- Ashford Borough Council; and
- Sport England.

4.2.2 Details of consultees contacted to date regarding the scope of the EIA are highlighted in Sections 5 to 17 along with a summary of responses and agreed actions. Discussions with consultees have been carried out regarding the topic scopes below:

- Agriculture and Soils;
- Air Quality;
- Biodiversity;

- Climate Change;
- Cultural Heritage;
- Geology, Hydrogeology and Land Quality;
- Human Health;
- Landscape and Visual Impact;
- Noise and Vibration;
- Socioeconomic Effects and Community;
- Surface Water Resources and Flood Risk;
- Transport; and
- Waste and Resource Management.

4.2.3 For each environmental topic, this report identifies those environmental impacts to be **scoped in** to the EIA because they are predicted to have the potential to cause a significant effect without effective mitigation. Those impacts that are regarded as unlikely to lead to a significant effect are **scoped out** with justification also provided in Sections 5 to 17. A summary table is provided in Table 4.2, outlining whether the topics (or aspects of their assessment) that are proposed to be scoped in or out of the assessment.

Three Tier Approach to Assessment

4.2.4 Following consultation on the previously submitted ES, a 'three-tier' approach is proposed for the amended planning application, and accompanying EIA. The conditions that would be attached to the outline planning permission if granted would require two further consents stages to control the design and delivery of the development from outline to the reserved matters stage. It is anticipated that there will be development quantum threshold 'triggers' that will inform the need to provide certain key infrastructure in advance of other development coming forward. These triggers will be established in order to demonstrate how the development can be constructed without the need for fixed phasing of the development land parcels or zones at the outline application stage.

4.2.5 The 'three tier' system includes the following key stages of the planning process:

- **Tier 1:** Current outline planning application will seek to secures approval for the proposed Development through the submission of an amended Development Specification document and accompanying amended parameter plans and notes which will form the basis of the EIA.

  The EIA will consider the flexibility presented by the amended parameter plans in respect of the completed development, in line with approach of assessing the "Rochdale envelope". This will address the worst case fully developed scheme in operation. Given the considerable length of time within which the Development will be carried out (ie 25 yrs), uncertainties exist in terms of the phasing of construction to meet local demand. Given the numerous ways in which the development could be phased it is not possible to assess the intermediate effects and it is therefore not proposed to assess specific phasing of the development zones. There will however be an assessment of the construction peak period based on annual housing numbers and associated infrastructure (eg schools and education facilities) delivery requirements.

  There will be a series of site wide strategies and design guidelines to supplement the scheme parameters and these will inform mitigation. The strategies currently envisaged to be carried out are in relation to waste, energy, heritage, biodiversity, and blue-green infrastructure. Mitigation and strategies put forward at this stage would be developed further for the Tier 2 Stage. The ES would be produced at this stage for the outline planning application, with recommendations for further mitigation measures to be considered at the Tier 2 stage. The LPA will need to be satisfied that the ES has sufficient detail at the Tier 1 stage to assess the likely environmental effects so as to accept the principle of the development.
- **Tier 2:** This Key phase will secure approval of more detailed documentation which set the definition of and provide a framework for each of the Development Zones. At this tier a greater level of detail will be provided which includes individual areas of the site for approval. The required technical information informs and establishes a base against which reserved matters applications within the key phase area can be assessed. Following the definition of each area, a framework

including a Design Code, Delivery Plan and other area specific documents including any relevant supplements to the Tier 1 site wide strategies that establish the design and delivery framework for that area, will be submitted for approval.

- **Tier 3:** Following Tier 1 and 2 approvals, reserved matters applications can be approved for individual parcels or infrastructure within the Tier 2 approved areas. These reserved matters applications will provide an implementable level of detailed design in accordance with the Framework for that key area secured in Tier 1 and 2, including the design parameters and the requirements of outline conditions. The detailed mitigation measures will be embedded in the design of the proposed Development to minimise the identified potential impacts on specific receptors.

4.3 Spatial Scope

4.3.1 The study areas for the EIA are individually defined for each environmental topic based on the spatial scope of the potential impacts on receptors or resources and relevant topic-specific criteria. The study areas for each topic are further described in specialist topic sections 5-17 of this Report.

4.4 Temporal Scope

4.4.1 The ES will detail assessment of the environmental impacts of the proposed Development during its construction and operation. Given its nature, the proposed Development is expected to have a design life of at least 100 years and would be maintained and upgraded as required. Therefore, the EIA would not cover the decommissioning of the proposed Development. In addition, the likely impact that would occur during the replacement of individual assets within the new settlement is similar to those discussed for the construction phase of this proposed Development.

4.4.2 In order to assess the environmental impacts on receptors that would be caused by the proposed Development, and to identify any potential significant effects, a comparison of the current environmental conditions immediately before the Development is implemented (baseline) and then a prediction of how the environmental conditions are likely to change in the absence of the Development (future baseline), is needed.

4.4.3 The assessment would be conducted for specific years, as appropriate for each topic:

- Updated baseline (2018- present);
- Future baseline (February 2023) – start of construction;
- Year of opening (assumed to in September 2023);
- Intermediate peak construction year(s) during partial occupation;
- End of the Core Strategy period 2037 (led by the transport assessment); and
- Final year of full build out of the proposed Development.

4.5 Determination of Baseline Conditions

4.5.1 In order to gather a comprehensive descriptive summary of the baseline conditions, each topic would need to use data gathering methods which are appropriate to the topic and follow any topic specific guidelines. This would involve conducting desk studies, undertaking specialist surveys as appropriate and engaging with stakeholders both to agree those methods of data collection and also to obtain data they hold.

4.5.2 The description of baseline conditions would identify receptors that may be affected by the Proposed Development and also their ‘value’ or ‘sensitivity’ (negligible to high).

4.5.3 A description for the future baseline is included in the environmental topic sections of this Report, where this is not included at the current stage, then a description would be completed within the ES topic chapter. The future baseline which is reported is further defined by the assessment scenario that the topic adheres to.

4.6 Assessment of Significant Environmental Effects

4.6.1 A description of the likely significant effects on the environment from the Proposed Development including the existence of the Proposed Development, the use of natural resources and the emission of pollutants, the creation of nuisances and the elimination of waste, is required under Schedule 4 of the EIA Regulations.

4.6.2 For each environmental topic, the significance of the potential environmental effect would be defined as a function of the value of the receptor and the magnitude of change or impact. The significance of effect would be derived using professional judgement and based upon relevant policy or industry guidance where available. Where no specific policy or guidance exists, bespoke significance criteria will be set out to define the scale of effect and adopted in the EIA process.

4.6.3 Environmental effects can be described as:

- Adverse, neutral or beneficial;
- Direct: caused by activities which are an integral part of the Proposed Development resulting in a change in environmental conditions;
- Indirect: due to activities that affect an environmental condition or receptor, which in turn affects other aspects of the environment or receptors;
- Cumulative: comprising multiple effects from different sources within the Proposed Development, or in- combination with other developments on the same receptor(s); and
- Temporary (e.g. demolition and construction phases), short term (<5 years), Medium term (5-10 years), Long term (>10 years) or Permanent (e.g. once the proposed Development is completed and fully operational).

4.6.4 This is the broad approach used when assessing significance of effects. However, for certain topics such as air quality and noise and vibration, the above criteria or approach is not used. Instead environmental impacts can be quantified against thresholds defined using numerical values to identify impacts. This quantification is undertaken through calculations or computer modelling. The specific significance criteria and methods proposed for each topic within the scope of the EIA are explained further in Sections 5 to 17.

4.7 Mitigation Measures, Enhancements and Residual Effects

Mitigation

4.7.1 Proposals for mitigation would follow the mitigation hierarchy of avoid, reduce, remedy and compensate for adverse effects identified during construction and operation. The impact assessment will identify the significance of environmental effects on receptors with proposed mitigation measures in place where this is feasible to the topic. For example, embedded design measures proposed to mitigate foreseeable impacts will be taken into account in the main impact assessment. Other forms of mitigation that relate to the need for further detailed assessment at reserved mattes application stage will be recommended as appropriate.

4.7.2 The ES would set out how significant environmental effects associated with any demolition and construction works would be mitigated. The assessment would consider current, and where appropriate, future baseline conditions expected with the construction of the proposed Development. The mitigation measures proposed in the ES would be expected to be included in a draft Code of Construction Practice (CoCP) which would be finalised and implemented when a works contractor has been appointed. Compliance with a CoCP will ensure that the proposed mitigation measures are properly implemented following the grant of planning permission.

4.7.3 Given the outline nature of the proposed Development, mitigation measures for the development in operation will relate to further commitments to be assessed and delivered at the more detailed design (Tier 2 and Tier 3) stages.

Enhancements

4.7.4 There may also be scope for enhancement measures to be proposed for the Development and would therefore be additional to actual mitigation. Such measures would be identified as beneficial effects of the Proposed Development.

Residual Effects

4.7.5 Residual effects would take into account any recommendations for mitigation that may be required, and evaluate the resulting significance.

4.8 Assessment of Cumulative Effects

Cumulative Effects Assessment

4.8.1 The EIA Regulations require that, in assessing the effects of a particular development proposal, consideration is also given to the cumulative effects. Cumulative effects are those effects of a development that may interact in an additive or subtractive manner with the effects arising from other committed developments that are not currently in existence but may be by the time the proposed Developmentis implemented.

4.8.2 These would be assessed in the EIA as:

- The combined action of interrelated Proposed Development specific environmental effects causing impacts on a single receptor; and
- The combined action of the Proposed Development and other planned developments environmental effects in combination on a single resource/receptor.

4.8.3 In assessing cumulative effects, major developments within the zone of influence of the Development have been identified through consultation with F&HDC and other relevant consultees on the basis of those that are:

- Permitted and under construction; and
- Permitted application(s), but not yet implemented.

4.8.4 Consideration has been given to developments identified in the adopted and emerging development plans.

4.8.5 The committed schemes that have been identified through interrogating F&HDC and Ashford BC websites is provided in Appendix C.

4.8.6 Two ‘in-combination’ cumulative effects assessment scenarios will be assessed in the ES:

- The proposed Development outline planning application in combination with the additional land provided by the Framework Masterplan (see Figure 3.1); Appendix A and
- The above scenario in combination with other committed schemes in the area including the Land Rear Rhodes House Main Road Sellindge Kent (planning ref. Y16/1122/SH which is the nearest consented major development to the application site (Appendix B map, site ‘AL’).

4.8.7 Cumulative effects would be considered within the ES topic chapters in the ES. The proposed schemes to be included as part of the cumulative assessment (‘committed or ‘consented’ schemes’) for each topic are set out in the respective chapters 5-17, providing reasons for their inclusion.

4.8.8 It should be noted that two existing planning permissions (map codes AJ and AK in Appendix B) present onsite are not included in the assessment of cumulative effects given that the land is required for the proposed Development.

4.9 Major Accidents and Disasters

4.9.1 Paragraph 8 of Schedule 4 of the EIA Regulations requires an EIA to include an assessment of the “significant environmental effects of a development to risks of major accidents or disasters which are relevant to the development concerned”. Paragraph 8 also states that “Where appropriate, this description should include measures to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and response to such emergencies “.

4.9.2 There is no formal definition of 'major accidents or disasters' that may affect a Development in the context of the current EIA Regulations. The following approach has however been adopted by way of applying a definition sourced from existing relevant legislation and guidance documents.

4.9.3 A 'major accident' is defined within the Control of Major Accident Hazards (COMAH) Regulations 2015 as:

"An occurrence such as a major emission, fire or explosion resulting from uncontrolled development in the course of the operation of any establishment and leading to serious danger to human health or the environment (whether immediate or delayed) inside or outside the establishment, and involving one or more dangerous substance."

4.9.4 Two key information sources have been reviewed in the assessment of major accidents and disasters considered to be of relevance to the proposed Development site:

- UK National Risk Register of Civil Emergencies; and
- Public information on establishments that are subject to COMAH 2015.

4.9.5 General risks arising from typical external environmental and anthropogenic hazard sources have been considered from the UK National Risk Register of Civil Emergencies (Ref.4.1). This document provides an overview of the main types of civil emergencies that could affect the UK over five years since its publication (2016). The report shows within a set of risk matrices how these emergencies compare in terms of likelihood, and the scale and extent of the consequences. It then provides detail of how the Government and emergency responders plan to prepare for and respond to them.

4.9.6 The main types of civil emergency, their relative plausibility of occurring and overall relative impact in the UK are shown in Figure 4-1 and Figure 4-2.

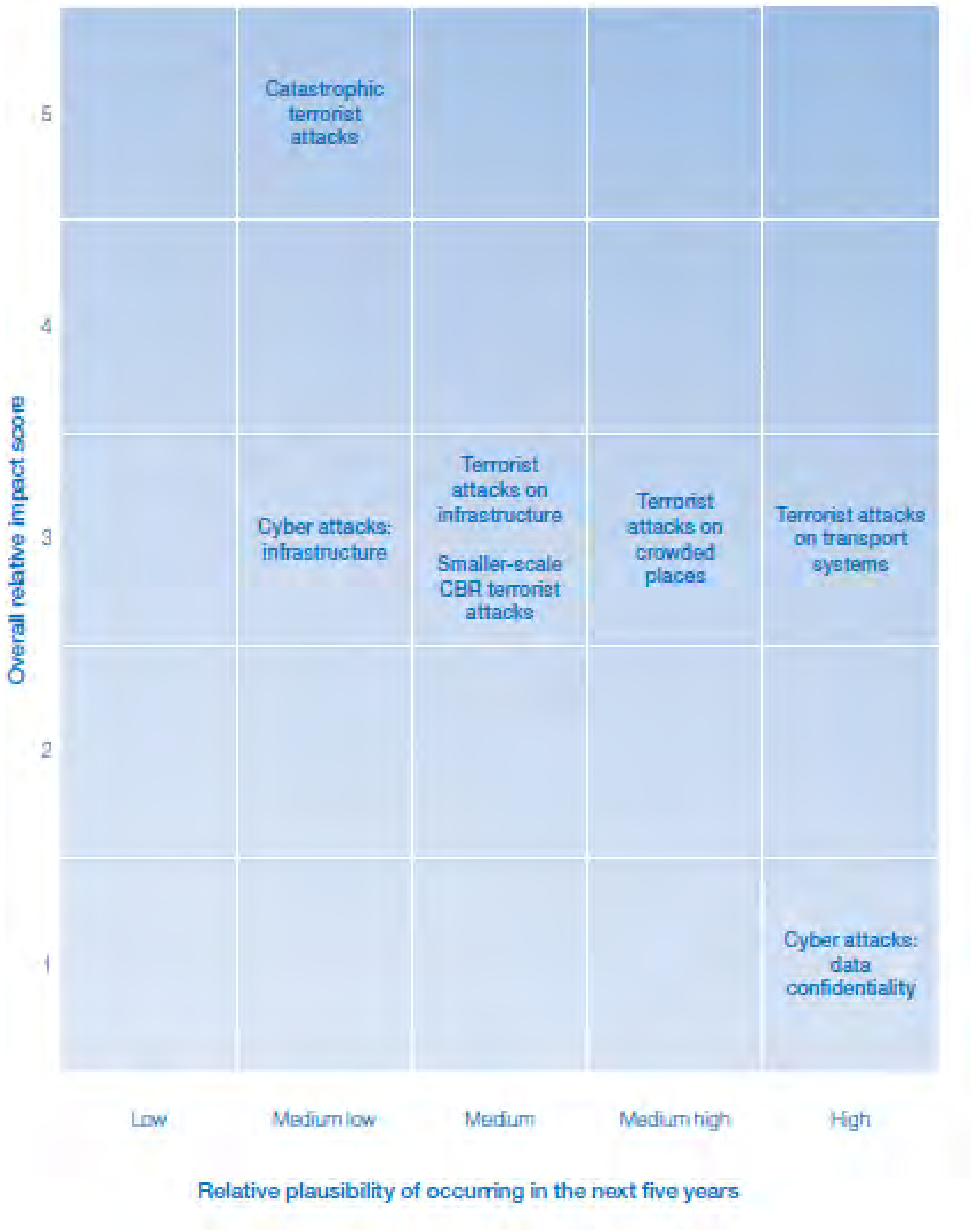

Figure 4-1 Risk of Terrorist and other Malicious Attacks (source: UK National Risk Register of Civil Emergencies: 2015 edition)

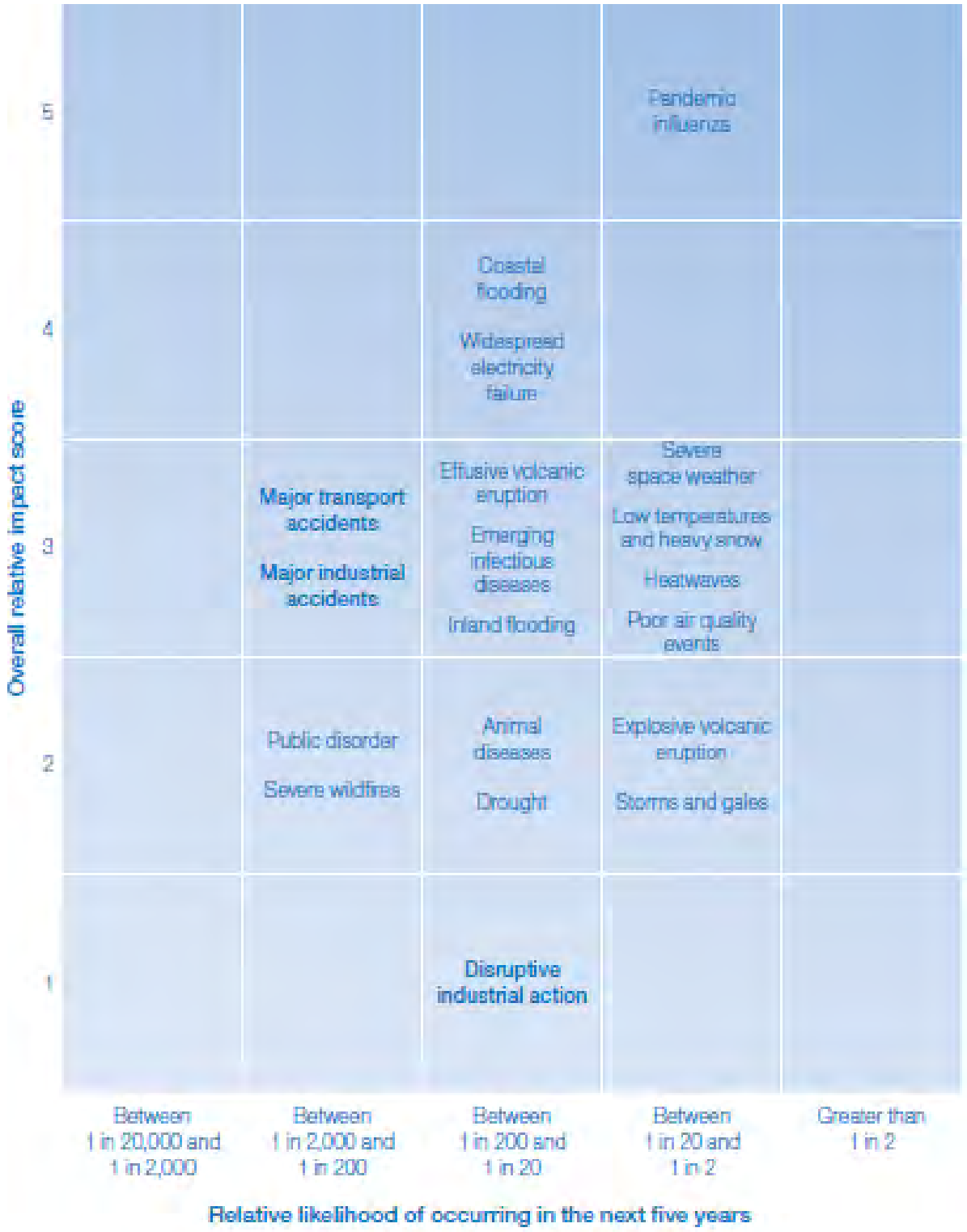

Figure 4-2 Other Risks (source: UK National Risk Register of Civil Emergencies: 2015 edition)

4.9.7 The key hazards and risks in the Register have been reviewed and for those considered relevant the potential impacts on receptors within and outside of the proposed Development have been considered in determining whether the aspect should be scoped into the EIA. The result of this assessment and the location in the ES that the impact will be addressed in is shown in Table 4-1.

Table 4-1 Scoping Table for Major Accidents and Disasters: Identified Key Hazards and Potential Impacts

Hazard – Project hazard log and London Risk Register	Environmental Receptor	Resultant Impact	Scope in/Scope out
Flooding	Contamination of waters, human health (injuries)	Infrastructure damage from water inundation. Development site occupier evacuation from flood event. Off-site downstream flooding effects to adjacent site occupiers.	Scope **In** – Proposed Development is located partially within Flood Zone 2 and 3 and therefore flood risk and water resources assessment have been **scoped in** to the ES. This aspect will be addressed in the Surface Water Resources and Flood chapter of the ES
Adverse Weather (long term, from storms, snow and gales)	Human health: occupants at the proposed Development	Power cuts and storm damage to infrastructure and buildings	Scope **In** – Impact could result in irreversible damage to environmental receptors from adverse weather events. Adaptation to such events will be addressed in the description of the Proposed Development chapter of the ES.
Transport Accidents, or Industrial Action (Channel tunnel operations)	Human health: occupants at the proposed Development	Temporary closure of the Channel Tunnel. Congestion on the M20 motorway lanes used for temporary lorry parking. Noise and air quality implications of traffic resurgence following congestion incidents.	Scope **In** – The implications for the effects of significant congestion events arising from industrial action or accident will be addressed in terms of transport, air quality and noise and will be reported in the respective impact assessment sections of the ES.
Terrorist Attack	Human health, contamination of waters, soils, air	Explosion resulting in loss of life and destruction of nearby Channel tunnel structure and infrastructure. Loss of human life, introduction of chemicals/contaminants to local environment.	Scope **out** – Distance of the Channel tunnel from the Development is considered sufficiently distant for the effects of explosions at source not to be likely to directly physically affect the proposed Development buildings or infrastructure.
Utility Failure including gas explosion or urban fire	Human health, sensitive ecological receptors	Power cut to buildings and infrastructure Gas leak and explosion leading to reduction of air quality.	Scope **out** – Proposed Development will be designed to Building Regulations, good standards of fire detection/fighting equipment. Utilities would be expected to be diverted and/or protected during enabling works. Utilities companies would have response procedures/mechanism to protect the networks.
Pandemic Influenza	Human health	Mild to acute respiratory disease, leading to death in vulnerable groups (the elderly and those with pre-existing conditions in particular)	Scope **out** - On 30 January 2020, the World Health Organisation (WHO) declared the novel coronavirus (2019-nCoV) outbreak a public health emergency of international concern. COVID-19 is a new illness that can affect

Hazard – Project hazard log and London Risk Register	Environmental Receptor	Resultant Impact	Scope in/Scope out
			lungs and airways, caused by a type of coronavirus. In March 2020, the construction industry developed Safe Operating Procedures for construction sites, however many construction sites across the UK ceased work. At the time of writing the pandemic is ongoing (WHO, 2020) with widespread social and economic implications, although deaths in the UK are now decreasing. During construction there could be a potential for contraction of a disease (e.g. pandemic diseases) by workers. The spread of disease as a consequence of the Project is not considered to be greater than associated with any other development. Standard control measures would be implemented by the appointed contractor during construction to handle and dispose of either any diseased plants or injurious weeds, or both and prevent their spread. The risk is no more vulnerable than other existing built development during operation. Standard measures such as regular hand-washing following contact with external surfaces, use of hand sanitiser when visiting commercial properties, and following emerging Government guidance as social distancing measures in place since March 2020 become further relaxed.

4.9.8 Table 4-1 shows that flood risk, adverse weather, and transport issues associated with major events affecting the operation of the Channel tunnel directly north of the Development site, would be addressed in the respective sections of the ES.

4.10 Alternatives

4.10.1 In accordance with the EIA Regulations, the ES would provide an outline of the main alternative designs considered by the applicant, taking into account a comparison of the environmental effects of the scheme.

4.11 Planning Policy and Guidance

4.11.1 Relevant national, regional and local planning policy will continue to be reviewed as appropriate to the ES topic. This would also include review of current and emerging guidance. Key local policy and guidance that is relevant to specific topic assessments scoped in to the report are set out in this report.

4.12 Summary of EIA Scoping

4.12.1 A summary of the topics described within this Report and the aspects that would be scoped in and out of the EIA are presented in Table 4-2.

Table 4-2 Summary of Environmental Topics Considered During EIA Scoping

Environmental topic	Included in the EIA Scope	Summary
Agriculture and Soils	Construction ✓	The Proposed Development has the potential to affect agricultural farm land through direct loss of farmland and holdings, including drainage.
	Operation ✓	Operational impacts would be limited to the edges of the proposed Developmental though this cannot be fully scoped out from further assessment.
Air Quality	Construction ✓	The Proposed Development has the potential to affect air quality through vehicle, fugitive dust and Non-Road Mobile Machinery emissions as a result of construction activities during the construction phase.
	Operation ✓	The Proposed Development has the potential to affect air quality through vehicle and energy centre emissions (energy centre highly unlikely but would nevertheless be assessed if it did become part of the proposed Development) during the operation phase.
Biodiversity	Construction ✓/ ×	The Proposed Development has the potential to result in severance and disturbance of existing green infrastructure including a range of habitats, mammals, amphibians and reptiles, birds, terrestrial invertebrates and invasive plant species in the absence of mitigation through the design. Other receptor groups are proposed to be scoped out of assessment as detailed in Chapter 7.
	Operation ✓/ ×	Operational effects can include disturbance from activities associated with the proposed Development, increased risk of road traffic collisions with wildlife, impacts from domestic animals and pollution.
Climate Change (adaptation, greenhouse gases)	Construction ✓	The Proposed Development would have potential to be affected by climate change over its lifetime. Adaptation of the proposed Development to climate change would be addressed through risk assessment design workshops with specialist team inputs (see Section 8.1).
	Operation ✓	Operational impacts will produce greenhouse gas emissions that will be compared with regional emissions.
Cultural Heritage	Construction ✓	The Proposed Development would have potential to permanently affect archaeological resources, and the setting of heritage assets during construction.
	Operation ✓/ ×	Following the implementation of mitigation measures, effects on archaeological resources in operation would not be significant and are scoped out. The Proposed Development would have permanent effects on the setting of heritage assets and are **scoped in**.

Environmental topic	Included in the EIA Scope	Summary
Geology, Hydrogeology and Land Quality	Construction ✓	The Proposed Development lies in an area of significant current and historic industrial uses and construction of the proposed Development could introduce contaminant pathways to human health, watercourses and damage to buildings or infrastructure. Sites of geological importance present on site have the potential to be affected by construction and therefore would be considered in the ES. Operational effects of underground structures and linear features on the groundwater regime will be assessed Operational effects of the proposed Development on groundwater quality is proposed to be scoped out.
	Operation ✓/ ×	
Human Health	Construction ✓	The Proposed Development would have potential for a combination of significant effects (e.g. noise, air quality, changes to social infrastructure, access and safety perceptions) upon the human health of the local population. Operational effects (which may also be positive) that might arise include environmental change, the introduction of new housing, social infrastructure and associated open space.
	Operation ✓	
Landscape and Visual Impact	Construction ✓	The Proposed Development would have potential significant effects upon the AONB and character areas and views, as well as visual receptors in the area during construction. Operational impacts on the AONB and other receptors have the potential to be significant and would consider the context of the proposed Development in the context of the framework masterplan and other consented schemes nearby.
	Operation ✓	
Noise and Vibration	Construction ✓	The Proposed Development has the potential to result in noise and vibration impacts on the surrounding receptors during construction. Operational highways and rail noise has the potential to result in noise and vibration impacts on surrounding receptors due to the introduction of the proposed Development.
	Operation ✓	
Socio-Economic Effects and Community	Construction ✓	The proposed Development has the potential to impact local business and the community, and create jobs during construction. The proposed Development may have some effects on local health and education facilities, however the development itself includes provision of appropriate levels of such facilities. The provision of the proposed Development would also have beneficial effects in operation, as it will act as catalyst for the development of the wider Framework Masterplan and complement other nearby future developments.
	Operation ✓	
Surface Water Resources and Flood Risk	Construction ✓	The Proposed Development lies mainly within Flood Zone 1 with some areas within Zones 2 and 3. The works have the

Environmental topic	Included in the EIA Scope	Summary
	Operation ✓	potential to cause detrimental changes to flood risk, water quality and resources. It is expected that any changes brought about by the proposed Development can be addressed in a Surface Water Drainage Strategy for the design and a FRA included as part of the planning submission.
Transport	Construction ✓	The Proposed Development would likely create traffic and transport effects to the existing road network as a result of the construction of the proposed Development. During operation, the Proposed Development would have potentially significant effects on the local highways and rail network due to its connections with the wider transport network and other committed developments likely to come forward in the future. The EIA would also be informed by a Transport Assessment.
	Operation ✓	
Waste and Resource Management	Construction ✓	The Proposed Development would generate significant amounts of waste and use significant quantities of materials during construction and operation of the proposed Development, and its impact upon available waste collection facilities in the region will be assessed.
	Operation ✓	
Microclimate: Daylight, Sunlight, Overshadowing and Wind	Construction ×	Development of the Proposed Development has the potential to impact on daylight, sunlight and overshadowing available to existing surrounding sensitive (residential) properties. However, the height of the proposed Development across the site is proposed to be up to a maximum of 18m above ground. These proposed building heights and densities indicate that there would be not be significant effects to surrounding receptors or within the development itself with respect to daylight, sunlight, or shadow. The proposed building heights are also not envisaged to generate significant wind effects during construction or operation of the proposed Development.
	Operation ×	

4.13 Proposed Structure of the ES

ES Content

4.13.1 The current proposed structure of the ES is set out below, based on the EIA Regulations, current best practice, and the scoping analysis.

Volume 1 – Main Environmental Statement Text

4.13.2 This would contain the full text of the EIA. The proposed chapter headings are set out below:

- Introduction (including Concise Statement of Aims);
- Proposed Development Description;
- Alternatives Considered;
- EIA Methodology (including limitations and assumptions);
- Specialist Topics: air quality, biodiversity, climate change, cultural heritage, geology, hydrogeology and land quality, human health, landscape and visual impact, noise and vibration, socioeconomic and community effects, surface water and flood risk, transport, waste and resource management.
- Cumulative Effects;

- Residual Effects; and
- Schedule of Mitigation.

4.13.3 Each specialist topic chapter (indicated above) would represent the assessment of the effects associated with that topic and be structured as follows:

- Introduction;
- Regulatory/Policy Framework;
- Methodology;
- Baseline (including future baseline scenarios);
- Impact Assessment (with embedded design mitigation);
- Mitigation (other forms) or enhancement measures;
- Residual effects;
- Cumulative effects (this would address cumulative effects with other schemes i.e. in-combination effects); and
- Summary - this would include a table summarising the significance of effects following the implementation of mitigation or enhancement.

Volume 2 – Environmental Statement Figures

4.13.4 This would contain a full set of supporting figures and illustrations which are referred to in Volume 1.

Volume 3 – Environmental Statement Appendices

4.13.5 This would provide detailed supporting data and the full text of any technical assessments and would be supplied in a separate volume.

Non-Technical Summary

4.13.6 A Non-Technical Summary would also be produced. This would provide a concise summary, in non-technical language i.e. plain English, of the key information in the ES. The Non-Technical Summary would be produced as an illustrated standalone document in a format suitable for public dissemination.

4.14 Supporting Planning Documents

4.14.1 The planning application would be supported by further standalone documents which will address other sustainable design aspects of the proposed Development. A summary is presented below.

Sustainability

4.14.2 A Sustainability Strategy is being developed for the proposed Development, and would be documented in a Sustainability Statement, based on consultation with the design team and the wider project team using information from documents used as part of the planning application. The Sustainability Strategy would follow the key aspects relating to the legislative requirements, sustainability targets and "triggers" which require the inclusion of specific commitments for the development of the scheme. These are developed in line with the client's vision for sustainability on Otterpool, drawing together a range of sustainability principles that, if embedded, will meet the high standards of sustainable design and construction that will be essential in creating an adaptable environment that will last for generations to come.

4.14.3 The EIA Regulations require the consideration of the effects of climate change in the design and assessment of the proposed Development. The proposed Development design in terms of its vulnerability to long term climate change effects and adaptation would be considered within the ES (see Section 7).

Energy Strategy

4.14.4 An Energy Statement would be produced and follow the industry construction standards and energy pricing forecasting. During design development, a reasonable baseline for energy consumption would be established to consider energy efficiency measures including low and zero carbon technologies

whilst also acknowledging site constraints and project delivery. This assessment would consider whole life energy use and carbon emissions.

Equalities Impact Assessment

4.14.5 Under the Race Relations (Amendment) Act 2000, the Disability Discrimination Act 2005 and the Equality Act 2010, an Equalities Impact Assessment (EqIA) would be produced for the proposed Development. This would provide a robust evidence-based assessment of the impact of the proposed Development on local equality groups (in respect of disability, gender, including gender identity, racial equality and others) during the construction and operational phases.

Other Documents

4.14.6 A design and access statement would be submitted which will focus on the how the design proposals meet with all relevant planning policy and legislation and planning policy.

4.14.7 Green Infrastructure Strategy will be produced to make it easier to understand how the existing green infrastructure has influenced the proposed framework masterplan and how the proposals are going to mitigate and enhance green infrastructure.

4.14.8 A Heritage Strategy will be produced which will provide detail of the mitigation measures as well as how the heritage assets will be preserved and integrated into the project.

4.14.9 A Planning Statement will also be produced that will demonstrate how the proposed Development complies with relevant planning policy at national, regional and local scale.

5 Agriculture and Soils

5.1 Introduction

5.1.1 This chapter addresses the proposed scope of the EIA with respect to agriculture and soils. It includes a summary of relevant consultation to date, baseline conditions and the proposed approach to the assessment of possible construction and operational effects. Aspects that are proposed to be scoped in and out of the assessment are identified.

5.2 Consultation and Scoping

5.2.1 Table 5-1 shows a summary of consultation undertaken to date that informed EIA scoping for the 2019 Scheme, the issues raised, and where relevant, how they will be addressed in the current application.:

Table 5-1 Consultation Undertaken to 2019

Consultee Contact/Date	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA (where relevant)
Natural England (7 December 2016)	Concern raised regarding the presence of best and most versatile (BMV) land. As the site is likely to comprise >20ha of BMV Natural England would like to review detailed soil information from across the site.	The presence of BMV land will be fully assessed in the EIA.
Natural England (30 May 2017)	Advice provided on sources of baseline information relating to soils and Agricultural Land Classification (ALC). These will all be used to inform the assessment of baseline conditions. Further information on data associated with available detailed mapping has been requested.	All available information will be used to inform the baseline.
Natural England (01 June 2018)	Clarity on the geographic scope	The geographical scope of the assessment in relation to BMV land and agricultural land holdings will be set out clearly.
Natural England (01 June 2018)	Phasing of assessments should be clearly defined	The proposed amended application will be assessed in accordance with the revised parameter plans, which will take into account flexibility in phasing and for which detailed phasing is not proposed to be included or required.
Natural England (01 June 2018)	Mitigation measures for affected farm business and farm operations should be clearly defined for both construction and operation phases	Mitigation measures relevant to agricultural land holdings will be set out.
Natural England (01 June 2018)	Impacts should be assessed in light of Government policy for the protection of BMV land	The presence of BMV land will be fully assessed in the EIA.

5.2.2 Table 5-2 summarises Consultation that has taken place since submission of the 2019 Scheme, the issues raised and how they are proposed to be addressed in the EIA.

Table 5-2 Consultation Undertaken since submission of 2019 scheme

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
Natural England (28 June 2019)	Detailed ALC information is required to support the planning application.	An analysis of existing information will be undertaken to provide a more detailed assessment of land areas at each grade. Consultation with Natural England will be undertaken to confirm what survey work is to be undertaken and at what stage.
F&HDC (11 July 2019)	In order for the local planning authority to apply the NPPF (2019) guidance and policy on development involving BMV agricultural land, it would be helpful to provide a breakdown of the area (ha) and proportion (%) of agricultural land in Grade 1, Grade 2 or Subgrade 3a. This is to be able to compare other sites involving development on BMV land in order to seek to use land of a poorer quality in preference to those of a higher quality.	The assessment detailed above will be used to provide additional detail on the areas of each grade affected.
F&HDC (11 July 2019)	In order to help ensure that embedded mitigation measures to safeguard soil resources for reuse on site, it would be helpful to have more information on the location and extent of soil resources of differing sensitivity, as identified in Table 5.4. This is to help ensure that soils of different resilience to soil handling/sensitivity are identified, stripped and stored separately and handled appropriately in suitable weather conditions, e.g. clay soils (low resilience/high sensitivity) should be managed separately from sandy soils (high resilience/low sensitivity), etc.	The assessment detailed above will be used to provide additional detail in relation to the resilience of soils to handling which will be used to inform the development of soil handling strategies.
F&HDC (11 July 2019)	Further information on the nature of the agricultural enterprises carried out on each holding, the location and extent of the boundaries of each agricultural holding, and the location of any buildings/other fixed infrastructure and equipment (e.g. silage clamps, grain storage sheds, agricultural drainage systems and water supply pipes) is necessary to help assess and substantiate the ES conclusion that likely significant effect of the proposed Development on all 18 agricultural holdings is Minor Adverse – Not Significant?	Information presented on land holdings will be updated with further detail provided where relevant to the assessment.
F&HDC (11 July 2019)	Is the assessment of agricultural holdings with land in the agri-environmental Higher Level Stewardship (HLS) (which is regarded as being of high sensitivity, see Table 5.4) as	The assessment criteria have been updated to account for the presence of land under agri-environment schemes.

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
	Minor Adverse – Not Significant, under estimated?	

5.2.3 Further consultation is proposed to be undertaken as follows:

- Following the completion of a predictive ALC map consultation will be undertaken with Natural England in relation to the requirement for and timing of soil surveys;
- Detailed land use information will be collected for each affected land holding.

5.3 Methodology

5.3.1 This assessment will relate to the following key factors:

- The soil types and related ALC grades likely to be affected by the proposed Development;
- The type of farm enterprises and farming/land management practices present, including any agri-environment schemes; and
- The possible presence of crop/soil/animal diseases or noxious weeds, and the risk of spreading such disease/weeds.

5.3.2 The objectives of the assessment will be to:

- Characterise the baseline environmental conditions for soils, land use and agriculture within the application boundary;
- Identify all soils, land-use and agricultural receptors within and adjacent to the application boundary that may be affected during the construction and operational phases;
- Assess the likely significant effects of the proposed Scheme on soil, land-use and agriculture, taking account of temporary and permanent land-use requirements, the potential for severance and phasing of the proposed Scheme; and
- Recommend measures, if appropriate, to mitigate potential significant adverse effects on soil, land-use and agriculture.

5.3.3 A range of existing information sources have been or will be reviewed to assess the character of the site in terms of land use and soils, including:

- Ordnance Survey mapping and aerial photography to establish land use and settlement patterns;
- Published ALC details for the area (provisional and detailed (available from www.magic.gov.uk)
- Climatic data and LandIS Soil Site Report, purchased from NSRI (National Soil Resources Institute)
- Land Information System Soilscapes database (available from www.magic.gov.uk)
- Extent of agri-environmental schemes (available from www.magic.gov.uk)
- Information from landowners/farmers affected by the proposed scheme (incl. farming type, farming practices, agri-environmental schemes etc.)
- Review of F&HDC Planning Registers to identify relevant development proposals currently under consideration by the council.

5.3.4 This will be supported by the collation of information from individual land holdings and consultation with Natural England in relation to soil and ALC surveys.

Relevant Policy and Guidance

5.3.5 Aside from the EIA Regulations there are no legislative requirements governing the assessment of agricultural matters, and the framework of any assessment is derived from a combination of EU and national agricultural and land use policies and measures. The key elements of these can be summarised as:

- the conservation of the BMV resources of agricultural land;
- retention of a competitive and sustainable agricultural industry;
- the diversification of individual farm businesses into supplementary non-agricultural activities;
- the more positive engagement of individual farm businesses with the delivery of environmental benefits.

National Planning Policy

5.3.6 The National Planning Policy Framework (NPPF 2019) (Ref.5.1) states that 'planning policies and decisions should recognise the economic and other benefits of the best and most versatile agricultural land. Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be prefered to those of a higher quality.'

Local Planning Policy

- Under Theme 2 of the Kent Environment Strategy (Ref.5.2), MR5.4 covers the establishment of '*land use management approaches that create, preserve and enhance healthy, viable soils and respect landscape character*'. Within this a required outcome is that '*soils remain functional and healthy*'.
- In Section 4.1 of the Shepway Core strategy (Ref.5.3) reference is made to the presence of high grade agricultural land within the District. In addition, saved policy SD1 includes that '*All developments should take account of the broad aim of sustainable development' and this includes 'Protect and enhance areas of countryside that are of special quality, particularly the Kent Downs Area of Outstanding Natural Beauty, Special Landscape Areas, Local Landscape Areas, Heritage Coast and undeveloped coast, ancient woodlands and, the best and most versatile agricultural land. Sustain the character and diversity of the wider countryside in general*'.

National Guidance

- The Soil Strategy for England (Ref.5.4) sets out the Government's aims in relation to protecting agricultural soils and in relation to protecting the soil resource during construction and development. There is a commitment to review the weight given to protecting best and most versatile land and review the need for any change to policy; no change has currently been advised.
- Within the Strategy there is an aim of encouraging better management of soils during the construction process. As part of this, a Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Ref.5.5) has been produced to protect soil resources disturbed on construction sites. Whilst the Code is not legally binding, the wider benefits of following the guidance (in terms of sustainability, cost savings and waste controls) are clearly set out.

Other Guidance

5.3.7 Other guidance documents relevant to soils and agriculture will be referenced. In general, these relate back to the policy and guidance documents referenced above, and include:

- Natural England Technical Information Note 049 (Ref.5.6);
- Good Practice Guide for Handling Soils (Ref.5.7); and
- British Standard Specification for Topsoil and Requirements for Use, BS3882:2015 (Ref.5.8).

Study Area

5.3.8 The Study Area for soils and ALC will comprise the application site. In relation to the farm businesses the Study Area will be extended where required to ensure a full understanding of land holdings which lie within and outside of the application site.

Assessment Methodology

Approach

5.3.9 There are no published methods for assessing the impacts of development upon agricultural receptors. The following document has, however, been used to inform the approach:

- Design Manual for Roads and Bridges (DMRB), LA109 Geology and Soils (Ref.5.9).

Future Baseline

5.3.10 It is considered that the baseline in relation to soils and ALC grades will not change from that described. There could potentially be changes to land management practices and business approaches across the landowners / land managers as the proposed Development zones are developed or changes to business practices occur; the interviews will seek to identify where potential changes could occur.

Significance Criteria

5.3.11 The approach to assigning levels of sensitivity to receptors is detailed in Table 5-3.

Table 5-3 Assessment of the value/severity of receptors for agriculture and soils

Sensitivity of receptor	Description	Examples
High	Very high agricultural and land use value, quality or rarity on a national scale.	Grade 1, 2 and 3a agricultural land Irrigated agriculture Higher Level Stewardship (HLS) land Soils with a high susceptibility to structural damage and soil erosion throughout the year, including heavily textured, poorly structured soils Pastoral farms
Medium	High agricultural and land use value, quality or rarity on a national scale	Grade 3b agricultural land Non-irrigated arable agriculture Capital Grants Countryside Stewardship (CS) / Entry Level Stewardship (ELS) land Soils with some seasonal susceptibility to structural damage and soil erosion Mixed farms
Low	Medium agricultural and land use value, quality or rarity on a regional scale	Grade 4 agricultural land Soils with medium to course textures and some resistance to structural damage for most of the year. Organic arable farms
Very Low	Low or negligible agricultural and land use value, quality or rarity on a local scale	Grade 5 agricultural land Non-agricultural land Course textured and stony soils with little potential for structural damage Non-organic arable farms

5.3.12 The magnitude of impact is based on the consequences the proposed Development would have upon agricultural and land use receptors. There is no published guidance on thresholds for assessing what scale of loss should be regarded as significant, but the presence of BMV land is an important factor in the consideration of the sustainability of development proposals, as set out in paragraph 170 of the NPPF (see Table 5-4).

Table 5-4 Assessment of the magnitude of impact on agricultural

Magnitude of impact	Description	Examples
High	Results in total loss or substantial change to key features or attributes of the resource, or its key characteristics, features or elements, such that post development character/composition will be fundamentally changed, affecting its integrity or viability	Permanent loss or degradation of over 20ha of BMV land, or entire regional resource of BMV land (ALC Grades 1, 2, 3a) Loss of more than 20% of farmed land associated with an agricultural farm holding. Permanent loss of entire area of land under agri-environment or Woodland Grant scheme. No access possible to severed land. Existing land-use across land holding would not be able to continue.
Medium	Results in partial loss or alteration to key features or attributes of the resource, or its key characteristics, features or elements, such that post development character/composition will be materially changed, affecting its integrity or viability.	Permanent loss or degradation of 5-20ha of BMV land, or large proportion of regional resource of BMV land Loss of more than 10–20% of farmed land associated with an agricultural farm holding. Long-term, reversible, loss of entire area or majority of land under agri-environment or Woodland Grant scheme. Access possible to severed land via the public highway. Existing land-use across land holding would be able to continue but with major changes such as loss of yield, additional land management or increased use of fertilisers and herbicides.
Low	Results in a measurable, but not material change, to key features or attributes of the resource, or its key characteristics, features or elements, such that post development character/composition will be similar to the pre-development situation	Permanent loss or degradation of <5ha of BMV land, or small proportion of regional resource of BMV land Loss of more than 5–10% of farmed land associated with an agricultural farm holding. Short- to medium-term reversible loss, or permanent loss of small areas, of land area under agri-environment or Woodland Grant scheme. Access possible to severed land via private ways. Existing land-use across land holding would be able to continue but with some changes such as loss of yield, additional land management or increased use of fertilisers and herbicides.
Very Low	Results in a little or no change to key features or attributes of the resource, or its key characteristics, features or elements, such that change is barely distinguishable	No loss of BMV land Loss of less than 5% of farmed land associated with an agricultural farm holding. No severance. Short-term impacts to receptors with no impact on integrity. No material changes to existing land-use.

5.3.13 Table 5-5 below details the matrix used for the classification of effects.

Table 5-5 Classification of effects

		Magnitude of impact			
		High	**Medium**	**Low**	**Very Low**
Sensitivity of receptor	**High**	Major	Major	Moderate	Minor
	Medium	Major	Moderate	Minor	Negligible
	Low	Moderate	Minor	Negligible	Negligible
	Very Low	Minor	Negligible	Negligible	Negligible

Cumulative Effects

5.3.14 An assessment, based on the above criteria, will be made in relation to any other proposed committed developments which may lead to a cumulative effect; for example, other developments which may affect nearby BMV land.

5.3.15 The following schemes are considered as being appropriate for inclusion in the assessment of cumulative effects, with reasons provided as shown in Table 5-6:

Table 5-6 Proposed Committed Developments for Inclusion in Cumulative Assessment

Appendix Map ID	Local Planning Authority	LPA Reference No.	Reason for inclusion in cumulative assessment
S38	Ashford	18/01801/AS	Development of greenfield site which appears to be in current agricultural use (within approx. 10km of the Scheme)
S51	Ashford	S51	Development of greenfield site which appears to be in current agricultural use (within approx. 10km of the Scheme)
S52	Ashford	S52	Development of greenfield site which appears to be in current agricultural use (within approx. 10km of the Scheme)
AL	F&HDC	Y16/0199/SH	Development of greenfield site which appears to be in current agricultural use (within approx. 10km of the Scheme)
H	F&HDC	Y14/0873/SH	Development of greenfield site which appears to be in current agricultural use (within approx. 10km of the Scheme)
AM	F&HDC	Y15/1122/SH	Development of greenfield site which appears to be in current agricultural use (within approx. 10km of the Scheme)

5.3.16 In addition to the above developments, associated infrastructure and developments will be assessed with respect to Framework Masterplan.

5.4 Baseline Data

Key Baseline Information Obtained

5.4.1 The following information has been gained from existing sources of information.

Geology

5.4.2 The site underlain by sandstone and mudstone, with some Head deposits across the northern part of the site and alluvium associated with watercourses.

5.4.3 The distribution of soils is shown on Figure 5.1, Appendix A. The soils present appear to fall into two main categories differentiated in the main by their drainage characteristics. In the central part of the site the soils are described as loamy soils with naturally high groundwater, with slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils present in the north-eastern part of the site. In the eastern / southern parts the soils are described as freely draining slightly acid (in places base-rich) loamy soils. The Soil Map of England and Wales (Ref.5.10) describe the presence of three Soil Series within the application boundary, as detailed below. The Wickham 1 and Park Gate Series are likely to represent the more poorly drained soils described above.

- Wickham 1 – soils formed in Cretaceous clay or mudstone drift which are slowly permeable seasonally waterlogged fine silty soils overlying fine loamy or clayey soils.
- Park Gate Series – soils formed in aeolian silty drift which are deep stoneless soils variably affected by groundwater.
- Malling Series – soils formed in Cetaceous sand, loam and limestone which are well drained non-calcareous fine loamy soils over limestone at variable depths. Some deep well drained course loamy soils and similar fine loamy over clayey soils. Some fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging. Occasional shallower calcareous soils over limestone.

ALC Grades

5.4.4 The Provisional ALC mapping (at a scale of 1:250,000; available from www.magic.gov.uk) shows the land to be a mix of Grades 2 and 3, with some non-agricultural land also mapped associated with Lympne. This is shown in Figure 5.2, Appendix A. The provisional mapping suggests Grade 2 land stretches west from Ashford Road to the north and south of the A20, potentially as far in places as Harringe Lane. This comprises much of the rest of the developed area. This mapping does also suggest lower grade land (Grade 3; not sub-divided into 3a (BMV and 3b (not BMV)) may be present around Barrow Hill, Sellindge.

5.4.5 This mapping does not, however, distinguish between Sub-grades 3a and 3b. Some detailed mapping is available (see Figure 5.3, Appendix A). The eastern part of the site has been mapped as predominantly Grade 2, with small areas of Sub-grades 3a and 3b. A small area around Newingreen has also been mapped as Grade 2.

5.4.6 Kent, including Shepway District, has a higher proportion of Grade 1 and 2 land compared to the rest of England (Agricultural Land Classification (ALC) Statistics, undated; based on the digital 1:250,000 scale Provisional ALC maps as referenced above). In Kent there is a 20.5% cover of Grade 2 land, compared to an average for England of 14.2%. Grade 1 land cover in Kent is 9.0% compared to 2.7% for England. In Shepway District, the proportion of Grade 2 land is even higher at 32%, with 16.5% Grade 1 land.

5.4.7 These statistics also show that, compared to an average of 48.2% Grade 3 land in England, Kent has a slightly higher proportion (49.2%) and Shepway District has a smaller proportion (26.9%).

Land Use

5.4.8 The agricultural land appears, from aerial photographs, to be predominantly arable land. There are small woodland blocks present with limited areas currently under pasture. The land lies between approximately 60 and 100m AOD with an undulating landform. From available mapping, it is unlikely that slope angle is a limiting factor in terms of agricultural production and thus ALC grade. There is the

potential for some Grade 4 land to lie immediately to the south of the application site boundary associated with steep slopes above the Royal Military Canal.

5.4.9 Several land parcels are under Stewardship agreements, both Entry and Higher Level (see Figure 5.4; Appendix A data from www.magic.gov.uk).

Key Receptors and their Value

5.4.10 The key receptors are likely to be as follows:

- BMV land and the soils which support this;
- Farm businesses.

5.4.11 It is considered likely that the value of the agricultural land, and the businesses which this supports, will be Medium to High.

Baseline Data to be Obtained

5.4.12 An analysis of existing information will be undertaken in line with the Welsh Government Predictive Agricultural Land Classification Map (Wales) Guidance Note to provide a more detailed assessment of land areas at each grade. Consultation with Natural England will be undertaken to confirm what survey work is to be undertaken and at what stage.

5.4.13 Further information on geology and flood risk will all be obtained from relevant specialists within the project team.

5.4.14 Detailed information on land use will be gained, where possible, from landowner interviews.

5.5 Description of Possible Significant Effects

Construction

5.5.1 There are likely to be possible significant adverse effects in relation to the land resource and in relation to agricultural enterprises.

5.5.2 The proposed Development would result in the permanent loss of areas of BMV land from agricultural productivity. The on-going baseline studies will confirm the extent of BMV land which would be lost; from available information, it is assumed this could comprise at least Grade 2 and Grade 3a land.

5.5.3 As the phases are progressed there are likely to be possible effects on farm viability. These will occur as land parcels, including any associated farm infrastructure, are taken out of productivity, reducing the total land available to that enterprise, as well as potentially severing access to other land parcels, farm buildings, water supplies etc.

There may be effects on land drainage, where drainage networks are affected by ground works, noting that this could potentially affect neighbouring land parcels as well. Adjacent land still within agricultural production could be affected by dust and noise disturbance, which is particularly relevant where livestock are being held.

Operation

5.5.4 During the operational phase possible significant effects are likely to be limited. Potential effects could be experienced around the edge of the proposed Development where residential and commercial activity affects (through noise, disturbance, nuisance, fly tipping etc.) areas that had previously not been in close proximity to housing or commercial areas.

5.6 Potential Mitigation Measures

Construction

5.6.1 The sustainable reuse of the soil resource would be undertaken in line with the Construction Code of Practice for the Sustainable Use of Soil on Construction Sites (Ref.5.5). This would be achieved by the development of a Soil Management Plan (SMP) identifying the soils present and separate soil stripping units (based on resilience), proposed storage locations and handling methods and locations for reuse where possible. Measures which will be considered include (but are not limited to):

- Completion of a Soil Resources Survey and incorporate results into a SMP;
- Linking of the SMP to the Site Waste Management Plan (SWMP);
- Ensuring that soils are stripped and handled in the driest condition possible;
- Confine vehicle movements to defined haul routes until all the soil resource has been stripped;
- Protecting stockpiles from erosion and tracking over; and
- Ensure the physical condition of the entire replaced soil profile is sufficient for the post-construction use.

5.6.2 The appropriate recording and handling of soils will ensure they are in the required condition for the proposed end use and that soils with the optimum characteristics are allocated for the given end use, such as food production, habitat creation / Green Infrastructure or the creation of sustainable drainage features (such as swales).

5.6.3 All fencing around the proposed Development will be sufficient to resist damage by livestock and will be regularly checked and maintained in a suitable condition. Any damage to boundary fencing will be repaired immediately.

5.6.4 A considerate constructors approach would be used to minimise potential effects on on-going agricultural enterprises during the construction phase. This would include Toolbox Talks to ensure all personnel were aware of the key issues and requirements, ensuring continuity of water supplies to drinking troughs and enabling access to limit severance issues.

5.6.5 In relation to temporary and permanent land take requirements there will be liaison with landowners to understand and address their concerns. This would cover, for example, the loss of land, disruption, access restrictions and crop losses.

Operation

5.6.6 Boundary fence maintenance and clear signage of access routes such as footpaths would reduce the potential for impacts through nuisance etc. to neighbouring farm businesses.

6 Air Quality

6.1 Introduction

6.1.1 This chapter addresses the proposed scope of the EIA with respect to air quality. It includes a summary of current and proposed consultation, baseline conditions and the proposed approach to the assessment of possible construction and operational effects. Aspects that are proposed to be scoped in and out of the assessment are identified.

6.2 Consultation and Scoping

6.2.1 Table 6-1 shows a summary of consultation undertaken to date that informed EIA scoping for the 2019 Scheme, the issues raised, and where relevant, how the issues raised will be addressed in the revised application:

Table 6-1 Consultation Undertaken to 2019

Consultee Contact/Date	Summary of Consultation/Scoping Opinion Response	Outcome / How this will be addressed in the EIA
F&HDC (Wai Tse, Environmental Protection Officer, Environmental Health) October 2016	Arcadis requested F&HDC 2016 Annual Summary Report detailing baseline air quality data.	Report supplied by F&HDC.
F&HDC (Wai Tse, Environmental Protection Officer, Environmental Health) March 2017	Agreement sought on proposed Arcadis nitrogen dioxide monitoring locations.	F&HDC happy with method and location of Arcadis monitoring.
F&HDC (Wai Tse, Environmental Protection Officer, Environmental Health) March 2018	Arcadis requested F&HDC 2017 Annual Summary Report detailing baseline air quality data.	Report supplied by F&HDC.
F&HDC (Wai Tse, Environmental Protection Officer, Environmental Health) September 2018	Arcadis sought feedback from F&HDC on proposed assessment years, rationale for assessment, and aspects to be screened out.	F&HDC indicated agreement with proposals, stating proposed assessment and modelling years were considered a reasonable approach and added no further comments.
F&HDC – Scoping Opinion	Methodology proposed and assessment of significance of effects in relation to air quality considered acceptable.	Proposed methodology and assessment of significance of effects is the same as previously, but has been updated in line with recent guidance.
F&HDC – Scoping Opinion	Study area of 200m within affected roads considered acceptable. Need to detail full study area extent when it is known.	Full study area extent would be detailed in the assessment.

Consultee Contact/Date	Summary of Consultation/Scoping Opinion Response	Outcome / How this will be addressed in the EIA
F&HDC – Scoping Opinion	Any land use which could give rise to significant odour effects requires an odour assessment.	From the details regarding the proposed Development available at this stage, a quantitative assessment of odour impacts has been scoped out. However, if there are any odorous land uses identified at the assessment stage, odour impacts would be considered.
Canterbury City Council (CCC) – Scoping Opinion	The development may generate significant vehicle movements which may impact on Air Quality Management Areas (AQMAs) located in Canterbury.	A sensitivity test will be undertaken to determine the impacts on the AQMAs,

6.2.2 Table 6-2 summarises Consultation that has taken place since submission of the 2019 Scheme, the issues raised and how they are proposed to be addressed in the EIA.

Table 6-2 Consultation Undertaken since submission of 2019 scheme

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
F&HDC Post Consultation Planning Report – July 2019 F&HDC (James Farrar, Case Officer) – 11/07/19	*We reinforce our view expressed at pre-application stage that the application needs to demonstrate compliance with the 'agent of change' principle introduced to NPPF which provides greater support for existing land use. Existing waste and employment sites enjoy policy support as existing /permitted land uses and specific attention is drawn to the NPPF requirement that 'unreasonable restrictions' should not be placed on existing businesses as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.*	A full review of all existing land uses in the vicinity of the proposed Development will be undertaken at the assessment stage, and suitable mitigation measures would be identified where necessary.
F&HDC Post Consultation Planning Report, Appendix H, July 2019. F&HDC (Wai Tse, Environmental Protection Officer, Environmental Health) - 10/06/19	*An Air quality assessment is required due to significant size and will have impacts on the surrounding road network. The base line year used for this assessment should be the date of application rather than the year of opening.* *I would advise a damage cost assessment is included in the report, with details on how the air quality damage costs, as calculated within the emission mitigation assessment are to be used to achieve air quality improvements through the development. Please be aware Defra have released new air quality damage cost guidance which has reduced the amount*	The following scenarios will be considered in the assessment: • Base Year – the year that the traffic surveys informing the traffic model were undertaken in. This scenario is modelled for the purposes of model verification. • Projected Base Year – base year traffic flows processed through air quality tools as the opening year – this is carried out in order to inform the modelling

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
	for NOx and replaced PM10 with a higher figure for $PM_{2.5}$.	adjustment methodology detailed in Highways England DMRB LA105. • Peak construction year and operational (partial occupation), without and with the proposed Development. • Final year without and with the proposed Development– i.e. fully occupied development, including future baseline. A damage cost assessment would be included within the assessment using the latest Defra guidance and would be carried out and applied in accordance with the IAQM (2017) Development Control guidance.
F&HDC Post Consultation Planning Report, Appendix D, July 2019 (Temple Air Quality ES Review)	The Applicant should provide bias adjustment and annualisation calculations for the baseline monitoring survey as these were not included in the ES Air Quality Chapter or Appendix. The Applicant should clarify whether the dust risk is applicable for the duration of construction works across all development zones. The Applicant should clarify why the LDV of 161 at 2029 at Nacklington Road has not been assessed. The Applicant should clarify why 2022 was not included in the Sensitivity Test. The Applicant should clarify why Old Dover Road was not included in the Canterbury AQMA Sensitivity Test. The Applicant should provide information on the proposed energy provision for the site as it is not included in the ES Air Quality Chapter. A detailed air quality assessment should be undertaken of any centralised boiler or CHP plant proposed. Vehicle flows associated with committed developments were considered. However, the Applicant should consider cumulative effects in the construction dust assessment.	Bias adjustment and annualisation calculations for the baseline monitoring survey would be detailed in the assessment. Dust risk calculated is worst-case as assessments assume that all planned construction activities occur concurrently and at the edge of the red line boundary. Justification for any roads being excluded in the modelling would be provided in the assessment. A detailed air quality assessment will be undertaken should any centralised boiler or CHP plant be proposed. Cumulative effects in the construction dust assessment would be considered in the assessment.
Post Consultation Planning Report Natural England – 28/06/19	Clarification on screening of air quality impacts, with further detailed assessment as necessary for the following designated sites: • Folkestone to Etchinghill Escarpment Special Area of Conservation (SAC)	Clarification on screening of air quality impacts, with further detailed assessment as necessary for the sites mentioned will be included in the assessment.

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
	• Folkestone to Etchinghill Escarpment Site of Special Scientific Interest (SSSI) • Lympne SSSI	

6.2.3 Further consultation is proposed to be undertaken as follows:

- Consultation with F&HDC to obtain the most up to date air quality monitoring data.

6.3 Methodology

Relevant Policy and Guidance

Policy

6.3.1 The following policy documents are relevant to the assessment:

- EU Framework Directive 96/62/EC: (Ref.6.1) implemented between 1996 and 1998 this Directive aims to protect human health and the environment by avoiding, reducing or preventing harmful concentrations of air pollutants;
- Directive 2008/50/EC on ambient air quality and cleaner air for Europe: (Ref.6.2) This Directive defines objectives for ambient air quality designed to avoid, prevent or reduce harmful effects on human health and the environment as a whole;
- Part IV of the Environment Act (1995): (Ref.6.3) requires the government to produce a national Air Quality Strategy which contains standards, objectives and measures for improving quality. The ambient air quality standards and objectives relevant to air quality assessment are given statutory backing in England through the Air Quality Regulations (2000, Ref.6.4), the Air Quality (Amendment) Regulations (2002, Ref.6.5) and the Air Quality Standards Regulations (2007, Ref.6.6). The Air Quality Standards Regulations (2010, Ref.6.7) came into force during 2011 and transposed the requirements of the European Union Directive 2008/50/EC;
- National Planning Policy Framework (NPPF, 2019): (Ref.5.2) The NPPF outlines a set of core land-use planning principles that should underpin both plan making and decision taking. Paragraph 181 of the Framework states: "*Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan*";
- The Planning Practice Guidance (PPG) (Ref.6.8) supports the NPPF in order to make it more accessible. This guidance includes advice relating to planning and air quality; the role of Local Plans with regard to air quality; when air quality is likely to be relevant to a planning decision; what should be included within an air quality assessment and how impacts on air quality can be mitigated;
- F&HD Council Core Strategy Review (2019) (Ref.6.9). Aim 2 of Strategic Need B states that local carbon emissions should be minimised, (good) air quality should be maintained and pollutants should be controlled. Policy SS7 states that "Planting and habitat creation should also be used to provide distance buffers between the M20/High Speed transport corridor for noise and air quality mitigation purposes".

Guidance

6.3.2 For construction phase impacts, the following guidance will be used to inform the assessment:

- Holman et al (2014). IAQM Guidance on the assessment of dust from demolition and construction v1.1, Institute of Air Quality Management, London.
  http://www.iaqm.co.uk/text/guidance/construction-dust-2014.pdf (Ref.6.10)
- The Institute of Air Quality Management (IAQM) guidance on the assessment of dust from demolition and construction (Ref.6.10) provides a mechanism for the assessor to consider both the magnitude of emissions and sensitivity of an area in order to define the level of risk of dust soiling and human health impacts during the construction phase. Defining the construction dust risk levels allows appropriate mitigation measures to be adopted.

6.3.3 For operational impacts the following guidance will be used to inform the assessment:

- Moorcroft and Barrowcliffe. et al. (2017) Land-use Planning & Development Control: Planning for Air Quality. v1.2. Institute of Air Quality Management, London. (Ref.6.11)
- Highways England, 2019: Design Manual for Roads and Bridges LA105 Air Quality. (Ref.6.12)
- Holman et al (2019). A Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites v1.0, Institute of Air Quality Management, London. www.iaqm.co.uk/text/guidance/airquality-impacts-on-nature-sites-2019.pdf (Ref.6.13)
- Defra (2019) Air Quality Damage Cost Guidance (Ref.6.14)

6.3.4 The IAQM Land Use Planning and Development Control guidance (Ref.6.11) is applicable to assessing the effect of changes in exposure of members of the public resulting from residential-led mixed-use developments such as the proposed Development. It provides guidance on; how to decide whether an air quality assessment is required, how to undertake a suitable assessment of operational impacts and whether these are to be considered significant or not, and how to identify whether additional mitigation is required.

6.3.5 The Highways England (HE) LA105 guidance (Ref.6.12) provides a method for adjusting modelled results to ensure that consideration of long-term monitoring trends and the observed lack of reduction in national roadside NO_2 concentrations is accounted for in the method. It is proposed to use this method to ensure that overly optimistic assumptions on rates of improvements are not used in the modelling process. This guidance provides a methodology for assessing the risk of non-compliance with the Air Quality Directive (2008/50/EC) associated with the operational phase of the proposed Development.

6.3.6 The IAQM Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites (Ref.6.13) provides guidance on the assessment of the air quality impacts of development on designated nature conservation sites.

6.3.7 Defra's Air Quality Damage Cost Guidance (Ref.6.14) would be used to determine the damage costs associated with the proposed Development in terms of air quality.

6.3.8 The following specialist software will be used to inform the assessment:

- ADMS-Roads (v4.1.1), Cambridge Environmental Research Consultants
- ArcGIS (v10.6), Environmental Systems Research Institute
- MapInfo (v15.2), Pitney Bowes.

6.3.9 Operational impacts are to be assessed by processing traffic (and energy centre if applicable) emissions within CERC's Advance Dispersion Modelling Software (ADMS (Roads) in order to produce pollutant predictions at sensitive receptors. This software is commonly used for assessments where the largest air quality impacts of a given scheme are expected to be through increased traffic flows. ArcGIS and MapInfo are Geographic Information Systems that routinely used during air quality assessments to process, manipulate and display air quality data.

Study Area

Construction Phase

6.3.10 The IAQM construction dust guidance (Ref.6.10) requires that construction dust impacts are assessed up to 350m from the locations of demolition, construction and earthworks activities. Often, the exact location of the aforementioned construction activities within the application site boundary are unknown, in this case it is deemed prudent to assess impacts within 350m of the application site boundary. For track out (the transport of dust and dirt from the construction site onto the public road network), impacts are assessed up to a distance of 500m from site entrances on roads used by construction traffic. Track out impacts are then considered within 50m of these roads.

6.3.11 If construction vehicle flows are greater than 100 Annual Average Daily Traffic (AADT) on a road during the construction phase, then exhaust emissions from construction vehicles will be assessed at receptors within 200m of these roads. The methodology of this aspect of the construction phase assessment would follow that detailed for the operational phase assessment.

Operational Phase

6.3.12 For the operational phase, the IAQM development control guidance (Ref.6.11) does not explicitly specify the geographical extent within which impacts should be assessed. The Design Manual for Roads and Bridges (DMRB) (Ref.6.12) states that all impacts within 200m of those roads which meet any of a set of traffic change criteria should be assessed. Impacts from traffic emissions beyond 200m of the emission source are generally accepted to be negligible.

6.3.13 The IAQM guidance (Ref.6.11) details its own indicative criteria with respect to change as a result of a proposed Development that if met, highlight the need for an assessment, rather than necessarily defining the boundaries of a study area. The criteria relevant to the proposed Development are:

- A change in Light Duty Vehicle (LDV) flows of >100 AADT within or adjacent to an Air Quality Management Area (AQMA), or >500 AADT elsewhere.
- A change in Heavy Duty Vehicle (HDV) flows of >25 AADT within or adjacent to an AQMA, or >100 AADT elsewhere.
- Where a road is realigned by 5m or more and is within an AQMA.
- Where a junction is added or removed close to existing receptors.
- Where there is one or more substantial combustion processes where there is a risk of impacts at relevant receptors.

6.3.14 Should any of the above criteria be exceeded, then further assessment may be required, as detailed below. It is expected that the change in traffic flows will dictate the extent of the study area. However, it should be noted that the guidance states that “the criteria provided are precautionary and should be treated as indicative; in some instances, it may be appropriate to amend them on the basis of professional judgement.” Therefore, the decision to proceed to further assessment should also be based on professional judgement, rather than the criteria alone.

6.3.15 The assessment will consider worst case sensitive receptor locations within 200m of affected vehicle routes. Modelling predictions will be compared against UK AQS objectives (Ref.6.15) / EU Limit Values as appropriate.

6.3.16 For any potential energy centre emissions (if applicable), the study area will depend on the size (including stack height) and specification of the energy centre. There is no set study area metric for energy centres, but typically maximum impacts would be predicted with 2km of the location of the emission source.

Assessment Methodology

Construction Phase Impacts Approach

6.3.17 The potential dust impacts during the construction phase will be assessed qualitatively using the approach defined in the IAQM construction dust guidance (Ref.6.10).

6.3.18 This assessment will be carried out using the following steps:

- Determine the potential dust emission magnitude for the four construction dust activities (demolition, earthworks, construction and trackout);
- Define the sensitivity of the area;
- Define the risk of impacts;
- Identify site-specific mitigation; and
- Determine overall significance of effects.

6.3.19 Assessment of gaseous emissions from construction phase vehicles would follow the same methodology as the operational phase assessment if the change in flows cannot be scoped out as per the IAQM development control criteria detailed in the above section 6.3.13 - 6.3.16.

6.3.20 Non-Road Mobile Machinery (NRMM) emissions will be assessed qualitatively, and further assessment would be undertaken if required.

Operational Impacts Approach

6.3.21 An assessment of the likely significant effects of the proposed Development in operation will be undertaken with regards to local air quality. This will focus on the following pollutants:

- Nitrogen Dioxide (NO_2)
- Particulate Matter (PM_{10} and $PM_{2.5}$)

6.3.22 NO_2 and particulate matter are the two pollutants principally associated with traffic emissions and exceedances of the annual mean and hourly AQS objectives for NO_2 are of particular concern. The scope of the assessment will be carried out with consideration of F&HDC's ongoing Local Air Quality Management (LAQM) review and assessment work, as required by obligations under Part IV of the Environment Act 1995.

6.3.23 As stated in 6.3.13 - 6.3.17 above, the IAQM development control guidance will determine the study area. Receptors within the air quality study area will be modelled for the following broad scenarios:

- Base Year – the year that the traffic surveys informing the traffic model were undertaken in. This scenario is modelled for the purposes of model verification.
- Projected Base Year – base year traffic flows processed through air quality tools as the opening year – this is carried out in order to inform the modelling adjustment methodology detailed in Highways England DMRB LA105.
- Opening Year without and with the proposed Development– including the future baseline.
- Interim year(s) without and with the proposed Development– including future baseline and partial occupation.
- Final year without and with the proposed Development– i.e. fully occupied development, including future baseline.

6.3.24 The geographical locations to be assessed will include sensitive receptors such as residential units and schools where the public and/or sensitive groups are likely to be exposed to pollutants across the various averaging periods to which the Air Quality Standards and Objectives apply. The sensitive receptors assessed will include both those associated with the proposed Development and existing receptors located within 200m of affected vehicle routes as defined by the criteria in the IAQM guidance (Ref.6.11).

6.3.25 Modelling will be undertaken using ADMS Roads. Emission factors for NOx (which eventually forms NO_2 in the atmosphere) and PM_{10} would be determined for each road at locations where the construction traffic trigger the thresholds for assessment, using the most recent Emission Factor Toolkit (EFTv9) as produced by Defra.

6.3.26 All other input data required for detailed modelling, such as suitable meteorological data, assessment year, verification study and receptor locations, would be confirmed in consultation with the relevant local authorities prior to carrying out the assessment.

6.3.27 Modelled pollutant concentrations calculated using base year traffic data will be verified against the baseline air quality monitoring results collected for the proposed Development as a means of calibrating the model. Model verification allows the user to determine the accuracy of the model runs

and then to adjust the model in areas where the model has performed unacceptably. The model verification will be undertaken in accordance with the principles outlined in LAQM.TG (16) (Ref.6.16). The selection of sites that are to be used as part of the verification process is dependent on the extent of the traffic data that is supplied, and the suitability, reliability and availability of monitored data which has been acquired as part of the baseline data collection exercise.

6.3.28 The air quality effects associated with any on-site energy centre(s) will be assessed as part of the operational air quality assessment, in combination with traffic impacts.

6.3.29 The Predicted Environmental Concentration (PEC) (which applies to both annual mean concentrations and deposition rates) and the Process Contribution (PC) (i.e. the impact of the proposed Development on the concentration/deposition rate) at designated nature conservation sites will be determined using the modelling methodology outlined above, and impacts assessed following the IAQM Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites (Ref.6.13).

6.3.30 In accordance with comments received in the Post Consultation Planning Report, a damage cost assessment following Defra's Air Quality Damage Cost Guidance (Ref.6.14) would also be undertaken as part of the assessment.

Assessing risk of non-compliance with the Air Quality Directive (2008/50/EC) during the Operational Phase.

6.3.31 Defra assesses and reports to the European Commission on the status of air quality in the UK, by reference to the Limit Values for each pollutant, in accordance with EU Directive (2008/50/EC). For the purposes of Defra assessment and reporting, the UK is divided in to 43 zones and agglomerations (hereafter referred to as zones). The main pollutant of concern with respect to compliance is NO_2.

6.3.32 The assessment of compliance with the Directive is undertaken using both monitoring (Defra AURN Network) and modelling from Defra's Pollution Climate Mapping (PCM) model. To determine the study area for the compliance risk assessment, the study area for the local air quality assessment is compared with the PCM model network as modelled by Defra. The Defra PCM modelling is at a much larger scale than the proposed Development modelling given that roads are modelled nationally within it. The modelling undertaken for the proposed Development is much more locally focused and, as such, is verified at a local level rather than a national level. Consequently, there are differences in the results. However, as the Defra PCM modelling is used to inform compliance, it has to be used in the air quality assessment as the basis to determine whether the proposed Development is a risk to compliance.

6.3.33 Defra utilises the PCM model to report for the purposes of compliance with the EU Directive 2008/50/EC. The most recent iteration of the PCM model will be used in the air quality assessment. The current compliance risk road network has modelled concentrations for all years between 2017-2030.

6.3.34 The impact of the proposed Development (i.e. the change in concentrations at receptors) on compliance would be undertaken in accordance with Highways England LA 105, whereby the concentrations in the Defra PCM model for the operational phase assessment years of the proposed Development are used to determine which roads exceed the EU Limit Value.

Significance Criteria

6.3.35 For construction phase dust impacts, significance of effects is not defined. Risk of impacts are calculated through application of IAQM construction dust guidance (Ref.6.10) and consequently proportional mitigation measures are recommended.

6.3.36 For assessment of gaseous emissions from construction phase vehicles, the approach to defining significance of operational phase impacts would be followed. The significance of impacts on human receptors will be assessed in accordance with the IAQM development control guidance (Ref.6.11). The significance of air quality effects during operation is dependent upon the percentage change in concentration between the 'without and with Scheme' scenarios, relative to the relevant air quality objective(s), as presented in Table 6-3.

Table 6-3 Impact descriptors for individual receptors (taken from the IAQM development control guidance)

Long Term Average Concentration at Receptor in Assessment Year	% Change in Concentration Relative to Air Quality Assessment Level (AQAL)			
	1	2-5	6-10	>10
75% or less of AQAL	Negligible	Negligible	Slight	Moderate
76 - 94% of AQAL	Negligible	Slight	Moderate	Moderate
95 - 102% of AQAL	Slight	Moderate	Moderate	Substantial
103 - 109% of AQAL	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL	Moderate	Substantial	Substantial	Substantial

6.3.37 It should be noted that the determination of significance relies on professional judgement and reasoning should be provided as far as practicable. This would be considered throughout the assessment when defining predicted impacts during operation. The guidance recommends that the following are considered when applying professional judgement:

- Extent and magnitude of impacts;
- Existing and future air quality in absence of development;
- Extent of current and future population exposure to the impacts; and
- The influence and validity of any assumptions adopted when undertaking the prediction of impacts.

6.3.38 In terms of the significance of impacts on ecological sites, the PEC will be calculated to identify whether the critical levels or critical loads will be exceeded. This information will be passed on to the ecologist if the PC exceeds 1% of the critical level/load. This information, along with professional judgment of the air quality specialist and ecologist, would be used to determine whether the impact on an ecological site would be significant.

Cumulative Effects

6.3.39 The committed developments that have been identified for consideration in the cumulative assessment are provided in Appendix B (this includes the additional 1,500 houses and associated infrastructure associated with the Framework Masterplan) and assessment of cumulative assessment scenarios identified in Section 4.8.6 will be undertaken for both the construction and operational phases.

6.3.40 Relevant schemes will be included in the transport model as agreed with the highways authorities in due course. Traffic data from those schemes will be included in the cumulative assessment of operational and construction vehicle emissions effects and included within development phase scenarios as appropriate.

6.3.41 Cumulative effects would also be considered in the construction dust assessment.

6.4 Baseline Data

Key Baseline Data Obtained

F&HDC Air Quality

6.4.1 As required by the Environment Act (1995), F&HDC has undertaken a Review and Assessment of air quality within its area of jurisdiction. This process has indicated that concentrations of all pollutants considered within the Air Quality Strategy are below the relevant AQS objectives and as such, no AQMAs have been declared within the local authority's area to date.

6.4.2 F&HDC undertakes monitoring of nitrogen dioxide (NO_2) concentrations using passive diffusion tubes at 13 locations across its district. A review of the 2018 Annual Summary Report (ASR) (Ref.6.17)

indicated that the Royal Oak Motel, Ashford Road diffusion tube is located within the site boundary and Cold Harbour diffusion tube is located to the south west of the site (see Figure 6.1, Appendix A). NO_2 results are shown in Table 6-4.

Table 6-4 Air Quality Diffusion Tube Monitoring undertaken by F&HDC adjacent to the application site 2012-2016

Monitoring Site	Type	National Grid Reference (X,Y)	Annual Mean NO_2 Concentration ($\mu g/m^3$)				
			2013	2014	2015	2016	2017
DT3: SH11 Coldharbour House, B2067, Lympne	Urban Background	609964, 135279	17.7	13.3	13.7	14.9	16.5
DT8: SH07 Ashford Road, Newingreen	Roadside	612694, 136190	20.2	21.3	20.2	22.7	21.4

6.4.3 As shown in Table 6-4, no exceedances of the annual mean AQS objective for NO_2 of 40 $\mu g/m^3$ were recorded at either monitoring site between 2013 and 2017. It also demonstrates that across the five-year period, roadside concentrations on Ashford Road did not improve.

Arcadis Air Quality Monitoring

6.4.4 It was acknowledged that the air quality baseline in and around the application site was poorly understood, especially with consideration of the nearby M20 motorway. Consequently, a six month air quality monitoring survey was agreed (with F&HDC) to be undertaken centred around the application site in order to better inform baseline air quality. In April 2017, 16 NO_2 diffusion tubes were deployed in the vicinity of the application site (see Figure 6.1, Appendix A).

6.4.5 As per the monitoring recommendations in LAQM TG16 (Ref.6.16), bias adjustment and annualisation were carried out on the monitored data. A locally derived bias adjustment factor was adopted as there was less than nine months of data. The local bias adjusted factor was derived using three diffusion tubes co-located at the Maidstone Rural automatic monitor. The bias adjustment factor was calculated to be 0.71, suggesting that the diffusion tubes were over-reading NO_2 concentrations. The factor was then applied to the raw monitored results.

6.4.6 The data was then annualised as per best practice detailed in LAQM TG16. The final bias adjusted and annualised results are shown in Table 6-5.

Table 6-5: Bias Adjusted and Annualised Results of the Arcadis Diffusion Tube Monitoring (2017)

Site ID	X	Y	Data Capture for Six Months (%)	2017 annualised and bias adjusted annual mean NO2 concentration (µg/m3)
O1	613638	136970	100	24.7
O2	612805	136835	100	14.2
O3	612680	136185	100	24.1
O4	612475	135827	100	15.0
O5	610636	137872	33	22.2
O6	611833	134980	100	14.2
O7	612239	135341	83	19.5

Site ID	X	Y	Data Capture for Six Months (%)	2017 annualised and bias adjusted annual mean NO2 concentration (µg/m3)
O8	611282	136670	83	25.4
O9	610701	137674	83	29.4
O10	609421	137755	83	11.7
O11	610794	137453	100	24.9
O12	610931	136834	100	16.7
O13	610978	135614	100	17.7
O14	612068	135514	100	11.6
O15	612887	137513	67	28.1
O16	609262	136590	100	10.6

6.4.7 Table 6-5 demonstrates that annual mean NO_2 concentrations were well below the annual mean AQS objective of 40µg/m^3 indicating a reasonably good level of existing air quality in the vicinity of the application site.

Defra Background Pollutant Concentrations

6.4.8 Predictions of background pollutant concentrations are periodically produced by Defra to assist Local Authorities in their Review and Assessment of Air Quality. These are produced for every 1km grid square in the UK. The application site and possible air quality study area is located across a number of grid squares. Data for the grid squares that cover the application site were downloaded from the Defra website for the purposes of the assessment. The background concentration predictions for each grid square during 2020 are presented below in Table 6-6 (Ref.6.18).

Table 6-6 Defra Background Map Concentrations across the application site in 2020

Grid Square (X,Y)	2020 Predicted Background Concentration (µg/m^3)	
	NO_2	PM_{10}
611500, 137500	11.4	17.0
612500, 137500	11.7	16.2
611500, 136500	8.7	14.4
612500, 136500	9.1	15.0

6.4.9 Table 6-6 indicates that background NO_2 and PM_{10} concentrations are low across the application site and that exceedances of the annual mean NO_2 and PM_{10} AQS objective of 40µg/m^3 are currently unlikely.

Key Environmental Receptors

6.4.10 The IAQM development control guidance (Ref.6.11) does not provide a method for assessing the 'value' or 'sensitivity' of receptors. In effect, the guidance considers all residential properties to be sensitive because of the potential for regular exposure of individuals to poor air quality. Areas away from residential properties are therefore not considered to be sensitive with the exception of those non-residential properties where vulnerable members of the population such as children, the elderly and infirm are likely to be regularly exposed. Key environmental receptors likely to be affected by the proposed Development will be those remaining residences that are present outside of the application site boundary but located within the overall framework masterplan area. Other receptors further afield will be identified once the Study Area is defined.

6.4.11 In addition to the above, ecological receptors will be assessed. In accordance with the IAQM designated nature conservation sites guidance (Ref.6.13), the impact of the proposed Development will be assessed on ecological sites with the following European, national or local designations which are located in the Study Area:

- Special Protection Areas (SPAs);
- Special Conservation Areas (SACs);
- Sites of Special Scientific Interest (SSSIs);
- Ramsar sites;
- Areas of Special Scientific Interest (ASSIs);
- National Nature Reserves (NNRs);
- Local Nature Reserves (LNRs);
- Local Wildlife Sites (LWSs); and
- Areas of Ancient Woodland (AW).

6.4.12 There are several of the above ecological sites within 5km of the proposed Development. These include, inter alia:

- Folkestone to Etchinghill Escarpment (SAC and SSSI);
- Lympne Escarpment SSSI;
- Otterpool Quarry SSSI;
- Gibbin's Brook SSSI;
- Seabrook Stream SSSI; and
- Hatch Park SSSI.

6.4.13 Depending upon the extent of traffic changes that occur as a result of the proposed Development, there may be other ecological sites that need to be identified and considered in the assessment.

Further Baseline Data to be Obtained

Extent of Construction Works

6.4.14 A summary of the location, duration, extent and types of construction works likely to be carried out will be obtained to inform the construction dust assessment.

Critical Loads and Deposition Rates at Ecological Sites

6.4.15 Data on site-specific critical loads and background nitrogen and acid deposition rates will be acquired as and when the Study Area is defined and it is known which ecological sites are to be included in the assessment. This data is available online from the Air Pollution Information System (APIS) (Ref.6.19).

F&HDC Air Quality Data

6.4.16 Data for air quality concentrations monitored in 2018 and 2019 at locations in the vicinity of the application site will be sourced from F&HDC, when it becomes available.

6.5 Description of Possible Significant Effect

Construction Phase

6.5.1 During the construction phase of the proposed Development, there is the potential for fugitive dust emissions from activities such as excavation, ground works, cutting, construction, and storage of materials. Vehicle movements both on-site and on the local road network also have the potential to result in the resuspension of dust from haul road and highway surfaces. The assessment of construction dust is therefore **scoped in**.

6.5.2 There is also the potential for air quality impacts from road traffic exhaust emissions from additional construction vehicles on the local highway. There are existing receptors within 200m of the likely routes used to access the site which could be impacted by an increase in pollutant concentrations due to the additional construction vehicles. The assessment of construction vehicle emissions is therefore **scoped in**.

6.5.3 NRMM emissions will be assessed qualitatively, and further assessment would be undertaken if required. The assessment of NRMM emissions is therefore **scoped in**.

Operational Phase

6.5.4 The Scheme has the potential to significantly increase traffic flows and hence change emissions on the local road network. There are likely to be deteriorations in air quality at receptors as a result of the change in traffic flows as a result of the proposed Development. The study area will be defined by the change in traffic flows as a result of the Scheme as described in Section 6.3.13 - 6.3.16, sensitive receptors within 200m of these roads will be considered to determine the impact of the proposed Development on air quality.

6.5.5 The inclusion of Combined Heat and Power units or energy centres in the proposed Development is considered unlikely at this stage, however, if they are included, they may give rise to additional operational phase emissions, the impact of which need to be analysed in combination with traffic emissions. The assessment of operational effects of N0x and PM_{10} from vehicles and from any energy centre are therefore **scoped in**.

6.5.6 Odour is an issue which is usually associated with other pollutants (such as bioaerosols) than those emitted by traffic. Odour Guidance for Local Authorities (Defra, 2009) (Ref.6.20) lists the common sources of odour; none of those quoted are traffic related. Some odorous pollutants such as Hydrogen Sulphide are released by traffic, but in such small quantities that odour is a problem which is not usually associated with traffic-based air quality assessments. The ES will detail measures to control any contaminated materials that are encountered during excavations during the construction works. It is for these reasons why a quantitative assessment of odour impacts has been **scoped out** at this stage. However, if there are any odorous land uses identified at the assessment stage, odour impacts would be considered.

6.6 Potential Mitigation Measures

Construction

6.6.1 In terms of construction dust, mitigation measures would be recommended based on the dust risk rating, in accordance with the IAQM construction dust guidance (Ref.6.10). Typical measures include, inter alia:

- Site Management (logging of incidents/complaints);
- Monitoring (site inspections, soiling checks, compliance with Dust Management plan, etc);
- Preparing and Maintaining the site (locate dust causing activities away from receptors, barriers, cleaning, enclosed specific operations with high potential for dust production, cover stockpiles, etc);
- Operating vehicle/machinery and sustainable travel (comply with NRMM standards, no idling, use mains electricity, travel plan etc);
- Operations (employ dust suppression, use enclosed chutes, minimise drop heights, etc);

- Demolition measures (damp down, avoid explosive blasting, soft strip interiors before demolition, etc);
- Earthworks measures (revegetate promptly, use hessian mulches and cover with topsoil, etc);
- Construction measures (avoid scabbling, keep aggregates damp, ensure fine powder materials are delivered enclosed and stored in silos, ensure bags are sealed after use); and
- Trackout measures (wash access and local roads, avid dry sweeping of large areas, ensure vehicle-borne materials are covered, install hard surface haul routes, wheel washing, etc).

6.6.2 Further detail on mitigation measures can be found in section 8.2 of the IAQM (2016) Guidance on the Assessment of Dust from Demolition and Construction (Ref.6.10).

6.6.3 Measures to reduce construction vehicle emissions would also be recommended, dependent on the predicted effects. Measures would likely include construction vehicle routing to ensure that construction vehicles avoid travelling through any areas that would be particularly sensitive to increases in vehicle emissions, where possible.

6.6.4 Measures to reduce NRMM emissions include avoiding the use of petrol- or diesel-powered generators and use mains electricity or battery powered equipment where practicable.

Operation

6.6.5 Exhaust emissions from operational phase traffic have the potential to cause an adverse impact on local air quality. As such, an aim for the operational phase should be to reduce vehicle trips to and from the site. There are a number of design practices that may be employed in order to achieve the reduction in vehicle trips, including:

- Minimising reliance upon motor vehicle use;
- Promoting alternative transport options;
- Inclusion of integrated cycle paths into surrounding environments;
- Inclusion of pedestrian walkways into surrounding environments;
- Inclusion of electric charging points;
- Implementation of a Travel Plan; and
- Integration of public transport provisions.

6.6.6 An Energy Centre for the purposes of district heating and cooling is considered to be highly unlikely but would nevertheless be assessed if it did become part of the proposed Development. Should one be included in the final design, it would need to be ensured that any turbines are low NOx burners and engines use a lean burn technology, if an alternative to fossil fuel usage was not viable.

6.6.7 Additionally, in accordance with Policy SS7 of the Folkestone & Hythe District Council Core Strategy Review (2019) (Ref.6.9), a distance buffer should be implemented between the proposed Development and the M20/High Speed transport corridor to minimise the effect of transport emissions on future receptors.

7 Biodiversity

7.1 Introduction

7.1.1 This chapter addresses the proposed scope of EIA with respect to Biodiversity. It includes a summary of current and proposed consultation, baseline condition and the proposed approach to the assessment of possible construction and operational effects. Areas that are proposed to be scoped in and out of the assessment are identified.

7.2 Consultation and Scoping

7.2.1 Table 7-1 shows a summary of consultation undertaken to date that informed EIA scoping for the 2019 Scheme, the issues raised, and where relevant, how these will be addressed in the current application:

Table 7-1 Consultation Undertaken to 2019

Consultee Contact/Date	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
Temple on behalf of Folkestone and Hythe District Council Received via James Farrar 2 June 2018	It was stated that the general approach and the methodology proposed for the assessment of biodiversity was considered acceptable. Main comments raised were in relation to: • Grading of the significance of impacts (the CIEEM methodology proposed was not considered appropriate, however this is the accepted methodology for EIA assessment for ecological features). • It was not agreed that impacts to: - Invertebrates; - White Clawed crayfish, - Fish; - Water bodies could be ruled out from the information provided. • That further ecological surveys would be required throughout the planning and buildout process, and for reserved matters applications. • It was requested that the ES evidence why European designated sites (SPA, SAC or Ramsar) more than 20km away have been scoped out of the EIA.	The approach for the ES to follow the valuation based upon a geographical area at which a receptor is important, as outlined in the CIEEM methodology is considered appropriate. The submitted ES was accepted with this approach. It has been agreed that invertebrates, fish, water bodies would be scoped into the assessment. White clawed crayfish are considered absent from the East Stour through the site. Therefore, scoping this receptor out is considered appropriate. While the white-clawed crayfish has been recorded from the River Darent, River Stour and River Medway Catchments, populations are now largely limited to the headwaters with only four locations reported. Recent records also exist for the Seabrook Stream near Hythe which is south of the Lympne Escarpment SSSI (Kent Biodiversity Action Plan). Their habitat requirements are for relatively hard, mineral-rich unpolluted water with plenty of refuges, gravel beds being ideal. The East Stour River within the Study Area does not support habitat typical of the requirements for this species. The data search confirmed did not return any records of the presence of white clawed crayfish, however a record of the non-native invasive signal crayfish was returned from

Consultee Contact/Date	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
		within the site. These are the key competitor for resources of the native crayfish and also predate them. Most significantly they carry a crayfish plague (*Aphanomyces astaci*), a fungal disease that can wipe out populations of white-clawed crayfish. The Environment Agency (EA) data request did not return any records crayfish within the Study Area. The EA are the holders of white clawed crayfish data and were subsequently contacted via telephone and the EA confirmed that White-clawed crayfish are absent from the East Stour. All European designated sites within 30km will be considered in the ES and the HRA Screening.
Environment Agency Jennifer Wilson Planning Specialist Received via James Farrar 2 June 2018	The Environment Agency response outlined the following points: • SuDS alone would be unlikely to provide all of the amphibian habitat / biodiversity benefit within the proposed development; • The usage of motion sensitive lighting; • Acknowledgement that Otter surveys are required; • A request that the removal of invasive plants is included within the requirements for the development; • That the biodiversity benefits of recreational areas should be maximised and accounted for.	With regards to provision of wildlife value from SuDS, this habitat creation will be in addition to the provision of necessary wildlife provision required for anticipated impacts. The biodiversity net gain calculations will acknowledge the limited value of some SuDS typologies, and determine the appropriate level of biodiversity value, based upon the habitats proposed within the SuDS features. Lighting will be specified to ensure impacts are minimised. This will include specification of appropriate fittings limiting throw onto sensitive areas, careful placement of features and usage of motion sensitive and time controlled lighting features where appropriate. A suite of otter surveys were conducted to inform the ES and this ES resubmission. Within the ES, the positive impact of the removal of native plants will be included within the assessment, and the requirement for the removal of these species, according to a management strategy will be specified within the ES documentation. The GI strategy being submitted with this resubmission will outline

Consultee Contact/Date	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
		how the biodiversity benefits of recreational areas are being maximised. These approaches will be accounted within the Biodiversity Net Gain calculations.
Natural England Response to EIA scoping Received via James Farrar 2 June 2018	With regards to biodiversity, Natural England largely provided standing advice in relation to the EIA scoping.	N/A

7.2.2 Table 7-2 summarises Consultation that has taken place since submission of the 2019 Scheme, the issues raised and how they are proposed to be addressed in the EIA.

Table 7-2 Consultation Undertaken since submission of 2019 scheme

Consultee Contact/Date	Summary of Consultation / Correspondence	How this will be addressed in the EIA (where relevant)
LPA Response to submission received 24/09/2020	A range of comments were provided by the LPA subsequent to the 2019 Application. The most pertinent of these are applicable below. 1. It was commented that dark corridors for bats are too narrow and as such light spill into these areas will be too high. Also, it was commented that it should be ensured that no lighting is added to dark corridors at a later stage 2. It was questioned if these was capacity for water vole habitat in the north-east of the site? 3. It was queried how breeding/wintering bird off-site mitigation be ensured given the proposed area is not owned by the applicant. 4. It was stated that the DAS deals with green infrastructure in part, it is too generic, and a great deal of the relevant information is spread through many other documents. Currently the environmental statement, impact assessments, analysis and concepts are minutely detailed, but the rationale between existing and proposed, its distinctiveness and how the existing landscape and views will be protected, exploited and enhanced, does not seem to be fully articulated. The reader is required to piece together information from many sources and infer the rationale behind the proposals. 5. Given the development will be built in phases, which mitigation areas can be developed prior to development? 6. It needs to be ensured the mitigation (multifunctional habitats – biodiversity, amenity and SuDS) is implementable, given the constraints. 7. How will open spaces developed prior to the main development phases be protected,	1. Additional information on the potential impacts of lighting on bats and the rationale behind the specification of green corridors will be provided within the updated ES. 2. With regards to water voles in the north-east, the potential to retain this species in this area will be assessed within the updated ES, but development considerations will also need to be addressed. 3. Further information on the procedures for securing the off-site mitigation areas will be provided, however the detail on how this will actually be secured will be provided in the stewardship documents. 4. An updated Green Infrastructure Strategy accommodating these points will be provided alongside the updated ES. 5. An approach to the phasing the mitigation provision will be provided as a component of the updated ES. 6. Potential to implement the GI provision will be assessed within the reissued GI strategy. 7. This comment will be addressed as appropriate within a updated ES. Open spaces are to be secured with in the parameter plans.

Consultee Contact/Date	Summary of Consultation / Correspondence	How this will be addressed in the EIA (where relevant)
	especially from encroachment of residential houses? 8. Will proposed sports pitches have lighting? Especially in areas with good bat usage 9. A single (not a phased) management plan, reflecting the requirements of the Biodiversity Action Plan, for the whole site should be submitted, in the event permission is granted. 10. Updated surveys and monitoring will be needed throughout the construction phases. 11. 20% biodiversity net gain can only be demonstrated once development is implemented. 12. Advises that an air quality specialist confirms the conclusions of the HRA report regarding the lack of significant air quality effects on Folkestone to Etchinghill Escarpment SAC. 13. If green infrastructure is not provided early on in the development, pressure is likely to increase on Folkestone to Etchinghill Escarpment SAC and at the Wye and Crundale Downs SAC. Clarify why this additional pressure is not predicted to occur. 14. GI needs to be more integrated into Cultural and Creative Strategy. 15. A copy is requested of the Otterpool Park Cultural Visioning Study that has informed the Cultural and Creative Strategy. 16. Achievement of biodiversity net gain relies upon measures relating to the built environment, such as bird and bat boxes, hedges and gardens. These are not areas of habitat, upon which the Defra metric is based. These measures are also in the control of future residents. It should be addressed how this risk will be managed. 17. Provide further detail on wildlife corridors and species used to assess permeability. 18. "The green infrastructure strategy could also better articulate the ecosystem services, green infrastructure functions and natural capital provided in the development and how these meet identified need, both in the new settlement overall and in the green spaces (as recommended by Natural England).1 An overarching green infrastructure strategy would also make it easier to understand how the existing green infrastructure has influenced the proposed Framework Masterplan and how the proposals are going to mitigate and enhance green infrastructure. 19. In this scenario the tiers and typologies of open space would help to act as focal points for each community, neighbourhood or village. We recommend this is revisited as part of the Green Infrastructure Strategy to demonstrate complementary strategies for public open space, sports and play. We wish to see public open	8. Further information on the assessment of lighting, including impacts upon bats will be provided within the updated ES. 9. An appropriate management plan will be provided at the appropriate stage within the development process. 10. The requirement for updated surveys will be reiterated within the updated ES. 11. This is agreed. The wording in the updated ES will acknowledge that the 20% is a potential uplift, and on-site confirmation of achieving the uplift will be required throughout the buildout process. 12. Air quality impacts on Etchinghill escarpment are assessed within the Air quality chapter of the ES, a link to this will be outline and signposted within the updated ES. 13. Recreational pressure on the identified receptors will be discussed in more detail in the ES. 14. Within the reissued GI strategy, clearer integration with the heritage strategy will be demonstrated. 15. Further information on the visitor surveys which informed the assessments will be provided with the ES. 16. The Biodiversity Net Gain 2.0 will be utilised to assess biodiversity net gain uplift in the updated ES. This will remove reference to bat and bird boxes. These will be specified but in a separate document. 17. Further information on the wildlife corridors will be provided within the updated GI strategy. 18. This will be addressed within the updated GI strategy. 19. This will be addressed within the updated GI strategy. 20. This will be addressed within the updated GI strategy. 21. Connectivity to Harringe Brooks Wood for wildlife will be expanded upon within the ES. Connectivity for humans is discouraged with the design as

Consultee Contact/Date	Summary of Consultation / Correspondence	How this will be addressed in the EIA (where relevant)
	spaces acting as much stronger focal points and meeting places for each village or neighbourhood together with smaller open spaces providing opportunities for outdoor recreation and socialising closer to home. This will help to define each neighbourhood's identity. The key principles should be encapsulated in the Strategic Design Principles and subsequent more detailed Strategic Design Code (Page 7) 20. More ambition and greater community engagement possible in urban wildlife provision - scope for improvements to built environment for a wider range of species. Community engagement, understanding and adoption of 'wildlife friendly' ethos essential to success of urban wildlife provision and some of the mitigation approaches (Page 7) 21. Better connectivity improvements, access management and buffering to Harringe Brooks Wood - further detail required on access management, improved buffering and connectivity would improve the proposals. 22. Improved connectivity - further detail is required on wildlife corridors and species used to assess permeability. Improved connections between woodlands and consideration of woodlands beyond application boundary. More detail on pollinator network. Provide (further) details regarding the pollinator network. Suggest linking to nearby "BugLife Bee Line". 23. Provide clarity on access connections to recreation sites off site. 24. More detail on tree and plant species - greater clarity on species, how these reflect local habitats, species and landscape. Further rationale required on choice of soft landscaping palette. 25. Assessment of risks on new tree and plant species – climate change and ash dieback - assessment of climate change on choice of species and on existing retained green infrastructure. 26. Management of recreation with dogs and recreational impacts on habitats - credible strategy for management of dog exercise required, including limiting access to biodiversity areas within and outside the application boundary. 27. Assessment of potential recreation impact on Dungeness Complex - review assessment using most recent data and assess whether SARMS fully mitigates impact. 28. Provide detail on how biodiversity enhancements of Otterpool Quarry SSSI link to other open spaces in the GI strategy. 29. We support the assessment and recommendations presented by Natural England	this area is sensitive to recreations. This area is privately owned and would not be managed as a component of a development. 22. Further detail on these aspects will be provided within the updated GI strategy. 23. This will be addressed within the updated GI strategy. 24. This will be addressed within the updated GI strategy. 25. This comment will be addressed within the updated ES. 26. Further information on the assessment of impacts from dogs will be provided within the updated ES. 27. An updated HRA with includes assessing impacts upon Dungeness will be provided in support of the ES. 28. This will be addressed within the updated GI strategy. 29. This will not be addressed within the ES but will be secured within stewardship documents to be provided in support of the development. 30. This will be acknowledged in the ES and will need to be secured within the planning approach. 31. It is not considered appropriate to address this within the ES but this will be addressed within other documents provided to support the development. 32. Where appropriate, this comment will be incorporated within the updated GI strategy. 33. Where appropriate, this comment will be incorporated within the updated GI strategy. 34. Further information on the rationale behind the buffer layout will be provided and assessed within the ES. 35. The rationale and design of the habitat corridors will be assessed within the updated ES and within the associated GI strategy. 36. This impact will be assessed within the ES. 37. Further detail on the design and rationale behind the habitat corridors and buffers will be

Consultee Contact/Date	Summary of Consultation / Correspondence	How this will be addressed in the EIA (where relevant)
	in respect of Otterpool Quarry SSSI. We welcome the biodiversity enhancements within a Country Park setting but would like to see how this typology is linked to other open spaces through the GI Strategy. We particularly draw attention to the comments regarding long-term stewardship and management and want to see this addressed in the long-term stewardship model as a 'locked asset'. 30. LPA will seek to impose requirements to monitor net gain in a phased manner, in addition to the Ecological Management Plan. 31. Suggest there could be a role for stewardship and the community development officer in relation to community wildlife and habitat initiatives. 32. Small areas of GI could be improved, relating to forthcoming Folkestone and Hythe Green Infrastructure Strategy, examples given include bird boxes for wider range of species, amphibian friendly kerbing, fruit trees in garden and pollinator species in gardens. 33. Further detail about engagement with the community regarding long term sustainability of biodiversity in the built environment (not introducing fish, managing gardens for wildlife etc). 34. Harringe Brooks wood buffer stated to be 50, but surfaced path is 30m from woods. Propose large buffer and graded woodland edge development (multipurpose with SUDS etc already proposed). 35. Suggest connecting woodland buffer instead of hedgerows and SUDS in the buffers from Harringe Brooks Wood linking to the south towards Aldington Road, to the north and to the east to Folks Wood and Kiln Wood. 36. The fragmentation of woodland (including ancient) within and outside of the site needs to be addressed in proposals. 37. Wildlife corridors lack sufficient detail to determine their connectivity value. E.g. not enough detail to assess if dormice commuting lines are suitable mitigation and whether they lead to suitable dormouse habitat. Suggest better mitigation would be larger areas of woodland near Harringe Brooks Woods. 38. Clarity and consistency should be provided regarding the rationale behind different grassland areas in different situations (e.g. rough vs species rich grassland). 39. Clarity should be provided regarding target species composition in each grassland type. 40. The management of grassland will be an ongoing cost and needs to be explored further in terms of governance and sustainability. 41. Further detail is required regarding the amount and type of space available for dog walking on	provided in the GI strategy and assessed within the ES. 38. Further information on the selection of habitat planting will be provided within the GI Strategy. 39. Further information on the selection of habitat planting will be provided within the GI Strategy. 40. Further information on the procedures for securing the off-site mitigation areas will be provided, however the detail on how this will actually be secured will be provided in the stewardship documents separate from the ES. 41. This will be outlined within the GI Strategy. 42. The HRA document submitted to support the application will address this comment. 43. The HRA document submitted to support the application will address this comment. 44. The HRA document submitted to support the application will address this comment. 45. This comment will be investigated as a component of the resubmission. The resubmission will include a new biodiversity net gain assessment.

Consultee Contact/Date	Summary of Consultation / Correspondence	How this will be addressed in the EIA (where relevant)
	the site (in light of NE recommended 8ha per 1000 people in situations where SANGs are required). 42. The Greatstone survey in the HRA is not representative of the wider Dungeness complex, as most visitors surveyed were local and most would have to travel much greater distances to reach the suite of protected sites. 43. The HRA concentrates only on regular dog walking as the main source of potential impact. Impacts from other recreational activities which could cause disturbance or trampling are not considered. 44. The assessment does not reference the SARMS and does not evaluate whether it provides sufficient mitigation for any potential recreational impacts arising from Otterpool Park. 45. Review the lack of biodiversity credits in triangle in the NE of the site.	
Natural England comments Provided 28/06/2019	1. Further information requested on screening of Air Quality impacts on certain receptors, particularly nearby SSSI and international designated sites. 2. Clarification of the proposed future management of the SSSI as part of the woodland country park was requested. 3. An expanded GI strategy detailing high level principles, and parameters alongside further details of GI including long term management. 4. Clarification of the net gain was calculated, how principles and targets will be secured and details of security of a 25 – 30 year management plan.	1. An updated HRA will be provided in support of the updated ES which will address this comment. 2. Information on this comment will be provided within the updated GI strategy. 3. An updated GI Strategy will be provided in support of the updated ES 4. The net gain will be calculated using the Biodiversity Metric v2.0 and will incorporate responses to these comments.
Environment Agency Comments Provided 16/05/2019	The Environment agency have provided feedback throughout the application process and, for the most part, it is believed that their concerns have been addressed. It was stated that the EA have no comments in relation to invasive species, water vole, external lighting and otter. 1. There is a comment that the developer must submit Habitat and Species action plans and have these approved to ensure that the aspirations within the outline plans are realised. 2. There is a comment that areas of 'wilderness' where succession of riparian habitats should be allowed should be provided and outlined within a management plan as referenced in the management plan and habitat management plan approved by the LPA. 3. Comment was made around the images used in support of the GI document. 4. SuDS which are identified for biodiversity should only receive clean uncontaminated water and where this is not the case these features should not be allocated any noteworthy biodiversity value.	1. Within the updated ES submission, these comments will be addressed. 2. 'Wilderness' areas are included within the proposed development, the location of these will be included within the updated ES. 3. This comment will be addressed within the GI Strategy being compiled and provided in updated ES. 4. This is acknowledged, the SuDS provision will be considered separately to the provision of water bodies for wildlife within the ES.

Consultee Contact/Date	Summary of Consultation / Correspondence	How this will be addressed in the EIA (where relevant)
KCC comments on the survey scope required to update receptor information for the resubmission. Telephone meeting conducted on 24/11/2019 with a formal survey scope submitted for approval to the LPA on 29/11/2019	The requirement for additional surveys to update the baseline data for resubmission was discussed with KCC (acting as the ecological advice for the LPA). An approach which involves updating surveys for species with dynamic populations, whilst assessing changes in habitats to infer changes in the likely distribution of other receptors was outlined. The approach agreed is outlined in full in this ES Scoping.	Arcadis agree that a mixture of a walkover survey to identify any significant changes on site, combined with proportionate resurvey (which can be compared with previous survey results to identify any changes) will be sufficient to inform the modified submission.
PPA Meeting 20.01.2020	A PPA meeting to discuss the approach to GI in the resubmission was conducted. Key issues discussed were: • Landscape Concept and Spatial Vision • GI Quantum Breakdown • AONB Recreation Visitor Survey Data requested • GI Context • Location of Key Open Spaces • Form, Function & Treatment of Other POS's • Series of Linked Spaces • Off-Site Works • Function of Otterpool Quarry Country Park • Open Spaces as the focal point for each Neighbourhood • Natural Capital / Ecosystem Services • GI Typology • Community Engagement in Urban Wildlife Provision • Net Gain • GI Buffers / Constraints • GI Strategy document • Advance Planting	An approach to these issues was discussed with requirements for working group sessions outlined.

7.2.3 Further consultation is proposed to be undertaken as follows:

- Formal agreement with NE regarding the details of the updated HRA Screening (Habitat Regulations Assessment) parameters;
- Further discussion with KCC and NE regarding mitigation measures and the GI strategy as outlined in the PPA meeting;
- Further consultees/stakeholders will be approached as required.

7.3 Methodology

Relevant Guidance

7.3.1 The following guidance has been used to inform the assessments:

- Birds of conservation (BoCC) 4: the Red List for Birds (December 2015) available online at https://www.bto.org/science/monitoring/psob;
- Breeding Bird methodology based on British Trust for Ornithology Breeding Bird Survey (BBS) https://www.bto.org/volunteer-surveys/bbs/research-conservation/methodology;
- British Standard 5837 (2012) Trees in relation to design, demolition and construction – Recommendations;
- CIEEM, (2019): Guidelines for Ecological Impact Assessment in the UK and Ireland v1.1;
- Collins, J. (ed) (2016): Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition), London, The Bat Conservation Trust;
- Defra Biodiversity Offsetting Metric (2012) available online at: https://www.gov.uk/government/collections/biodiversity-offsetting);
- JNCC, (2004), Common Standards Monitoring Guidance for Birds, Version August 2004, ISSN 1743-8160;
- JNCC, (2010), Handbook for Phase 1 habitat survey - a technique for environmental audit, ISBN 0 86139 636 7;
- NARRS HSI Guidance based on 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;
- Natural England (2013) Higher Level Stewardship Environmental Stewardship Handbook, 4th Edition available online at: http://publications.naturalengland.org.uk/publication/2827091;
- Strachan, R., Moorhouse, T., Gelling, M, 2011: The Water Vole Conservation Handbook, Wild Cru.

Study Area and Zone of Influence

7.3.2 The Study Area (SA) is the area within which habitat surveys have been undertaken and the Zone of Influence (ZoI) describes the area over which the activities associated with the proposed Development could influence ecological receptors. The Study Area and ZoI has been established on the basis of a desk-based review of ecological receptors in the general vicinity of the application site boundary, together with the results of field surveys, a review of the likely areas affected by the proposed Development, and the outcomes of the consultation exercise.

7.3.3 The Study Area is presented in Figure 7.1 in Appendix A and the ZoI will be confirmed in the Biodiversity Chapter of the reissued ES, with an appropriate ZOI for each receptor.

Assessment Methodology

7.3.4 The impacts on Biodiversity will be assessed in accordance with CIEEM guidance (2019).

Evaluation

7.3.5 In order to determine the likelihood of a significant effect, it will first be necessary to identify whether a receptor is sufficiently valuable. To achieve this, where possible, habitats, species and populations will be valued on the basis of a combination of their rarity, status and distribution, using contextual information where it exists. This will include legal, policy and conservation status.

7.3.6 The factors which will be taken into consideration in evaluating ecological receptors for both habitats and species will be adapted from Ratcliffe (Ref.7.1) following CIEEM guidelines. The frame of reference for the valuation of ecological resources in terms of geographical levels from International to Site level will be used. A range of documents will be consulted to assign that criteria, for example, for breeding birds, the Birds of Conservation Concern (BOCC) 4: the Red list of Birds (2015) (Ref.7.4) traffic light system of the highlighting species of nature conservation concern will also be considered.

7.3.7 In addition to the consideration of individual receptors, the potential effects on ecosystem services will be discussed. These are the flow of benefits that people derive from the natural environment. The natural environment can be considered as a stock of natural capital' from which these benefits – social, health-related, cultural or economic – flow. The ecosystem services delivered will also be considered as part of this assessment with reference to the UK National Ecosystem Assessment (NFA) (2011) (Ref.7.2) and the Natural Capital Protocol (NCC 2016) (Ref.7.3).

7.3.8 Biodiversity Net Gain calculations based on the Biodiversity Net Gain Metric v2.0 will be undertaken. The valuation will be based on the condition of the habitats, based on the metric guidance where possible. After this, the habitats currently present on site will be mapped, and a valuation of these habitats will be conducted to produce biodiversity units as a baseline. Also, the areas of habitat post construction will be mapped, and valued. A calculation of the potential overall changed biodiversity value will be provided and utilised to demonstrate the biodiversity value of the development.

7.3.9 In the process of Ecological Impact Assessment (EcIA) it is important to select the appropriate features for inclusion in the assessment. In this case, a threshold of Site level value has been set. Therefore, even habitats and species valued at the Site level are relevant to the proposed Development assessment.

Significance criteria

7.3.10 A significant effect is defined as one which is considered likely to affect the integrity or conservation status of an Important Ecological Receptor (IER). Where a significant effect is identified, the value of the receptor will be used to help determine the geographical scale at which the effect is significant. Thus, any negative effect which is considered to significantly affect the integrity of a receptor of, for example, national value will be identified as being a nationally significant effect.

7.3.11 In accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, and the guidance set out in the CIEEM Guidelines, it is considered inappropriate to attempt to investigate in detail all potential ecological issues in relation to the Site. It is therefore necessary, under the Regulations, to focus on those activities that could potentially generate significant ecological effects; this is determined by considering 'ecological features'. In accordance with the British Standard BS42020:2013 Biodiversity- Code of Practice for Planning and Biodiversity, this assessment has followed the CIEEM guidelines.

7.3.12 In order to determine the likelihood of a significant ecological effect, it is first necessary to identify whether a receptor is sufficiently important for a significant impact upon it to be material in decision-making. To achieve this, where possible, animal species and their populations have been valued on the basis of a combination of their rarity, status and distribution, using contextual information where it exists. Habitats and plant communities are evaluated against existing selection criteria, wherever possible (such as those developed to aid the designation of SSSIs or non-statutory designated sites). Only those ecological features that it was considered could experience significant impacts (i.e. impacts that could adversely affect the integrity of the habitat or the favourable conservation status of a species' local population), and which were identified as being of sufficient importance to be material to decision-making (i.e. of Medium (District/Borough) level importance or above), have been classified as being 'Ecological Features' and have been considered in the impact assessment. Those which are 'Ecological Features are listed in Table 7-6, below.

7.3.13 The habitats and features within the ZoI are known as the 'ecological features'. The nature conservation importance of each of the 'ecological features' considers the protected species and species of conservation concern that they may support, to avoid pseudo-replication. For example, the importance for species associated with the hedgerows (breeding birds, reptiles and hedgehogs) has been taken into account as part of categorising the overall importance of the hedgerows.

7.3.14 The following geographic frame of reference has been used to determine the importance of ecological features: International; National; Regional; County; and Local/Site; as set out in the EcIA guidance (Ref. 7-10). The specific criteria have been adapted from the document for the location, scale and duration of the development.

Table 7-3 Geographical context of Ecological Features

Importance of Ecological Features	Description
International and European	**Habitats** An internationally designated site or candidate site (Special Protection Area (SPA), provisional SPA, Special Areas of Conservation (SAC), candidate SAC, Ramsar Site, Biogenetic/Biosphere Reserve, World Heritage Site) or an area that would meet the published selection criteria for designation. A viable area of a habitat type listed in Annex I of the Habitats Directive, or smaller areas of such habitat, which are essential to maintain the viability of a larger whole. **Species** Any regularly occurring population of internationally important species, threatened or rare in the UK (i.e. an **International Union for Conservation of Nature** red list species that is also a UK Red Data Book or Section 41 species (of the NERC Act 2006). A regularly occurring, nationally significant population/number of an internationally important species.
National (England)	**Habitats** A nationally designated site (Site of Special Scientific Interest (SSSI), National Nature Reserve (NNR), Marine Nature Reserve (MNR)) or a discrete area, which would meet the published selection criteria for national designation (e.g. SSSI selection guidelines). A viable area of a priority habitat identified as a priority under Section 41, or of smaller areas of such habitat essential to maintain wider viability. **Species** A regularly occurring, regionally or county significant population/number of an internationally/nationally important species. Any regularly occurring population of a nationally important species, threatened or rare in the region or county (see Local Biodiversity Action Plan). A feature identified as of critical importance in the UK under Section 41.
Regional (South East England)	**Habitats** Sites that exceed the County-level designations but fall short of SSSI selection criteria. Viable areas of key habitat identified in the Regional Biodiversity Action Plan (BAP) or smaller areas of habitat essential to maintain wider viability. **Species** Any regularly occurring, locally significant population of a species listed as being nationally scarce, which occurs in 16 of 100 10km^2 squares in the UK or in a Regional BAP. A regularly occurring, locally significant population/number of a regionally important species. Sites maintaining populations of internationally/nationally important species that are not threatened or rare in the region or county.
County (Kent County Council)	**Habitats** Sites recognised by local authorities, e.g. Local Nature Reserves or County Wildlife Sites. A viable area of habitat identified in County BAP. A diverse and/or ecologically valuable hedgerow network. Semi-natural ancient woodland greater than 0.25ha.

Importance of Ecological Features	Description
	Species Any regularly occurring, locally significant population of a species listed in a County BAP due to regional rarity or localisation. A regularly occurring, locally significant population of a County important species. Sites supporting populations of internationally / nationally / regionally important species that are not threatened or rare in the region or county, and not integral to maintaining those populations. Sites/features scarce in the County or that appreciably enrich the County habitat.
Local / Site (Due to the scale of the development the site is considered to be significant at a Local level)	**Habitats** Non-statutory designations attributed by the Local Planning Authority such as Sites of Importance for Nature Conservation (SINCs) and Local Wildlife Sites (LWSs). Areas of habitat that appreciably enrich the local habitat resource (e.g. species-rich hedgerows, ponds etc). Sites that retain other elements that due to their size, quality or the wide distribution within the local area are not considered for the above classifications. **Species** Populations/assemblages of species that appreciably enrich the biodiversity resource within the local context. Sites supporting populations of County important species that are not threatened or rare in the County and are not integral to maintaining those population.

7.3.15 The significance of the likely effects upon the IER will be assessed both before and after consideration of the additional mitigation measures. The latter will represent the assessment of the residual effects of the proposed Development.

Cumulative Effects

7.3.16 Of the consented schemes in Appendix B (the long list), two short lists of schemes will be assessed for their potential cumulative effects, relating to the EIA and HRA respectively.

EIA Cumulative Short List

7.3.17 The schemes which will be assessed are those which have the potential to have a cumulative impact upon the important ecological receptors, i.e. the designated sites, habitats and species within the Zone of Influence of the Development. The schemes to be assessed have been chosen due to their size, proximity and / or potential hydrological connectivity to the scheme. The schemes to be assessed are presented in Table 7-4

Table 7-4 Proposed Committed Developments for Inclusion in Cumulative Assessment

Appendix Map ID	Local Planning Authority	LPA Reference No.	Reason for inclusion in cumulative assessment
H	F&HDC	Y14/0873/SH	Potential to have an impact upon species whose functional ranges overlap with the development area and to have cumulative impacts upon designated sites.
AL	F&HDC	Y16/0199/SH	Potential to have an impact upon species whose functional ranges overlap with the development area and to have cumulative impacts upon designated sites.

Appendix Map ID	Local Planning Authority	LPA Reference No.	Reason for inclusion in cumulative assessment
AM	F&HDC	Y16/1122/SH	Potential to have an impact upon species whose functional ranges overlap with the development area and to have cumulative impacts upon designated sites.

HRA Cumulative Short List

7.3.18 The short listed schemes which will be assessed within the HRA will be greater in number to those assessed within the EIA, this is due to the greater distances involved and the greater sensitivity of the sites. These schemes are those that have the potential to have a significant cumulative effect upon international designated sites. The selection parameters of these schemes will be detailed within the HRA Screening Report, but include those schemes that have the potential to have a significant cumulative effect through the following impact pathways:

- Recreational pressure upon international designated sites;
- Air quality impacts upon international designated sites (through increased traffic); and
- Water quality impacts upon international designated sites (through nitrates entering the Stour).

Design Mitigation

7.3.19 Additional mitigation will be required following the final design of the Framework Masterplan. However, during the evolution of the masterplan, avoidance and mitigation is being designed into the masterplan. Large areas around the East Stour River, woodlands and other important areas will be buffered from the development. The biodiversity value of the green infrastructure will be maximised, for example, the SuDS treatment areas will also be designed as replacement habitat for amphibian, water vole and bats. Allotments and orchards will also be fully integrated with biodiversity needs. Recreational areas will also incorporate sensitive design such as limited lighting, raised walk boards or natural permeable surfaces and habitat buffers. Key corridors are being retained or created with tunnels and other connective measures indicated where fragmentation is unavoidable.

Residual Effects

7.3.20 After assessing the impacts of the proposal and once measures to avoid and mitigate ecological impacts have been finalised, assessment of the residual impacts will be undertaken. Any residual impacts that would result in significant effects would require additional design and or compensatory measures. The assessment will suggest such measures to be carried forward with the scheme.

7.4 Baseline Data

Key Baseline Information Obtained

7.4.1 The ecological baseline for this assessment has largely been informed by surveys undertaken in 2016, 2017 and 2018.

7.4.2 A review of existing ecological information relating to the Otterpool Park Study Area and the associated ZoI has been undertaken. This has included an assessment of available desk-based data which incorporates the following sources:

- Shepway District Council, Folkestone Kent, Extended Phase 1 Habitat Survey Ecology Report (WYG) July 2016, which includes Kent and Medway Biological Records Centre Data;
- "Magic" website: http://magic.defra.gov.uk/ (the database managed by Natural England), and https://data.gov.uk/dataset/.
- M20 Lorry Area Stanford West Interim Environmental Assessment Report (Highways England) August 2016 available online at https://highwaysengland.citizenspace.com/he/managing-freight-vehicles-through

kent/supporting_documents/M20%20Lorry%20Area%20Stanford%20West%20Interim%20Environmental%20Assessment%20Report.pdf;

- Harringe Brooks Wind Park (Ecotricity) April 2012 (planning application ref' Y12/0451/SH for A wind energy development comprising the erection of six wind turbines, each with a maximum overall height of up to 125m together with access tracks, crane pad areas, electricity sub-station, temporary construction compound and amended vehicular access being accompanied by an Environmental Statement. Land 500M South West Otterpool Manor Barn (adj. Harringe Brooks Wood) Otterpool Lane Sellindge Kent);
- Link Park Phase 2 (Peter Brett Associates) August 2015;
- Ecology Report – Lympne, Former Lympne Airfield – Proposed Housing Development (CSa) January 2013 (planning application ref' Y13/0360/SH); and
- Ecological Appraisal, Folkestone Racecourse, Kent, Waterman Energy, Environment & Design Limited, September 2010 https://www.shepway.gov.uk/media/2960/Appendix-72---Ecology-Appraisal-v3--Doc-Ref-A63/pdf/Appendix_7.2_-_Ecology_Appraisal_v3__(Doc_Ref_A63).pdf.

7.4.3 An extended Phase 1 habitat survey (JNCC, 2010) was conducted on 4, 5, 6 and 25 October 2016. This survey identified any habitats likely to be of nature conservation value, and to investigate the potential for protected or notable species of plants and/or animals. Following the initial desk study and field survey the IERs were identified for which further surveys and/or assessments were recommended. These were conducted between 2016 and 2019 and the results of these assessments are summarised in Appendix C below.

Site Description

7.1.1 The Site comprises predominantly arable fields and grazed pasture supporting improved grassland. Some areas of the site supported species poor semi-improved grassland, namely areas within the Folkestone racecourse site, within Lympne airfield and smaller areas around field margins and woodland edges. Most of the field boundaries within the site were hedgerows. These varied, including defunct species poor hedgerows, intact hedgerows and species rich hedgerows with, trees. A subset of these hedgerows would be classified as 'important' under the Wildlife and Landscape Criteria of the Hedgerows Regulations (1997). Several of the hedgerows supported mature trees.

7.1.2 The mainline railway that links Folkestone to London (including the HS1 high speed line) and together with the M20 (which lies beyond the railway line) form the northern boundary to the Site. This railway line is on an embankment covered by trees and scrub.

Important Ecological Features

7.4.4 The receptors **scoped in** to the EcIA are presented in summary below. Further details of the selection of the IERs, survey scope and the rationale, with summary baseline data is provided in Appendix C.

Receptors scoped into the assessment

7.4.5 The following ecological receptors have been **scoped in**to the assessment:

- **Designated Sites:** International designated sites within 30km will be considered, National statutory Designated sites within 5km of the site and non-statutory designated sites within 2km of the site are considered. Seventeen European Sites with the potential to be impacted by the proposed Development were identified within 30km from the site. Within 5km of the proposed site, there are seven national statutory designated sites. Within 2km of the site, there are nine non-statutory designated sites.
- **Kent BAP 'Mid Kent Greensand & Gault' biodiversity opportunity areas:** Within 2km of the site, 24 ancient woodland blocks were recorded upon the ancient woodland inventory (AWI);
- **Habitats and Ancient Woodland,** Across the site, a range of habitats were recorded. Of these, the largest by area were arable farmland and improved grassland pasture. However, there were also a range of more valuable habitats including hedgerows, ponds, rivers, woodland, wet woodlands and open mosaic habitats.

- **Habitats of Principal Importance**, the Study Area supports habitats that although they fall within categories of principal importance the quality of these habitats is generally low and they are common and typical of the wider area.
- **Badger:** Across the survey area 103 badger setts were recorded, in addition to multiple latrines, hairs, pathways and mammal runs. Of the 103 setts, 18 were classified as active Main setts with the number of entrances ranging from 10 – 35. Eight setts were classified as Annexe, and six Subsidiary setts were classified as active and two as partially used. The remaining 66 sets were all classified as outlier setts.
- **Bats:** Nine species were recorded and identified to species level. The vast majority of bats recorded were common or soprano pipistrelles. Some rarer and / or less recorded bats were identified, areas of the site important for these species were identified.
- **Great Crested Newt (GCN**): Eight ponds had confirmed GCN presence. One pond, 15 had a medium population, while the rest were low.
- **Birds (wintering and breeding):** The site supports a varied assemblage of wintering birds typical of a farmland setting, with a total of 69 species being recorded during the wintering bird surveys. Of these, 30 were considered notable.
- **Reptiles ('common' species):** Across the site, three common reptile species were recorded, common lizard, grass snake and slow worm. In total, over 500 individual records of reptiles were recorded across the site during the surveys.
- **Water voles**: Of the 44 water bodies surveyed (on site and in the ZOI of the development) for water vole during the 2017 and 2018 surveys, two water bodies had high water vole populations, three water bodies had medium water vole populations and 19 water bodies had low water vole populations.
- **Otters**: Two probable otter signs were identified on the 28 September 2017. These included one otter spraint and one 'anal jelly', located approximately 185m apart, in the north-west corner of the site, along the East Stour River between Harringe Lane and Somerville Court Farm.
- **Dormice:** Three dormouse nests were found Harringe Brooks Woods (one nest was recorded twice during the surveys).
- **Arboricultural features:** It is estimated that within the site there are in excess of 500 individual trees, 40 hedgerows and 25 areas of woodland (which vary greatly in size, quality and age). The individual trees within the study area do not have an overall uniformed characteristic.
- **Invasive Plants:** The following species were recorded within the site: Parrot's Feather *Myriophyllum aquaticum*, Canadian Pondweed *Elodea canadensis*, Japanese Knotweed *Fallopia japonica*, Montbretia *Crocosmia x crocosmifolia*, Cotoneaster (Wall) *Cotoneaster horizontalis*, Virginia Creeper *Parthenocissus quinquefolia*, Giant Rhubarb *Gunnera manicata*, New Zealand Stonecrop *Crassula helmsii*, Variegated Yellow Archangel, *Lamiastrum galeobdolon* subsp. *Argentatum*.
- **Fish:** Habitats for fish located within the East Stour River corridor and other water bodies, including the Folkestone Racecourse Lake and a pond south of the A20; and
- **Invertebrates**: Most of the site has been intensively farmed for many decades (arable/grazing) and is of limited value to invertebrates. The field margins and hedgerows in the intensively farmed areas are species poor and would support impoverished invertebrate communities. Indeed, very few species of conservation concern have been recorded from the site.

Further surveys

7.4.6 As outlined above and in Appendix C, there is a suite of baseline data which has been collected for the site. In order to update the baseline information, a suite of updates and surveys are proposed for a range of receptors to update the baseline data. The details of the proposed updates are provided in Table 7-5.

Table 7-5: Age of data used in the 2019 submission and proposed approach to updates for the resubmission

Receptor	Age of existing survey data	Proposed Approach to updating for the resubmission
Designated sites	Information on the presence designated sites obtained from Magic Mapping in 2018.	Updated data to be obtained from Magic Mapping prior to submission
Ancient Woodlands	Information on the presence of woodlands listed on the AWI obtained from Magic Mapping.	Updated data to be obtained from Magic Mapping prior to submission
Planning policy (local and National) Kent BAP 'Mid Kent Greensand & Gault' biodiversity opportunity area	Planning data obtained from up-to-date planning sources. Information on BOAs obtained from Kent Nature Partnership.	Update of BOA details prior to submission.
Habitats	Initially visited October 2016, surveys conducted throughout 2016, 2017 and 2018. Detailed habitat surveys undertaken June 2018.	An extended Phase 1 survey will be undertaken to assess any significant changes from the 2018 baseline and update the report. Where changes are identified, further surveys in 2020 may be necessary, this will be agreed with the LPA but are not considered necessary at this stage. Desk study data will be updated with data from KMBRC.
Habitats of Principal Importance	Initially visited October 2016, with update survey visits throughout 2017 and 2018. Detailed habitat surveys undertaken June 2018.	An extended Phase 1 survey will be undertaken to assess any significant changes from the 2018 baseline and update the report. Where changes are identified, further surveys in 2020 may be necessary, this will be agreed with the LPA but are not considered necessary at this stage. Desk study data will be updated with data from KMBRC.
Arboricultural features	Arboricultural Scoping Survey was completed in accessible areas in Winter 2016 and Spring 2017. Hedgerow Assessment was completed in February and June 2018.	An extended Phase 1 survey will be undertaken to assess any significant changes from the 2018 baseline and update the report. Where changes are identified, further surveys in 2020 may be necessary, this will be agreed with the LPA but are not considered necessary at this stage.
Badger	Badger survey was undertaken in Spring 2017, with updates throughout 2017 and 2018. Desk study data was obtained in 2018.	Key setts to be revisited to identify any changes. A full re-survey is not proposed at this stage. Where changes are identified, further surveys in 2020 may be necessary, this will be agreed with the LPA but are not considered necessary at this stage. Desk study data will be updated with data from KMBRC.

Receptor	Age of existing survey data	Proposed Approach to updating for the resubmission
Bats	Bat surveys completed: Static and transect surveys – 2017 Bat building assessments – 2017 Emergence – re-entry surveys 2017 – 2018 Desk study data was obtained in 2018.	Status of key foraging and commuting features to be assessed during the Extended Phase 1 Walkover. Where changes are identified, further surveys in 2020 may be necessary, this will be agreed with the LPA but are not considered necessary at this stage. Desk study data will be updated with data from KMBRC.
Great Crested Newt (GCN)	Additional ponds outside the OPA were scoped in for eDNA assessment in Spring 2018. Population surveys completed in Spring 2017. eDNA surveys conducted in Spring 2018 on off-site ponds. Desk study data was obtained in 2018.	Accessible off and on-site ponds will be reassessed to identify any significant changes in habitat suitability(using HSI only). Where changes are identified, further surveys in 2020 may be necessary, this will be agreed with the LPA but are not considered necessary at this stage. Desk study data will be updated with data from KMBRC.
Birds (wintering and breeding)	**Wintering bird surveys** November to February 2016 / 2017. Desk study data was obtained in 2018. **Breeding Bird Surveys** March to June 2017. Desk study data was obtained in 2018.	Initially, one wintering bird survey was conducted across the site in November 2019. The data obtained during this survey was assessed against the 2016 data, and no significant changes were identified. The surveys were conducted by the same staff which conducted the 2016 surveys, to allow a qualitative assessment of any onsite changes to also be made. Desk study data will be updated with data from KMBRC.
Reptiles ('common' species)	Population survey visits were conducted between April and September 2017. Desk study data was obtained in 2018.	An extended Phase 1 survey will be undertaken to assess any significant changes from the 2018 baseline. Where changes are identified, further surveys in 2020 may be necessary, this will be agreed with the LPA but are not considered necessary at this stage. Desk study data will be updated with data from KMBRC.
Water vole	Surveys completed in Spring 2017, and Autumn 2017 and Spring 2018. Desk study data was obtained in 2018.	A single water vole survey is proposed in spring 2020 to update the survey information for the 2020 submission (as the populations of this species can change in relatively short timescales). Desk study data will be updated with data from KMBRC.
Otter	A total of 6 surveys were conducted in 2017 – 2018. Desk study data was obtained in 2018.	A single otter survey is proposed in spring 2020 to update the survey data for the 2020 resubmission, as this species is highly mobile. Desk study data will be updated with data from KMBRC.

Receptor	Age of existing survey data	Proposed Approach to updating for the resubmission
Dormouse	Dormouse tubes on-site were installed in April 2017 checked until October 2017. Surveys within Kiln Wood and Harringe Brooks Woods (both off-site) were conducted in 2018. Desk study data was obtained in 2018.	No further dedicated surveys are considered necessary. Desk study data will be updated with data from KMBRC.
Invertebrates (terrestrial)	A walkover of the site was conducted on the 8 of August 2018. Desk study data was obtained in 2018.	An extended Phase 1 survey will be undertaken to assess any significant changes from the 2018 baseline. No further dedicated surveys are considered necessary, unless the design of the development is extensively changed.
Fish	Data from EA obtained in January 2017.	No further dedicated surveys are considered necessary. Desk study data will be updated with data from KMBRC.
Common Toad	Desk study data from KMBRC, March 2018 and recorded during GCN survey conducted in 2017.	No further dedicated surveys are considered necessary. Desk study data will be updated with data from KMBRC.
Hedgehog	Desk study data from KMBRC, March 2018	No further dedicated surveys are considered necessary. Desk study data will be updated with data from KMBRC.
Harvest Mouse	Desk study data from KMBRC, March 2018	No further dedicated surveys are considered necessary. Desk study data will be updated with data from KMBRC.
Invasive Plants	Data on the distribution of these species was collected during other surveys, including the Phase 1 mapping surveys, in 2016, 2017 and 2018.	An extended Phase 1 survey will be undertaken to assess any significant changes in the status of invasive plants on the site.
Non-native Invasive Animals (listed on schedule 9 of the WCA)	Desk study data obtained from KMBRC, March 2018 Incidental records from surveys conducted 2016 - 2018.	No further dedicated surveys are considered necessary. Desk study data will be updated with data from KMBRC.

Receptors scoped out of the assessment

7.4.7 The following receptors have been **scoped out** of the EIA as they are not considered to be present in the Study Area or ZoI or because the proposed Development is considered unlikely to have potential to cause adverse significant effects. SPA, SAC and Ramsar sites will however be considered within the HRA screening report:

- **White clawed crayfish:** The data search did not return any records of the presence of white clawed crayfish *Austropotamobius pallipes*, however a record of the non-native invasive signal crayfish *Pacifastacus leniusculus* was returned from within the Study Area. The formal Environment Agency (EA) data request did not contain any specific data on crayfish, however, the EA were contacted via telephone and it was confirmed that white-clawed crayfish are considered absent from the East Stour River. A trap for signal crayfish was found within the site during the water vole surveys conducted within the site.

  While the white-clawed crayfish has been recorded from the River Darent, River Stour and River Medway Catchments, populations are now largely limited to the headwaters with only four locations reported. Recent records also exist for the Seabrook Stream near Hythe which is south of the Lympne Escarpment SSSI (Kent Biodiversity Action Plan).

  Their habitat requirements are for relatively hard, mineral-rich unpolluted water with plenty of refuges, gravel beds being ideal. The East Stour River within the Study Area does not support habitat typical of the requirements for this species.

  The data search confirmed did not return any records of the presence of white clawed crayfish, however a record of the non-native invasive signal crayfish was returned from within the site. These are the key competitor for resources of the native crayfish and also predate them. Most significantly they carry a crayfish plague (Aphanomyces astaci), a fungal disease that can wipe out populations of white-clawed crayfish.

  The Environment Agency (EA) data request did not return any records crayfish within the Study Area. The EA are the holders of white clawed crayfish data and were subsequently contacted via telephone and the EA confirmed that White-clawed crayfish are absent from the East Stour
- **Protected plants :** From the Phase 1 habitat survey, no habitats likely to support protected plants were recorded within the Study Area, the most notable habitats will be retained and buffered from development .

7.5 Description of Possible Significant Effects

Construction

7.5.1 The following potential construction effects are proposed to be **scoped in** to the EIA:

- Direct mortality due to habitat loss and degradation and construction vehicle mortality.
- Habitat loss, degradation and conversion resulting from the clearance of vegetation for compounds and areas for construction;
- Fragmentation; from the construction of roads and development of areas (resulting in reduced fecundity, access to resources etc.);
- Degradation of habitat due to vehicles (emissions and damage to the vegetation and soil), construction dust, the spread of invasive species and increase recreational usage and waste created by workers; and
- Disturbance and displacement of fauna due to construction noise and lighting.

7.5.2 The following potential effects are proposed to be **scoped out** of further assessment in the EIA:

- Pollution impacts with the exception of air quality and noise impacts are scoped out as these impacts are to be controlled in line with industry good practice listed in a CoCP (Code of Construction Practice) which will support the EIA.
- Impacts from unlikely events such as fires, large spillages etc. as the risk of these impacts is to be controlled through design, good working practices and training within a CoCP.

Operation

7.5.3 The main effects which would be attributable to the creation of the proposed Development are to be minimised and avoided through design. These impacts are accounted for within the section above. The effects below are attributable to the operation phase of the proposed Development and would be considered within the EIA:

- Increased faunal mortality or displacement resulting from increased and road traffic accidents (RTAs), human persecution and pet ownership;
- Increased pollution resulting directly from the garden town (air quality, noise pollution);
- Increased faunal disturbance from recreational use of sensitive areas and from noise and lighting associated with the site.

7.5.4 The following operational effects are proposed to be **scoped out** of further assessment:

- Water pollution from the proposed Development as this would be controlled through good design as outlined in a CoCP.

7.6 Potential Mitigation and Enhancement Measures

Construction

7.6.1 Overall, the impacts and effects from the proposed Development upon ecological receptors are to be minimised through design in line with the mitigation hierarchy. The following key mitigation measures will be considered with respect to construction effects:

- Landscape-led design to ensure ecologically valuable habitats are created as a component of the proposed Development (woodlands, hedgerows and aquatic features).
- Design to ensure that SuDs features and other Green Infrastructure (GI) are maximised for their biodiversity value via design, location and connectivity;
- Retention and enhancement of key corridors through the SA to retain and improve connectivity for wildlife, including commuting routes for bats. These would be designed to connect to valuable habitats adjacent to the SA;
- Creation of valuable wildlife areas for IERs (GCN, reptiles, bats, farmland birds etc.) and where required and appropriate, translocation of these species into these areas;
- Installation of wildlife tunnels, overpasses, etc. throughout the site to reduce likelihood of vehicular collisions an to retain or enhance permeability;
- Buffers around key area such as river corridors, woodlands; hedgerows and water bodies to ensure retention of ecological value.
- Impacts during the construction phase would be controlled through industry standard practices. Industry good practice within a CoCP would be followed to limit direct mortality, noise/visual disturbance; habitat degradation and pollution.

Operation

7.6.2 Key design measures to minimise significant adverse effects would be expected to have been achieved during construction. However, operational mitigation measures that will be included for consideration are:

- Continued maintenance of created wildlife habitats to maximise biodiversity value;
- Maintenance of features installed to deter and manage impacts from recreation, implementing additional measures as required;
- Approaches to control impacts from dogs and domestic animals, if required;
- Sensitive operation of street lighting to limit night lighting effects;
- Maintenance of wildlife tunnels, fencing, overpasses etc. to reduce likelihood of vehicular collisions.

8 Climate Change

8.1 Introduction

8.1.1 This chapter details the proposed scope of work for the assessment of the effects of the proposed Development on climate during both the construction and operational phases. 'Climate' as an assessment topic has been divided into the following three subsections:

- **Greenhouse Gases (GHG)** – Describes how the potential GHG emissions, associated with the construction and operation of the proposed Development, would impact the climate and identifies measures to reduce the GHG emissions.
- **Climate Change Adaptation** – Presents the vulnerability of the proposed Development to climate change and how climate change will potentially manifest itself in the future. It would evaluate the effectiveness and feasibility of resilience measures integrated into the proposed Development to increase the resilience of the proposed Development to climate change impacts.
- **In-combination Climate Change Impact (ICCI) -** Evaluates the combined effect of the proposed Development and potential climate change impacts on the receiving environment during the construction and operation of the proposed Development.

8.2 Consultation and Scoping

8.2.1 Table 8-1 shows a summary of consultation undertaken to date that informed EIA scoping for the 2019 Scheme, the issues raised, and where relevant, how it will be addressed in the current application:

Table 8-1 Consultation Undertaken to 2019

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
F&HDC	The Scoping Opinion Response received for the original Scoping Opinion reflected that the general approach and the methodology proposed for the assessment of climate was considered acceptable Therefore, the assessment should be undertaken on that basis.	The methodology presented within Section 8.3 has been devised in line with the methodology presented for the original Scoping Opinion.
Kent County Council (KCC) Katie Stewart, Director of Environment, Planning and Enforcement Carolyn McKenzie, Head of Sustainable Business and Communities	The project team engaged KCC to discuss local area objectives, GHG emission data for the Kent and the wider South East region. KCC informed directed to: • Kent Environment Strategy: A Strategy for Environment, Health & Economy, 2016. • Draft Kent State of Environment Report. • Emissions data for Kent and South East. • Kent Preparing for Climate Change: Review of activity – 2012. • Kent's Adaptation Plan 2011-2013. • Air quality data available from the Kent air website -www.kentair.org.uk. • Kent and Medway Energy and Low Emissions Strategy.	The climate assessment would take into consideration all the information provided by KCC.

8.2.2 Table 8-2 summarises Consultation that has taken place since submission of the 2019 Scheme, the issues raised and how they are proposed to be addressed in the EIA.

Table 8-2 Consultation Undertaken since submission of 2019 scheme

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
KCC Barbara Cooper, Corporate Director – Growth, Environment and Transport 11 July 2019	KCC is concerned that the applicant has not allowed for the appropriate level of infrastructure within the masterplan that will be required for the development to be sustainable and low carbon, nor considered fully the requirements for long term governance / stewardship of the infrastructure on the site. However, KCC welcomes the inclusion of an Energy Strategy as part of the application. The recent changes in Government targets to Net Zero Emissions by 2050, and the current draft Kent and Medway Energy and Low Emissions are matching the net zero emissions target by 2050.	Section 8.5 presents the potential significant effects Chapter 8: Climate of the ES would incorporate appropriate level of mitigation measures to comply with KCC's sustainability and low carbon requirements. In addition, sustainability elements associated with air quality, biodiversity, landscape and water would be covered in Chapter 6: Air Quality, Chapter 7: Biodiversity, Chapter 12: Landscape and Visual Impact and Chapter 15: Surface Water Resources and Flood Risk. For example, as part of the Hydrology Assessment and Chapter 15: Surface Water Resources and Flood Risk, flood risk on or offsite would be assessed to avoid changes in the baseline condition in the River East Stour. will be assessed and recommendations would be made for the design to best accommodate future changes in climate. An Energy Strategy will be produced in accordance to changes in Government targets and in partnership with KCC and F&HDC to develop an acceptable outcome.

8.3 Methodology

Relevant Legislation, Policy and Guidance

8.3.1 The impact assessment will be undertaken in accordance with current national legislation, and national, regional and local plans and policies, relevant at the time of submission, relating to climate in the context of the proposed Development. The assessment will also be undertaken in accordance with the Paris Agreement (Ref.8.1) which was adopted in 2015 and entered into force in November 2016. This is an international climate agreement aiming to limit global temperature increase this century to less than 2 degrees Celsius above pre-industrial levels. The Agreement also establishes objectives for ensuring climate change resilience and adaptation.

8.3.2 In addition to the above Act, reference would be made to the following legislation, as well as regional and local guidance and relating to climate:

- The Climate Change Act 2008 (Ref. 8.2).
- Clean Growth Strategy 2017 (Amended 2018) (Ref. 8.3).
- The UK Climate Change Risk Assessment 2017 (Ref. 8.4).
- The National Adaptation Programme (NAP) and the Third Strategy for Climate Adaptation Reporting: Making the country Resilient to a changing Climate 2018 (Ref. 8.5).
- The Carbon Plan: Delivering our Low Carbon Future 2011 (Ref. 8.6).

- National Planning Policy Framework (NPPF) 2019 (Ref. 8.7).
- Kent Environment Strategy: A Strategy for Environment, Health & Economy 2016 (Ref. 8.8).
- Kent and Medway Energy and Low Emissions Strategy: Consultation Draft (Ref. 8.9).
- Kent and Medway Energy and Low Emissions Strategy: Evidence Base (Ref. 8.10).
- Folkestone & Hythe District Council Core Strategy Submission Draft 2020 (Ref. 8.11).
- The Green Construction Board PAS 2080:2016 Carbon Management in Infrastructure 2016 (Ref. 8.12).
- Environmental Impact Assessment Guide to: Assessing GHG Emissions and Evaluating their Significance 2017 (Ref. 8.13).
- Environmental Impact Assessment Guide to: Climate Change Resilience and Adaptation (Ref. 8.14).
- BS EN 15978:2011 Sustainability of Construction Works, Assessment of Environmental Performance of Buildings 2011 (Ref. 8.15).

Study Area

8.3.3 In relation to GHG emissions, for the construction phase, the assessment would consider emissions associated with construction related activities, material resources and waste and their associated transport. Therefore, the study area will comprise the proposed Development boundary and the geographical area covered by the transport of waste, material resources and construction workers to and from the proposed Development.

8.3.4 For the operational phase, the GHG emissions assessment would consider emissions associated with energy and operational transport movements covered by the Transport Assessment, residential and Commercial and Industrial (C&I) waste movement. Therefore, the study area will comprise of the application boundary and the traffic model area of the proposed Development.

8.3.5 In relation to climate change adaptation, for both construction and operation, the study area would be the proposed Development Site.

8.3.6 The study area for the ICCI assessment, for both construction and operation, would be defined by the Zone of Influence (ZOI) for each of the environmental discipline chapters included in the assessment.

Assessment Methodology

Proposed Scope of Assessment

GHG Emissions

8.3.7 Following the Environmental Impact Assessment Guide to: Assessing GHG and Evaluating their Significance (IEMA,2017), the assessment undertaken to inform this Scoping Report has consisted of qualitative desk study using readily available published data. More detailed, site-specific quantitative assessments would be undertaken as part of the EIA.

8.3.8 The proposed scope of the GHG emissions assessment is summarised in Table 8-3 and is consistent with the principles set out in PAS 2080:2016:

- Relevance – data and assessment methodology has been selected and presented in Table 8-3.
- Completeness – the GHG emissions assessment would be based on a life cycle (LC) approach.
- Consistency – consistent methodology and data sources for GHG emissions would be used to allow comparison of emissions over time.
- Accuracy – the quantification of the GHG emissions would neither be over nor under estimate actual emissions, as far as can be judged. Also, uncertainties would be reduced as far as reasonably practicable.
- Transparency – the outputs of the GHG emissions assessment would be available along with data sources and any relevant assumptions.

8.3.9 Best practice criteria, based on professional knowledge and the predicted low GHG emissions, have been applied for the exclusion of elements included within Table 8-3 (cut-off rules) from the scope.

Table 8-3 Scope of the GHG Assessment for the proposed Development

Life Cycle Stage	Included	Scoped out
Construction	• Construction products • Transport of construction materials from the factory gate to the construction site • Construction processes	• Construction products manufacturing • Preliminary desk-based studies • Transport of construction plant equipment to and from site
Operation	• Carbon sequestration from tree planting • Operation of the proposed Development • Operational water use	• Maintenance, repair, replacement and refurbishment
Post-operation	N/A	• End of life deconstruction, demolishing and decommissioning, transport and waste processing and disposal

8.3.10 Both construction and operational phases of the proposed Development would be considered for the GHG assessment. This would be based on the full operation of the proposed Development and the anticipated construction period commencing in approximately 2023.

8.3.11 The GHG emissions assessment would take a LC approach consistent with the principles set out in PAS 2080:2016. The GHG emissions associated with the construction and operations of the proposed Development would be reported in the form of the 'carbon footprint'-reported in tonnes of carbon dioxide equivalent (tCO_2e).

8.3.12 Direct and indirect emissions would be considered in line with GHG reporting and the total carbon footprint that would be reported in CO_{2e}. This would allow for the emissions of the six key GHG: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6); to be expressed in terms of their equivalent global warming potential in mass of CO_{2e}.

8.3.13 The assessment would report the carbon footprint from the construction phase and for the operational design life of the proposed Development. In addition, the assessment would be carried out for the following time periods:

- Anticipated construction start year.
- First occupied phase complete year.
- Final occupation year.

8.3.14 While international standards and guidance documents exist for compiling GHG Inventories, there are currently no accepted criteria for quantifying the GHG emissions of construction activities. In the absence of such guidance, the assessment would be undertaken using professional judgement, the proposed Development's Bill of Quantities and Bath University's Inventory of Carbon and Energy (ICE) Database.

8.3.15 The Arcadis' Carbon Model would be used to calculate the carbon footprint associated with construction of the proposed Development as it is based on the widely-used GHG Protocol. This contains carbon emissions factors related to the types of materials commonly used in construction projects.

8.3.16 The Carbon Model measures the GHG impacts of construction activities in terms of CO_{2e}. It does this by calculating the embodied CO_{2e} of materials and the associated emissions of their transport. Figure 8-1 below represents the stages at which embodied CO_{2e} of materials would be calculated.

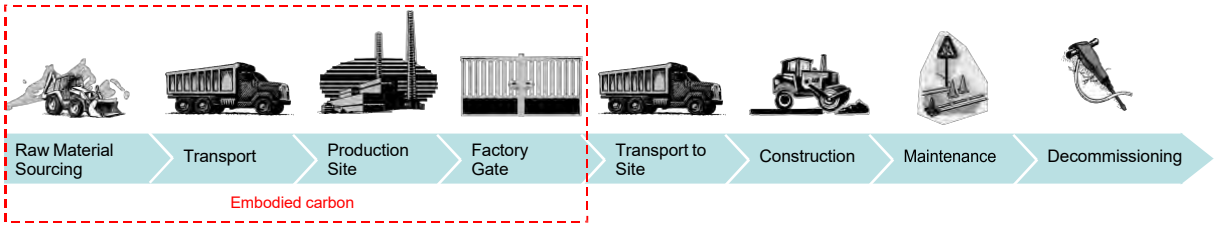

Figure 8-1 Diagrammatic representation of the measure of embodied carbon in relation to material life cycle

8.3.17 In addition to the calculation of embodied emissions of materials, the emissions of construction activities would also be considered. This would include GHG emissions associated with waste arisings, water use, transportation of waste arisings, construction site energy for the duration of the construction period, workers' commuting activities and land use change.

8.3.18 The construction related emissions would be based on the construction and logistics information for the proposed Development. This would include information relating to specific land use / class across the entire proposed Development in terms of:

- Volume (m^3) of material resources.
- Type of material resources (e.g. concrete).
- Transport distances (km) of material resources.
- Volume (m^3) of waste generated (both demolition and construction).
- GHG emissions coefficients.
- Overall carbon emissions of each design element and land use class.
- Functional units (e.g. tonnes of carbon dioxide CO_{2e} per metre and year of design element and land use/class) if available.

8.3.19 The excavation and movement of excavated materials within the proposed Development would be modelled separately. This assessment would provide volumes of materials reused on site along with distances travelled and modes of transport.

8.3.20 For the operational phase, transport related GHG emissions would be calculated using the Transport Assessment and buildings related GHG emissions will be calculated using DEFRA GHG emissions factors (Ref. 8.16).

Climate Change Resilience and Adaptation

8.3.21 The vulnerability of the proposed Development to climate change and incorporation of appropriate adaptation measures into the project's design will be part of the iterative design process.

8.3.22 An assessment of climate change resilience and adaptation will be conducted. This will identify the potential climate change impacts and consider their potential consequence and likelihood of occurrence.

8.3.23 The assessment will include all infrastructure, buildings and assets associated with the proposed Development. It will assess resilience against both gradual climate change and the risks associated with and increased frequency of severe weather events as per the UK Climate Projections 2018 (UKCP18) (Ref. 8.17).

8.3.24 The assessment of the proposed Development vulnerability to climate change will take into account mitigation measures that have been integrated into the proposed Development design. The link between the climate change resilience and adaptation assessment, and the assessments reported within other chapters for the ES, will be cross-referenced as appropriate.

8.3.25 For the operational phase of the proposed Development, once potential impacts have been identified, the likelihood and consequence of each impact occurring to each receptor will be assessed, for the

selected future time frame of the proposed Development operation (through to the 2080s). Likelihood and consequence definitions are outlined in Table 8-4 and Table 8-5.

Table 8-4 Likelihood Categories

Likelihood Category	Definition
Very high	The event occurs multiple times during the lifetime of the proposed Development (60 years) e.g. approximately annually, typically 60 events.
High	The event occurs several times during the lifetime of the proposed Development (60 years) e.g. approximately once every 5 years typically 12 events
Medium	The event occurs limited times during the lifetime of the proposed Development (60 years) e.g. approximately once every 15 years, typically 4 events.
Low	The event occurs during the lifetime of the proposed Development (60 years) e.g. once in 60 years.
Very low	The event unlikely to occur during the lifetime of the proposed Development (60 years).

Table 8-5 Measure of Consequence

Measure of Consequence	Definition
Very large adverse	• On-going annual impact with the potential for extreme events to cause operational or structural damage. For example, higher temperatures causing a major failure in structures or buildings with the potential for injury. • Permanent damage and complete loss of service with a disruption lasting more than one week. • Severe health effects or fatalities. • Extreme financial loss. • Very significant loss to the environment requiring replacement and/ or restoration.
Large adverse	• Seasonal impact with the potential for climatic events to cause operational or structural damage. For example, increased summer maximum temperatures could affect structures through the movement of materials, foundations etc. Long term or significant damage and severe loss of service with a disruption lasting more than three days. • Serious health effects. • Severe financial loss. • Significant loss to the environment requiring replacement and/ or restoration.
Moderate adverse	• Seasonal impact with the potential for minor operational loss. For example, higher summer temperatures could cause overheating which could lead to a loss in operational hours. Medium term or moderate damage and moderate loss of service with a disruption lasting more than one day (less than three days). • Moderate health effects. • Moderate financial loss.

Measure of Consequence	Definition
	• Moderate loss to the environment requiring restoration.
Minor adverse	• Minimal impact, either positive or negative and likely to be mitigated through resilience measures included through regulatory or best practice. Short term or minimal damage and short-term loss of service with a disruption lasting less than one day. • Minimal health effects. • Minimal financial loss. • Minimal loss to the environment.
Negligible	• No impact, either positive or negative and likely to be mitigated through resilience measures included through regulatory or best practice.

ICCI Assessment

8.3.26 An ICCI assessment will be undertaken to evaluate the combined impacts of future climate change and the proposed Development on identified receptors in the surrounding environment.

8.3.27 Projected changes to average climatic conditions, as a result of climate change, and an increased frequency and severity of extreme weather events have the potential to impact the ability of the surrounding natural environment to adapt to climate change.

8.3.28 UKCP18 projections for temperature and precipitation variables will be analysed to identify potential climate hazards that may impact receptors in the vicinity of the proposed Development. Potential hazards identified include increased winter precipitation levels leading to a potential increase in flood risk, and higher summer temperatures combined with decreased summer precipitation levels potentially leading to greater heat stress and increased incidence of droughts.

8.3.29 The likelihood of climate hazards leading to an in-combination impact considers both the likelihood of an impact occurring (e.g. contaminant soil exposure due to ground movements) and the confidence levels associated with the change in climate hazard within the timescale (e.g. intense rainfall would increase contaminant soil migration). The likelihood is defined using the likelihood criteria outlined in Table 8-6, based on an assessment of the UKCP18, confidence in the projections, and professional judgement.

Table 8-6 Likelihood criteria for ICCI effects

Likelihood of impact occurring	Confidence of climate hazard occurring	
	Low	High
Low	Low	Medium
High	Medium	High

8.3.30 The consequence of in-combination impacts will be based on the change to the significance of the effect of the proposed Development on the resource or receptor for each relevant environmental discipline, given existing mitigation measures as outlined in the relevant discipline assessments reported within this ES. The consequence criteria for in-combination effects are shown in Table 8-7.

Table 8-7 Consequence criteria for ICCI effects

Consequence	Consequence criteria
High	The climate change parameter in-combination with the effect of the proposed Development causes the significance of the effect of the proposed Development on the resource/receptor, as defined by the topic, to increase to major.
Medium	The climate change parameter in-combination with the effect of the proposed Development causes the significance of the effect of the proposed Development on the resource/receptor, as defined by the topic, to increase to moderate
Low	The climate change parameter in-combination with the effect of the proposed Development causes the significance of the effect of the proposed Development on the resource/receptor, as defined by the topic, to increase to low
Very Low	The climate change parameter in combination with the effect of the proposed Development does not impact the significance of the effect of the proposed Development on the resource/receptor, as defined by the topic.

Cumulative Effects

8.3.31 The effects of all GHG emissions are essentially cumulative; it is their concentration in the atmosphere, not the actual level of emissions, that determines the warming effect. In addition, it is the global excess of emissions from human activities all over the world that contributes to the overall effect on climate, not only local emissions. For this reason, the impact of the proposed Development should be considered in the context of overall emissions from the UK, rather in combination with other local developments

In addition, the study area for climate resilience and in-combination climate effects is land within the proposed Development boundary and the surrounding environment as informed by other environmental topic assessments study areas. Therefore, no additional cumulative assessment would be required.

Assumptions and Limitations

8.3.32 The assessment will be based on information in respect of energy use, types and quantities of materials used and waste generated, that will be available during the proposed Development design process. Where information is not available, assumptions based on professional judgement will be made. These assumptions will be consistent with those made by other topics for their assessments presented within the ES.

8.3.33 GHG emissions from the end of life stage (decommissioning) of the proposed Development have been scoped out of the assessment due to the anticipated operational timescale of the proposed Development.

8.3.34 The assessment uses the lifespan of the Scheme (estimated at 60 years) and the lifecycle stages to determine the relevant period (short, medium and long-term) over which the climate projections are selected e.g. 2020s (2010 - 2039), 2050s (2040 - 2069), and 2080s (2070 - 2099).

8.3.35 Climate change, by its very nature, is associated with a range of assumptions and limitations. For example, there is uncertainty regarding how global climatic trends would be reflected at the regional scale. To overcome these issues, the assessment will use forecast climate change data from UKCP18. These projections provide an update to the UKCP09 projections, and provide climate projections out to 2100, facilitating the assessment of risk exposure to future climate conditions.

8.3.36 Assessments made in relation to ‘consequence’ and ’likelihood’ will relied on professional judgement and evidence gathered through other environmental topic assessments.

8.3.37 All assumptions and limitations, including any exclusions, together with assumptions for choices and criteria leading to exclusion of input and output data will be documented as part of the assessment.

Significance Criteria

GHG Emissions

8.3.38 All GHG emissions contribute to global climate change and can, therefore, be considered to have some level of significance. However, there is currently no specific guidance regarding significance levels for GHG emission impacts, although the guidance does indicate consideration of the UK National inventory. The UK has legally binding GHG reduction targets and, therefore, the level of significance will consider how the proposed Development would contribute to the UK National GHG inventory and the UK achieving its reduction targets. The proposed Development calculated emissions will, therefore, be assessed against the UK's carbon budgets.

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8.3.39 The significance of effects is a combination of likelihood and consequence as shown in Table 8-8.

Table 8-8 Significance criteria

Measure of Consequence	Measure of Likelihood				
	Very High	High	Medium	Low	Very Low
Very Large Adverse	Significant	Significant	Significant	Significant	Not Significant
Large Adverse	Significant	Significant	Significant	Significant	Not Significant
Moderate Adverse	Significant	Significant	Significant	Not Significant	Not Significant
Minor Adverse	Significant	Significant	Not Significant	Not Significant	Not Significant
Negligible	Significant	Not Significant	Not Significant	Not Significant	Not Significant

8.4 Baseline Data

Key Baseline Information Obtained

8.4.1 Across England as a whole, land temperature in the decade 2005 - 2014 was 1°C warmer than 1961 - 1990. There has been a significant human influence on the observed warming in annual Central England Temperature since 1950. Statistical results from extreme weather value analysis suggest that the UK daily maximum and minimum temperature extremes have increased by just over 1°C since the 1950s, and that heavy seasonal and annual rainfall events have also increased (Ref. 8.17).

8.4.2 There has been a small observed increase in annual mean rainfall in recent decades. Between 1961 - 1990 and 1981 - 2010 annual mean rainfall increased by 3.2%. However, this change is not statistically significant in the context of rainfall totals over the last century (Ref. 8.17).

8.4.3 Historic climate data has been extracted from UKCP18 (Ref. 8.17) for the study area from 1981 - 2019, which provides the most up-to-date historic data for the UK.

Table 8-9 Average historic data from within 12km of the proposed Development

Parameter		Historic Average			
		Winter	Spring	Summer	Autumn
Precipitation	Precipitation rate (mm/day)	3.40	2.38	1.60	2.43
Temperature	Mean air temperature at 1.5m (°C)	4.76	7.94	16.35	11.09

Parameter		Historic Average			
		Winter	Spring	Summer	Autumn
	Maximum air temperature at 1.5m (°C)	6.81	11.04	20.33	14.13
	Minimum air temperature at 1.5m (°C)	2.35	4.69	11.91	8.07
Wind	Wind speed at 10m (ms^{-1})	5.65	5.05	4.34	4.67
	Eastward wind at 10m (ms^{-1})	1.78	0.82	0.97	0.96
	North wind at 10m (ms^{-1})	2.53	0.83	0.97	1.24
Humidity	Relative humidity at 1.5m (%)	87.38	79.22	74.52	82.67
	Specific humidity at 1.5m (%)	0.0048	0.0054	0.0085	0.0070
Cloud	Total cloud (%)	89.03	82.64	59.08	75.12

Future Baseline

8.4.4 General climate change trends projected over UK land by UKCP18 shows an increased chance of warmer, wet winters and hotter, drier summers along with an increase in the frequency and intensity of extremes.

8.4.5 Information on projected climatic conditions have been extracted from UKCP18 (Ref. 8.17) for the study area, which provides the most up-to-date projections of climate change for the UK.

Table 8-10 Average climate projections from within 12km of the proposed development

Parameter		Forecasted Average per season											
		Winter			Spring			Summer			Autumn		
		2022-2041	2042-2061	2062-2081	2022-2041	2042-2061	2062-2081	2022-2041	2042-2061	2062-2081	2022-2041	2042-2061	2062-2081
Precipitation	Precipitation rate (mm/day)	3.49	3.68	3.93	2.4	2.25	2.26	1.43	1.26	1.02	2.35	2.19	2.01
Temperature	Mean air temperature at 1.5m (°C)	5.76	6.67	7.69	9.06	9.77	10.72	18.06	19.23	20.85	12.57	13.82	15.25
	Maximum air temperature at 1.5m (°C)	7.89	8.85	9.95	12.34	13.14	14.14	22.32	23.76	25.65	15.94	17.45	19.06
	Minimum air temperature at 1.5m (°C)	3.32	4.21	5.21	5.65	6.3	7.24	13.32	14.25	15.69	9.35	10.42	11.77
Wind	Wind speed at 10m (ms-1)	5.56	5.67	5.74	5.01	4.93	5	4.31	4.27	4.25	4.57	4.48	4.41
	Eastward wind at 10m (ms-1)	1.79	1.99	2.23	0.88	0.87	1.07	0.79	0.61	0.32	0.95	0.97	0.9
	North wind at 10m (ms-1)	2.58	2.83	3.2	0.92	0.87	1.14	0.7	0.41	0.01	1.19	1.25	1.15
Humidity	Relative humidity at 1.5m (%)	87.24	86.91	86.86	78.15	77.69	77.19	71.91	70.16	68.6	81.49	80.8	79.89
	Specific humidity at 1.5m (%)	0.0051	0.0054	0.0058	0.0057	0.0059	0.0063	0.0091	0.0095	0.0102	0.0076	0.0081	0.0087
Cloud	Total cloud (%)	86.92	85.66	83.58	79.74	77.55	75.91	52.86	48.13	42.26	69.88	66.35	62.52

Key Baseline Information to be obtained

8.4.6 Baseline conditions for GHG would be established through a desktop research by calculating what carbon emissions would have been in the absence of the proposed Development and the planned measures aiming to reduce GHG emissions.

Key Environmental Receptors

8.4.7 There are no obvious environmental receptors for GHG emissions in the same way that there are for other topic assessments. However, it would be possible to quantify the GHG emissions due to the Project Development in absolute terms, for example, tonnes of CO_{2e} from material resources.

8.4.8 The proposed Development receptors which are vulnerable to climate change impacts are identified as:

- Construction phase receptors including the workforce, plant, and machinery.
- Proposed Development buildings and assets and their operation (e.g. pavements, buildings and structures, earthworks and drainage, technology assets etc.).
- Proposed Development end-users (e.g. members of public, commercial operators etc.).

8.5 Description of Possible Significant Effects

8.5.1 This section outlines the potential effects of the proposed Development that will be assessed further for the construction and operational phases of the Development from a climate change resilience adaptation and GHG emissions perspective.

GHG Emissions

Construction

8.5.2 The construction phase of the Proposed Development would have the potential to increase GHG emissions due to:

- Embodied energy in the manufacture of construction materials.
- Emissions from construction plant onsite.
- Emissions from water consumption.
- Exhaust emissions from construction phase road traffic.

Operation

8.5.3 Potential impacts on the environment arising from GHG emissions, would include operational emissions from the proposed Development including building energy use and transport movements.

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Construction

8.5.4 Potential impacts during the proposed Development construction phase include:

- Inaccessible construction site due to severe weather events (flooding, snow and ice, and storms) restricting working hours and delaying construction.
- Health and safety risks to the workforce during severe weather events. ·
- Unsuitable conditions (due to very hot weather or very wet weather, for example) for certain construction activities, such as laying pavement materials or delivery of construction plant, and thus increasing the need to repeat certain works. ·
- Damage to construction materials, plant and equipment, including damage to temporary buildings and facilities within the site boundary (such as offices, compounds, material storage areas and worksites, temporary access, temporary haul routes, etc.).

Operation

8.5.5 The proposed Development has the potential to be impacted upon by a changing climate and, in particular, more frequent severe weather events, in the medium to long-term (2050s and 2080s). Potential impacts on the proposed Development during the operational phase include: ·

- Material and asset deterioration due to high temperatures.
- Overheating of electrical equipment and in buildings further increased by urban heat island effects
- Power cuts.
- Health and safety risks to buildings and road users.
- Increased frequency of fog episodes, which may reduce visibility and access.
- Changes in buildings and road users' patterns.
- Longer vegetation growing seasons resulting in increased periods of tree fall and increased maintenance and management requirements.
- Damage to buildings and/or roads from periods of heavy rainfall.
- Flood risk (surface, groundwater, fluvial and snow/ice melt) and damage to drainage systems with the potential for increased runoff from adjacent land contributing to surface water flooding.
- Increased slope instability as a result of prolonged or heavy precipitation leading to subsidence.
- Storm damage to buildings.
- Inaccessible during severe weather events, leading to road and schools' closures.

8.6 Potential Mitigation Measures

Greenhouse Gas Emissions

8.6.1 The Contractor would ensure appropriate measures within the Code of Construction Practice are implemented and, as appropriate, additional measures to ensure the resilience of the proposed mitigation of impacts during extreme weather events. For example, avoidance of storing construction materials in floodplains and dampening of soils and stockpiles.

8.6.2 Water use during construction would be minimised and the reuse would be encouraged. The water abstraction required for construction would be coordinated with the needs of local community.

8.6.3 The presence of noxious weeds, if any, would be controlled by an appropriate management regime during both construction and operation.

8.6.4 Table 8-11 and Table 8-12 present a non-exhaustive list of additional potential mitigation measures for material resources and waste, methods of construction, energy, water, landscape and transport that will be considered further in the ES.

Table 8-11 Summary of potential GHG emissions mitigation measures

	Proposed Mitigation Measure
Material resources and waste	• Use of green building materials with low embodied energy and recycled materials. • Render finishes, projecting sills with drips and extended eaves. • Avoidance of fully filled cavities. • Use of ground granulated blast-furnace slag (GGBS) in concrete where possible. • Reuse and recovery of materials where possible. For example, by setting appropriate phasing of construction to allow the opportunity for the construction wastes to be reused or recycled on-site in subsequent stages of the development. This will reduce transport movements, the requirement of raw materials and therefore carbon emissions. • Endeavouring to achieve a cut and fill balance to avoid excavation waste.

	Proposed Mitigation Measure
	• Implementation of a Site Waste Management Plan to record the movements of waste, control its management and to encourage better waste management practices to reduce transport movements and therefore carbon emissions. • Design to improve municipal waste recycling and implementing waste minimisation mechanisms.
Methods of construction	• Employ modern methods of construction such as prefabrication of units and products off-site.
Energy	• Minimise energy requirements and emissions from equipment and plant (including minimising the use of diesel or petrol powered generators and instead using mains electricity or battery powered equipment). • Power down of equipment / plant during periods of non-utilisation; optimising vehicle utilisation. • Energy efficient window units and frames with certified thermal and acoustic insulation properties. • Thermal insulation of walls and roof voids of all units to reduce heat losses and demand. • Use of more efficient heating (e.g. ground or air source heat pumps). • Passive design, including orientation and minimising solar gain. • Improve performance of glazing • Use of low energy lighting throughout the proposed Development. For example, use energy efficient street lighting and/ or switch streetlights off for periods of the night. • Include solar photovoltaic cells within all suitable properties.
Water / conservation	• Install blue infrastructure (e.g. landscape features). • Specification of water recycling and low-flow taps and showers.
Landscape	• Tree planting and landscaping to absorb GHG emission.
Transport	• Remodel streets to encourage walking, cycling and public transport, e.g. reduce parking spaces. • Implement a transport strategy and travel plan aimed at reducing encouraging more sustainable of travel with less GHG emissions. • Develop electric vehicle charging point strategy with provision in local centres and employment locations. • Seek to develop an electric vehicle car club in conjunction with an operator. • Seek to develop a rental bike scheme, including electric bikes. • Providing passive provision for electric vehicle charging at homes with allocated spaces as well as to on-street parking areas.

Climate Change Adaptation

8.6.5 Whilst climate change has the potential to bring about changes in the groundwater regime (for example groundwater depths and gradients), there is insufficiently detailed evidence to predict with certainty the impact that climate change will have on the assessment and remediation of contaminated land. Therefore, it is not considered feasible to predict climate change mitigation measures at this stage.

However, the detailed assessment of contamination and the detailed design of remediation would consider potential changes in the groundwater regimes, and other potential impacts, to ensure that remediation designs are resilient.

8.6.6 The proposed Development would adhere to the EA's guidance on allowances for rainfall and flood probability due to climate change, within the context of flood risk assessment. This would require that more extreme predictions of climate models are considered and be relevant to construction and operation.

8.6.7 Appropriate water drainage, considering capacity, would be incorporated within the design of the Scheme.

8.6.8 A summary of additional potential mitigation measures for comfort, construction, green landscape and infrastructure are listed in Table 8-12 summarises the potential mitigation measures that will be considered further in the ES.

Table 8-12 Summary of potential climate change adaptation mitigation measures

Aspects	Proposed Mitigation Measure
Comfort	• Use of external shutter when incident radiation is higher than 100 W/m^2 • Paint outside surfaces of roof and external walls in white colour • Use of heavy weight external and internal partitions
Construction	• Wind load change consideration and recessed window and door reveals • Render finishes, projecting sills with drips and extended eaves • Greater laps and fixings to roof and cladding fixings • Avoidance of fully filled cavities
Flood	• Sustainable drainage systems and urban flash flooding • Ground water levels changes and river flood defences • Water flow obstruction, erosion management and increase gutter, downpipe and drainage sizing • Move all electrical outlets, metering, boiler and electrical equipment above flood level • Increase green cover, wetlands and trees
Green landscaping features	• Plant more street trees/ shaded outdoor space and convert selected streets into greenways • Enhance vegetation if the soil has good infiltration qualities • Plant trees with large canopies - using caution not to compromise building stability • Plant heat, drought and pollution tolerant plants (Xeriscaping) • Plant drought resistant plants such as birch, alder, yew, beech, Italian alder, box and privet • Avoid the use of species such as willows, poplars and oaks as these can cause low level ozone production under high temperatures • Remove/ reduce non-porous garden surfaces. Replace with an alternative: grass reinforcement concrete or plastic mesh, gravel, brick (with drainage channels), cellular paving, or lawn or vegetable plots
Infrastructure	• Add shading to transport infrastructure and add seating in shaded areas • Identify and allocate appropriate buildings as 'community cool rooms

Aspects	Proposed Mitigation Measure
	• Ensure pedestrian and cycle routes are sheltered from high winds/storms, e.g. by soft landscaping • Replace pavements and roads with porous, 'cool' materials

9 Cultural Heritage

9.1 Introduction

9.1.1 This chapter addresses the proposed scope of EIA with respect to Cultural Heritage (archaeology, historic buildings and historic landscapes). It includes a summary of current and proposed consultation, baseline conditions and the proposed approach to the assessment of possible construction and operational effects. Areas that are proposed to be scoped in and out of the assessment are identified.

9.2 Consultation and Scoping

9.2.1 Table 9-1 shows a summary of consultation undertaken to date that informed EIA scoping for the 2019 Scheme, the issues raised, and where relevant, how it will be addressed in the current application. Numbers refer to paragraph numbers in the earlier Otterpool Park Scoping report (May 2018; Ref.9.1) unless otherwise stated.

9.2.2 Consultation undertaken prior to end of April 2018, when the earlier scoping report was written, is listed in Table 9-1 of that scoping report.

Table 9-1 Consultation Undertaken to 2019

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
HE and KCC	9.3.4 -Requested that emerging information from trial trenching and other evaluations be reflected as amendments to the emerging master plan.	Further trial trenching took place later in 2018. The Framework Masterplan will take account of all relevant evaluations work and will be explained in the embedded mitigation measures section within the Cultural Heritage chapter of the ES.
HE and KCC	9.3.3, 9.3.7, 9.3.8 and 9.4.32 - Info and reports from trial trenching, geoarchaeological DBA and other evaluations (including some appraisal reports) have yet to be shared. Information needed to inform assessment of significance and impacts. Further potential for nationally important archaeology is expected and has not yet been evaluated (e.g. the complex of barrows and other features west of Barrow Hill, Sellindge). It is essential that pre-application work is assessed in the ES.	These have since been shared with HE and KCC. Subsequent fieldwork carried out in 2018 focussed on areas of highest archaeological potential. Results of this pre-application fieldwork and further work planned for 2020 will inform the impact assessment. The reports will form appendices of the ES.
HE and KCC	9.3.7, 9.3.8, 9.4.27, 9.4.28 and 9.4.32 - NPPF advises that non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments should be considered using the same NPPF policies as for designated heritage assets.	This is noted and will be reflected in the ES Chapter.
HE and KCC	9.3.8 and 9.4.2 - Other heritage assets identified include the barrow cemeteries to the east and west of Barrow Hill, Sellindge and the Roman villa site. KCC's current opinion is that these assets are of equivalent	The Barrows have been assessed as a group in the ES. The Roman Villa and the barrows will be

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
	significance to scheduled monuments, and should be considered using the same national policies as for designated archaeological assets. Evaluation of the barrows as a group and their setting is required in the ES.	physically preserved and due regard given to their settings. Further evaluation of the barrows and the villa were submitted as part of the ES in February 2019 and will be incorporated into the ES 2020.
HE and KCC	9.3.7 - Romano-British remains identified by geophysical survey east of Lympne Industrial Estate as an example of potential 'showstoppers' that have not been fully evaluated and therefore might pose a risk to the masterplan. KCC stated the need for evaluation as soon as possible. KCC requested an additional geophysical survey (resistivity) so that the layout of the villa complex might be better understood. The results of this additional survey would need to be considered in the EIA and the masterplan potentially amended.	Plans to trial trench this area are underway. The requested additional geophysical survey of the Roman Villa has since been carried out and the Framework Masterplan has been amended to preserve it and its setting.
HE and F&HDC	9.4 and 4.2.6 - Concerned that the red line boundary largely excludes Westenhanger Castle and that the project is not able to deliver benefits against the harm caused by changes within the setting of the castle. District Council's and HE's advice is that Westenhanger Castle should be included within the red line.	This advice has been followed and the Castle is now within the application site boundary.
HE and KCC	Para 9.4.10 - There is existing communal value for the site and there is a high potential to increase this by making the castle a key component of the new settlement. 9.4.10 - Issues should be explored in the EIA and new or existing uses should be developed at the castle in coordination with the Otterpool Park development.	The application site boundary now includes the Castle. The Heritage Strategy for the Site and Feasibility Study for the Castle are currently exploring existing and new uses for the Castle.
HE	Under para 9.5.1 the construction phase could have an impact for the current operation of Westenhanger Castle as the means by which its owner generates the funds with which to look after the site and to continue its conservation.	Noted. The ES will include an assessment of this.
HE	There are elements of the historic landscape of the castle that are not scheduled. Enhanced understanding for the Site needs to be included in the Statement of Significance for the castle and its landscape. Archaeological remains of historic features associated with the scheduled castle and its landscape may require treatment as per NPPF (2012) para 139.	The Statement of Significance on the Castle has been updated to reflect this. It is accepted that archaeological remains of historic features associated with the scheduled castle, if found to be of equivalent value, will be treated as per FN63

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
		to para 194 of NPPF 2019 (previously 139 of NPPF (2012)).
HE	Para 9.6 - For such a large project to be delivered over a long period, mitigation works work should be set within an overall research agenda for Otterpool Park. An agreed historic environment framework will help to deliver the intention of the NPPF. Such a framework would need to be kept under regular review and be responsive to new issues as these emerge over time.	A research agenda/framework for the scheme is being prepared as part of the Heritage Strategy.
HE	Agreed the content of para 9.5.3 as to designated heritage assets that are scoped in or out for the EIA process. Para 9.5.4 addresses the important issues for the settings of heritage assets. We agree the five bullet points but at Westenhanger Castle it is not just setting that applies. Parts of the scheduled monument are within the project boundary and may experience change and non-designated historic features associated with the castle are also directly affected. The setting of the newly discovered Roman villa is included but not the setting of the prehistoric barrows	Re Para 9.5.4 operational effects – the direct physical impacts to below ground remains of the Castle are covered under Construction Effects but will be brought out further in the ES. The setting of the prehistoric barrows will be included under Construction and Operational effects.
HE	Para 9.6.2 - Too high a level of harm could be caused to the significance of the castle. ... key views out from and towards the castle should be agreed with HE for consideration.	Other viewpoints have been agreed. Further viewpoints are being agreed with Historic England for consideration.
KCC	[Summary table at start of report] - Long term effects on heritage assets such as Bronze Age barrows and historic landscapes should be assessed as well as 'built heritage assets'.	The summary table will be amended to include non-built heritage assets such as prehistoric barrows and historic landscape.
KCC	9.3.1 - Reference should be made to the 2013 Department for Digital, Culture, Media and Sport Policy Paper 'Scheduled Monuments & nationally important but non-scheduled monuments', which sets out current Government policy on the identification, protection, conservation and investigation of nationally important archaeological sites.	This has now been included.
KCC	9.3.2 - Reference should be made to the emerging Folkestone & Hythe District Heritage Strategy, and to the Kent Farmsteads Guidance.	The Methodology section of the Chapter will be updated to include this. The Heritage Strategy will take due account of this.
KCC	9.3.3 -KCC expressed concern in restricting the study area for non-designated heritage	This will be addressed in the 'Study Area' section of this Chapter

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
	assets to 500m. A wider approach to understanding potential needed. Significant non-designated archaeological sites in the wider area such as the Saltwood Tunnel site, should be considered.	
KCC	9.3.7 - there may be a need to undertake further trial trenching in areas already evaluated to inform the mitigation strategy.	This is understood as per on-going consultation with HE and KCC.
KCC	9.3.7 and 9.6.1- Apart from the two areas noted above, Figure 9.2 shows further area identified for 'trenching at a later date'. Where there is sufficient flexibility in the masterplan that would allow it to be amended to accommodate unexpected, but nationally important discoveries, KCC is content that evaluation of these areas could generally be deferred to a later date (i.e. post determination of an outline planning application, but before agreement of detailed reserved matters). Where key infrastructure requirements are involved, with locations fixed by the application stage, field evaluation prior to determination would seem appropriate	Further archaeological trial trenching evaluation is planned for 2020. Areas targeted are ones that are: • Areas of key infrastructure • Areas within Development Phase 1 • Areas where particular questions need to be answered, e.g. on the Roman villa, for masterplanning purposes.
KCC	9.4.28 - KCC is currently of the view that the Romano British villa found east of Otterpool Quarry is of schedulable quality and should be treated in the EIA as if it were a scheduled monument in line with paragraph 139 of the NPPF (2012).	The Roman villa has been treated as if it were scheduled.
KCC	9.5.4 - Setting of the Bronze Age barrows to the east and west of Barrow Hill, Sellindge should be scoped in, as should any other nationally important archaeology that could yet be revealed by the ongoing trial trenching	See response to HE's comment above. The setting of the barrows will be scoped in.
KCC	9.4.10 - case study within the Folkestone & Hythe The Folkestone Racecourse Heritage Strategy should be consulted.	This will be consulted.
KCC	9.5.1 - The level of visual intrusion at Upper Otterpool and Otterpool Manor needs to be tested through the EIA process.	The level of visual intrusion to these two Listed Buildings due to construction is considered to be minor as both will have a large area of open space around them.
KCC	9.6.3 - Commitment on the retention of key historic landscape features and where historic landscape features are not being retained for these to be recorded (including through archaeological investigation).	This will be addressed in the Mitigation section of this ES Chapter.

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
	Further assessment will be required as part of the EIA process.	
KCC	9.6.5 and 9.6.7 – KCC acknowledges that not all archaeological remains will warrant preservation in situ. Where preservation by record is accepted, appropriate measures should be included to ensure (in line with paragraph 141 of the NPPF (2012)) any information (assets or archives) is stored, managed and publicly accessible. An appropriate research framework needs to be put in place from the outset to guide how the works will be managed for such a large project carried out over a long period of time, extending into the operational phase of the development. The long-term future of the archaeological archives should be considered.	See comments above in regard to a Research Agenda/ Framework and treatment of the archive.
ABC and KCC	Concerns about assets which have been scoped out: Sandling Park Registered Park and Garden; the Romano-British building south of Burch's Rough (which is a Scheduled Monument) and Aldington Church Conservation Area. Requests that the setting effects on these assets need to be scoped in unless robust justification is provided in the ES. 4.12.1 Premature to scope out archaeological resources, as the archaeological resource not yet been assessed, and proposed mitigation measures have not been agreed.	An addendum to the DBA (Appendix 9.2) has been carried out which establishes the anticipated minimal impact to the setting and views of Aldington Church Conservation Area. Additionally, the LVIA includes a viewpoint from Aldington Church and this conclude that there will be no visual impact (see Chapter 12 of the ES). The setting to Sandling Park RPG has been scoped back in. We have considered the setting to Burch's Rough Romano-British building and do not consider that it will be impacted.

9.2.3 Table 9-2 summarises Consultation that has taken place since submission of the 2019 Scheme, the issues raised and how they are proposed to be addressed in the EIA.

Table 9-2 Consultation Undertaken since submission of 2019 scheme

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
F&HDC and KCC/ between May and July 2019	Historic Farms - LPA and KCC think the brick-built barn at Hillhurst Farm should not be demolished but should be re-used.	The Framework Masterplan will be altered to retain the brick-built barn and it will be re-used as part of the development.
KCC/ between May and July 2019	Military Remains- the possible second Pickett Hamilton Fort (retracted into the ground in Link Park area) needs to be located and recorded	We have included recording of the possible second Pickett Hamilton fort in the plan for the

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
	and may have the potential to meet the criteria for listing.	next phase of pre-determination fieldwork in 2020. The Framework Masterplan contains the flexibility to be able to protect and enhance the feature if needed.
KCC, HE and F&HDC / between May and July 2019	Other military remains should be preserved if possible or referenced somehow in the masterplan. F&HDC suggest an illustrated military pamphlet for a separate military trail.	The Heritage Strategy is exploring these options.
KCC and HE/ between May and July 2019	Prehistoric Barrows- the entire group of barrows west of Barrow Hill should be preserved in situ and they all should be considered nationally important. KCC consider that preserving some under a playing field may not be appropriate. The Barrow east of Barrow Hill (44) needs more open space (to be agreed) and this open space needs to be shown on the masterplan. F&HDC want more flexibility built into the form of the open space around the barrow group at Barrow Hill and the single barrow (44).	A Statement of Significance of the barrows has since been prepared (Appendix 9.7) and the Framework Masterplan has been altered so that all are preserved *in situ* (including now Barrow 131). The Heritage Strategy will provide a guide for how the playing field should be designed in order to preserve the three barrows under it. The area of open space around barrow 44 (and barrow 131) is now shown on the parameter plans. The Framework Masterplan is now more flexible so extra open space around barrow 44 may be possible.
F&HDC / between May and July 2019	More flexibility needs to be built into the form of the open space around the Roman villa.	More detail will be provided in the Heritage Strategy for what the open space should be like around the Roman villa (and barrows).
All/ between May and July 2019	Heritage Strategy - input from all statutory consultees as to what the Heritage Strategy should contain and its need to be visionary and long term as well as an action plan for the short term. Crossovers needed with the Stewardship Strategy, Creative and Cultural Strategy, F&HDC Heritage Strategy, Green Infrastructure Strategy and the Charter for Otterpool Park.	All this has been taken on board and included in the scope for the Heritage Strategy.
All/ between May and July 2019	Many comments from all statutory heritage consultees about public benefit and opportunities for community involvement. KCC -a community archaeologist should be funded through developer contributions. KCC, F&HDC and HE – An Archaeology Clerk of Works	The project is not prepared to fund a full-time community archaeologist. However, a Community Development Officer will be appointed, and part of

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
	should be funded through developer contributions.	their remit will be in involving the new and existing communities in their heritage. An Archaeology Clerk of Works may be needed, and this has been discussed and will be considered further as the project progresses.
All/ between May and July 2019	Many comments from all Statutory Consultees on governance and stewardship of assets and how this will be achieved and managed in the long term.	The comments will all be discussed in the Heritage Strategy and Stewardship Strategy.
All/ between May and July 2019	Westenhanger Castle -Consultees would like to see Westenhanger Castle brought into the red line which would help secure a viable future for it (which KCC and HE feel would be lacking under the current i.e. the previous scheme).	The castle has now been brought into the red line.
KCC and HE/ between May and July 2019	Westenhanger Castle - KCC and HE disagree with the assessment of harm we have assigned to the castle's setting including the deer park and are ready to object if the masterplan is not altered to create more space around the castle. They (along with F&HDC) also want other viewpoints (apart from the one from the south) to be given more consideration and feel more viewpoint assessment is needed.	More viewpoint assessment work is being undertaken and other viewpoints are being given consideration.
KCC and HE/ between May and July 2019	Westenhanger Castle - KCC and HE think that more heritage benefits need to be delivered to the castle to outweigh the negative impacts	The Castle is now within the red line therefore it can be integrated with its adjacent deer park (to the south). This will afford the Castle, its listed barns and its setting significant heritage benefits as well as increasing its community and communal value
F&HDC / between May and July 2019	Westenhanger Castle should become a focal point that helps define the character of the wider settlement – retained buildings and features should observe important spatial relationships and allow important views to survive. However, we do not favour the artificial creation of a 'heritage park' with old buildings set apart, disconnected from each other – historic buildings should be interwoven within the fabric of a clear physical, landscape and historical framework for development of the area. We must balance the need to conserve the historic environment with the	Agreed. This is what the Framework Masterplan strives to achieve. Purcell have been taken on the help develop a Framework Masterplan for the castle and barns and a consultant landscape architect has been taken on to develop a more detailed design for its 'Great Park'.

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
	economic, social and environment benefits of the development.	
F&HDC / between May and July 2019	Westenhanger Castle - F&HDC are concerned about housing density and heights around the castle and that key views are not obscured. They have many comments on the proposed buildings that will provide a backdrop to the castle (and other listed buildings). They also have comments on how the park around the castle needs to be designed 'imaginatively' as a 'transition zone'. They also think the proposed canal around the lake might appear artificial. They want a better scaled plan of the parameter plan showing the castle and its town park. They also want detailed design parameters about colour palettes and architectural materials.	The extra viewpoint assessment work will help with this. The heritage workshop held in in January 2020 with F&HDC and KCC addressed all these issues. Arcadis and the external consultants appointed to draw up plans for the Castle and its park have taken all these comments on board.
All/ between May and July 2019	Archaeological Assessment and Evaluation - more fieldwork is needed pre-determination in targeted areas. More flexibility needed in the masterplan to deal with the discovery of as yet unknown archaeological remains that may need to be preserved in situ.	More archaeological and geoarchaeological evaluation fieldwork will be carried out in 2020. This plan of work addresses specific areas that KCC and HE are concerned about. The flexibility issue has been addressed – see comments above.
HE/ between May and July 2019	Listing/ scheduling screening of non-designated assets - HE disagree with some of our assessments of significance and would like us to use their paid for Enhanced Advisory Service to clarify if any meet the criteria for scheduling (e.g. the barrows and the villa) or listing e.g. military remains and historic buildings. HE considers that they have insufficient data in order to say how far any of the historic buildings meet the criteria for listing and that internal inspection would be necessary.	Arcadis are of the opinion that the project has provided sufficient information and that we do not need to do any further assessment. This opinion is echoed by F&HDC (see below). We are confident in the assessments of significance that we have carried out for: • Non-designated buildings and military remains • The Roman Villa • The Prehistoric Barrows • Landscape features outside the scheduled area of Westenhanger Castle We have treated all these heritage assets within the Framework Masterplan as if they were designated in case, they are subsequently designated. Internal inspections can be

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
		arranged for HE if they wish to make further assessment of their own.
F&HDC / between May and July 2019	F&HDC broadly agree with our assessment of which historic buildings might meet the criteria for listing. They say the listing process could be carried out post-consent without the need for further assessment. F&HDC do not comment on whether the barrows or villa should be scheduled.	Agree that listing process could be carried out post consent if required by Historic England.
KCC/ between May and July 2019	Other/placemaking - the historic field types should be used to influence the layout of the transport routes which in the current proposal appear as an imposed form not in keeping with the landscape.	We have paid attention to keeping existing historic field boundaries but recognise that the proposed infrastructure layout does not always follow the field boundaries. Such precise matters will be discussed with the heritage stakeholders.
HE/ August 2019	HE asked for confirmation on what the next steps were for archaeological field evaluation. KC replied in September 2019. HE also asked whether we intend to make use of their listing screening service for buildings identified in the ES as having potential for listing and for the Roman villa and barrows to be considered for possible scheduling. They also suggested a screening by Historic England for possible listings of the military heritage at RAF Lympne.	See comment above
All/ September 2019	Request from Arcadis for comments from the consultees on the scope of next phase of archaeological field evaluation, including geophysics at the castle. HE responded in October 2019 broadly agreeing with our scope.	See comment above
HE/ September 2019	HE (Peter Kendall – the regional Inspector) sent a list of HE's priorities for the Castle including refilling the moat and carrying out geophysical survey.	See comment above
HE/ November 2019	Peter Kendall asked what progress we had made in terms of further archaeological evaluation on site. KC from Arcadis replied December 2019.	See comment above
HE/ January 2020	Peter Kendall asked what progress we had made in terms of further archaeological evaluation on site. KC from Arcadis replied February 2020.	See comment above

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
KCC, F&HDC – 30th January 2020	A Heritage Workshop took place with F&HDC and KCC which covered most of the points already raised above, and specifically the scope of the Heritage Strategy. Also, an update was given on the next phase of planned archaeological fieldwork. Further viewpoints assessment was discussed.	See comment above
HE/February 2020	HE (Peter Kendall) sent details of what viewpoints HE think are important to assess in terms of views to and from the Castle.	See comment above

9.3 Methodology

Relevant Legislation, Policies and Guidance

9.3.1 The following legislation and policies are relevant to the assessment of cultural heritage effects and will inform the assessment as appropriate:

Legislation & Policy

- Her Majesty's Stationary Office (HMSO), HMSO, 1990: Planning (Listed Buildings and Conservation Areas) Act. London;
- HMSO, 1979: Ancient Monuments and Archaeological Areas Act 1979;
- HMSO, 1986: Protection of Military Remains Act. London;
- HMSO, 1997: Hedgerow Regulations. London;
- Department for Communities and Local Government (DCLG), 2019: National Planning Policy Framework (NPPF)., London;
- Department for Culture Media & Sport, 2013: Scheduled Monuments & Nationally Important but Non-Scheduled Monuments. London; and
- Folkestone & Hythe District Council, 2019: Core Strategy Review, Folkestone.

Guidance

9.3.2 The following guidance will be used to inform the cultural heritage assessment:

- Chartered Institute for Archaeologists (CIfA), 2019. Code of Conduct. Reading;
- (International Council on Monuments and Sites) (ICOMOS), 2011: Guidance on Heritage Impact Assessments for Cultural World Heritage Properties, Paris;
- CIfA, 2017: Standard and guidance for historic environment desk-based assessment. Reading;
- CIfA, 2014: Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment. Reading;
- Historic England, 2008: Conservation principles policies and guidance for the sustainable management of the historic environment.(Currently under review);
- Historic England, 2015: Historic Environment Good Practice Advice in Planning 2: Managing Significance in Decision-Taking in the Historic Environment (GPA2). London;
- Historic England, 2017: Historic Environment Good Practice Advice in Planning 3: The Setting of Heritage Assets (GPA3). London;
- KCC, Oxford Archaeology and English Heritage, 2001: Kent Historic Landscape Characterisation;
- F&HDC, 2018: Draft Folkestone & Hythe Heritage Strategy 5b: Castles, Folkestone;

- F&HDC, 2018: Draft Folkestone & Hythe Heritage Strategy, Volume 1, Chapter 7: Opportunities, Folkestone;
- F&HDC, 2018: Draft Folkestone & Hythe Heritage Strategy: Vulnerabilities of the Heritage Assets, Folkestone;
- F&HDC, 2018: Draft Folkestone & Hythe Heritage Strategy: Case Study for Folkestone Racecourse, Folkestone; and
- English Heritage, et al., 2013: Kent Farmsteads Guidance, Cheltenham.

Study Area

9.3.3 The study area comprises the proposed Development site and all nationally designated assets within 1km of the application site boundary, and non-designated assets within 500m of the application site boundary (refer to Figure 9.1 in Appendix A). This study area was deemed appropriate to the size and sensitivity of the scheme. Where relevant, heritage assets outside these study areas have been considered where they provide context to heritage assets within the proposed development, or where they may have inter-visibility with heritage assets within the proposed development.

Assessment Methodology

General Approach

9.3.4 Following consultation with the statutory heritage consultees -Historic England (HE), Kent County Council (KCC) and F&HDC - between 2016 and 2018, it was requested that a series of desk-based appraisals and field evaluations be undertaken to further understand the baseline and provide early input to the proposed Development design.

9.3.5 At the time of writing the first scoping report in April 2018 most of the required archaeological appraisal reports had been written. These consisted of a Desk-based Assessment; an Archaeological Appraisal & Fieldwork Strategy; a Historic Landscape Characterisation & Farmsteads Analysis; a Historic Buildings & Structures Appraisal; a Statement of Significance on Westenhanger Castle and a Conservation Management Plan for Westenhanger Castle. A geo-archaeological assessment of the site was also underway at that time.

9.3.6 The geophysical survey over the majority (337Ha) of the site was carried out in several stages and has mainly consisted of magnetometry. The first stage took place in April and May 2017, followed by a suite of geophysical surveys of the potential Tudor Garden south of the Castle in September and October 2017, followed by large scheme of geophysics at the end of 2017 and surveys of the airfield and a field east of Lympne Industrial Estate in June 2018. The consultees requested further geophysical survey (Resistivity or Ground Penetrating Radar) of the Roman Villa and this was carried out in September 2018. Further geophysical survey (79Ha) is planned for 2020.

9.3.7 Archaeological trial trenching evaluation was undertaken across selected areas of the site from the end of 2017 to September 2018 (63Ha). A second season of trial trenching is planned for 2020 (60Ha). See Figure 9.2 in Appendix A for trial trenching areas.

9.3.8 Updates to the appraisal reports have been undertaken following comments and extra information from the consultees. The geoarchaeological assessment is currently being updated. An addendum to the Desk-Based Assessment has been submitted incorporating extra archaeological information gained from LiDAR, from further walkover surveys and from extra historic map research.

9.3.9 A drone survey of the Roman villa field and the Racecourse was undertaken in July 2018.

9.3.10 An archaeological watching brief on Ground Investigations was carried out in August to September 2018.

9.3.11 Statements of Significance on the prehistoric barrows and the Roman villa were submitted in March 2019.

9.3.12 All of the above studies have informed understanding of the cultural heritage baseline constraints and opportunities for the proposed Development such that impacts have been designed out early on wherever possible. All these reports will form appendices to the ES and the results will be assessed in the baseline section.

Significance Criteria

9.3.13 The sources of guidance such as ICOMOS *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties* (2011), the NPPF and Historic England's three guidance documents - *Conservation Principles, GPA2* and *GPA3*. Based on practice guidance provided by these sources an assessment of the resource significance of each heritage asset will be undertaken on a five-point scale informed by Appendix 3A in the ICOMOS guidance of Very High, High, Medium, Low, Negligible. Following determination of heritage significance, assessment of the magnitude of impact is based on professional judgement informed by Appendix 3B in the ICOMOS methodology. This sets a magnitude level of Major, Moderate, Minor, Negligible, and No change based upon factors affecting the degree of change to cultural heritage assets.

9.3.14 Table 9-3 illustrates how information on the heritage significance of the asset and the magnitude of change is combined to arrive at an assessment of the significance of effect arising from the proposed development, referred to as the 'significance of effects matrix':

Table 9-3 Heritage significance of the asset and the magnitude of change

Heritage significance of asset	**Magnitude of Change**				
	Major	**Moderate**	**Minor**	**Negligible**	**No Change**
Very high	Very large	Large or very large	Moderate/ large	Slight	Neutral
High	Large or very large	Moderate/ large	Moderate/ slight	Slight	Neutral
Medium	Moderate/ large	Moderate	Slight	Neutral/Slight	Neutral
Low	Slight/ moderate	Slight	Neutral/Slight	Neutral/Slight	Neutral
Negligible	Slight	Neutral/Slight	Neutral/Slight	Neutral	Neutral

9.3.15 Based on professional judgement and guidance, a 'significant effect' on a heritage asset could be assessed as a moderate or large/very large effect.

9.3.16 Following an assessment of the significance of effect, the effects of the development on the application site will be addressed using our own professional judgement. The significance of the effect may be defined as adverse, beneficial, or neutral and determined by the nature of impact to the heritage asset affected.

Cumulative Effects

9.3.17 The Otterpool Framework Masterplan will be included within the assessment of cumulative effects, in addition to the committed schemes listed in Table 9-4:

Table 9-4 Proposed Committed Developments for Inclusion in Cumulative Assessment

Appendix Map ID	Local Planning Authority	LPA Reference No.	Reason for inclusion in cumulative assessment
H	Folkestone & Hythe District Council	Y14/0873/SH	Land adjacent to The Surgery, Main Road Sellindge Kent. Hybrid application for the redevelopment of land between the A20 and M20 at Sellindge. The 200 dwelling proposed Development in Sellindge lies outside the application site's boundary. It would affect the setting of Listed Buildings in Sellindge – those on Ashford Road and Somerfield Court. It would be visible from Barrow Hill, Sellindge and the green and blue infrastructure proposed around the East River Stour within the application site. Some loss to historic landscape character will be produced especially to Somerfield Court and its barns which is a farm dating to 1796 or earlier. However, the intervening M20 and CTRL has severed the visual links between it and the Otterpool Park application site and the Listed Building in Barrow Hill and it is not considered that harm would be caused. Given the above, this development is proposed to be **scoped out** of detailed assessment pending agreement with consultees on cumulative impacts.
AM	Folkestone & Hythe District Council	Y16/1122/SH	Land Rear Rhodes House Main Road Sellindge Kent. Outline planning application for a neighbourhood extension for the creation of up to 162 houses and up to 929 square metres Class B1 Business floorspace. Approved 15/1/2019. This lies outside the application site's boundary. It would affect the setting of Listed Buildings in Sellindge particularly Rhodes House. It may be visible from Barrow Hill, Sellindge and the green and blue infrastructure proposed around the East River Stour within the application site. Some loss to historic landscape character will be produced. However, the intervening M20 and CTRL has severed the visual links between Rhodes House and the Otterpool Park application site and the Listed Building in Barrow Hill and it is not considered that harm would be caused. Given the above, this development is proposed to be **scoped out** of detailed assessment pending agreement with consultees on cumulative impacts.

Appendix Map ID	Local Planning Authority	LPA Reference No.	Reason for inclusion in cumulative assessment
AL	Folkestone & Hythe District Council	Y16/0199/SH	Holiday Extras Ashford Road Newingreen Erection of a two storey office building and extension of the car park (alternative to planning permission Y15/0175/SH). The setting of the adjacent Listed Building – The Royal Oak Public House - is a potential issue and, to a lesser degree, the setting of Sandling Park Registered Park and Garden (RPG). Cumulatively it is considered that the existing Holiday Extra Building combined with the extension will decrease the visual impact of the Otterpool development on the Listed Building and RPG as the buildings (combined with hedges) effectively provide a screen to the north-west of the Listed Building. For reasons provided above this receptor is proposed to be **scoped out** of further assessment.

9.4 Baseline Data

Key Baseline Information Obtained

9.4.1 The following section provides a summary of the baseline including results of studies undertaken to date and areas of further work to be undertaken. Numbers in brackets are unique identifiers. Designated assets i.e. Scheduled Monuments, Listed Buildings and Registered Parks and Gardens have SM, LB or RPG as a prefix.

Key Heritage Assets

9.4.2 Paragraphs 9.4.3 to 9.4.23 provide details of the key heritage assets which have the potential to be affected by the proposed Development. These are located either within the application site boundary or its immediate environs. They comprise designated and non-designated heritage assets with relationships to the proposed Development in the form of settings or historic views which would be subject to impact. It also includes non-designated heritage assets of regional or potential national importance within the site boundary that could be physically impacted by the proposed development. These are therefore **scoped in**. These heritage assets are included in Figure 9-1 of Appendix A.

Westenhanger Castle

9.4.3 **Westenhanger Castle** (**SM6** and **LB5**) lies within the northern extent of the application site, to the south of the CTRL and is designated as a Scheduled Monument (SM) and Grade I Listed Building. The SM comprises the remains of the medieval and later castle, a 16th-18th Century fortified house with associated structures and landscaping including the earthwork and structural remains of the moated inner court. In the outer court of the Castle are two 16th century barns which are also Grade I listed, the likely buried remains of the service buildings, the church, and its cemetery. Stable blocks built in the 1980s for Folkestone Racecourse, lie partly within the scheduled area within the outer court of the castle. Scheduled monument consent would be required to carry out any groundworks within the Scheduled area. Scheduled monument consent is received for removal of the racecourse stables block.

9.4.4 There are several important elements of the Castle's landscape and formal grounds that are not designated. The remains of a 16th Century formal garden or orchard survives below ground to the

south of the castle moat, below the northern arm of the Racecourse. This is known from historic mapping, documentary evidence and geophysical survey to have been walled.

9.4.5 Earthworks and water features to the south of the Castle, in the area inside the circuit of the racecourse, have been identified by subsequent walkovers and historic map research as of potential interest. They may have formed part of the landscaped grounds of the Castle.

9.4.6 A causeway leading from Ashford Road to the Castle has been identified by historic map research as the former principal access to the Castle at its heyday, and this survives as a field boundary.

9.4.7 Remains relating to the Castle's deer park such as the park pale ditch and an animal pound may survive as earthworks or below ground remains within the outline application site boundary.

9.4.8 The Castle and its barns are now in ownership of F&HDC. As such their communal value can be increased from the development by making the castle a key component of the new settlement now that they are inside the red line boundary.

Listed buildings and Conservation Areas

9.4.9 **Upper Otterpool** is a Grade II listed farmhouse (**LB20**) dating to the late 16th or early 17th century with later alterations. The building stands together with outbuildings comprising adjoining barns. It lies at the northern edge of Lympne Airfield and a concrete and brick building foundation from a possible WWII airfield building lies within its grounds.

9.4.10 **Otterpool Manor** (**LB38**) is a Grade II Listed farmhouse dating from the 17th century or earlier with adjacent (non-listed) barns of possible medieval date. It is situated in the centre of the proposed Development area.

9.4.11 **The Royal Oak Public House** (**LB15**). The Grade II listed public house was built in the early to mid-19th century and was altered internally in the 1950's.

9.4.12 **Bellevue House** (**LB21**) is a Grade II listed building which formerly served as a country club and converted to a house and flats. It occupies the site of a Medieval Moated site (**51**) but does not date to this period.

9.4.13 **Stream Cottage** and **Grove Bridge Cottage** (**LB11**) Grade II listed former single house dating to the 17th century or earlier which was later divided and has a 19th

9.4.14 **Berwick House** (**LB29**) and **Little Berwick** (**LB27**). Berwick house (**LB29**) is a Grade II Listed house of unconfirmed date, with a 19th century façade. Little Berwick is Grade II Listed (**LB27**) and lies to the north of Berwick House and is thought to be of early 17th century date with a 19th century façade and 20th century alterations.

9.4.15 The setting and views of the listed buildings forms a major consideration in terms of potential impact.

9.4.16 The south-eastern corner of the site would border Lympne Conservation Area. The location of Lympne Conservation Area represents the historic core of Lympne Village. There are nine Listed Buildings within the Conservation Area (**LB30**, **LB41**, **LB19**, **LB3**, **LB37**, **LB4**, **LB25**, **LB26**, **LB31**). These include the Grade I Listed Church of St Stephen (**LB4**) which lies within a walled churchyard containing three Listed churchyard monuments (**LB25**, **LB26** and **LB31**). Adjacent to the church is the Grade I Listed Lympne Castle (**LB3**). There are also several non-designated buildings within the Conservation Area which contribute to its character. The location of this historic settlement is significant to its setting. This is due to Lympne Castle's (**LB3**) original function as a fortified house; a strategically placed defensive feature along the former coastline, which is now marked by the Royal Military Canal (**SM2**, **SM5**, **SM3**) to the south.

9.4.17 The church and Lympne Castle are situated at the southern end of the village where the land begins to fall away to the south towards Romney Marsh and Stutfall Castle Saxon Shore Fort (**SM4**). From within the Conservation Area the key views are towards the Church of St Stephen and the Castle from the Aldington Road; of Castle Close from both direction; from the Church looking over Romney Marsh; and looking along the Aldington Road from within the Conservation Area. Finally, the Conservation Area is appreciated from the Marsh below the Castle taking in the Church (**LB4**), Castle (**LB3**) and Stutfall Castle (**SM4**).

9.4.18 The main views to and from Lympne Castle (**LB3**) and Lympne Conservation Area are from the south and south-east from the bottom of the escarpment and the sea. The Conservation Area is also well screened to the north and west by treelines and more recent development. Despite this screening, returning views from the south of the Lympne Conservation Area might be subject to limited impact from the introduction of new built form into the background of the village. The medieval built form within Lympne Conservation Area relates to the medieval heritage within the proposed Development site, but given the nucleated character the village of Lympne it is in many ways removed from it.

Registered Park and Garden

9.4.19 The Grade II Registered Sandling Park lies to east of the application site. Although it is largely screened from the proposed Development by intervening trees it is scoped in.

Non-listed Buildings

9.4.20 Other non-designated buildings of heritage value are present within the application site or its immediate environs. The setting and views of these buildings forms a major consideration in terms of impact. An assessment has been carried out of the heritage value of all the non-designated buildings and structures within and at the perimeter of the site and concluded that several of the non-designated buildings exhibit aspects which might be of designable quality.

Archaeological Remains

9.4.21 Throughout prehistory the site was favourable for settlement and trade due to its proximity to historic routeways and the former coastline. Bronze Age settlement activity is recorded on the higher slopes in several areas of the site: close to Bellevue; east and south-east of Harringe Brook Woods; around Link Park Industrial Estate and north and east of Westenhanger Castle.

9.4.22 Either side of Barrow Hill, Sellindge are groups of ring ditches seen from the air and on LiDAR. These are ploughed out and partially ploughed out Bronze Age burial mounds; a monument type which rarely survives above ground in the county (see Figure 9-1). Although not scheduled, these burial mound monuments are of importance. Geophysical surveys, trial trenching evaluations, and geo-archaeological investigations have expanded our knowledge and understanding of the Prehistory of the site.

9.4.23 The site later formed part of a Roman landscape near to the Roman fort of Stutfall Castle and close to Roman roads connecting it to Canterbury, Maidstone, Dover and a port at West Hythe. Evidence of Roman farming and settlement has been revealed by trial trenching west and north of Otterpool Manor. A Roman villa (**167**) was found east of Otterpool Quarry and south of Ashford Road. This previously unknown site was uncovered as a result of the geophysics and trial trenching (see Figure 9-1).

Other Heritage Assets

9.4.24 This section provides a summary of heritage assets which are considered to lie beyond the zone of influence of the proposed Development and therefore are proposed to be **scoped out** of further assessment. These include Scheduled Monuments, Grade I and Grade II listed buildings and Registered Parks and Gardens. The Scheduled Monuments include a Romano-British villa (**SM1**), the Roman Stutfall Castle (**SM4**) and the Napoleonic Royal Military Canal (**SM2**, **SM5** & **SM3**). Due to the topography of the Aldington Ridge, all the SMs have settings which are sufficiently removed or screened from the proposed Development as to be beyond potential visual and significant group value impacts and effectively **scoped out**. The same is true of The Grade II Registered Park and Garden of Port Lympne which lies to the south-west of the OPA boundary.

9.4.25 Within the Parish of Sellindge are ten Grade II Listed Buildings (**LB28**, **LB33**, **LB35**, **LB10**, **LB34**, **LB9**, **LB18**, **LB40**, **LB14**, **LB17**). These assets lie within what was the historic core of the settlement of Sellindge, based on cartographic sources, which has since extended to the south along the A20 Ashford Road. The main setting of these assets is the small village nature of the settlement which is crossed by the A20.

9.4.26 These sites are therefore **scoped out** of further assessment with respect to effects on their visual setting.

Archaeological Resources

9.4.27 The archaeological remains within the study area show activity ranging from the Prehistoric through to the Modern period and demonstrate a landscape which has been occupied throughout these periods. Several areas of high archaeological potential have been identified within the Archaeological Appraisal and Fieldwork Strategy report. Further information has been brought to light from the current fieldwork as well as from further map archival research and from examination of LiDAR data.

9.4.28 Anglo-Saxon burials have been revealed close to Aldington Road south of Lympne Industrial Park and there appears to have been a Saxon site south of Lympne near the junction of Aldington Road and Stone Street.

9.4.29 As well as the medieval manorial centres of Westenhanger Manor, Otterpool Manor and the moated site at Bellevue, the area was dotted by dispersed medieval farmsteads, some of which carried on into the post-medieval period and even to the present day.

9.4.30 Most recent remains include, Post-Medieval farmsteads; the buildings of the Folkestone Racecourse, and military remains and structures from the First and Second World Wars. The majority of military structures are focused around Lympne Airfield and include the Battle HQ and bunkers, a Pickett Hamilton Fort, other pillboxes (no longer standing), an aircraft dispersal pen, RAF huts and a machine gun range, as well as the airfield itself. These remains demonstrate the development of the landscape over time from a largely agricultural area to a more varied landscape including agriculture, industrial sites, quarrying, airfields and racecourses in the modern period.

9.4.31 These known non-designated heritage assets within the proposed Development are **scoped in** as are those that are as yet undiscovered.

Further Baseline Data to be Obtained

9.4.32 The appraisal reports outlined above are complete and have identified methods for addressing the key issues discussed with HE, KCC and F&HDC to date. This will include the following:

- Investigation of the possible second Pickett Hamilton Fort in Link Park and its heritage significance;
- Further geophysical survey, a large part of which is currently taking place;
- Further geo-archaeological desk-based assessment and fieldwork in order to understand the depositional sequences across the site and the areas of most potential for Palaeolithic and Mesolithic deposits. Part of this work, including updating the geo-archaeological desk-based assessment into a deposit model, is due to happen in 2020;
- More trial trenching including a programme of work planned for 2020; and
- Further viewpoint assessment work for views to and from Westenhanger Castle, due to take place in 2020.

9.5 Description of Possible Significant Effects

Construction

9.5.1 The following cultural heritage assets are considered likely to be adversely affected by construction of the scheme and are therefore proposed to be **scoped in**.

- Westenhanger Castle – temporary effects to setting caused by dust, noise and visual effects. These will have a knock-on effect potentially affecting the occupants' ability to manage and maintain the listed property;
- Lympne Conservation Area – temporary effects to setting to the northern part of the CA caused by increases in traffic causing noise and visual intrusion;
- Designated and non-designated heritage assets within the site boundary and at its edges. Their settings have the potential to be temporarily affected by increased traffic, noise and dust;
- Upper Otterpool, and Otterpool Manor - temporary minor visual intrusion;

- Certain archaeological assets which are currently buried or only survive as earthworks or cropmarks and may be destroyed by groundworks or landscaping. These would experience permanent removal;
- Certain historic non-designated buildings or structures which may be permanently removed; and
- Elements of historic landscape that may be permanently removed e.g. certain hedgerows.

9.5.2 The archaeological resource is well represented in terms of potential at present but awaits the results of the ongoing appraisal and extensive field evaluation to determine the presence of significant archaeological remains

9.5.3 Construction effects that are proposed to be **scoped out** of further assessment are as follows:

- Impacts to the settings of Scheduled Monuments outside the planning application boundary are **scoped out** of further assessment due to distance from the site, intervening screening or topography. Listed buildings to north of the CTRL (HS1) are **scoped out** of further assessment.
- Listed Buildings within Lympne Conservation Area are effectively screened from significant adverse visual setting effects by a combination of distance and intervening form, notably in the form of the later 20th Century estate which lies immediately south-east of the proposed development. They are therefore **scoped out** (although the northern part of the Conservation area is **scoped in**).
- From Sellindge, views into the landscape to the south have been partially removed by the construction of the M20 and CTRL, and by later development at Sellindge itself. Given the very limited inter-visibility, the proposed Development is considered to have no potential for adverse significant visual effects to these built heritage assets in Sellindge.
- Impacts to the settings of other listed buildings to north of the CTRL (HS1) are **scoped out** of further assessment due to their distance from the scheme, intervening screening and the existence visual severance caused by the M20 and CTRL (HS1).
- The Registered Parks and Garden of Port Lympne and its respective Listed buildings are **scoped out**. Port Lympne Registered Park and Garden is not inter-visible with the development due to the topography and fact that it is surrounded by woodland. The significant views from the Park are to the south.
- Beyond these areas, listed buildings which are not located within or adjacent to the proposed Development site are also **scoped out**. It is considered that their settings will not being affected due to surrounding built form, tree screening or topography.

Operation

9.5.4 Potential significant adverse effects during operation of the development **scoped into** further assessment relating to the setting of historic views in relation to:

- The setting of Westenhanger Castle and barns;
- The setting of Listed Buildings within the development area and close by;
- The setting of non-designated historic buildings e.g. farmsteads;
- The setting of the northern part of Lympne Conservation Area due to increased traffic;
- The setting of the Roman villa east of Otterpool Quarry; and
- The setting of the prehistoric barrows.

9.5.5 The following operational effects are proposed to be **scoped out** of further assessment:

- Direct and visual impacts to the Scheduled Monuments outside of the Development;
- Listed buildings to north of the CTRL, are considered to be **scoped out** of further consideration together with the Registered Park and Garden of Port Lympne and its listed buildings;
- Beyond these areas, listed buildings which are not located within or adjacent to the Development are also **scoped out**.

9.6 Potential Mitigation Measures

Construction

9.6.1 Completed appraisals and archaeological evaluations at the proposed Development site will provide a detailed understanding of the resources present. Based on this understanding, the Environmental Statement will include mitigation measures which will ensure that the proposed Development design mitigates significant adverse effects via avoidance of sensitive resources wherever possible. The Heritage Strategy currently being prepared will provide more detail of the mitigation measures.

9.6.2 Particular aspects to consider will include sensitive siting of the design with respect to the setting of Westenhanger Castle and historic views, in particular but not solely, the southerly aspect.

9.6.3 Similarly, sensitive incorporation of listed and non-designated buildings which are subsequently designated or deemed to have heritage value will be retained wherever possible to help mitigate potential negative impacts. Where not retained mitigation through an appropriate level of historic building recording and public outreach will be considered. Embedded mitigation measures will be incorporated to retain historic landscape features i.e. historic hedges. Mitigation to protect these features during the construction process will also form part of the ES.

9.6.4 The setting of Lympne Conservation Area and its Listed Buildings will be preserved by gradating or otherwise limiting massing and form close to the south-east boundary of the Site.

9.6.5 With regard to the archaeological resources, opportunities for preservation in-situ within open space e.g. the barrows will be considered, as will preservation by record (excavation) of other assets following further consultation with the statutory consultees.

9.6.6 Historic building recording of certain historic structures and buildings prior to demolition will be undertaken to mitigate the impact of their demolition.

9.6.7 Measures will be taken to retain historic landscape features such as historic hedges. Mitigation to protect these features during the construction process will be applied.

Operation

9.6.8 Operational effects to heritage assets and archaeological resources not retained and incorporated into the development will have been addressed at the construction stages, generally through recording and documentation.

9.6.9 During operation, it will remain for the measures for the long-term management of Westenhanger Castle and barns, the prehistoric barrows, the Roman villa and the military heritage assets to be considered.

9.6.10 The provision will serve to prevent determination of significant harm to the castle. Similarly, the implementation of measures to safeguard historic buildings and their settings within the development and addressing the historic landscape character and farmstead analysis within the Framework Masterplan will have been secured by the time the development is operational and will not require mitigation.

10 Geology, Hydrogeology and Land Quality

10.1 Introduction

10.1.1 This chapter addresses the proposed scope of EIA with respect to Geology, Hydrogeology and Land Quality. It includes a summary of current and proposed consultation, baseline condition and the proposed approach to the assessment of possible construction and operational effects. Areas that are proposed to be scoped in and out of the assessment are identified.

10.2 Consultation and Scoping

10.2.1 Table 10-1 shows a summary of consultation undertaken to date that informed EIA scoping for the 2019 Scheme, the issues raised, and where relevant, how it will be addressed in the current application:

Table 10-1 Consultation Undertaken to 2019

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
Idom Meerbrook	Key environmental receptors that should also be considered are: Adjacent land Infrastructure along with existing and future buildings and structures.	Adjacent land, infrastructure, buildings and structures will be considered in the ES chapter and the impact assessed.
Idom Meerbrook	Construction workers should be considered during the construction phase due to potential exposure of contaminants during works.	Construction workers will be considered as receptors in the ES chapter and the impact assessed.

10.2.2 Further consultation is proposed to be undertaken as follows:

- F&HDC, EA, KCC – as required.
- Natural England – with regards to the Otterpool Quarry Geological SSSI and in particular how this will be incorporated into the green infrastructure

10.3 Methodology

Relevant Policy, Legislation and Guidance

10.3.1 The following policy and guidance will be used to inform the assessment:

Policy

10.3.2 The following policies are relevant to the assessment:

- National Planning Policy Framework, 2019
- Shepway District Council, 2013. Shepway Core Strategy Local Plan.
- Shepway District Council, 2013. Shepway District Local Plan Review: Policies Applicable 2013 Onwards.

Guidance and Legislation

10.3.3 The following relevant guidance will be referred to and used in the assessment.

- Environment Agency, 2019. Land Contamination: Risk Management (LCRM)
- Environment Agency Revised March 2017 Groundwater Protection: Principles and Practice (GP3)
- Environment Agency, 2015. Contaminated Land Exposure Assessment (CLEA) tool. Bristol. Environment Agency.
- Department for Environment, Food and Rural Affairs, 2012. Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance. London. The Stationery Office Limited.
- Department for Environment, Food and Rural Affairs, 2013. Environmental Permitting Guidance, Core Guidance for the Environmental Permitting (England and Wales) Regulations 2010. London. The Stationery Office Limited.
- British Standards, 2001. BS10175 Code of Practice for the Investigation of Potentially Contaminated Sites. London. British Standards Institution.
- British Standards, 2015 +A1 2019. BS8485 Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings. London. British Standards Institution.
- CIRIA, 2006. CIRIA C665 Assessing risks posed by hazardous ground gases to buildings. London. Construction Industry Research and Information Association.

Study Area

10.3.4 For the geological environment, the study area would be defined to include the area within the application boundary, which includes the Otterpool Geological SSSI.

10.3.5 With regards to land quality and hydrogeology, the study area would also be defined to reflect the surrounding geological, hydrogeological and environmental (e.g. landfill sites) features and the distance over which significant effects can reasonably be considered to have the potential to occur.

10.3.6 Development of a Conceptual Site Model (CSM) consistent with the principles of LCRM will form part of the baseline. This will help underpin the distance to which off-site potential sources need to be considered. Distance may vary, for example, in response to credible pathways, hydraulic gradients and associated groundwater flow direction.

Assessment Methodology

Approach

10.3.7 In relation to contaminated land, a source, pathway receptor approach in accordance with Environment Agency (EA) LCRM would be adopted for assessing risks from contaminated soils / groundwater. Contaminant concentrations, when available, would be screened against appropriate screening values such as the LQM/CIEH Suitable 4 Use Levels (Ref.10.1). The adopted assessment methodology comprises a number of stages and is drawn from the Design Manual for Roads and Bridges (DMRB) LA109 Geology and Soils (Ref.10.2) and the paper Practical Methodology for Determining the Significance of Impacts on the Water Environment (Mustow et al., 2005) (Ref.10.3).

10.3.8 The methodology for assessing the value of geology receptors is now detailed within DMRB so assessment of significance will be undertaken using this guidance with regards to the Otterpool Quarry Geological SSSI. The methodology will pay due regard to recommendations from Natural England

10.3.9 In relation to hydrogeology, an assessment of effects will be undertaken that considers derogation (water level and water quality) potential to water interests and environmental receptors. Groundwater features within a suitable search radius, according to hydrogeological conditions, would be identified. A water cycle study will be undertaken which will assess the risks from groundwater flooding. An assessment would then be undertaken to determine the significance of development-related impacts

10.3.10 In line with the recently published DMRB LA109, Mineral Resources will be assessed within the Waste and Resource Management chapter.

Significance Criteria

10.3.11 For determination of significance criteria for the assessment of effects, guidance would be sought from LCRM, DMRB LA109 and professional judgement.

Cumulative Effects

10.3.12 Consideration of off-site potential contamination sources represent, in-combination with (and therefore cumulative) effects of other existing development in the area, will be considered. Cumulative assessment in terms of interactions with nearby committed schemes are proposed to be **scoped out** of assessment. Unacceptable impacts would be addressed by those schemes and they would be expected to be built in accordance with legislative construction controls, with in-built measures to control potentially contaminative emissions during operation, regardless of use. Cumulative effects would therefore be negated.

10.4 Baseline Data

Key Baseline Information Obtained

10.4.1 A preliminary review of desk study information relating to geology, hydrogeology land quality at the site has been undertaken to outline the baseline conditions below.

Geology and Ground Conditions

10.4.2 The site is located on an area of gently undulating ground north of the Hythe escarpment. The bedrock beneath the site is the Lower Greensand Group. In order of increasing age, this Group comprises the Folkestone Formation (sandstone) in the north-east corner of the site, the Sandgate Formation (sandstone, siltstone and mudstone) in the north and east and in three small outliers, and the Hythe Formation (sandstone and limestone) in the south and west.

10.4.3 Underlying the Hythe Formation are mudstones of the Atherfield Clay and Weald Clay Formations, which outcrop on the slopes to the south of the site. Approximately 50% of the site is covered by Head (clay and silt) superficial deposits.

Geological SSSI

10.4.4 Otterpool Quarry is a 10.9 ha site designated as SSSI due to its geological interest. Although overgrown with vegetation, the stratigraphy exposed by the quarry workings represents a high-quality section through the Cretaceous Hythe Beds in East Kent and is of significance in showing the contact between this formation and the Sandgate Beds above. The Hythe Beds are especially fossiliferous at this locality. It was confirmed by NE that the boundaries of the SSSI are based on convenient physical markers such as fences and land ownership rather than the physical extent of the protected features. The quarry has been backfilled so that up to approximately 5-6m of quarry wall length remains exposed at the south-east corner of the designated area.

Hydrogeology

10.4.5 The Folkestone Formation in the north-east and the Hythe Formation in the south and west of the site are classified by the EA as Principal Aquifers. These units have high permeability and may support water supply or base flow to rivers on a strategic scale. The Sandgate Formation in the north and east of the site is classified as a Secondary A aquifer. There are no groundwater Source Protection Zones (SPZ) or licenced groundwater abstractions on the site. The nearest groundwater abstraction is approximately 2km to the east. Shepway Council confirmed that they held no records of private drinking water supplies within a 500m radius of the Development site.

Potentially Contaminative Land Uses

10.4.6 There are numerous potentially contaminative land uses on the site and in the surrounding area, as identified by desk-based information and the site walkover. These relate to formers uses on site including Lympne airfield, industrial operations, and infilled pits (see Figure 10.2 in Appendix A). Information on former military uses and airfield on site indicates a low to high risk across the site of

Unexploded Ordnance (UXO) presence, as well as potential for associated crash sites and burning pits.

Intrusive Investigation – Contamination Data

10.4.7 A preliminary intrusive ground investigation has been undertaken to assess the ground conditions across the Development site. Soil samples were analysed for a suite of contaminants. The concentrations recorded were generally below (i.e. compliant with) the assessment criteria for a residential land use. Groundwater contaminant concentrations were low. Contamination of high significance has not been encountered

Key Environmental Receptors

10.4.8 The following key environmental receptors that will be considered in the Environmental Statement are as follows:

- Existing and future site occupants and off-site human receptors.
- The Folkestone Formation and Hythe Formation Principal Aquifers and the Sandgate Formation and Alluvium Secondary A aquifers.
- Various surface water receptors, including field drains, the pond in the centre of the racecourse, and tributaries of the East Stour River. In addition, various springs are shown on the reviewed historical and hydrogeological mapping.
- Various groundwater interests, such as abstractions and springs.
- Existing and future buildings and structures.
- Otterpool Quarry SSSI.

Further Baseline Data to be Obtained

10.4.9 Further, more detailed phases of intrusive investigation would be undertaken at later stages in the development programme to inform the scheme design.

10.5 Description of Possible Significant Effects

Construction

10.5.1 The following significant construction effects are **scoped in**to the EIA:

- Effects on the above receptors associated with ground or groundwater contamination that may already exist from historical and current potentially contaminative land uses (including UXO).
- The potential for contamination to occur as a result of construction activities, for example due to the storage / spillages of fuels / chemicals and construction materials.
- The potential for exposure to human health receptors (on and off site) to contaminants in dust via ingestion and inhalation as a result of construction works.
- Creation of new pollutant pathways, for example due to piling techniques, basements or SuDS which would allow pathways for contamination to reach groundwater resources.
- Temporary dewatering and/or barrier effects on groundwater levels and flows.
- Effects associated with earth moving operations.
- Potential for change in groundwater depth and flow directions as a result of Sustainable Urban Drainage Systems (SuDS), linear sewers and other services. Associated potential impacts to infiltration patterns. Potential risk of subsidence.
- Effects on the Otterpool Quarry SSSI.

Operation

10.5.2 The following operational effects are **scoped in**to the EIA:

10.5.3 Whilst it is proposed that the long-term protection of the Quarry Park SSSI would be implemented as part of the design during the construction phase, the value of the resource when the Development is operational compared to the existing scenario will be assessed by reference to:

- Long term groundwater barrier effects caused by underground structures.
- Long term effects of linear features on the groundwater regime, e.g. roads, services, balancing ponds, SuDS.
- Groundwater drawdown effects caused by potential public water supply requirements.

10.5.4 The following operational effects are **scoped out**:

- The effects of historic (pre-existing) ground and groundwater contamination on the identified receptors following construction. It is expected that any significant adverse effects that require mitigation will be reduced to acceptable levels by the time the Development is operational.
- The potential for the introduction of future contamination as a result of new potentially significantly contaminative land uses on site is not considered likely given the mix of proposed uses and legislative operational controls that will be required for any future potentially contaminative activities e.g. tank bunding in accordance with EA guidance, on site.
- In terms of natural contaminants, the site is located in a low probability area for radon gas emissions from the ground. Less than 1% of homes are estimated to be at or above the Action Level for Radon. Remedial measures in new dwellings are therefore unlikely to be a statutory requirement.

10.6 Potential Mitigation Measures

Construction

10.6.1 Further assessment to quantify potential risks to the identified receptors associated with contamination would be undertaken in accordance with LCRM guidance. If a significant risk is identified, remedial measures will be proposed.

10.6.2 Construction mitigation measures will be proposed to minimise significant adverse effects to identified receptors. These measures will be set out in the ES and would be documented in a Code of Construction Practice (CoCP). Such measures will include materials management and the control of groundwater quality and usage. Pre- and post-construction groundwater level monitoring will be investigated. Appropriate control and trigger levels set, and relevant mitigation measures proposed.

10.6.3 Mitigation measures with regards to protection and enhancement of the Otterpool Quarry SSSI will be discussed with NE.

Operation

10.6.4 The Quarry Park SSSI is expected to have been adapted and enhanced following construction of the Development. However, some measures relating to public recreational or educational use of the SSSI in future will be considered further and how the maintenance of the area is managed within the Green Infrastructure.

11 Human Health

11.1 Introduction

11.1.1 This chapter addresses the proposed scope of the EIA with respect to Human Health. It includes a summary of current and proposed consultation, baseline condition and the proposed approach to the assessment of possible construction and operational effects. Areas that are proposed to be scoped in and out of the assessment are identified. The Human Health assessment will summarise the findings of the stand-alone Health Impact Assessment being undertaken for the proposed Development.

11.2 Consultation and Scoping

11.2.1 Table 11-1 shows a summary of consultation undertaken to date that informed EIA scoping for the 2019 Scheme, the issues raised, and where relevant, how it will be addressed in the current application:

Table 11-1 Consultation Undertaken to 2019

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
F&HDC (Scoping Opinion, 25/06/2018)	Potential effects on the health of construction workers should be considered.	Potential effects on the health of construction workers will be addressed in the EIA in terms of healthcare provision.
Ashford Borough Council (Scoping Opinion, 05/06/2018)	Interest expressed in the consideration of health infrastructure, including impacts on existing services and the location of additional facilities.	The quantity and mix of health infrastructure required as part of the proposed Development is discussed in the Community Infrastructure and Facilities Report which accompanies the planning application, with relevant aspects summarised in Chapter 14: Socioeconomics and Community and Section 11.4 of this Chapter.
Kent County Council (Scoping Opinion, 08/06/2018)	Supports the provision of C2 and/or C3 land uses to cater for social care needs and would also support the incorporation of smaller units for people with learning disabilities / mental health needs or autism	Social care needs, together with impacts on mental health and well-being will be considered further both within the Human Health chapter of the ES and Chapter 14: Socioeconomics and Community where applicable.
Natural England (Scoping Opinion, 01/06/2018)	Opportunities to provide people with access to nature and recreation should be included, thereby benefitting health and well-being.	Impacts on human health as a result of changes in access to nature, open space and recreation will be addressed within the Human Health chapter of the ES.

11.2.2 No further consultation has taken place since submission of the 2019 Scheme. Additional consultation will be undertaken with F&HDC to confirm amendments to the scope, for example potential implications arising from the Covid-19 pandemic and associated social distancing restrictions.

11.3 Methodology

Relevant Guidance

11.3.1 Health comprises a range of aspects of physical and mental health, and social wellbeing, defined by the World Health Organisation (WHO) as '*a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity*'. The WHO goes on to describe Health Impact Assessment as being '*a combination of procedures, methods and tools that systematically judges the potential and sometimes unintended, effects of a policy, plan, programme or project on both the health of a population and the distribution of those effects within the population*.'

11.3.2 Figure 11-1 shows how human health, as defined by the WHO, is affected by factors ranging from individual concerns such as age, sex and hereditary factors to those which cover increasingly large populations, such as the local economy, built environment and the natural environment, known as determinants of health. These include determinants that can improve and protect health as well as determinants that might harm health. The figure is based on the diagram produced by Dahlgren and Whitehead (1991) (Ref.11.1) and amended by Barton and Grant (2006) (Ref.11.2). Health impact assessments identify changes to health determinants because of a project or programme, setting out where improvements and potential harm to health might occur. Of the health determinants listed above, only the pre-determined factors are unlikely to be influenced by a development proposal such as the proposed Development.

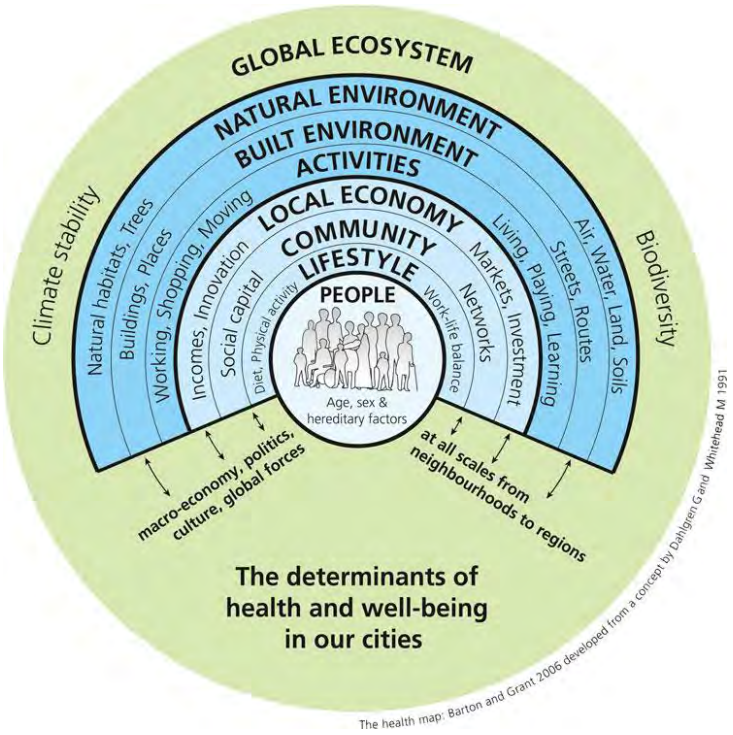


Figure 11-1 Determinants of health and well-being

11.3.3 The following guidance has been used to inform the health impact assessment:

- NHS London Healthy Urban Development Unit (HUDU), 2017: Rapid Health Impact Assessment Tool (Ref 11.3).
- IEMA Health in Environmental Impact Assessment – A Primer for a Proportionate Approach (June 2017) (Ref 11.4), which is primarily a discussion document designed to outline and identify issues arising from changes to the EIA Directive 2014/52/EU that came into force in the UK in May 2017, requiring the inclusion of population and human health within EIA.

11.3.4 The Rapid Health Impact Assessment Tool helps identify those determinants of health likely to be influenced by a specific proposal and is designed to be a flexible tool that can be related to specific types of development. The analysis is predominantly based on qualitative professional judgement of the likely health impacts and the criteria identified are shown to have either direct or indirect impacts on health and/or the determinants of health.

Study Area

11.3.5 The spatial scope for the assessment of impacts on human health will accord with the spatial scopes of contributing chapters of the ES (for example air quality, noise, transport, socioeconomics).

Assessment Methodology

Approach

11.3.6 For human health and well-being, the assessment will use the HUDU Rapid Health Impact Assessment Tool to assess the qualitative impact of the Proposed Development on health determinants. None of the health determinants identified in the HIA Tool have been scoped out of the assessment. Accordingly, the following determinants are **scoped in** for the assessment:

- Housing quality and design
- Access to social infrastructure (for example healthcare services)
- Access to open space and nature
- Health related environmental change (for example air quality, noise, contaminated land health related impacts)
- Access to healthy food (for example allotments)
- Access to work and training
- Crime reduction and community safety
- Accessibility and active travel
- Social cohesion and lifetime neighbourhoods
- Minimising the use of resources
- Climate change.

11.3.7 The assessment will draw on other topic chapters prepared as part of the ES (notably air quality, noise, socio-economics, traffic and transport) as well as relevant supporting reports and information to accompany the ES (for example the Design and Access Statement).

Significance Criteria

11.3.8 For each determinant, a qualitative assessment would be undertaken as follows:

- How the health determinant might change and whether this would be beneficial or adverse
- Duration of change – temporary or permanent
- Exposure (including identification of vulnerable populations)
- Intensity (magnitude or severity of the change in the health determinant).

Cumulative Effects

11.3.9 Consideration will be given to the likely significant effects of the proposed Development with committed schemes identified from a review of planning applications. Potential cumulative effects of relevance to human health include committed schemes which generate additional population, or which may cause health related environmental change.

11.3.10 The Otterpool Framework Masterplan will be included within the assessment of cumulative effects, in addition to the committed schemes listed in Table 11-2. An assessment will be made of the findings of cumulative assessments undertaken as part of other ES topics (for example noise, air quality) in order to assess the in-combination effect on the health of the population.

Table 11-2 Proposed Committed Developments for Inclusion in Cumulative Assessment

Appendix Map ID	Local Planning Authority	LPA Reference No.	Reason for inclusion in cumulative assessment
G	F&HDC	Y06/1079/SH	Mixed use development including 1,050 residential units, open space, employment. Potential impact of new population on education / healthcare facilities.
H	F&HDC	Y14/0873/SH	Proximity of application for 200 residential units to the site including affordable housing, local mixed use centre.
AM	F&HDC	Y16/1122/SH	Proximity of application (residential)
CG	Ashford Borough Council	Area Action Plan	Scale of proposal for up to 5.750 new homes and associated facilities

11.4 Baseline Data

Key Baseline Information Obtained

11.4.1 Relevant data relating to the demographic profile of Folkestone and Hythe District has been identified, including the age structure of the District (and comparative data for Kent and Medway, and the South-East region) and population change over time. ONS Mid-2018 population estimates (Ref. 11.5) state give the population of Folkestone and Hythe District as 112,578 people. The District has an older age profile than England (as a comparator area), with a higher proportion of residents in the 45 years to retirement age group. Total population growth within Folkestone and Hythe over the period 2020-2037 is expected to be in the region of 13.1% (greater than the average rate for England over this period (9.9%)). Across Folkestone and Hythe, projections predict an increase in all age bands with the exception of 0-19 year olds.

11.4.2 The 2019 health profile for Folkestone and Hythe District produced by Public Health England (Ref. 11.6) highlights the following:

- The health of people in Folkestone and Hythe is varied compared with the England average;
- About 20.2% of children live in low-income families;
- Life expectancy is similar to the England average (for men and women);
- About 21% of Year 6 children (aged 10-11) are classified as obese;
- The under 75 mortality rates from cancer is significantly worse than the England average; and
- Long-term unemployment is worse than the England average.

11.4.3 Table 11-3 provides an overview of health status of residents within Shepway District (based on 2011 Census data) (Ref. 11.7)

Table 11-3 Health Status within Folkestone and Hythe District

	Shepway District	South-East Region
Very Good Health	42.21%	49.02%
Good Health	36.12%	34.63%
Fair Health	15.25%	12.02%
Bad Health	4.93%	3.38%

	Shepway District	South-East Region
Very Bad Health	1.49%	0.96%

11.4.4 A review of the 2019 Index of Multiple Deprivation (IMD) (Ref 11.8) shows that, of the 67 Lower Super Output Areas (LSOAs) within Folkestone & Hythe District, four (8%) are within the top 10% most deprived in England. This number has remained consistent between the 2015 and 2019 iterations of the IMD. Wards in F&HDC with the poorest health outcomes are located to the south of the District. Health priorities for the District include tackling health inequalities and empowering children and families to lead healthier and safer lives.

Further Baseline Data to be Obtained

11.4.5 The preceding section provides an overview of health data for Shepway District; further baseline data will be obtained in relation to each of the health determinants outlined in paragraph 11.3.6 using a variety of data sources including:

- Public Health England fingertips website
- 2011 Census data and other data prepared by the ONS
- English Indices of Deprivation 2019
- Data relating to security and crime
- Review baseline data from other relevant environmental topics, notably air quality, noise, transport, socioeconomics and climate change.

11.5 Description of Possible Significant Effects

Construction

11.5.1 Potential impacts on human health to arise from the Development during construction include:

- The impacts on local residents and employees from environmental change – for example noise generated by construction activities, changes in air quality (for example dust emissions) and impacts associated with road safety as a result of the presence of construction vehicles. The health assessment for these aspects will draw from findings set out in the relevant Chapters of the ES and professional judgement.
- Impacts relating to changes in access to social infrastructure (for example education and healthcare services), or to accessing training and employment, for example as a result of road closures / diversions during the construction period.
- Accessibility is a key influence on how people live, affecting how they socialise, access services and employment and having a direct link to health and well-being. Access to public transport services may be affected temporarily during construction. Construction works may also affect how people walk and cycle around the area.
- During construction, there may be a reduction in the natural surveillance of spaces and residents may perceive there to be a reduction in personal safety.
- Changes in accessibility and perceptions of personal safety may have a resultant impact on levels of social cohesion during the construction period.

Operation

Early Occupation

11.5.2 Potential health impacts of the proposed Development on residents during the ‘early occupation’ stage would also be considered as part of the human health assessment. The following potential impacts have been identified:

- There may be disturbance and nuisance within the proposed Development area during subsequent construction phases affecting early occupation residents (for example noise impacts as a result of construction activities or effects associated with construction traffic). The assessment would consider findings from other EIA topics including Air Quality, Noise and Vibration, and Transport.
- Potential impacts on recreation and access, for example by the lack of local services and temporary severance to areas of open space, Construction activities could also affect the amenity of users of PRoW and early phased open spaces areas through the generation of noise, dust and the movement of construction vehicles.
- Potential impacts on crime and safety from living close to construction activities.
- Impacts on health due to lack of access to healthcare facilities.
- Impacts on health due to feelings of isolation due to a lack of community services, local schools and facilities to encourage social cohesion and community interaction.

Other Operational Effects

11.5.3 Potential impacts on human health to arise from the Development during operation include:

- Potential health impacts on existing and new residents as a result of environmental change (again, this would primarily relate to changes in traffic movement and air quality) and would draw on the findings of the relevant ES chapters, together with health-specific baseline data.
- Beneficial impacts for arising from the provision of a range of new housing types and tenures, new social infrastructure (schools, healthcare, community facilities) and employment opportunities.
- Beneficial impacts arising from provision of areas of open and natural space, including green infrastructure, thus promoting healthier lifestyles for new and existing residents.
- Improvements in active travel through the provision of new walking and cycling routes through the Development, and connections to the wider area.
- Changes in levels of crime and perceived personal safety as a result of careful design.
- Changes in levels of social cohesion through the creation of new communities.

11.6 Potential Mitigation Measures

11.6.1 Mitigation measures will be described in relevant ES chapters where they relate to specific aspects of environmental change. For example, these may relate to method statements to control pollution risk, dust management measures, response to environmental incidents, or traffic management measures. During operation, these may relate to habitat restoration (enabling access to nature), consideration to measures to minimise soil and water pollution, and the restoration of severed walking and cycling routes.

11.6.2 The new population for Otterpool will generate a requirement for community infrastructure, including education, healthcare, and community facilities. Embedded mitigation includes appropriate provision to meet these needs. An assessment of need for community infrastructure will be described in Chapter 14 (Socio-Economic Effects and Community).

12 Landscape and Visual Impact

12.1 Introduction

12.1.1 This chapter addresses the proposed scope of EIA with respect to Landscape and Visual Impact. It includes a summary of current and proposed consultation, baseline condition and the proposed approach to the assessment of possible construction and operational effects. Areas that are proposed to be scoped in and out of the assessment are identified.

12.2 Consultation and Scoping

12.2.1 Table 12-1 shows a summary of consultation undertaken to date that informed EIA scoping for the 2019 Scheme, the issues raised, and where relevant, how it will be addressed in the current application:

Table 12-1 Consultation Undertaken to 2019

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
Natural England	Sufficient detail will be required within the ES so that impacts to the AONB can be fully understood – including the location, density and height of buildings.	The Landscape and Visual Impact Assessment (LVIA) will assess the effects upon the AONB. The Parameter Plans set out the location, density and height of built form – but not individual buildings, given the outline nature of the application.
Natural England	Details of green and blue infrastructure measures will also be required.	The Green Infrastructure Strategy (in combination with the Water Cycle Strategy) will set out green and blue infrastructure proposals.
Kent Downs AONB Unit	Addition of a further representative viewpoint at Grid Reference 610500 142400.	Inclusion of viewpoint (no.28) within the visual analysis part of the LVIA.
Kent Downs AONB Unit	Inclusion of planning application Y16/1122: Land rear of Rhodes House, Main Road, Sellindge within the cumulative assessment.	To be included within the Residual and Cumulative Effects assessment section of the LVIA.
Kent Downs AONB Unit	Inclusion of an assessment of both direct and indirect impacts on the special characteristics and qualities of the AONB and its purpose for designation.	To be included within the Residual and Cumulative Effects section of the LVIA.
Kent Downs AONB Unit	Inclusion of potential effects relating to tranquillity, including noise pollution, visitor pressure and transport effects.	Effects on tranquillity regarding noise pollution to be included within Chapter 13- Noise & Vibration of the ES.
Kent Downs AONB Unit	Inclusion of potential effects relating to tranquillity, including light pollution effects.	Effects on tranquillity regarding light pollution to be included within the Assessment of Residual and Cumulative Effects section within the LVIA.

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
Kent Downs AONB Unit	Inclusion of potential effects relating to tranquillity, including visitor pressure effects.	Effects on tranquillity regarding visitor pressure to be included within Chapter 14 - Socio-economic Effects and Community chapter of the ES.
Kent Downs AONB Unit	Inclusion of potential effects relating to tranquillity, including transport effects.	Effects on tranquillity regarding visitor pressure to be included within Chapter 16 - Transport of the ES.
Kent Downs AONB Unit	Greater transparency, detail, and consistency in the definitions of criteria used within the LVIA methodology.	A detailed methodology would be set out in the LVIA.
Kent Downs AONB Unit	Include consideration of Ash Die-Back in the future baseline section of the LVIA.	To be included in the future baseline section of the LVIA.
F&HDC	Inclusion of viewpoints capturing visual amenity of users of the Saxon Shore Way south of the Application Boundary.	Inclusion of a further viewpoint (No. 29) within visual analysis section of the LVIA.
ABC	Inclusion of a number of additional sites within the cumulative assessment.	These sites are to be reviewed as part of the Residual and Cumulative Effects assessment.
ABC & Kent Downs AONB Unit	An assessment of the potential; effects of lighting at night should be provided as part of the ES.	To be included within the Residual and Cumulative Effects assessment within the LVIA.
Historic England	EIA methodology - HE note the need to agree parameters describing the type and maximum size of new elements in order to understand likely effects and the effectiveness of proposed mitigation. These need to be reproduced in visual representations of the likely appearance of the Proposed Development.	Visual representations of the likely appearance of the proposed Development around Westenhanger Castle will be discussed with F&HC with a view for their inclusion as part of the LVIA.

12.2.2 Table 12-2 summarises Consultation that has taken place since submission of the 2019 Scheme, the issues raised and how they are proposed to be addressed in the EIA.

Table 12-2 Consultation Undertaken since submission of 2019 scheme

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
F&HDC: Post Consultation Planning Report 11th July 2019	The 2019 EIA-LVIA methodology was not undertaken with best practice and should be improved to provide a robust and realistic assessment.	Clarification will be sought from F&HDC prior to preparation of the LVIA assessment.

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
Case Officer James Farrar	The quality and scale of the viewpoint images within the 2019 EIA-LVIA is insufficient to provide a good representation of the existing view – the field of view being too great for a single image to make the viewpoint worthwhile.	The horizontal field of view (53.5 degrees – planar) displayed in those 2019 EIA-LVIA viewpoint figures that contained visualisations of the development accords with the Landscape Institute's 'Visual Representation of Development Proposals Technical Guidance Note 06/19' (Ref.12.1). The remaining viewpoint figures (i.e. those not containing visualisations) varied in their horizontal fields of view depending upon the panoramic nature of view available and how close the site was from the viewpoint location. To accord with the Landscape Institute's latest guidance document the area containing the site would additionally be presented with a 53.5 degree horizontal field of view.
Review of the 2019 EIA carried out by the Temple Group Ltd, on behalf of F&HDC 5th April 2019	Clarification is required upon how the locations of the visualisations contained within the 2019 EIA-LVIA were agreed with the F&HDC prior to the application being submitted, and would therefore be considered an acceptable representation of proposed views.	The viewpoints showing visualisations were agreed in the meeting dated 31st July 2018 where the F&HDC Project Planning Officer and the Landscape & Urban Design Officer were present, in addition to the planning manager of the Kent Downs AONB Unit. The minutes of the meeting record this.
	Clarification is required as to how all residential properties within certain settlements were assessed in the 2019 EIA-LVIA as having a susceptibility recorded as moderate or low and with an overall sensitivity of moderate/low in contrast to the *Guidelines for Landscape & Visual Impact Assessment - third edition* (GLVIA3) (Ref.12.2) standard practice.	The susceptibility and sensitivity of residential receptors will be reconsidered in light of this comment.
	The viewpoints upon which visualisations were not undertaken within the 2019 EIA-LVIA lack the technical information recommended by GLVIA3 and LI technical guidance. This, together with the over-extended field of view results in images that do not provide a realistic view of the proposed site which is necessary for the transparency and understanding of the judgements made by the assessor.	To accord with the Landscape Institute's latest guidance document: '*Visual Representation of Development Proposals*' (Ref.12.1) the area containing the site would additionally be presented with a 53.5 degree horizontal field of view in those views where visualisations have not been prepared.
	Details are required for the cumulative impact assessment excluding that provided for likely effects on Folkestone and Hythe District Council '*High Level Landscape Appraisal*' (Ref.12.3) landscape character receptors.	Descriptions of the cumulative assessment upon the other receptors identified within the 2019 EIA-LVIA will be made within the LVIA.

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
Natural England (NE): letter to F&HDC 3rd June 2019	Under-estimation of the effects on specific viewpoints within the 2019 EIA-LVIA.	Clarification will be sought from F&HDC prior to preparation of the LVIA regarding NE's concerns upon under-estimation of the effects on specific viewpoints.
	Inadequate mitigation of adverse landscape and visual effects outlined within the 2019 EIA-LVIA.	The nature of mitigation outlined in the LVIA will be re-considered in light of this comment.
	The development proposals outlined in F&HDC Core Strategy Review (Ref.12.4) policy CSD9 should be included in the cumulative assessment.	The development proposals outlined in F&HDC Core Strategy Review policy CSD9 are to be included within the cumulative assessment.
	The effects of a permanent Lorry Holding Area solution to Operation Stack should be included in the cumulative assessment.	There are no current Lorry Holding Area proposals associated with Operation Stack that have been put forward by Highways England. Therefore, this would not be included within the cumulative assessment.
	It is unclear how the extant and committed developments were considered cumulatively with the proposed Development within the 2019 EIA-LVIA.	Clearer descriptions of the cumulative assessment will be made within the LVIA.
	Concern that the 2019 EIA-LVIA only assessed the visual impact upon receptor groups (i.e. users of the North Downs National Trail) and not upon the receptors at each individual viewpoint.	The visual effect on the receptors each viewpoint is representative of will additionally be assessed within the LVIA.
	The visualisations produced din the 2019 EIA-LVIA did not clearly illustrate the potential height of the development.	We are confident that the methodology employed to produce the visualisations (set out in the 2019 EIA-LVIA) accurately depicts the potential maximum height of individual development blocks as indicated on Parameter Plan *OPM(P)1013 Building Heights*.
	The colour used to indicate the extent of the development within the 2019 EIA-LVIA visualisations needs reconsideration.	We will discuss the reasons for altering the colour for these viewpoints with F&HDC.
	The visualisations contained within 2019 EIA-LVIA should include clear identification of key locations to aid the viewer in deciphering parts of the development and structural planting.	Labels will be added to the visualisations within the LVIA.
	Additional visualisations should be prepared for viewpoints 27 and 28.	We will discuss the reasons for requesting visualisations for these viewpoints with F&HDC.

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
	An additional assessment scenario, to the three contained within the 2019 EA-LVIA, depicting the point 20-30 years after construction should be assessed.	We will discuss the reasons for requesting an additional scenario with F&HDC.

12.2.3 Further consultation is proposed to be undertaken as follows:

- With F&HDC to clarify issues raised in their reviews of the 2019 EIA-LVIA.
- With F&HDC to reconfirm the selection of representative viewpoints for inclusion in the LVIA now that the site boundary includes Westenhanger Castle.

12.3 Methodology

Relevant Policy and Guidance

12.3.1 The local planning policies, which relate to the landscape character and/or visual amenity of the Site and its surrounds, and which will be referred to in the LVIA, where these may have a bearing on the proposed Development and its potential impacts are.

- *Folkestone & Hythe District Council Core Strategy Submission Draft Review, 2019* (Ref.12.4):
  - **SS1** District-wide Spatial Strategy;
  - **SS3** Place-Shaping and Sustainable Settlements Strategy;
  - **SS6** New Garden Settlement – Development Requirements;
  - **SS7** New Garden Settlement – Place Shaping Principles;
  - **SS8** New Garden Settlement – Sustainability and Healthy New Town Principles;
  - **CSD4** Green Infrastructure of Natural Networks, Open Spaces and Recreation.
- *Shepway District Local Plan Review, 2006: Policies Applicable 2013 Onwards* (Ref.12.5):
  - **CO1** Countryside;
  - **CO4** Special Landscape Areas;
  - **CO24** Landscaping at Key Development Opportunities;
  - **SD1** Sustainable Development;
  - **BE1** Building Design, Layout and Special Needs Access;
  - **BE4** seeks respect the character and appearance of Conservation Areas;
  - **BE16** Landscape and Amenity;
  - **BE17** Trees;
  - **BE18** protection of parks and gardens of historic interest;
  - **LR3** Formal Sport and Recreation in the Countryside;
  - **LR8** Public Rights of Way;
  - **LR9** Loss of Open Space.
- *Folkestone & Hythe District Council Places and Policies Local Plan (Submission Draft, February 2018)* (Ref.12.6):
  - **HB1** Quality Places Through Design;
  - **HB2** Cohesive Design;
  - **NE3** Protecting the District's Landscapes and Countryside;
  - **NE5** Light Pollution and External Illumination; U15 Light pollution.
- *Ashford Borough Council Local Plan 2030 (Adopted 2019)* (Ref.12.7)*:*
  - **ENV3b** Landscape Character and Design in the AONB;

- **ENV4** Light Pollution and Promoting Dark Skies

12.3.2 The following relevant landscape-related planning policy guidance documents have been also considered in the preparation of this chapter and will be applicable to the LVIA:

- Shepway Strategic Growth Options Report, 2017: 'High Level Options Report' (Ref.12.8);
- Shepway Strategic Growth Options Report, 2017: 'Phase Two Report' (Ref. 12.9);
- Shepway Green Infrastructure Report, 2011 (Ref.12.10);
- The Kent Design Guide (Ref. 12.11);
- Kent Downs AONB Landscape Design Handbook (Ref. 12.12);
- Kent Downs AONB Rural Streets and Lanes Design Handbook (Ref. 12.13);
- Kent Downs AONB Management Plan 2014-2019 (Ref. 12.14);
- Kent Downs AONB Setting Position Statement (An advice note produced by the Kent Downs AONB Joint Advisory Committee, January 2018 (Ref. 12.15).

Study Area

12.3.3 The LVIA study area has been determined by desk and field work. This identified a preliminary Zone of Theoretical Visibility (ZTV) of the proposed Development, and its inter-visibility with other committed developments that are likely to be included within the assessment of cumulative impact.

12.3.4 The extent of the LVIA study area was discussed with the stakeholders listed in above in preparation of the 2019 EIA-LVIA. It has been agreed that beyond the area shown in Figure 12.1 (Appendix A) the proposed Development, taking into consideration anticipated building heights and the distances they would be reasonable perceptible from, would not result in significant visual or landscape character effects.

Assessment Methodology

Approach

12.3.5 The LVIA will be prepared by a Chartered Landscape Architect and will be based on the recommendations set out in:

- Landscape Institute & Institute of Environmental Management and Assessment, 2013: *Guidelines for Landscape and Visual Impact Assessment, Third Edition*. London. Routledge (GLVIA3) (Ref.12.16).
- Landscape Institute, 2013: *GLVIA3 Statement of Clarification 1/13 10-06-13*. Landscape Institute (Ref.12.17).
- Landscape Institute, 2019: *Visual Representation of Development Proposals Technical Guidance Note 06/19.* Landscape Institute (Ref.12.1).
- Natural England, 2014: *An Approach to Landscape Character Assessment*. Natural England (Ref.12.18).

12.3.6 The assessment will draw upon site surveys, desk-top research sources and the design proposals to determine significant environmental effects during the construction and operational phases of the proposed Development. The LVIA will be reported in the ES setting out: an introduction to the topic, a detailed assessment methodology, the findings of baseline research (including reference to landscape designations, and landscape character), mitigation measures, an assessment of effects (including cumulative considerations), and an overall summary.

12.3.7 The methodology includes:

- The establishment of the baseline landscape character receptors against which the effects of the Development would be assessed- through review of landscape-related designations and planning policies, and other landscape studies relevant to the area including national, regional, county and local landscape character assessments;
- Determination of the 'value' of the landscape character receptors, and their 'susceptibility' to change - as based upon the definitions set out in GLVIA3, to ascertain their 'sensitivity';

- The establishment of the zone of theoretical visibility for the Development and the identification of potential visual receptors within this. Selection of representative viewpoints for these, and the use of photographs taken in both during summer (best-case scenario) and winter months (worst-case scenario), and at night;
- Determination of the 'value' of the visual receptors (i.e. potential viewers and/or viewing groups) at each viewpoint, and their 'susceptibility' to receive change - as based upon the guidance set out in GLVIA3;
- Consideration of the nature of the impact likely to occur, i.e. the magnitude of change, brought about by the Development to the landscape character and visual receptors. The magnitude of change will be assessed at certain points, including: during the proposed construction phasing, at full completion of the scheme and 15 years after completion (when the last of any structural planting will have suitably established);
- Ongoing involvement with the continuing masterplanning design process to ensure adverse effects identified are avoided, reduced, abated and/or compensated for;
- Assessment of the proposed Development outline proposals with respect to the magnitude of change on landscape character and visual receptors, without and with mitigation proposals in place;
- An assessment of whether a likely significant adverse or beneficial effect would occur upon any receptor by considering the predicted magnitude of change upon the receptor together with its sensitivity;
- Following the implementation of proposed mitigation measures, the significance of residual effects upon landscape character and visual amenity in EIA terms;
- An assessment of the cumulative landscape and visual impact of the Development.

Significance Criteria

12.3.8 The significance of an effect, whether adverse or beneficial, will be assessed by comparing the sensitivity of the receptor relative to the magnitude of change, and by considering the following indicative criteria:

Table 12-3 Landscape Effects Significance Criteria

Landscape Effect	Indicative Criteria
Major	An adverse or beneficial very large change to a landscape receptor of high sensitivity after embedded design, mitigation and enhancement measures have been taken into account.
Moderate	An adverse or beneficial medium degree of change to a landscape receptor of moderate sensitivity after embedded design, mitigation and enhancement measures have been taken into account. An adverse or beneficial small degree of change to a landscape receptor of high sensitivity after embedded design, mitigation and enhancement measures have been taken into account. An adverse or beneficial large degree of change to a landscape receptor of low sensitivity, after embedded design, mitigation and enhancement measures have been taken into account.
Minor	An adverse or beneficial very small degree of change to a landscape receptor of low sensitivity, after embedded design, mitigation and enhancement measures have been taken into account
Negligible	Little or no perceived change to a landscape receptor despite its sensitivity, after embedded design, mitigation and enhancement measures have been taken into account.

Table 12-4 Visual Effects Significance Criteria

Landscape Effect	Indicative Criteria
Major	An adverse or beneficial very large change to the amenity of a visual receptor of high sensitivity after embedded design, mitigation and enhancement measures have been taken into account.
Moderate	An adverse or beneficial medium degree of change to the amenity of a visual receptor of moderate sensitivity after embedded design, mitigation and enhancement measures have been taken into account. An adverse or beneficial small degree of change to the amenity of a visual receptor of high sensitivity after embedded design, mitigation and enhancement measures have been taken into account. An adverse or beneficial large degree of change to the amenity of a visual receptor of low sensitivity, after embedded design, mitigation and enhancement measures have been taken into account.
Minor	An adverse or beneficial very small degree of change to the amenity of a visual receptor of low sensitivity, after embedded design, mitigation and enhancement measures have been taken into account.
Negligible	Little or no perceived change to the amenity of a visual receptor despite its sensitivity, after embedded design, mitigation and enhancement measures have been taken into account.

12.3.9 Where there is no magnitude of change, the effect would be classed as 'None'. In addition, intermediate conditions may be described, such as 'Moderate-Major' (where, for example, the criteria for Moderate may be exceeded but not qualify as Major) etc.

12.3.10 Major effects are those that are likely to be considered 'significant', especially if they are long term, permanent and/or not reversible. Minor or Negligible effects are those that are likely to be considered as "not significant". Where the significance of the effect is considered to be 'moderate' reasoned professional judgement is used to determine whether or not this is 'significant'. These are effects that are not 'significant', but which may be important considerations in decision making concerning the proposed Development.

12.3.11 In addition, in some instances the effect may be offset by other considerations, for example, through the mitigation proposals, and the resulting effect is neither beneficial nor adverse and would be classed as 'neutral' and 'not significant'.

Cumulative Effects

12.3.12 Landscape and visual cumulative effects will be identified where the combined impact from additional committed developments (i.e. those: in-construction; which an existing planning approval; are due for determination at the time of writing, or have an existing allocation within Local Plans) with the proposed Development are considered to be different to the impact of the proposed Development by itself.

12.3.13 In the case of visual effects, the nature of effect will also be described either as:

- *'In combination'*, where more than one development is seen at one time within a single view;
- *'In succession'*, where more than one development is seen at one time from the same viewpoint but at different orientations; and
- *'In sequence'*, where multiple developments can be seen along a route.

12.3.14 The list of committed developments for inclusion within the cumulative assessment will be agreed with F&HDC prior to the preparation of the LVIA. It is intended that only those developments that are of a sufficient scale to be of influence on the landscape or views (i.e. greater than 50 houses, or a commercial/industrial scheme with equivalent massing) would be included.

12.3.15 The study area for the assessment of cumulative impacts will be limited to the following:

- Visual Context – those additional developments seen from within the ZTV of the proposed Development.
- Landscape Character – those additional developments visible from the range of landscape character areas being assessed within the LVIA.

12.3.16 A review of nearby consented schemes Appendix B has been undertaken in the consideration of cumulative effects assessment. The committed schemes listed in Table 12-5 will be considered in the assessment of cumulative effects.

Table 12-5 Cumulative effects

Appendix Map ID	Local Planning Authority	LPA Reference No.	Proposal	Reason for inclusion in cumulative assessment
AM	FHDC	Y16/1122/SH	Approved Outline planning application for a neighbourhood extension for the creation of up to 162 houses at Land Rear Rhodes House Main Road Sellindge.	A potential development that meets the threshold scale set out in paragraph 12.3.14 and is within the LVIA study area.
H	F&HDC	Y14/0873/SH	Hybrid planning permission granted in for up to 250 dwellings, a local mixed-use centre, and associated commercial floorspace on Land Adjacent to the Surgery, Main Road Sellindge.	A potential development that meets the threshold scale set out in paragraph 12.3.14 and is within the LVIA study area.
	F&HDC	Core Strategy Review Submission Draft February 2020 Policy CSD9	Allocation of a further 162 dwellings to the west of application site Y14/0873/SH within the Core Strategy Review Submission Draft February 2020 policy CSD9.	A potential development that meets the threshold scale set out in paragraph 12.3.14 and is within the LVIA study area.
S2	Ashford Borough Council	S2	Hybrid application for 700no. residential units and primary school.	A potential development that meets the threshold scale set out in paragraph 12.3.14 and is within the LVIA study area.
S14	Ashford Borough Council	18/00652/AS	Full application for 353 residential units at Park Farm South East, granted permission 30/09/2019.	A potential development that meets the threshold scale set out in paragraph 12.3.14 and is within the LVIA study area.
S15	Ashford Borough Council	Local Plan allocated site S14	Allocation for mixed use development of 300 dwellings and 8,500sqm B1-B8 at Finberry North West.	A potential development that meets the threshold scale set out in paragraph 12.3.14 and is within the LVIA study area.

Appendix Map ID	Local Planning Authority	LPA Reference No.	Proposal	Reason for inclusion in cumulative assessment
S16	Ashford Borough Council	18/00098/AS	Hybrid Application for mixed use development of 350 dwellings, 22ha commercial at Waterbrook.	A potential development that meets the threshold scale set out in paragraph 12.3.14 and is within the LVIA study area.
S17/PP1	Ashford Borough Council	16/01722/AS and 19/00702/AS	Permission granted for two residential developments totalling 220 units at Willesborough Lees.	A potential development that meets the threshold scale set out in paragraph 12.3.14 and is within the LVIA study area.
S19	Ashford Borough Council	Local Plan allocated site S19	Allocation for 170 dwellings at Conningrook Phase 2.	A potential development that meets the threshold scale set out in paragraph 12.3.14 and is within the LVIA study area.
S45	Ashford Borough Council	S45	Allocation for 100 dwellings at Land South of Brockman's Lane, Bridgefield.	A potential development that meets the threshold scale set out in paragraph 12.3.14 and is within the LVIA study area.
U22/PP5	Ashford Borough Council	12/01245/AS	Permission granted for 300 dwellings at Conningbrook.	A potential development that meets the threshold scale set out in paragraph 12.3.14 and is within the LVIA study area.
PP14	Ashford Borough Council	14/00906/AS	Permission granted for an employment-led mixed use scheme comprising 157616sqm of commercial buildings and structures at Land On The North Side Of, Highfield Lane, Sevington,	A potential development that meets the threshold scale set out in paragraph 12.3.14 and is within the LVIA study area.
PP24, (inc. approved reserved matters applications: PP15, PP23, B10, B11, B12 & B13	Ashford Borough Council	02/00278/AS, as amended by 11/00473/AS	Outline Permission granted (and reserved matters applications granted) for up to 1100 dwellings and 70,000sqm of business floorspace with mixed-use facilities at Cheesmans Green.	A potential development that meets the threshold scale set out in paragraph 12.3.14 and is within the LVIA study area.

12.4 Baseline Data

Key Baseline Information Obtained

Desktop & Field Work

12.4.1 Desktop and field work has been undertaken to understand the natural and manmade composition of the LVIA study area, and to help identify and establish the sensitivity of landscape character and visual amenity receptors. This has included research into, for example the area's existing topography, hydrology, soil profile, vegetative cover, land use, historical and cultural associations, settlement patterns and built form vernacular, accessibility and recreational usage.

Designations

12.4.2 In addition, relevant landscape character and visual amenity related planning designations (at national, county, and local levels) have been identified. These designations include: the Kent Downs AONB; the North Downs Way National Trail; areas of Open Access Land; the Parks and Gardens of Special Historic Interest of Sandling Park, Lympne Park, and Lympne Castle; the North Downs Special Landscape Area; the Saxon Shore Long Distance Path; Lympne Conservation Area; and the Woodchurch Dark Skies Protection Area.

Landscape Character

12.4.3 Published, and site-specific Landscape Character Assessments (LCA's), supplemented by field work, will inform the identification of landscape character receptors for use in the LVIA. The existing character assessments and guidance documents that will be used in the preparation of the LVIA include:

- 'National Character Area Profiles': 'NCA 120: Wealden Greensand'; 'NCA 119: North Downs'; & 'NCA 123: Romney Marshes'; (2014) Natural England (Ref.12.19);
- 'The Kent Downs Landscape' (1995), Countryside Commission (Ref.12.20);
- 'Landscape Assessment of Kent' (2004), Kent County Council (Ref.12.21);
- 'Kent Historic Landscape Characterisation' (2001), Kent County Council and Historic England (Ref.12.22);
- 'Kent Downs AONB Management Plan - 2014-2019', (2014) The Kent Downs Area of Outstanding Natural Beauty Unit (Ref.12.14);
- 'Romney Marsh Landscape Character Assessment' (2016), The 5th Continent Landscape Partnership & Shepway District Council (Ref.12.23);
- 'Shepway District, High Level Landscape Character Appraisal' (2017) Shepway District Council (Ref.12.24);
- 'Ashford Landscape Character Supplementary Planning Document' (2011), Ashford Borough Council (Ref.12.25);
- 'The Otterpool Park Site Specific Landscape Character Assessment' (2019), Arcadis (Ref.12.26).

Key Environmental Receptors

Landscape Character Receptors

12.4.4 An assessment of potential effects on the following landscape character receptors will be undertaken within the ES:

- Relevant county and district Landscape Character Areas.

Visual Receptors

12.4.5 The visual receptors included in the scope of the LVIA are shown in Table 12-5 below:

Table 12-6 Visual Receptors

Receptor	Viewpoint Number
Users of PRoW through the Site	15, 16, 17, 19, 20, 21, 22, 23
Users of localised/close range PRoW, within 2km to the south of Site	29
Users of localised/close range PRoW, within 2km to the west of the Site	11, 14
Users of localised/close range PRoW, within 2km to the north of the Site	25, 27
Users of localised/close range PRoW, within 2km to the east of the Site	8, 9, 10
Users of intermediate/medium range PRoW, between 2-5km to the west of the Site	12, 13
Users of intermediate/medium range PRoW, between 2-5km to the north of the Site	3, 4, 5, 6, 26
Users of the North Downs Way, National Trail	1, 2, 3, 4, 5, 6, 7, 28
Users of the Saxon Shore Way, Long Distance Path	12, 29
Users of Open Access Land upon the North Downs scarp slopes within medium range	5
Users of Open Access Land (including Peene Country Park) upon the North Downs scarp slopes within long range	1, 2
Users of Lympne Airfield	18
Users of Westenhanger Castle	9
Users of Port Lympne Animal Park	17
Users and residents of Lympne	18
Users and residents of Westenhanger	20
Users and residents of Newingreen	19, 10
Users and residents of Barrow Hill	16
Users and residents of Stanford	27
Users and residents of Court-at-Street	11
Users and residents of Aldington Church	13
Users and residents of Brabourne	26
Users and residents of Sellindge	25
Individual Properties in the environs of the site, outside of the identified settlements (paragraph 12.3.273)	-

Receptor	Viewpoint Number
Users of Junction 11 of the M20 and the adjacent Service Station	8
Users of roads through the Site including the A20, Stone Street and Otterpool Lane	17, 24
Users of roads within 0-2km of the Site including Hythe Road, Stone Street, Aldington Road, Harringe Lane, Kennet Lane	8, 11, 14, 29,18
Users of the Ashford to Dover and HS1 railway lines.	-

12.4.6 These receptors are represented by the viewpoints shown in Figure 12.1 (Appendix A). The precise position of these publicly accessible locations has been agreed with F&HDC, as well as ABC, AONB Unit and NE during discussion and site visits.

Landscape Related Designations

12.4.7 In addition to the effects upon receptors, the impact upon the landscape relevant designations and recreational areas, listed in the 'Key Baseline Information Obtained' section above, will be considered, discussed, and concluded upon in the LVIA.

Further Baseline Data to be Obtained

12.4.8 The further baseline data to be obtained includes:

- Re-visiting of viewpoint locations agreed in the 2019 EIA-LVIA.

12.5 Description of Possible Significant Effects

Construction

12.5.1 It is considered that there may be potential for significant effects during the construction of the Development upon some of the landscape character and visual amenity receptors identified. It is also considered that there are measures which can be employed during construction to avoid or minimise the identified significant effects. The residual nature of effects following the implementation of construction mitigation measures will be assessed in the LVIA.

Operation

12.5.2 The LVIA will consider the magnitude of impacts on receptors during the proposed operation of the Development as there may be the potential for significant effects upon landscape character and visual amenity receptors listed above. Following the implementation of mitigation measures, residual effects of the Development would be assessed when fully occupied and also 15 years following final completion when landscaping and associated planting would be suitably established.

12.6 Potential Mitigation Measures

12.6.1 The design of the proposed Development will iteratively evolve in collaboration with the LVIA so that where it is considered potential significant adverse landscape and visual effects may arise mitigation measures will be proposed to avoid or reduce identified effects. The LVIA will take into consideration the following hierarchy of mitigation measures:

- Primary measures employed through the iterative design process are being positively embedded into the proposed Development through consultation, rather than addressed reactively;
  - careful planning, siting and design of the built form and open space within the proposed Development;
  - the offset of built development from existing sensitive landscape and visual receptors within and surrounding the Site;
  - consideration of key views into and out of the proposed Development;

- proposed structural landscape works;
- other measures such as advance works, innovative construction methods, and the phasing of development, and

- Secondary measures, designed to address any adverse effects remaining after primary measures; and
- Standard construction and operational management practices for avoiding and reducing environmental effects.

13 Noise and Vibration

13.1 Introduction

13.1.1 This chapter addresses the proposed scope of EIA with respect to Noise and Vibration. It includes a summary of current and proposed consultation, baseline conditions, and the proposed approach to the assessment of possible construction and operational effects. Areas that are proposed to be scoped in and out of the assessment are identified.

13.2 Consultation and Scoping

13.2.1 Table 13-1 shows a summary of consultation undertaken to date that informed EIA scoping for the 2019 Scheme, the issues raised, and where relevant, how it will be addressed in the current application:

Table 13-1 Consultation Undertaken to 2019

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
Mr Wai Tse, F&HDC EHO 20.09.18	Although the noise and vibration monitoring schedule was agreed with the EHO prior to production of the scoping request, the formal council response considered that there were insufficient noise monitoring locations across the development Site.	F&HDC confirmed acceptance of subsequent proposals from Arcadis to undertake additional baseline noise monitoring. F&HDC agreed that the number of additional monitoring locations and the proposed durations were acceptable. The additional monitoring locations were NML4L, NML5L, NML6L, NML7S, NML8S, NML9S and NML10S. The baseline survey forming the basis of the assessment contained in this chapter includes the additional survey locations.
Mr Wai Tse, F&HDC EHO 14.07.17	F&HDC confirmed acceptance for the timetable for the surveys and agreed that the holiday period would not significantly affect the surveys.	Surveys were undertaken during school term time. The data gathered will be used for the assessments in the Noise and Vibration chapter of the ES.
Mr Wai Tse, F&HDC EHO 12.07.17	F&HDC contacted by email regarding the timetable for the proposed noise and vibration surveys. Specifically, it was proposed by Arcadis noise team that the surveys would extend into the school holiday period at which time it was considered that the holidays would have little influence upon the baseline surveys.	
Mr Wai Tse, F&HDC EHO 26.05.17	F&HDC confirmed his agreement with the proposed methodology and monitoring points.	-
Mr Wai Tse, F&HDC EHO 25.05.17	F&HDC contacted by email seeking agreement for the proposed methodology for a baseline noise and vibration survey provided with a plan showing proposed monitoring positions containing minor revisions following minor changes to the scheme	Survey methodology was amended to take account of EHO comments and will be used for assessments in this chapter.

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
	Framework Masterplan and accommodating F&HDC request to have a monitoring location in proximity to the Lympne industrial estate that will be included in the assessment.	
Mr Wai Tse, F&HDC EHO 19.12.16	F&HDC confirmed agreement with the proposed methodology and monitoring points but raised an issue in relation to the Lympne industrial estate located to the south of the proposed Development and requested that consideration should be given to this aspect in the assessment.	Survey methodology was amended to take account of EHO comments and will be used for assessments in this chapter.
Mr Wai Tse, F&HDC EHO 22.11.16	F&HDC contacted by email seeking agreement for the proposed methodology for a baseline noise and vibration survey and provided with a plan showing proposed monitoring positions.	Content of this final consultation e-mail will inform the scope of the baseline surveys included in the Noise and Vibration chapter of the ES.

13.2.2 No Consultation that has taken place since submission of the 2019 Scheme.

13.3 Methodology

Relevant Policy and Guidance

13.3.1 The assessment will be made using various policy, standards and guidance documents as referred to in the following subsections.

Study Area

13.3.2 Potential noise and vibration generated by the proposed operational Development, including during the construction phase, will be assessed and considered within a study area defined to include sensitive receptors identified within the Application Site boundary, and up to 300m outside the Application Site boundary.

13.3.3 For the assessment of traffic noise associated with the proposed Development, the study area included sensitive receptors along the affected road network as defined in Figure 13-1 without the proposed Developmentand Figure 13-2 with the proposed Development.

13.3.4 For the assessment of traffic noise associated with the proposed Development, the study area included sensitive receptors along the affected road network as defined in the Transport Chapter 16 and shown in Appendix A Figure 16-1.

Assessment Methodology

Approach to assessment

13.3.5 The approach adopted will **scope in** noise and vibration associated with the following facets of the Construction and Operational phases of the proposed Development:

- **Construction Phase - Noise: Scoped in**; Assessment of the likely noise effects caused by demolition and construction work, and consideration of construction delivery traffic during peak construction;
- **Construction Phase - Vibration: Scoped in**; Assessment of the likely effects caused by construction induced ground borne vibration from specific activities (piling, dynamic compaction);

- **Operational Phase – Traffic Noise: Scoped in**; Assessment of the likely noise effects due to changes in road traffic patterns on the local network as a result of the proposed Development(including peak construction of earlier phases of the proposed Development);
- **Operational Phase – Build Development Noise: Scoped in**; Assessment of the likely noise effects resulting from the introduction of new noise sources associated with the commercial elements of the proposed Development; and
- **Operational Phase – Residential Site Suitability: Scoped in**; Assessment of the Application Site in respect of noise and vibration to determine the suitability of the Site for residential development and other mixed uses as proposed. The assessment will include the consideration of the potential impacts of noise from the existing commercial areas on new receptors also.

13.3.6 The assessments referenced above will be based upon current legislative, policy and guidance documents that will be covered in the individual noise and vibration assessments. A description of each document will be provided in the Noise and Vibration chapter of the Environmental Statement.

13.3.7 The assessments will consider existing sensitive receptors and new sensitive receptors created as part of the proposed Development. Guidance will be referenced as appropriate for specific elements of the scheme such as BB93 (Ref.13.6) in relation to the proposed new schools, ProPG:2017 (Ref.13.7) for residential properties and BS4142 (Ref.13.5) for assessing commercial noise. Changes in road traffic noise will be considered broadly in accordance with the Design Manual for Roads and Bridges (LA111: Noise and Vibration) (Ref.13.2). Furthermore, proposed sensitive receptors in proximity to the HS1 railway line, reference will be made to the guidance of BS7385 (Ref.13.3). and BS6472-1 (Ref.13.4) to consider potential adverse vibration impacts.

13.3.8 Considering the nature of the proposed Development, ground borne vibration created by changes in road traffic on the local network or new roads within the Application Site is not anticipated to be a significant issue necessitating consideration within the scope of this ES. Therefore, operational ground borne vibration from traffic in the operational phase is scoped out of the assessment.

Construction Noise

13.3.9 Guidance on assessing and controlling noise from construction sites can be found in British Standard BS 5228:2009 Part 1 and Part 2 (Ref.13.8).

13.3.10 BS5228: - Part 1 provides guidance and recommendations on methods for the calculation of construction noise including information regarding noise levels from a range of construction equipment types. Construction noise impacts for the proposed Development would be assessed in accordance with this standard.

13.3.11 BS 5228: - Part 1 Annex E gives different methods of guidance on significance of noise effects from construction, and provides Method 1, the ‘ABC’ method as appropriate to establish construction noise limits in relation to dwellings. The ABC Method would be applied only to the most sensitive receptors i.e. residential receptors.

13.3.12 Construction noise impacts on non-residential receptors such as schools, offices, health care facilities and places of worship would be considered according to Method 2 – the 5dB change criteria in BS5228 as advised in the standard.

Significance

13.3.13 For the previous assessment of construction noise presented in the Noise and Vibration Chapter of the ES issued 2019, the clearly defined guidance provided by the new DMRB LA111 had not been published. Significance was based upon an approach commonly used within the UK with regard to the setting of LOAEL and SOAEL values for construction noise at residential properties. This was presented in the table 13-5 of the previous ES 2019.

13.3.14 The LOAEL and SOAEL values for construction noise at residential properties are presented within Table 13-2. This has been defined in accordance with the new guidance recently introduced in November 2019 in the revised DMRB LA111 (Ref.13.2). This document specifically provides recommendations on the setting of LOAEL and SOAEL. These values are defined in Table 13-2.

Table 13-2 Levels of LOAEL and SOAEL Assumed for Construction Noise

Time period	LOAEL $L_{Aeq,T}$ (dB)	SOAEL $L_{Aeq,T}$ (dB)
Daytime (07:00 – 19:00 and Saturdays 07:00 – 13:00)	Baseline noise levels LAeq,T	Threshold level determined as per BS 5228-1:2009+A1:2014 Section E3.2 and Table E.1
Evenings and Weekends (19:00 – 23:00 weekdays, 13:00 – 23:00 Saturdays and 07:00 – 23:00 Sundays)	Baseline noise levels LAeq,T	Threshold level determined as per BS 5228-1:2009+A1:2014 Section E3.2 and Table E.1
Night (23:00 – 07:00)	Baseline noise levels LAeq,T	Threshold level determined as per BS 5228-1:2009+A1:2014 Section E3.2 and Table E.1

Construction Vibration

13.3.15 BS 5228:2009 Part 2: Vibration provides guidance in relation to the effects of construction vibration upon the surroundings and will be used to determine potential effects from construction vibration.

Significance

13.3.16 The previous ES considered ground borne vibration with significant impacts deemed to occur if Peak Particle Velocity (PPV) vibration levels exceed 10mms^{-1} as stated within BS5228:pt2 2009 (+A1: 2014) (Ref. 13.8) as the level at which "*Vibration is likely to be intolerable for any more than a very brief exposure to this level*".

13.3.17 Since the previous assessment presented in the ES submitted 2019 more definitive significance criteria is available in the new DMRB LA111 (Ref.13.2) published November 2019; For construction vibration the thresholds have been set with regard to LOAEL and SOAEL, referencing DMRB LA111 (Ref.13.2) and are defined below in Table 13-3. These are more clearly defined with the SOAEL having a lower trigger level than that used in the previous assessment.

Table 13-3 Construction Vibration Significance Thresholds

Time Period	LOAEL	SOAEL
All time periods	>0.3mm/s PPV	>1.0 mm/s PPV

Operational Road Traffic Noise Assessment

13.3.18 Noise associated with road traffic sources will be calculated in accordance with the methodology of the Calculation of Road Traffic Noise (CRTN)(Ref.13.1), specifically considering Basic Noise Levels based upon supplied 18hr AAWT traffic flow data; and an assessment made drawing upon pertinent aspects of the Design Manual for Roads and Bridges (DMRB) Sustainability and Environmental Appraisal LA111; Noise and Vibration (Ref.13.2) published November 2019.

13.3.19 Although the DMRB is intended for the assessment of new or altered road schemes, which is not the situation with the proposed Development, it does provide relevant guidance that can be adopted for the assessment of noise in the short term, resulting from changes in traffic flows. As such certain aspects of the DMRB methodology will be implemented as a way to consider the impacts of traffic flow changes on the local road network attributable to the proposed Development.

13.3.20 Traffic flow information provided within the Transport Assessment produced in support of this application will be used for the operational assessment, primarily considering road traffic noise based upon traffic flow information for an interim year during construction, as well as the complete Development. The scenarios considered are as follows:

- Comparison of road traffic noise levels in the **interim construction year of 2029** "Without" proposed Development against traffic flows 2029 "With" proposed Development enabling changes in road traffic noise to be considered.
- Comparison of road traffic noise levels in the **full occupancy year of 2046** "Without" proposed Development against traffic flows 2046 "With" proposed Development enabling changes in road traffic noise to be considered.
- Comparison of road traffic noise levels in the **full occupancy year 2046** "Without" proposed Development traffic flows against the traffic flows in 2046 "With" proposed Development considering the likely cumulative impact of the proposed Development and committed development in the vicinity of the Application Site.

13.3.21 The DMRB provides a semantic rating scheme for the magnitude of change in road traffic noise in terms of both long-term and short-term changes in road traffic noise. For the purposes of this assessment the magnitude of change in the short term will be considered as this criterion reflects people's greater sensitivity to noise when a change in noise initially occurs. Changes in road traffic noise is considered in accordance with Table 13-4 below.

Table 13-4 Magnitude of Noise Change – Short term

Short term magnitude Major	Short term noise change (dB LA10,18hr or Lnight) Greater or equal to 5.0
Major	≥5.0dB
Moderate	3.0dB to 4.9dB
Minor	1.0dB to 2.9dB
Negligible	< 1.0dB

Significance

13.3.22 For the purposes of this assessment, daytime noise levels of LOAEL and SOAEL relative to road traffic noise will be based upon the guidance provided within DMRB LA111 (Ref.13.2). The definitions of LOAEL and SOAEL used are presented in Table 13-5 below, relative to the road traffic noise levels at sensitive receptors.

Table 13-5 Levels of LOAEL and SOAEL for Predicted Road Traffic Noise

Time Period	Adverse effect level	L_{A10} noise level (dB)
Day	LOAEL	55 $LA_{10,18hr}$ Facade
	SOAEL	68 $LA_{10,18hr}$ Facade
Night	LOAEL	40dB L^{night}, outside (free field)
	SOAEL	55dB L^{night}, outside (free field)

Cumulative Effects

13.3.23 The committed developments that have been identified for the cumulative assessment will be included in the transport model as agreed with the highways authorities. A cumulative scheme plan is provided in Appendix B together with a Table listing the cumulative schemes considered. Traffic data from these schemes will be included in the cumulative assessment of operational effects and included within development phase scenarios as appropriate.

13.4 Baseline Data

Key Baseline Information Obtained

13.4.1 As the revised boundary of the Application Site is only marginally different to that previously considered; the noise monitoring locations and vibration monitoring locations that were included in the original baseline survey for the 2019 planning application are considered as remaining valid for this application. In addition, as the surveys were completed in 2019, they are considered to be representative of the current noise climate of the site for the purposes of assessment. As such, no additional noise or vibration monitoring locations are proposed.

13.4.2 Based upon the knowledge gained from the surveys, dominant noise sources vary across the site but include:

- Road traffic using the M20 motorway and trains using the HS1 rail line directly to the north of the site,
- Road traffic on the primary routes through the Application Site including the A20, B2067, Stone Street and Aldington Road, and
- Commercial operations at the Lympne industrial estate and associated traffic on the local road network directly south of the site.

Key Environmental Receptors

13.4.3 Key sensitive receptors to noise and vibration include residential properties, hospitals and schools, both existing and proposed.

13.4.4 The nearest such receptors are present either within or close to the site boundary at Lympne, Sellindge, Newingreen, Westenhanger and individual dwellings and farms within the proposed Development area. These and other nearby receptors will be considered as well as newly created receptors within the proposed Development.

13.4.5 Offices, commercial and industrial uses are of lower sensitivity. Receptors will be classified according to their sensitivity into high, medium and low categories prior to the assessment of noise and vibration impacts within the ES.

Baseline Noise Survey Details

13.4.6 A baseline noise survey comprising of unattended long term and attended short term locations was undertaken to support the original planning application, and is considered to provide a representative indication of the noise climate across the proposed Development site.

13.4.7 The 10 short-term and 6 long-term noise monitoring locations are presented in Appendix A, Figure 13.1. The survey was undertaken adopting the following methodology:

- Longer term unattended monitoring was undertaken at 6 locations over a minimum period of 5 days to cover the weekday and weekend periods; and
- Shorter term attended monitoring was undertaken at 10 locations on the basis of a rotational attended 24hr weekday monitoring surveys. The principle of this was that for the full 24hr period (in unison with longer term monitoring) the monitoring location was changed approximately every 60 minutes on a rotational basis.

13.4.8 Noise measurements were undertaken using Type 1 sound level analysers and in accordance with BS7455-1 (Ref.13.9) and BS7455-2 (Ref.13.10). The data gathered from the surveys will be used to undertake assessments using the standards and guidance as previously referenced.

Ground Borne Vibration (Train induced) Monitoring Survey

13.4.9 Given the proximity the HS1 line, a ground borne vibration survey was undertaken in support of the original 2019 planning application. The purpose of this survey was to quantify the potential for any vibration impacts on the proposed Development in the vicinity of the railway line.

13.4.10 Taking account of the minor changes to the northern boundary of the Application Site the vibration monitoring locations are considered to remain valid for the purposes of assessment. Furthermore, no additional monitoring locations are considered necessary.

13.4.11 The survey was undertaken selecting locations close to the northern site boundary of the Application Site as shown in Appendix A, Figure 13.1. The survey comprised of:

- Continuous monitoring extending over a period of 4 days to cover the weekday and weekend periods at VML1; and
- Short term attended monitoring at VML2 due to lack of equipment security.

13.5 Description of Possible Significant Effects

Construction

13.5.1 Effects arising from construction of the proposed Development will be related to construction vehicle and plant noise emissions, and both aspects are **scoped in**.

13.5.2 Noise levels will be predicted at the nearest existing noise-sensitive receptors as well as new receptors created within the proposed Development. The assessment will identify typical work activities and indicate receptors that would be likely to experience significant adverse effects.

13.5.3 Given the uncertainties generated by a lack of information regarding construction programmes for nearby committed schemes, cumulative construction effects would be **scoped out** at this stage but may require consideration through a later Code of Construction Practice as better detailed information becomes available.

Operation

13.5.4 The key effects arising from operation of the proposed Development relate to noise increases from additional vehicles generated by the new occupants within the Application Site, and on the existing local road network, as well as new static noise sources such as plant for proposed commercial uses within the site itself.

13.5.5 In addition, the suitability of the site for sensitive end use relating to residential and other sensitive development will also be considered, primarily based around the risk based protocol detailed within the ProPG guidance, BB93, BS8233 and other facet specific guidance.

13.5.6 Assessment of these operational effects are **scoped in**, although only noise target levels will be determined for proposed static mechanical services plant noise at sensitive receptors and assessed in accordance with the methodology contained in BS4142 (Ref.13.5) at the detailed design stage.

13.6 Potential Mitigation Measures

Construction

13.6.1 In order to ensure that noise and vibration during construction is suitably controlled, best practice measures such as site hoardings, ‘just-in-time’ construction vehicle deliveries, and plant noise or vibration rating limits, will be proposed for incorporation within a Code of Construction Practice (CoCP).

13.6.2 Essentially construction mitigation will be formed around the principles of Best Practical Means (BPM) to ensure that these impacts are suitably and actively controlled. This would be proposed through **Tiers 1 to 3** of the assessment process, with more detail becoming available in later Tiers).

Operation

13.6.3 The proposed Development as shown on the parameter plans provides flexibility with regard to indicative locations of key development facets, and layouts for new access routes and development zones within the defined deviation limits. The parameter plan further incorporates embedded mitigation through the use of green space and buffer zones to create separation spaces between new receptors and potential noise sources. These elements will be considered as part of the **Tier 1 assessment**.

13.6.4 Where the Tier 1 assessment identifies a potential for significant adverse effects, outline mitigation measures will be further developed as part of the **Tier 2 assessment** Stage making reference to relevant guidance and Standards.

13.6.5 Fully designed mitigation will then form part of the detailed design at the **Tier 3 assessment** (Reserved Matters) stage of the planning process.

14 Socio-economic Effects and Community

14.1 Introduction

14.1.1 The Socioeconomics and Community assessment will consider the significant environmental effects of the construction and operation of the proposed Development on:

- Population and housing
- Economy and employment
- Community services and infrastructure (for example education and healthcare facilities)
- Open space and recreation
- Residential amenity (include crime and anti-social behaviour)

14.2 Consultation and Scoping

14.2.1 Table 14-1 shows a summary of consultation undertaken to date that informed EIA scoping for the 2019 Scheme, the issues raised, and where relevant, how it will be addressed in the current application:

Table 14-1 Consultation Undertaken to 2019

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
Natural England (Scoping Opinion 01/06/2018)	Need for assessment of recreational impacts on the Kent Downs AONB, including potential impacts on access land, Public Rights of Way, and other routes in the vicinity of the proposed Development(for example the nearby North Downs Way National Trail).	An assessment of recreational impacts on the Kent Downs AONB and other areas has been undertaken as part of the Habitats Regulation Assessment (HRA) and a summary of the findings will be provided within the ES chapter.
Canterbury City Council (Scoping Opinion 31/05/2018)	Delivery of employment development should be considered.	An assessment will be made of impacts on employment during construction and operational stages of the proposed Development, including job creation and associated supply chain effects.
Kent County Council (Scoping Opinion, 08/06/2018)	Development should be served by fibre broadband infrastructure. Consideration of nursing / dementia care home for older people and/or extra care housing land uses within the proposed Development to cater for social care needs. Consideration also to the incorporation of smaller units rather than an institutional care home for people with specific health needs. Level of demand for education within the development would need to be based on the forecast requirements of the Local Education Authority.	Consideration of the need for appropriate housing and care facilities will be included in the development of the Framework Masterplan for Otterpool Park. A range of housing types, sizes and tenures have been identified. Impacts on the housing needs for older people will be described in the ES. The ES will consider the need for education facilities, based on forecast requirements of the Local Education Authority.
Kent Downs AONB (Scoping Opinion 30/05/2018)	Necessary to assess the impacts of increased visitor pressure on the Kent Downs AONB.	An assessment of recreational impacts on the Kent Downs AONB and other areas has been undertaken as part of the Habitats Regulation Assessment (HRA)

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
		and a summary of the findings will be provided within the ES chapter.

14.2.2 No further consultation has taken place since submission of the 2019 Scheme, or is likely to be required.

14.3 Methodology

Relevant Guidance

14.3.1 There is no legislation or specific requirements which specifically govern how socio-economic assessments are undertaken as part of an Environmental Impact Assessment. The socio-economic assessment would draw on conclusions made in other ES technical chapters e.g. noise and air quality which are covered by legislation and legal standards due to cross-cutting themes.

14.3.2 The assessment will also be informed by the Homes and Communities Agency's 'Additionality Guide' (Ref. 14.1), which explains how to assess the additional impact of local economic growth for various interventions.

14.3.3 The term 'community' not only relates to facilities that provide services and resources for the local population (such as education, healthcare, places of worship, leisure facilities, community centres and areas of public open space), but also to how such facilities are accessed and whether any severance of access may take place as a consequence of the proposed works.

Study Area

14.3.4 The spatial scope would include both wider and local study areas. Table 14-2 summarises how various sub-topics would be assessed within each study area.

14.3.5 The wider study area is intended to capture the majority of economic effects which may occur outside of the immediate local area. Baseline information would be considered at both ward, local authority (F&HDC) and County level as necessary.

Table 14-2 Spatial Scope for Assessment

Study Area	Description	Relevant Sub-Topic
The Application Boundary	Relates to all land within the red line boundary for the proposed Development. The study area will be used to assess effects of the proposed Development in terms of permanent and temporary land-take.	Community services and infrastructure Open space and recreation Residential amenity
Local Study Area	The local study area corresponds to an area extending approximately 500m from the application boundary, in order to capture effects relating to catchment areas and local linkages. The local study area will be used to assess effects of the proposed Development on topics including community facilities, recreational routes.	Population Housing Economy and employment Community services and infrastructure Open space and recreation Residential amenity
Wider Study Area	The wider study area would consider data at appropriate spatial levels including ward level, F&HDC and Kent County Council. The purpose	Population Housing

Study Area	Description	Relevant Sub-Topic
	of the wider study area is to primarily consider the impacts of the proposed Development in terms of the wider economy.	Economy and employment

Assessment Methodology

Approach

14.3.6 A qualitative assessment of impacts on the local community during construction will be undertaken, focussing on access to services, community severance, crime, and anti-social behaviour.

14.3.7 Specific methodologies for assessing the effects of the proposed Development would address the following:

- **Employment**: employment generated during the construction phase would be assessed using standard Office for National Statistics (ONS) and Business Register and Employment Survey (BRES) data. The operational assessment of employment would include analysis of the proposed land uses and associated floor space provision coupled with an assessment of the likely effect on the employment availability for the existing economically active population.
- **Population**: the new net additional population that will arise as a result of the proposed Development will be estimated.
- **Community facilities**: an audit of the existing community facilities (including education, healthcare, and open space) will be undertaken as part of the baseline assessment. Potential level of demand arising from the proposed Development for each of these would be assessed as follows:
    - Education – current capacity information for primary and secondary schools would be based on Annual Schools Census data (2015). Child yield would be estimated for pre-school, primary and secondary school-aged children arising from the proposed Development.
    - Healthcare – current waiting list information would be accessed using available NHS data and information from specific GP surgeries relating to waiting lists. The Healthy Urban Development Unit (HUDU) benchmark of 1,800 registered patients per NHS GP would be used as part of the assessment of demand for healthcare facilities arising from the proposed Development.

Assessment Periods / Scenarios

14.3.8 Construction of the proposed Development is expected to be phased over 25-30 years. The construction phase assessment is likely to be carried out using a staged approach and consequently socio-economic and community impacts would be considered in relation to localised construction phases.

Significance Criteria

14.3.9 Unlike other environmental topics such as noise, the sensitivity of receptors to the proposed Development is not determined by reference to designations or an objective standard. Instead, it is the nature of the activity that the human receptor is undertaking that is most influential in determining sensitivity. A combination of quantitative and qualitative assessment, together with professional judgement, will therefore be undertaken.

14.3.10 Impact significance has been assessed by consideration of the following factors for each predicted impact:

- The magnitude of the predicted impact
- The geographic extent of the impact
- The duration and reversibility of the impact

- The capacity of the local economy or area to absorb or adjust to the impact.

14.3.11 The terms used to define the significance of effect are as follows:

- **Adverse**: detrimental or negative impacts to a socio-economic resource or receptor
- **Negligible**: imperceptible impacts to a socio-economic resource or receptor
- **Beneficial**: advantageous or positive impact to a socio-economic resource or receptor.

14.3.12 Where beneficial or adverse effects have been identified, these have been assessed against the following scales:

- **Minor**: slight, very short or highly localised impact
- **Moderate**: limited impact (by extent, duration or magnitude) which may be considered significant
- **Major**: considerable impact (by extent, duration or magnitude) of more than local significance (for example a sizeable change in relation to the baseline, or affecting a wide geographic area).

Cumulative Effects

14.3.13 Consideration will be given to the likely significant effects of the proposed Development with committed schemes identified from a review of planning applications. Potential cumulative effects of relevance to socioeconomics include committed schemes which generate additional population and thereby potential impact on local facilities and resources (such as schools and healthcare facilities).

14.3.14 The Otterpool Framework Masterplan will be included within the assessment of cumulative effects, in addition to the committed schemes listed in Table 14-3.

Table 14-3 Proposed Committed Developments for Inclusion in Cumulative Assessment

Appendix Map ID	Local Planning Authority	LPA Reference No.	Reason for inclusion in cumulative assessment
G	F&HDC	Y06/1079/SH	Mixed use development including 1,050 residential units, open space, employment. Potential impact of new population on education / healthcare facilities.
H	F&HDC	Y14/0873/SH	Proximity of application for 250 residential units to the site including affordable housing, local mixed use centre
AM	F&HDC	Y16/1122/SH	Proximity of application (residential).
CG	Ashford Borough Council	Area Action Plan	Scale of proposal for up to 5.750 new homes and associated facilities.

14.4 Baseline Data

Key Baseline Information Obtained

14.4.1 The site of the proposed Development is bounded by the M20 and a high-speed train line to the north, the A20/Stone Street to the east, Harringe Lane to the west and Aldington Road to the south.

14.4.2 Within the wider area are the towns of Ashford, Hythe and Folkestone. Smaller settlements within the immediate vicinity of the proposed Development include Westenhanger to the north; Lympne to the south-east; and Barrow Hill, Sellindge and Newingreen to the north-west and east of the proposed Development respectively. Lympne Distribution and Industrial Park lies to the south west. A large proportion of the remainder of the site is used as agricultural land. Westenhanger Castle lies within the study area to the north of the site.

14.4.3 Initial baseline information relating to the labour force and employment (for example economic activity, employment by sector, unemployment, skills and qualifications) has been collated from a variety of sources including the 2011 Census, Nomis official labour market statistics, ONS data and the Business Register and Employment Survey (BRES).

14.4.4 The population of Folkestone and Hythe District is 112,578 according to the ONS Mid-2018 population estimates (Ref. 14.2). There are three Lower Super Output Areas (LSOAs) that cover the application Site boundary (referred to as Shepway 008D, Shepway 009C and Shepway 009D); using 2011 Census data, the total population for these three LSOAs was 5.627 people, with average population density being 1.4 persons per hectare compared to a district wide population density of 3.0. F&HDC has a higher proportion of residents aged 45-64 and those in older age groups than England as a whole. Population growth within Folkestone and Hythe District over the period 2020-2037 is expected to be in the region of 13.1% (greater than the average rate for England over this period (9.9%)). Across Folkestone and Hythe, projections predict an increase in all age bands with the exception of 0-19-year olds.

14.4.5 The proposed Development is located in one of the UK's most economically active counties in an area experiencing high population growth. Whilst Kent as a whole may broadly be in line with national averages in terms of various socio-economic indicators, at the district level there are clear differences. ONS data indicates that Folkestone and Hythe District and the County of Kent have a high percentage of economically active residents, with over two-thirds of each area's population in employment. A slightly higher proportion of residents in Folkestone and Hythe District have no qualifications compared to data for the South East (10.8% compared to 5.6%). Folkestone and Hythe District has a higher proportion of benefit claimants than for Kent, including data relating to out-of-work benefits, such as Jobseeker's Allowance, and Incapacity Allowance.

14.4.6 Industries with the highest proportions of employees in Folkestone and Hythe District include the wholesale and retail trade/motor vehicle repairs (13.9%), human health and social work activities (12.5%) and administrative and support services (9.7%). The District also has a higher proportion of employees in the public administration and defence category (6.9% compared to 3.2% for the South-East). Folkestone and Hythe District has a lower proportion of employees in professional, scientific and technical activities compared to the South-East (5.6% compared to 9.0%). The District also has a lower proportion of residents employed as managers, directors and senior officials (8.0%) compared to averages for Kent (11.0%) and the South East (12.1%).

14.4.7 The District is described as having three distinct 'economic sub-areas' (Ref. 14.3) – Folkestone and Hythe, Romney Marsh and the North Downs area, each of which have their own distinct economies and spatial characteristics. A summary of these is given below:

- **Folkestone and Hythe** – home to the majority of economic activity in the District and where the majority of growth is likely to take place up to 2026. The sub-area has good transport connections (for example HS1, M20, Channel tunnel, Port of Dover). Folkestone is the largest retail centre in the District and both Folkestone and Hythe have several industrial estates. Folkestone is developing a role as a focus for cultural, creative and IT companies especially in the Old Town.
- **Romney Marsh** – predominantly agricultural area. The area is home to the nuclear power stations at Dungeness (one of which is currently being decommissioned and the other due to decline significantly) and also Lydd Airport (which has plans for expansion to accommodate larger passenger planes).
- **North Downs** – again a predominantly agricultural area, with settlements including Hawkinge, Sellindge, Lyminge, Elham and Densole, and includes part of the Kent Downs Area of Outstanding Natural Beauty. The sub-area is considered to perform exceptionally well economically, with key development opportunities.

14.4.8 Travel to work data (2011 Census) for the former Shepway District identifies it to be a net exporter of labour, with key commuting destinations being Ashford, Dover, Canterbury, Maidstone and central London. The self-containment rate for Shepway was 69% in 2011 (this refers to the share of residents who also work in the district).

14.4.9 Research undertaken for the Otterpool Park Garden Town (Lichfields, 2018) identifies that the existing commercial market is relatively localised, with the District recording a relatively low share of inward investments compared to other parts of Kent over the last two decades. Reasons for this include the nature of the employment site offer coupled with delivery barriers to land coming forward for development. Folkestone and Hythe does not have availability of strategic employment land which in turn reduces the extent of its commercial property market catchment area.

Key Environmental Receptors

14.4.10 Resources are the assets and facilities which may be affected by the proposed Development; receptors are the users or beneficiaries of those resources. Table 14-4 summarises the resources and corresponding receptors that will be considered as part of the assessment. It should be noted that receptors may be within and external to the wider study area.

Table 14-4 Socio-economics and Community – Resources and Receptors

Resource	Corresponding Receptor
Residential properties	Local residents
Commercial property	Local businesses
Community infrastructure (for example education, healthcare, community facilities)	Users of community infrastructure
Areas of open space, play areas, recreational routes	Users of these spaces and facilities

Further Baseline Data to be Obtained

14.4.11 Further baseline information at the local level relating to population, labour force and employment (for example economic activity, employment by sector, unemployment, skills, and qualifications) will be collected from sources previously referred to such as 2011 Census data, the ONS and Nomis.

14.4.12 Other sources of data to be explored as part of the Socio-economic and Community assessment will include:

- Updated baseline information of relevance to F&HDC, using data sources include Nomis and the ONS
- Relevant policies/data contained within the South-East Local Enterprise Partnership Strategic Plan and assessments produced for F&HDC
- Data relating to Travel to Work Areas and commuting patterns for the main settlements in the area
- Data relating to usage of recreational facilities in the study area and surrounding areas
- Identification of community infrastructure, residential and commercial assets within the relevant study area
- Primary data in relation to PRoW usage, gathered through site visits and surveys

14.4.13 This information would be drawn together primarily through desk-top research. Site visits will be undertaken as necessary, to confirm the relevance of findings.

14.5 Description of Possible Significant Effects

Construction

14.5.1 During the construction stage, the following potential impacts have been identified:

- Land-take from residential, commercial and community uses.
- The potential to generate benefits as a result of construction employment and associated spend. In addition to the creation of direct employment as a result of construction of the proposed Development, indirect and induced employment opportunities would also be generated. Indirect employment results from expenditure on supplies and services necessary for the construction of the scheme; induced employment results from the spending of incomes earned by those directly employed on the construction of the proposed Development and workers employed by suppliers/ subcontractors for example on food or accommodation.

- Potential impacts on local leisure and recreation. Some PRoWs would be temporarily severed during the construction phase. This may lead to a change in the route that walkers or cyclists take to access local facilities, and a change in journey length accordingly. There may be a temporary impact on access to facilities and communities as public rights of way are severed and diverted. Construction could also affect the amenity of users of PRoW through the generation of noise, dust and the movement of construction vehicles.
- There may be short to medium term disturbance and nuisance within the local area during the construction phase. The assessment would consider findings from other EIA topics including Air Quality, Noise and Vibration, and Transport. From the perspective of socio-economics and community, local people may experience a temporary reduction in amenity as a result of a combination of effects – for example slight increases in noise as a result of construction activities or effects associated with construction traffic.

Operation

14.5.2 The following potential impacts are likely to arise as part of the operational stage of the proposed Development:

- Population change as a result of the creation of new housing and communities.
- The contribution to housing supply in terms of affordability and variety. The broad mix of housing type, tenure and size would provide new housing opportunities for people in the local area.
- Creation of both direct and indirect employment opportunities in new business hubs located within the garden settlement. The extent to which the proposed Development would positively impact on unemployment levels may depend on the connectivity between emerging businesses and the unemployed cohort.
- Community infrastructure includes not only education and healthcare facilities, but also libraries, post offices, community centres, youth centres, places of worship and areas of open space. Community facilities are a means of stimulating social inclusion and provide an important resource to the existing and future community. The proposed Development would contribute to community facility and service provision in the local area (including community meeting venues for example) and to the broader amenity and open space provision.
- Impacts on education facilities (primary, secondary, and tertiary) as a result of the expected net additional population that will occupy the proposed Development.
- The potential effects on crime and anti-social behaviour.

14.6 Potential Mitigation Measures

Construction

14.6.1 The following measures outlined below will be considered further in the assessment of appropriate construction mitigation and subsequent residual effects.

14.6.2 A Code of Construction Practice (CoCP) would be prepared and approved before any construction work commences and would outline appropriate induction to be given to ensure contractors act considerately in relation to local residents, particularly for any works that may be programmed to take place at night.

14.6.3 The proposed Development would minimise temporary land-take, where possible. The right to compensation, methods and procedures for assessing appropriate levels of such, would be identified in relation to the National Compensation Code. Where necessary, continued consultation will be undertaken with landowners, occupiers and agents, in order to manage and reduce impact on day-to-day activities as far as practicably possible.

14.6.4 Local residents and businesses in proximity to the proposed Development during construction may experience reductions in amenity from changes in air quality, visual amenity and noise and vibration. Detailed information relating to mitigation for these areas would be prepared in relation to individual topics.

14.6.5 In order to minimise disruption to NMU routes, PRoW, footways and cycle routes, temporary diversions would be put in place together with appropriate signage. This would be carried out in consultation with the local highways authority and other interested stakeholders.

Operation

14.6.6 For the operational phase of the Development, mitigation measures that will be considered include ensuring adequate provision of social and community infrastructure, a local employment and training strategy, provision of access routes and communication routes, and the preparation of a Community Development Strategy.

15 Surface Water Resources and Flood Risk

15.1 Introduction

15.1.1 This chapter addresses the proposed scope of EIA with respect to Surface Water Resources and Flood Risk. It includes a summary of current and proposed consultation, baseline condition and the proposed approach to the assessment of possible construction and operational effects. Areas that are proposed to be scoped in and out of the assessment are identified.

15.2 Consultation and Scoping

15.2.1 Table 15-1 shows a summary of consultation undertaken to date that informed EIA scoping for the 2019 Scheme, the issues raised, and where relevant, how it will be addressed in the current application:

Table 15-1 Consultation Undertaken to 2019

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
KCC (8/6/2018)	The climate change allowances are the main criteria to consider and ensure that sufficient allowance is provided within the drainage design. The conceptual drainage strategy should demonstrate location and "order of magnitude" sizing for particular drainage measures. Flood risk has been covered adequately within the Scoping document however it should be reiterated that additional surface water runoff into the East Stour may impact the functioning of Aldington Flood Storage Reservoir and this needs to be considered within the site-specific FRA.	Updates to the conceptual drainage strategy will be made to cover these aspects and reported in a revised surface water drainage strategy going forward.
F&HDC (25/6/2018)	The general approach, the methodology proposed, and the assessment of the significance of effects is considered acceptable, and the assessment should be undertaken on that basis. No hydrological or hydraulic modelling will be undertaken on the basis that there is no development in fluvial flood zones. This approach must be agreed with the EA. The effects associated with temporary diversions and temporary loss of floodplain storage should be considered.	Hydraulic modelling of the East Stour and key tributaries draining through the proposed Development will be undertaken to define baseline flood risk from these sources, including climate change allowances over the lifetime of the proposed Development. The model will also be used to assess any effects of the 3 No. proposed new watercourse crossings, and to test any further flood risk mitigation measures if required.
EA (26/6/2018)	Concerns expressed about where foul drainage would go, and water quality effects to the East Stour. Stated that the risks presented by the disposal of effluent and surface water run-off on water quality from the proposed Development should be fully assessed within the ES.	Noted, these aspects will be fully assessed within Chapter 15 of the updated ES going forward, as well as within the detailed Water Cycle Study.

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
	The English Channel should also be considered as a potential receptor given that there is the possibility of treated effluent which may be discharged near a bathing beach. This receptor should be given a High sensitivity based on its amenity use and the effect of the proposed Development on this attribute should be assessed. No reference to the potential impact of misconnections from all of the houses.	
Historic England (31/05/2018)	Consideration should be made to the existing flood issue at Westenhanger Castle in which flood events deposit sewage within parts of the scheduled monument.	This will be considered as part of the updated FRA going forward.
Ashford Borough Council (ABC) (5/6/2018)	All drainage of the Site is across the border into Ashford Borough. The potential effect on water quality in the East Stour and potential for downstream impacts in Ashford should be considered.	Noted, these aspects will be assessed in Chapter 15 of the updated ES going forward.

15.2.2 Table 15-2 summarises Consultation that has taken place since submission of the 2019 Scheme, the issues raised and how they are proposed to be addressed in the EIA.

Table 15-2 Consultation Undertaken since submission of 2019 scheme

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
F&HDC (13/06/2019)	Details should be submitted to demonstrate how the proposals meet the requirements of the Sequential Test. The FRA and ES should include a review of climate change with respect to the watercourses crossing the site. The additional information provided should include an assessment of the impact associated with an increase in peak river flow and should reference any appropriate mitigation measures required. The flood extent should be re-defined using the results of the additional analysis and should be used to refine the proposed layout of the site, ideally siting more vulnerable development in the areas of lowest risk of flooding. Further work needs to be undertaken to determine how storage volumes can be integrated into the design layout. A full set of	The Sequential Test will be carried out as part of the updated FRA going forward. This will be carried out as part of the updated FRA going forward. Hydraulic modelling of the East Stour and key tributaries draining through the proposed Development will be undertaken to inform a review of climate change and its impact on fluvial flood extents and risk throughout the anticipated lifetime of the proposed Development. This information will be provided as part of the updated Drainage Strategy going forward.

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
	drainage calculations to support the submitted drainage strategy should be provided. A detailed layout plan and accompanying drawings should be submitted in support of the proposed drainage strategy. The information provided should include an appropriate level of detail with respect to the proposed discharge points and an assessment of the localised drainage sub catchments across the study based on topography.	This will be provided as part of the updated Drainage Strategy going forward.
KCC LLFA (11/07/2019)	As there has been a commitment to ensuring that surface water flows to the River Stour do not increase, it is important that the baseline flow rate within Stour is defined downstream of the Otterpool development.	This will be provided as part of the updated Drainage Strategy going forward, informed by hydrological modelling of the East Stour catchment.
EA (16/05/2019)	The applicant will need to provide further information to ensure that the proposed Development can go ahead without posing an unacceptable flood risk on or away from the site. At the detailed design stage, it will be necessary to further quantify the risk and impacts expected from the development. Further detailed information on the management of risk posed to controlled waters by this development would be required before built development is undertaken. The Planning and Delivery Statement refers to Policy CSD5 requiring maximum water use of 105 litres per person per day. This is a figure excluding external use, and Policy CSD5 quotes 110 litres, the figure including external use (which is the one normally in use). The requirement in Policy SS8 New Garden Settlement and CSD9 Sellindge Strategy for a higher target of 90 litres per person per day is noted. The ES only mentions 90 litres and the Utility Deliver Strategy refers to 90 – 100 litres. If this is to be the target throughout the development, the text referred to will need to be changed for consistency.	This will be carried out as part of the updated FRA going forward. Hydraulic modelling of the East Stour and key tributaries draining through the proposed Development will be undertaken to define baseline flood risk including climate change allowances over the lifetime of the proposed Development. The model will also be used to assess any effects of the 3 No. proposed new watercourse crossings, and to test any further flood risk mitigation measures if required. Further details will be provided in the mitigation section of Chapter 15 of updated ES going forward. This will be amended as part of the updated ES and the detailed WCS going forward.
Local Planning Authority (LPA) Post Consultation Planning Report (11/07/2019)	The LPA welcomes the inclusion of land in the north west corner of the Framework Masterplan area for a proposed water recycling centre but notes that three potential wastewater options remain with no preferred	Details will be provided as part of the detailed WCS and updated Drainage Strategy going forward.

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
	option. The expectation of the LPA is that a highly sustainable and innovative approach to water supply and water recycling will be secured at this outline stage. The LPA strongly supports the provision of a new Onsite Treatment works (Option 2). In relation to the Flood Risk Assessment, Drainage Strategy and relevant chapters of the Environmental Statement refer to the detailed comments provided by Herrington Consulting Ltd.	
Sellindge Parish Council (12/06/2019)	There are concerns that the amount of surface water runoff from Otterpool Pak Garden Town, could well cause problems downstream in Sellindge at Meadow Grove and Grove Bridge area, and even further downstream in Ashford Borough Council area.	This will be assessed as part of the updated FRA and Drainage Strategy going forward.
Ashford Borough Council (3/07/2019)	The objectives of the integrated water management strategy set out in the Outline Water Cycle Study and the Flood Risk and Water Drainage Strategy are supported, with proposals to reduce flood risk downstream through the use of SuDS on site. However, there is not currently enough information submitted to demonstrate that this is possible to achieve. Given the direct impact the development will have upon flood risk in Ashford, further information should be submitted to demonstrate that the proposed reduction can be achieved. It is requested that further consultation takes place once the proposals for wastewater infrastructure are further developed.	This will be carried out as part of the updated FRA going forward. Hydraulic modelling of the East Stour and key tributaries will be undertaken in order to assess any effects on flood risk to areas downstream of the proposed Development. This will be carried out as part of updates to the ES and supporting documents going forward.
Natural England (21/05/2020)	The Stodmarsh European designated sites (Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar site) is threatened by eutrophication, caused by high nutrient levels including nitrogen and in particular phosphorous. The latter originates mainly from permitted wastewater discharges into the River Stour. Sellindge wastewater treatment works (WwTW) is a contributor to these impacts. The Applicant will need to assess the water quality issues arising from the Proposed Development and any proposals that may contribute to nutrient levels in the Stour catchment.	The water quality issues highlighted will be addressed as part of updates to the ES and supporting Water Cycle Study and Habitats Regulations Assessment going forward.

15.2.3 Further consultation is proposed to be undertaken as follows:

- **EA**: Hydraulic modelling of the East Stour and key tributaries draining through the proposed Development will be undertaken to define baseline flood risk including climate change allowances over the lifetime of the proposed Development. The model will also be used to assess any effects of the 3 No. proposed new watercourse crossings, and to test any further flood risk mitigation measures if required. The findings of the hydraulic modelling would be presented to the EA for review and approval. Requirements will be established for specific consents where works are proposed in proximity to main rivers.
- **Kent LLFA**: more detailed assessment of the management of surface water drainage arising from the application site will continue following receipt of additional site investigation data. Requirements will be established for specific consents where works are proposed in proximity to ordinary watercourses.
- **Southern Water plc and Affinity Water** – as part of the site-specific detailed Water Cycle Study engagement with these organisations will be undertaken to ensure that infrastructure to supply the site with water and to collect and treat wastewater is sufficient for the development proposals.

15.3 Methodology

Relevant Policy and Guidance

15.3.1 A summary of the key policies and guidance relating to the water environment in the context of the proposed Development is summarised below:

- Shepway District Council (2013) Shepway Core Strategy: Local Plan
- Shepway District Council (2015) Strategic Flood Risk Assessment (SFRA)
- Highways England – formally Highways Agency (2009) The Design Manual for Roads and Bridges (DMRB); LA 113 Road Drainage and the Water Environment
- Mustow et al. (2005) The Practical Methodology for Determining the Significance of Impacts on the Water Environment.
- Department for Communities and Local Government (2019) National Planning Policy Framework
- Ministry of Housing Communities and Local Government (2014) Flood Risk and Coastal Change Planning Practice Guidance.
- Environment Agency (2020) Flood Risk Assessments: climate change allowances
- Lead Local Flood Authorities of the South East of England (2017) Water People Places: A guide for master planning sustainable drainage into developments

Study Area

15.3.2 The study area for this assessment includes land within the application site OPA and FM boundaries, in addition to downstream reaches of the East Stour up to and including Ashford, and any other surface water receptor within 1km of the application boundary. For the purpose of the hydraulic modelling being undertaken to inform the assessment of flood risk, the study area comprises approximately a 9.7km stretch of the East Stour and includes the extents of the Harringe Brook, the Lympne watercourse and racecourse drain and their hydrological catchments.

15.3.3 The study areas have been defined in consultation with the EA, to reflect the surrounding water environment and following consideration of the zone of influence.

Assessment

Future Baseline

15.3.4 The assessment would consider the construction phase of the proposed Development and the intervening operational phases.

15.3.5 With regard to flood risk and drainage, future baseline conditions would be forecast, drawing on current best practice guidelines, taking into account the likely impacts of climate change on river flows, rainfall

intensities, tidal flood levels/ storm surge and groundwater levels, and these future conditions would be represented in the quantitative modelling assessments undertaken to inform the surface water drainage design and FRA.

15.3.6 The likely effects of implementation of future cycles of WFD management plans on the ecological and chemical quality of waterbodies would be considered when assigning future baseline value to water environment resources and receptors.

15.3.7 Where relevant, the assessment would differentiate between short term, temporary effects and long term/permanent effects. With regard to the surface water environment examples of short term effects include temporary loss of floodplain storage volume due to establishing construction compounds in the floodplain or short term pollution risk associated with the construction of permanent watercourse crossings.

Significance Criteria

15.3.8 Criteria have been developed from the methodology published within Mustow et al. (2005) Significance of Impacts on the Water Environment and in Highways England (2019) Volume 11 Section 3 Part 10 of the Design Manual for Roads and Bridges LA 113 Road Drainage and the Water Environment. This document supersedes previous advice contained in HD 45/09 which has been withdrawn, and makes provision for requirements outlined under EU Directive 2000/60/EC [Water Framework Directive 2000]. These criteria will inform the significance of adverse, neutral or beneficial effects and appropriate mitigation measures.

Cumulative Effects

15.3.9 Inter-project cumulative effects arising from the proposed Development in combination with 'other development' schemes during the construction and operational phases would be assessed. An appropriate 'Zone of Influence' (ZOI) to help identify 'other development' for inclusion in the assessment would be agreed with the EA and a desk study approach is proposed to take a proportionate and focussed assessment of cumulative effects on water environment receptors.

15.3.10 In addition to the Otterpool Framework Masterplan development, the following committed schemes listed in Table 15-3 will be included in the assessment:

Table 15-3 Proposed Committed Developments for Inclusion in Cumulative Assessment

Appendix Map ID	Local Planning Authority	LPA Reference No.	Reason for inclusion in cumulative assessment
AL	F&HDC	Y16/0199/SH	Situated in the same East Stour hydrological catchment and receiving WwTW wastewater catchment as the Proposed Development with potential for effects on common waterbodies and water resources.
AM	F&HDC	Y16/1122/SH	Situated in the same East Stour hydrological catchment and receiving WwTW wastewater catchment as the Proposed Development with potential for effects on common waterbodies and water resources.
H	F&HDC	Y14/0873/SH	Situated in the same East Stour hydrological catchment and receiving WwTW wastewater catchment as the Proposed Development with potential for effects on common waterbodies and water resources.
S38	Ashford	S38	Situated in the same East Stour hydrological catchment and receiving WwTW wastewater catchment as the Proposed Development with

			potential for effects on common waterbodies and water resources.
A	F&H	HO2E	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
B	F&H	HO2D	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
C	F&H	Y14/0300/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
D	F&H	HO2C	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
E	F&H	HO2B	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
F	F&H	Y12/0897/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
G	F&H	Y06/1079/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
I	F&H	Y15/1241/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
K	F&H	Y14/1376/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
L	F&H	Y15/0550/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed

			Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
M	F&H	Y14/0336/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
O	F&H	Y14/1094/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
P	F&H	Y16/0403/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
Q	F&H	Y15/0030/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
R	F&H	Y08/1036/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
T	F&H	Y08/1212/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
U	F&H	Y11/0284/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
V	F&H	Y12/0767/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
W	F&H	Y15/1035/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.

X	F&H	Y14/1149/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
Y	F&H	Y14/0928/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
Z	F&H	Y16/0447/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
AA	F&H	Y13/1301/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
AB	F&H	Y16/0463/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
AC	F&H	Y14/1428/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
AD	F&H	Y14/0341/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
AE	F&H	Y15/0720/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
AF	F&H	Y16/1266/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
AG	F&H	Y17/0248/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for

			effects on the common marine environment that the WwTW will ultimately discharge to.
AN	F&H	Y17/1042/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
AO	F&H	Y16/0794/SH	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
UA2	F&H	Rotunda and Marine Parade Car Parks, Lower Sandgate Road, Folkestone	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
UA3	F&H	The Royal Victoria Hospital, Radnor Park Avenue, Folkestone	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
UA4	F&H	3-5 Shorncliffe Road, Folkestone	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
UA6	F&H	Shepway Close, Folkestone	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
UA8	F&H	Highview School, Moat Farm Road, Folkestone	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
UA9	F&H	Brockman Family Centre, Cheriton	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
UA10	F&H	The Cherry Pickers Public House, Cheriton	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.

UA11	F&H	Affinity Water, Shearway Road, Cheriton	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
UA12	F&H	Encombe House, Sandgate'	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
UA13	F&H	Smiths Medical Campus, Hythe	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
UA14	F&H	Land at Station Road, Hythe	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
UA15	F&H	Land at the Saltwood Care Centre, Hythe	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
UA17	F&H	Foxwood School, Seabrook Road, Hythe	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
UA19	F&H	Hythe Swimming Pool, Hythe	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
ND1	F&H	Former Officers' Mess, Aerodrome Road, Hawkinge	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
ND4	F&H	Land east of Broad Street, Lyminge	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for effects on the common marine environment that the WwTW will ultimately discharge to.
ND9	F&H	Etchinghill Nursery, Etchinghill	Situated in the same receiving West Hythe WwTW wastewater catchment that the proposed Development may connect to with potential for

			effects on the common marine environment that the WwTW will ultimately discharge to.

15.4 Baseline Data

Key Baseline Information Obtained

15.4.1 Baseline data is being gathered by undertaking the following:

- Identifying appropriate study area(s) in consideration of the Development details;
- Taking into consideration issues raised through consultation with interested parties;
- Undertaking a desk study (including requesting information from third parties) within agreed study area(s);
- Undertaking a site walkover on 6 October 2017; and
- Undertaking a new topographic survey of the river channels (Harringe Brook, North Lympne watercourse and the racecourse drains) and associated hydraulic structures to obtain data required to build the full hydraulic model. This survey has been currently impacted by COVID-19 access restrictions but a comprehensive topographic survey of the East Stour was obtained from the EA, which has been used for the interim hydraulic modelling that will inform the updated flood risk assessment and surface water drainage strategy.

15.4.2 Flood risk data and flood history information has been collected from the Shepway District Council (2015) Strategic Flood Risk Assessment (SFRA), the Shepway District Council (2013) Shepway Core Strategy Local Plan, the Shepway District Council (2012) Folkestone and Hythe Stage 1 Surface Water Management Plan and Environment Agency (2012) Long Term Flood Risk Mapping. Data to describe hydrological catchment areas and characteristics has been drawn from the Centre for Ecology and Hydrology (2017) Flood Estimation Handbook (FEH) web service.

15.4.3 Surface water quality data and Water Framework Directive status information was collected from the South-East River Basin Management Plan and from online EA mapping.

15.4.4 Water environment data available from Shepway District's Water Cycle Study (2011) and 2018 update will be used.

15.4.5 A summary of baseline conditions is provided in the following sections.

Surface Water Features and Existing Hydrology

15.4.6 Land within the OPA and FM boundaries has a moderately sloping topography towards the north-west. The ground levels vary between approximately 57m and 107m above ordnance datum (AOD). Due to the topography, surface water mainly flows from east to west through two minor valleys which flow into the East Stour. Other surface water features within the application site boundaries include ponds, a lake and ditches/drains. The topography and existing watercourses split the application site into a number of sub-catchments, which drain to a watercourse and convey flow to the East Stour.

Surface Water Quality

15.4.7 Within the study area the only waterbody which is classified under the European Parliament and Council (2000) Water Framework Directive (WFD) is the East Stour reach of the Stour catchment. The East Stour currently achieves Moderate status, targeting Good status by 2027, in part limited by diffuse source nitrate pollution linked to agricultural and land management practices. Its chemical water quality 'does not require assessment' as the watercourse does not receive any known discharges of priority substances. Whilst WFD legislation is also applicable to the minor watercourses that flow through the application site; these features are not specifically monitored by the EA.

Flood Risk – Historical Flooding

15.4.8 The Shepway District Council (2012) Folkestone and Hythe Surface Water Management Plan (SWMP) details previous flooding incidents within the area, noting that due to the location and geological properties of the Folkestone area, it is often difficult to ascertain one source or cause to past flooding events.

15.4.9 A combined fluvial and surface water flooding event is documented, dating to 1996, as having affected numerous locations across Folkestone and Hythe. It is reported that this event was extreme and associated with the Pent Stream, with a rarity of 1 in 500 years (0.2% annual chance).

Fluvial Flood Risk

15.4.10 The Environment Agency (2017) Flood Map for Planning is shown in Figure 15.1 in Appendix A. Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. The map shows that the vast majority of the site is Flood Zone 1, with limited areas of Flood Zones 2 and 3 following the route and profile of the East Stour valley which runs through the northern half of the application site.

Surface Water Flood Risk

15.4.11 As a largely greenfield site, rainfall runoff patterns are governed by topography, soil type and the nature of the overlying surfaces. Data on existing surface water flood risk have been gathered from the EA Long term flood risk map, an extract of which for the study area is provided in Figure 15.2 in Appendix A. The mapping indicates limited areas of localised flooding within the area of study, mostly associated with valley features representing drainage routes/flow paths; and the channels of the watercourses within the site area, such as the East Stour meander. The application site is therefore subject to varying degrees of flood risk from this source.

Groundwater Flood Risk

15.4.12 The Shepway District Council (2015) Stage 2 Strategic Flood Risk Assessment reports on flood risk from this source and is informed by data compiled by the British Geological Survey (BGS). The datasets and related mapping indicate that the whole of the Shepway District is generally located within a low risk area in terms of groundwater flooding.

Flood Risk from Artificial Sources

15.4.13 The site does not lie within an area at risk of flooding from reservoirs. The nearest extent of flooding shown on the EA Long term flood risk map is located 2.8km to the north-west of the site towards Ashford. The nearest reservoir is Aldington Flood Storage Area connected to the East Stour River and is located at grid reference TR 06611 38053 in Ashford.

Flood Risk from Sewers

15.4.14 The 2015 Stage 2 Shepway District Council Strategic Flood Risk Assessment details that the majority of sewer networks within the area of study are combined sewers. These networks can be overwhelmed during large rainstorm events, resulting in surcharge and risk of land and property flooding. Many of the surface water and highway sewers also discharge directly to local watercourses, which increases the risk of surcharging drainage during a storm event.

Key Environmental Receptors and their Value

15.4.15 The following environmental receptors have been identified as part of this scoping assessment, these have been summarised and assigned a value within Table 15-3 below.

Table 15-4 Key Water and Flood Risk Receptors and their Value

Receptor	Attribute	Description	Value (Sensitivity)
English Channel	Water quality and amenity	Several designated bathing waters achieving Excellent or Good quality	High
East Stour	Flood risk	The proposed Development is typically classified as more vulnerable in line with NPPF guidance for flood risk and coastal change.	High
	Water quality	Watercourse having a WFD classification shown in a RBMP	High

Receptor	Attribute	Description	Value (Sensitivity)
		Q95 of <1.0m3/s	
	Water resources	The East Stour is identified as being unlikely to support new requests for consumptive abstractions given the reliability of water availability.	High (to be confirmed as part of the detailed WCS)
Ordinary watercourses	Flood risk	The proposed Development is typically classified as more vulnerable in line with NPPF guidance for flood risk and coastal change.	High
	Water quality	Watercourse not having a WFD classification shown in a RBMP Q95 < or equal to 0.001m^3/s	Low
	Water resources	Inferred that the existing watercourses are unlikely to support new requests for consumptive abstractions given the reliability of water availability in the East Stour.	Medium (to be confirmed as part of the detailed WCS)
Existing ponds and waterbodies	Flood risk	The proposed Development is typically classified as more vulnerable in line with NPPF guidance for flood risk and coastal change.	Low
	Water quality	No WFD classification with RBMP	Low
	Water resources	Inferred that the existing watercourses are unlikely to support new requests for consumptive abstractions given the reliability of water availability in the East Stour.	Medium (to be confirmed as part of the detailed WCS)

Further Baseline Data to be Obtained

15.4.16 Initial Trial Pit and Borehole testing has been carried out to gain accurate values for soil infiltration rates and ground conditions at key locations within the application site boundary but further testing will be carried out to fill any gaps. In addition to support the assessment of the potential effects on water resources information on existing abstractions and discharges from/to surface waterbodies within the study area will be gathered.

15.5 Description of Possible Significant Effects

Construction

15.5.1 Construction phase effects are **scoped in** and will address the following aspects in relation to water quality and supply, flood risk, and hydromorphology.

15.5.2 The assessment considers activities such as earthworks including excavation, transportation, stockpiling and backfilling of material on water quality.

15.5.3 The potential for accidental spillages of oils, chemicals, cements and fuels from the movement of construction traffic across the application site and in association with storage facilities is greatest during the construction phase.

15.5.4 Where construction works or development is proposed within areas likely to flood this can cause disruption to the works as well as have an impact on flood risk in the wider area. These impacts would be magnified in areas where communities are already vulnerable to flooding such as Ashford, which

is served by the Aldington flood storage reservoir, the functioning of which may be impacted by any additional surface water runoff generated by the development.

15.5.5 During the construction phase, there is the potential for increases in impermeable land cover as well as changes to flow pathways, which could impact the existing land drainage regime.

15.5.6 Potential impacts from sedimentation and pollution have the potential to detrimentally impact the availability and quality of water resources to support existing abstractions and reduce the capacity of watercourses to assimilate existing consented discharges.

15.5.7 Changes to surface water runoff pathways and rates/volumes have the potential to result in deterioration of water resource availability.

15.5.8 Changes in surface water runoff pathways and rates/volumes in conjunction with works in proximity to, or in, the river channels and surface water features has the potential to result in changes in hydromorphology, i.e. changes in the physical characteristics of the shape, boundaries and content of these waterbodies.

15.5.9 As this scoping stage, no construction effects are **scoped out**.

Operation

15.5.10 A number of potentially significant effects during operation of the proposed Development have been identified and the following paragraphs detail aspects that are **scoped in** to the assessment.

15.5.11 The increase in impermeable land cover, proposed employment land uses, as well as likely increase in traffic flows across the proposed Development has the potential to result in increased concentrations of pollutants and sediment in surface water runoff, resulting in detriment to the water quality of receiving waterbodies.

15.5.12 The increase in impermeable land cover and the potential for changes in existing drainage pathways have the potential to impact flood risk to the application site and to third party areas. In addition, any proposals within the floodplain could potentially affect floodplain storage and impact flood risk mechanisms.

15.5.13 As the population grows there can be impacts on the available quality and quantity of water as more water is required for supply and soil infiltration capacity becomes more limited.

15.5.14 The hydromorphology of existing watercourses, relative to the existing situation, can be impacted by changes in flow regimes through the addition of new structures and new drainage outfalls.

15.5.15 Extra effluent discharge from a new onsite WwTW or upgraded existing Sellindge or West Hythe WwTW can impact the water quality in the receiving East Stour or marine environment, encompassing the English Channel, subject to the chosen final WwTW solution for Otterpool. This has the potential to exacerbate eutrophication in the Stodmarsh European designated sites.

15.6 Potential Mitigation Measures

Construction

Code of Construction Practice

15.6.1 To ensure the quality of the water environment does not deteriorate during construction, a Code of Construction Practice (CoCP) would be produced and implemented following agreement with F&HDC. This would document best practice construction methodologies and describe procedures for the management of environmental impacts during construction, including a Pollution Control Plan, to safeguard the quality of surface water during the construction phase. Outline measures for the control of local water resource quality and volumes would be incorporated with the CoCP and will be outlined within the ES.

Operation

Drainage Strategy

15.6.2 A detailed drainage strategy will be produced for the proposed Development. An initial conceptual strategy will be produced and reported in the accompanying FRA. This will describe likely feasible

sustainable drainage systems (SuDS) measures (integrating rainwater reuse solutions), including the location and order of magnitude sizing of proposed drainage features that would manage both the quantity and quality of surface water runoff generated from the development site, to meet the LLFA, EA and LPA requirements on flood risk, drainage and integrated water management. This would ensure the proposed Development results in no detriment to existing drainage patterns and surface water flood risk both within the application site and in surrounding areas whilst maximising multiple benefits of SuDS.

Flood Risk Assessment

15.6.3 A site-specific Flood Risk Assessment (FRA) will be prepared for the proposed Scheme and would provide an assessment of flood risk from all sources along with identification of any mitigation works required to manage flood risk throughout the lifetime of the proposed Development. Following review of the previous outline planning submission, bespoke fluvial flood modelling of the East Stour and its tributaries (Harringe Brook, North Lympne watercourse and racecourse drains) has been commissioned to inform the assessment of flood risk. This will account for the impacts of climate change over the anticipated lifetime of the development including increases in peak river flow, as required in the NPPF and PPG. The model would incorporate design proposals for three bridge crossings and test appropriate flood risk mitigation measures as required. As agreed with the EA and LPA, a two-staged approach to the modelling and FRA will be adopted to account for the COVID-19 access restrictions to undertake the new river channel survey for the key site tributaries. An FRA addendum will also be produced once the full hydraulic model is being completed.

Water Cycle Study

15.6.4 Building on the outline Water Cycle Study (WCS) prepared in support of the previous outline planning submission, a site-specific Water Cycle Study (WCS) will be prepared for the proposed Development and would enable the sustainable planning of water use and wastewater treatment through ensuring the following objectives are met:

- Urban development only occurs within environmental constraints, in particular linked to water quality issues in the East Stour catchment;
- Urban development occurs in the most sustainable location;
- Water cycle infrastructure is in place before development, and;
- Opportunities for more sustainable infrastructure options have been realised.

15.6.5 As part of the subsequent detailed WCS, to promote the sustainable use of water resources, measures would be implemented during the operation phase, where possible, to promote general water use efficiency and particularly reduce the use of potable water.

16 Transport

16.1 Introduction

16.1.1 This chapter addresses the proposed scope of EIA with respect to Transport. It includes a summary of current and proposed consultation, baseline data collection and the proposed approach to the assessment of possible construction and operational effects.

16.1.2 The application submission will also be accompanied by a Transport Assessment (TA) and a Travel Plan. These documents will be scoped with the highway authorities and outputs from them will inform the traffic and transport assessment required for the EIA.

16.2 Consultation and Scoping

16.2.1 Table 16-1 shows a summary of consultation undertaken to date that informed EIA scoping for the 2019 Scheme, the issues raised, and where relevant, how it will be addressed in the current application:

Table 16-1 Consultation Undertaken to 2019

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
Canterbury County Council	The lorry park should be included in the cumulative impact assessment if the land is still shortlisted for use as such.	The Lorry Park will not be assessed in the Transport Assessment or Environmental Statement as it is not a committed development. Proposals to replace Operation Stack are currently being considered. Further consultation will be undertaken with Highways England and the most up to date information regarding the new proposals will be considered in the TA and the ES.
Highways England / Kevin Bown, Nigel Walkden December 2017	Since the Lorry Park is not a committed development it should not be included in the assessment. However, the impact and mitigation of Operation Stack should be considered.	
Folkestone & Hythe District Council / James Farrar July 2018	On the Lorry Park issue we do not think it needs to be scoped in at this stage.	
Canterbury County Council	Modelling used in any Transport Assessment should include specific or strategic modelling of routes into Canterbury.	The scope of highway capacity modelling was expanded to consider key junctions in Canterbury. The scope was agreed with Kent County Council and will be included in the transport assessment. Impact on the key roads in Canterbury identified during scoping is included in the ES.
Kent County Council	Scope of modelling required in Canterbury.	

16.2.2 Table 16-2 summarises Consultation that has taken place since submission of the 2019 Scheme, the issues raised and how they are proposed to be addressed in the EIA.

Table 16-2 Consultation Undertaken since submission of 2019 scheme

Consultee Contact/Date	Summary of Consultation/Correspondence	How this will be addressed in the EIA (where relevant)
Kent County Council / Matthew Hogben Folkestone & Hythe District Council / James Farrar, James Hammond (February 2020)	Discussion over each comment relating to transport made by Kent County Council on the 2019 application and agreement of actions to provide further information and clarifications before submitting a revised application.	The Transport Assessment, Travel Plan and Transport Environmental chapter will incorporate the agreed position on these points following the conclusion of further consultation.
Highways England / Nigel Walkden, Rachel McKay, Nii Dodoo (March 2020)	Discussion over comments relating to the base VISSIM model and 2019 Transport Assessment made by Highways England.	Once agreed, the base model will be used to create forecast models to provide the inputs on which the Transport Assessment and Transport Environmental chapter will be based.
Kent County Council / Matthew Hogben (March 2020)	Discussions regarding the collection of new traffic data. KCC confirmed that the data used for the 2019 application can be used for the revised application.	Existing data to be used as a baseline for forecasting future year traffic flows.
Folkestone & Hythe District Council / James Farrar, James Hammond, Llywelyn Lloyd Kent County Council / Mathew Hogben, Kate Beswick, Sally Benge, Katie Chantler (March 2020)	Discussions regarding KCC and Folkestone & Hythe DC comments on 2019 Transport Assessment: Summary of points: • Further discussions to agree highway mitigation schemes once assessment has been updated. Proposed infrastructure mitigation to be subject to a 'monitor and manage' approach to implementation; • A stand-alone Transport Strategy document to be produced to accompany EIA and TA; • Further discussions to be held with KCC ProW team and F&HDC walking & cycling team to discussion mitigation schemes; • Further discussions required to agree scope of assessment of rail trips; • A stand-alone Spatial Vision document to be produced to outline Strategic Design Principles; • Strategic housing forecasts to be updated for traffic forecasting.	Further discussions required to agree how these points will be addressed.

16.2.3 Further consultation is proposed to be undertaken as follows:

- Discussions with Folkestone & Hythe District Council, Kent County Council and Highways England relating to their comments on the 2019 application;
- Agreement of the VISSIM base model with Highways England; and

- Discussions to be held with Kent County Council and F&HDC officers regarding highway and sustainable transport mitigation measures.

16.3 Methodology

Relevant Policy and Guidance

16.3.1 The following guidance has been used to inform the assessment:

- IEMA, 2004: Guidelines for Environmental Impact Assessment;
- IEMA, 1993: Guidance Note Number 1: Guidelines for the Environmental Assessment of Road Traffic;
- Ministry of Housing, Communities and Local Government, March 2014: Travel Plans, Transport Assessments and Statements;
- Ministry of Housing, Communities and Local Government, October 2014: Transport Evidence Bases in Plan Making and Decision Taking;
- Department for Transport, various dates: Travel Plan Guidelines;
- Department for Transport, September 2013: The Strategic Road Network and the Delivery of Sustainable Development;
- Highways England, September 2015: The Strategic Road Network Planning for the Future;
- Kent Design Initiative, December 2005: The Kent Design Guide;
- Department for Transport, various dates: Design Manual for Roads and Bridges Volume 11, Section 3, Part 8;
- Ministry of Housing, Communities and Local Government / Department for Transport, 2007: The Manual for Streets;
- Ministry of Housing, Communities and Local Government / Department for Transport, 2010: The Manual for Streets 2, CIHT, 2010 – a companion guide to Manual for Streets.

Study Area

16.3.2 The extent of the assessment study area for each mode has been defined by the routes people will travel using each mode between the site and off-site locations across the UK. The study area for walk and cycle trips includes all existing and proposed pedestrian routes within the site boundary and destinations within walking distance of the site; Sellindge and Stanford, east towards Hythe, west along Aldington Road and south along Lympne Hill.

16.3.3 The effect of the development on public transport is considered on the routes and services that provide access to the on- and off-site locations between which residents of and visitors to the site are expected to travel. For bus services, this includes services that route to the site and other connecting services.

16.3.4 The extent of highway network to be included in the assessment in presented in Figure 16.1 in Appendix A.

Assessment Methodology

Approach

16.3.5 The environmental effects of road traffic resulting from the Otterpool Park development will be assessed upon the local highway network in accordance with IEMA guidelines.

16.3.6 Assessments will be undertaken across a typical working day with the effects compared the peak morning and evening hours. On any link where increases in traffic flow are in excess of the above IEMA impact threshold (30% on any link or 10% on sensitive links), a detailed environmental assessment against the assessment criteria will be undertaken on this link.

16.3.7 The IEMA Guidelines state that an environmental assessment of traffic effects should be carried out when there is an increase in flow by more than 30% (or the number of heavy goods vehicles will increase by more than 30%) and where there is an increase of traffic flow of 10% in sensitive areas.

In this instance it is considered that the resultant extent of the Otterpool Park proposals and proximate to sensitive residential areas and communities, the 10% threshold should apply.

16.3.8 The assessment will draw upon information gathered for the Transport Assessment (TA) which will accompany the planning application for the proposed Development. The traffic and transport section of the ES will summarise the results of the TA and in reference to the IEMA (1993) guidance. The assessment will therefore identify a number of potential transport impact types as follows:

- severance
- driver delay
- pedestrian delay
- pedestrian amenity
- fear and intimidation
- accidents and safety
- hazardous loads.

16.3.9 Severance occurs when there is difficulty experienced in crossing a heavily trafficked road. The guidance set out in Design Manual for Roads and Bridges Volume 11, Section 3, Part 8 Pedestrians, Cyclists, Equestrians and Community Effects suggests that changes in traffic flow of 30%, 60% and 90% are considered as 'minor', 'moderate' and 'major' changes in severance respectively. Severance change is therefore measured in terms of percentage change in traffic rather than in actual flow. All these factors will be considered when determining the likely severance effect. In general terms, according to the IEMA Guidelines, a 30% change in traffic flow is likely to produce a 'slight' change in severance, with 'moderate' and 'substantial' changes occurring at 60% and 90% respectively.

16.3.10 The term pedestrian amenity is broadly defined as the relative pleasantness of a journey. It is considered to be affected by traffic flow, speed and composition, as well as footway width, lighting and quality and the separation/ protection from traffic. It encompasses the overall relationship between pedestrians and traffic, including fear and intimidation which is the most emotive and difficult effect to quantify and assess. The IEMA Guidelines reference the Manual of Environmental Appraisal (Department of Transport, 1983) which suggests that a tentative threshold for judging the significance of changes in pedestrian amenity would be where the traffic flow (or its HGV component) is halved or doubled.

16.3.11 The delay incurred by pedestrians is generally a direct consequence of their ability to crossroads, which is influenced by volume as well as the general level of pedestrian activity and visibility. Thus, the provision of crossing facilities, the geometric characteristics of the road, and the traffic volume, composition and speed are all factors that can affect pedestrian delay and will be considered when assessing this effect. The IEMA Guidelines advise that in assessing levels of, and changes in, pedestrian delay, assessors do not attempt to use quantitative thresholds given the range of local factors and conditions which can influence pedestrian delay. Instead, the IEMA Guidelines recommend the use of professional judgement to determine whether pedestrian delay is a significant effect. Studies have shown that, for a link with no crossing facilities and a two-way flow of about 1,400 vehicles per hour, a lower delay threshold of 10 seconds and upper threshold of 40 seconds could apply depending on other road and traffic flow characteristics.

16.3.12 There are no commonly agreed thresholds for estimating levels of danger or fear and intimidation. However, the IEMA Guidelines suggest the adoption of values from Pedestrian Delay, Annoyance and Risk - Imperial College (Crompton,1981) when considering any effect on pedestrian fear and intimidation. These thresholds are replicated in Table 16-3 and can be used as a first approximation of the likelihood of pedestrian fear and intimidation, although other factors need to be considered such as proximity to traffic and footpath widths.

Table 16-3 Assessing Magnitude of Impacts of fear and Intimidation

Importance/sensitivity of resource or receptor*	Average Traffic Flow over 18 Hour Day (Vehicle/hour)	Total 18 Hour Goods Vehicle Flow	Average Speed over 18 Hour Day (Mile/hour)
Major	1800+	3000+	20+
Moderate	1200 - 1800	2000 – 3000	15 – 20
Minor	600-1200	1000 - 2000	10 - 15

Source: IEMA Guidance

16.3.13 Delay to drivers generally occurs at junctions where vehicle manoeuvres are undertaken, with vehicles having to give or receive priority depending upon the junction arrangement. Driver delay could also occur on narrow roads if flows are increased (particularly those where it is difficult for vehicles to pass). The proposed Development is anticipated to have an impact on junctions around the application site and operational assessments have been undertaken within the TA to ascertain the likely change in operation as a result of proposed Development generated traffic. Driver delay is determined through use of junction delay information. To maintain consistency with the categorisation of delay impact considered 'severe' in the TA, a change in delay of 20 seconds or more is considered a major impact. A change in delay of between 16 and 20 seconds has therefore been classified as a moderate impact, a change of between 11 and 15 seconds would be minor, and up to 10 seconds would be Negligible.

16.3.14 Accidents and safety are assessed using the personal injury accident data obtained from highway authority records. The IEMA Guidelines recommend that professional judgement will be needed to assess the impacts.

16.3.15 Paragraph 2.4 of the IEMA Guidelines acknowledges that most developments would not result in an increase in the number of movements of hazardous or dangerous loads. The proposed Development is not anticipated to generate any hazardous loads. Hazardous loads will therefore not be considered in the assessment.

16.3.16 The effects on air quality, dust and dirt will be considered in the Air Quality chapter of the ES.

16.3.17 The following forecasts will be assessed:

1. 2018 Base Year: pre-construction 'no scheme' baseline;
2. The forecast year of full build-out for the outline planning application (OPA) scheme- as shown by the application site boundary. This represents the main assessment for the Outline Planning Application; and
3. Cumulative assessment with full build-out for the OPFM. This scenario represents a sensitivity assessment.

16.3.18 Each future year assessment will include two scenarios:

1. Do-Minimum, which includes committed highway improvements schemes and forecast baseline traffic flows; and
2. Do-Something, which includes committed highway improvements schemes, highway schemes proposed for the Otterpool Park Development, forecast baseline traffic flows, and Otterpool Park Development traffic flows.

16.3.19 For each assessment year a weekday morning peak period (08:00 to 09:00) and a weekday evening peak period (17:00 to 18:00) will be assessed.

16.3.20 The assessment of the pedestrian, cycle and public transport networks effects will be based on the fully completed Development.

Significance Criteria

16.3.21 In order to determine the significance of effects, the following parameters have been considered:

1. The sensitivity of each link on the preferred route;

2. The percentage increase in total traffic and/or HGVs as a result of the Development along each link on the preferred route (magnitude of impact); and
3. The environmental effects as set out within IEMA Guidelines on each link where the impacts of the Development are above the significance thresholds.

16.3.22 The significance of transport effects has then been determined by considering the identified impact magnitudes in terms of traffic increase alongside the receptors affected by those impacts (taking account of their sensitivity) to determine the significance of effects. Moderate and major adverse/beneficial effects are assumed to represent significant effects. As there are no published standard criteria, the Table 16-4 provides a matrix of magnitude of impact against sensitivity of receptors to identify where significant effects are anticipated to occur. Significant effects are highlighted in the Table.

Table 16-4 Significance of Effect

Magnitude of Change:	Sensitivity of receptor:		
	High	**Medium**	**Low**
Major	Major	Major/Moderate	Moderate
Moderate	Major/Moderate	Moderate	Minor
Minor	Moderate	Minor	Minor/Negligible
Negligible	Minor	Minor/Negligible	Negligible

Construction Effects

16.3.23 Given the outline nature of the outline planning application, there is limited information available on the proposed construction works. The transport and access effects of the construction of the proposed Development would be dependent on various factors including, the final programme and phasing of construction works, import/export of materials, construction processes adopted.

16.3.24 The number of construction vehicle HGVs will be calculated by considering the type and amount of construction and demolition material and waste arisings for each assessment year. The total yearly material and waste arising will be calculated by volume and the corresponding total yearly number of HGVs required to transport the load will be estimated.

16.3.25 A qualitative assessment will be made of the likely significant transport and access effects of the proposed construction works. This will be based on an estimation of reasonable worst-case conditions and has sought to consider those aspects of the construction works that could lead to significant effects. The assessment has drawn upon Arcadis's experience of assessing the environmental effects of similar developments.

16.3.26 Suitable management and control measures have been identified for incorporation within a Code of Construction Practice to manage the construction works.

Cumulative Effects

16.3.27 Since detailed information of the scale, type and location of new development within the study area for the assessment years is not available at this stage, it was agreed during scoping with Kent County Council and Highways England that the primary method for forecasting future traffic growth should be the application of growth factors derived from TEMPro, a program that provides projections of the total number of trips in an area over time based on the forecast number of households and jobs for use in local and regional transport models. In addition to the use of TEMPro, specific developments, to be agreed with Kent County Council and Folkestone & Hythe District Council, for which traffic generation and routing assumptions are available will be included in the assessment separately and heavy goods vehicle (HGV) traffic growth on the M20 will be calculated using national freight traffic growth data.

16.3.28 As mentioned in Section 4.9 above, the new EIA Regulations include the requirement to assess 'significant effects arising from the vulnerability of the proposed Development to major accidents or disasters that are relevant to that development'. Operation Stack is a procedure to managing congestion that has been activated in Kent during periods of extraordinary cross-Channel disruption. It involves "stacking" large goods vehicles on the M20 between Junction 8 (Maidstone services) and Junction 9 (Ashford) on the M20. If more space is needed, the closed section extends to Junction 11. The transport assessment will include a description of the likely impact of operation stack on the accessibility of the site. Measures will be proposed, discussed and agreed with Highways England to mitigate impact as far as is practically possible.

16.4 Baseline Data

Key Baseline Information Obtained

16.4.1 The following baseline data has been obtained:

- Bus timetable and routing information;
- Rail timetable and routing information;
- Pedestrian and cycle route networks;
- Travel behaviour information relevant to the trip generation, mode split and assignment calculations;
- Traffic flow data for junctions and links within the study area to enable the highway capacity modelling; and
- Automatic number plate recognition surveys to enable the VISSIM modelling.

Key Environmental Receptors

16.4.2 The IEMA guidelines identify groups and special interests which should be considered within the assessment. These include the following:

- People at home and in work places;
- Sensitive groups including children, the elderly and disabled;
- Sensitive locations, e.g. hospitals, churches, schools, historical buildings;
- People walking and cycling;
- Open spaces, recreational sites, shopping areas;
- Sites of ecological / nature conservation value; and
- Sites of tourist/visitor attraction.

16.4.3 The key receptors that are being considered in the transport chapter of the ES fall include:

- Occupiers of residential properties surrounding the application site;
- Business, education and workplace occupiers in the area surrounding the site;
- Pedestrians and cyclists travelling within and through the area surrounding the site, including users of recreational spaces and with particular reference to sensitive pedestrian groups such as children, the elderly and those with mobility impairments;
- Private vehicle users travelling or parking on the highway network in the area surrounding the sites;
- Emergency services requiring access within or passing through the area surrounding the site;
- Public transport users (passengers) travelling to, from and through the area surrounding the sites; and
- Public transport operators (including coach operators) whose operations may be affected by changes to services as a consequence of route diversions or changes to journey times.

Further Baseline Data to be Obtained

16.4.4 The following baseline data has been obtained:

- Accident record data for the most recent 36 months covering an area within the study area to provide a baseline safety analysis;
- Strategic Housing forecasts and TEMPro growth factors to enable the highway capacity modelling;
- Traffic flow data on the A20, Stone Street, Aldington Road and Lympne Hill.

16.5 Description of Possible Significant Effects

Construction

16.5.1 Information on the construction programme and resultant HGV traffic flows will be reviewed to determine whether traffic increases would be likely to generate significant transport effects. Construction effects are considered to be temporary, concentrated during the construction phase of the proposed Development only. After the construction of the first development phase for occupation, future construction periods will run concurrently with operational phases already complete and occupied. Where construction phases coincide with the agreed operational assessment years, construction vehicle flows will be included in the assessment along with the operational flows. As such, no separate construction traffic assessment will be undertaken but the effects are **scoped in**.

Operation

16.5.2 Permanent impacts during the operational phase would be mainly associated with users of the proposed Development. The impacts during operation that will be considered include:

- Rail patronage and hence resulting movements to and from Westenhanger station;
- Permanent road closures and diversions and improvements;
- Changes in public transport facilities, including bus stop and taxi stands;
- Changes in road and parking layouts in the vicinity of the proposed development; and
- Changes in the use of other public transport services.

16.5.3 Potential permanent traffic and transport effects during operation may include:

- Changes in traffic flows;
- Changed journey times and distances for private and commercial vehicle occupants;
- Changes to interchanges, such as Westenhanger railway station;
- Changed journey times, distances or frequencies for public transport;
- More road accidents; and
- Changed journey times and distances, and loss of amenity for vulnerable road users.

16.6 Potential Mitigation Measures

Construction

16.6.1 The construction phase of development is anticipated to commence in 2023 and build out over approximately a 30-year period. The proposed Development will be designed to minimise environmental effects and will therefore incorporate mitigation measures that could include the following:

- Agreeing routes for construction vehicles that avoid residential areas where possible;
- Minimising changes to pedestrian and cycle routes during construction whilst also ensuring that appropriate separation is maintained between these users and construction traffic for safety reasons;
- Ensure that any long-term traffic management solutions required maintain minimum lane widths and two-way traffic flow where possible and to provide appropriate diversionary signage;

- Changes required to the highway network to facilitate the movement of larger construction vehicles without encroaching onto footways, with reinstatement wherever possible in the operational phase;
- Changes required to car, coach, cycle or motorcycle parking provision as a result of construction activity and the need to provide alternative locations and capacity where possible; and
- A worker travel plan including site-specific requirements and guidelines to reduce the number of construction workers travelling by private car and encourage the use of other transport modes.

Operation

16.6.2 The Otterpool Park Transport Strategy aims to minimise transport impacts through consideration of the following measures:

- Limiting the need to travel through the provision of a full mix of land uses and encouraging home working;
- Providing high quality walking and cycling linkages within the proposed Development and connections to the wider area;
- Improving access to existing bus services, including service frequency improvements where possible;
- Improving access to Westenhanger station for all modes and creating a mobility hub at the station to offer a range of sustainable travel mode choices including a bus interchange;
- Upgrade of facilities at Westenhanger station, including passenger waiting facilities and information, ticket machines, lift access and a new station building;
- Promoting sustainable travel and vehicle choices through a comprehensive set of travel measures including personalised travel planning, a car club etc.;
- Mitigation measures at key junctions to reduce delays to drivers;
- Provision for pedestrian and cyclist movements at junctions and links to reduce severance; and
- Seeking to route traffic away from the most sensitive areas, such as schools.

17 Waste and Resource Management

17.1 Introduction

17.1.1 The proposed Development would use large quantities of materials during construction of the development, and the proposed Development would result in the generation of solid waste from construction, demolition and excavation (referred to as CD&E waste), in combination with operational wastes produced by residential, commercial and other uses as the proposed Development are built out. The waste and resources management assessment will assess the significant environmental effects of construction and operation and propose relevant mitigation measures.

17.1.2 It should be noted that this Chapter does not make reference to impacts associated with the offsite manufacture of products or the off-site extraction of primary materials. These stages of the product's or material resource's lifecycles are outside the scope of this assessment due to the range of unknown variables associated with the extraction and manufacturing processes.

17.1.3 This Chapter also does not make reference to the impact of the transportation of construction materials to Site and the transportation of waste from Site. These are discussed in Climate Change (Chapter 8) and Traffic and Transport (Chapter 16).

17.1.4 The material resources and waste assessment also has a relationship to the following topics:

- Climate Change (transport of waste and construction materials)
- Geology and Soils (excavation of soils and rocks; reuse of excavated materials; reuse criteria; contaminated soils waste analysis)
- Transport (transport of waste and construction materials)
- Air Quality (transport of waste and construction materials).

17.2 Consultation and Scoping

17.2.1 Table 17-1 shows a summary of consultation undertaken to date that informed EIA scoping for the 2019 Scheme, the issues raised, and where relevant, how it will be addressed in the current application:

Table 17-1 Consultation Undertaken to 2019

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
James Farrar Folkestone and Hythe District Council Kent County Council 8 June 2018	As documented within the original Scoping Report, the proposed site conflicts with several Mineral Safeguarding Areas (MSA), which are safeguarded under Policy CSM 5 of the KMWLP. Any application to come forward for this site will therefore need to be accompanied by information to satisfy policies DM 7 and DM 8 of the KMWLP which set out situations where the presumption to safeguard can be disengaged. For Policy DM 7, this is usually done by way of a Minerals Assessment, which assesses the economic viability of the mineral as well as other factors.	A Minerals Assessment report has been produced by SLR, which assesses the economic and extractable potential of the underlying minerals safeguarded area beneath the proposed development. This is discussed in greater detail in section 17.4.10.
James Farrar Folkestone and Hythe District Council	The site for the materials recycling facility and anaerobic digestion plant at Otterpool Quarry (granted planning permission by KCC under reference SH/08/124) lies within the site of the proposed development.	Planning permission was passed in 2011, however, only basic infrastructure has been put in place (access kerbing).

Consultee/Contact	Summary of Consultation/Scoping Opinion Response	How this will be addressed in the EIA
Kent County Council 8 June 2018	This means that the site is safeguarded for waste management purposes under Policy CSW 6 of the KMWLP. Consideration will be required to determine where the needs of the Otterpool waste facility waste stream can be met elsewhere, as to not adversely impact the County's ability to self-sufficiently manage its own waste. This is often done via an Infrastructure Assessment to satisfy Policy DM 8 of the KMWLP. KCC produced a Supplementary Planning Document (SPD) 4 on waste infrastructure safeguarding, which should be referred to when preparing the above evidence.	We are currently considering whether the permission has been lawfully implemented and as part of the revised planning submission we will justify the loss of the facility. We are also considering if the proposed Development would be considered as exempt or as acceptable under KCC Policy DM 8 clauses 1 and 2.
James Farrar Shepway District Council 26 June 2018	Kent County Council sites listed for public use (Shornecliffe) is already at high capacity due to the area it covers already. Waste facilities in the area may require permit variations to allow increased the tonnages, if feasible.	We understand the need for a new Household Waste Recovery Site (HWRC) and are looking at supporting an off-site location or expansion at the existing facilities.

17.2.2 Table 17-2 summarises Consultation that has taken place since submission of the 2019 Scheme, the issues raised and how they are proposed to be addressed in the EIA.

Table 17-2 Consultation Undertaken since submission of 2019 scheme

Consultee Contact / Date	Summary of Consultation / Correspondence	How this will be addressed in the EIA

F&HDC
 	
Post Consultation Planning Report
	The LPA wish Waste Strategy to include initiatives to reduce household waste and increase recycling rates.	The revised waste strategy will include details of the following to incentivise waste reduction and increase recycling rates
		
		• Waste targets:
		  o Household waste per household – Reduce by at least 10%
		  o Recycling and composting – at least 50% of waste
		  o Household waste to landfill – 5% or less
		• Voluntary Incentive Schemes
		• Innovative techniques for waste management within the development
		
		The success of these measures would be limited by current F&HDC collection methods and KCC disposal methods.

	The application includes proposed redevelopment of the existing waste site at Otterpool Quarry and therefore Policy DM8 of the Waste and Minerals Local Plan is engaged.	As part of the revised planning submission, we will justify the loss of the facility.

Consultee Contact / Date	Summary of Consultation / Correspondence	How this will be addressed in the EIA
	Proposals applicable under this policy will need to provide assessment information, as appropriate to the nature and scale of the proposed development, in a Minerals and Waste Infrastructure Assessment.	
KCC comment on the outline planning application	KCC indicate the site for a materials recycling facility and anaerobic digestion plant at Otterpool Quarry lies within the site of the proposed Development at Otterpool Park. The facility was granted planning permission by KCC under reference SH/08/124. KCC consider that planning permission has been implemented, and is therefore lawfully extant – however, the facility is not yet active. The site is also safeguarded for waste management. Consideration needs to be given to where the needs for the management of this waste stream can be met elsewhere, if required, as to not adversely impact the county's ability to self-sufficiently manage its own waste.	Planning permission was passed in 2011, however, only basic infrastructure has been put in place (access kerbing). We are currently considering whether the permission has been lawfully implemented and as part of the revised submission, at the Tier 2 stage, we will justify the loss of the facility.
	KCC Waste Management requires a new co-located Household Waste Recycling Centre (HWRC) and Waste Treatment Site (WTS) in the locality, in order to account and provide for the growth planned at Otterpool Park. As this new facility would provide additional capacity beyond that required by Otterpool Park alone and an improved service benefitting the wider community the applicant would be expected to fund a proportionate share of this new facility, secured within the section 106 agreement.	We understand the need for a new HWRC and are looking at supporting an off-site location. The HWRC would be better situated in an industrial area, rather than close to residential users; and should have better access links, e.g. closer to M20; or should be an expansion of existing KCC HWRC facility.
LPA and Local Authority meeting	LPA meeting to discuss the Waste Strategy and new F&HDC waste contract. 20 February 2020	The Waste Strategy will include a 'menu' of waste management options and a method of updating waste management procedures at the proposed Development as technology and management techniques change.

17.2.3 Further consultation is proposed to be undertaken as follows:

- EA – with regards to waste management facilities detailing KCC sites that handle operational and CD&E waste.
- KCC – in relation to the 2018/2919 Waste Annual Monitoring Reports (AMR) and Local Aggregate AMR.
- F&HDC – for information regarding updated bin storage requirements, the planning status of the Otterpool Quarry application.

17.3 Methodology

Relevant Policy and Guidance

17.3.1 In addition to compliance with legislation and national planning policy framework objectives, the following policies and guidance will be used to inform the assessment:

International and National Legislation

17.3.2 The following international and national legislation are relevant to the assessment:

- European Directive 1999/31/EC on the landfill of waste (Ref.17.1)
- European Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (Ref.17.2)
- The Clean Neighbourhoods and Environment Act 2005 (Ref.17.3)
- Environmental Permitting (England & Wales) Regulations (EPR) 2016 (Ref. 17.4)
- The Hazardous Waste (England and Wales) Regulations 2005, Statutory Instrument 2005 No. 894 and 2009 amendment SI 507 and 2016 amendment SI 2016 No 336 (Ref. 17.5)
- Waste (England and Wales) Regulations 2011, and 2012 amendment (Ref. 17.6)
- Environmental Protection Act 1990 (Ref. 17.7).

National and Local Policy

17.3.3 The following national policies are relevant to the assessment:

- Waste Management Plan for England 2013 (Ref. 17.8)
- Our waste, our resources: a strategy for England 2018 (Ref. 17.9)
- National Planning Policy Framework (NPPF), Department for Communities and Local Government, 2019 (Ref. 17.10)
- National Planning Policy for Waste, October 2014 (Ref. 17.11)

17.3.4 The following local policies are relevant to the assessment:

- Kent County Council Mineral and Waste Local Plan (KMWLP) 2013-2030 (Adopted July 2016) (Ref. 17.12)
- Folkestone and Hythe District Council Core Strategy Review 2020 (Ref. 17.13)
- Kent Waste Needs Assessment 2017: Construction, Demolition & Excavation Waste Management Needs (Ref. 17.14)
- Kent Waste Disposal Strategy 2017-2035 Strategy Document (Ref. 17.15)
- Kent State of the Environment Report: Waste Update, July 2019 (Ref. 17.16).

Guidance

17.3.5 The following relevant guidance will be referred to in the assessment:

- Repealed Site Waste Management Plan (SWMP) Regulations 2008 (Ref. 17.17)
- Building Research Establishment (BRE) Site Methodology to Audit, Reduce and Target Waste (SMARTWaste) (Building Research Establishment, 2018) (Ref. 17.18)

- Contaminated Land: Applications in Real Environments (2011) The Definition of Waste: Development Industry Code of Practice (Ref. 17.19)
- Waste Resources and Action Programme (WRAP) SWMP Template (Ref. 17.20)
- Waste management in buildings – Code of practice BS5906:2005 (Ref. 17.21).

17.3.6 Since the planning application was submitted in 2019, the assessment methodologies for waste and material resources have been set out in guidance in the form of the Design Manual for Roads and Bridges (DMRB) LA 110 Material assets and waste (formerly interim Advice Note (IAN) 153/11) (Ref.17.22). DMRB guidance LA 110 is primarily intended for waste management and material resources assessments for new highway schemes. However, the guidance is considered to be applicable to other types of projects and, in the absence of an alternative recognised, robust and up-to-date set of guidance for non-highways schemes, LA 110 has been used to inform the assessment in this Chapter. This includes guidance on appropriate study areas for the assessment.

Study Area

17.3.7 LA 110 recommends two geographically different study areas, the first being based on the construction footprint or project boundary of the Proposed Development, and the second being designed to include all waste infrastructure that is suitable for accepting waste arisings generated by the Proposed Development. The study areas for the assessment, set out below, conform with this approach.

17.3.8 The study area for Mineral Safeguarded Areas (see Figure 10.2 in Appendix A) and for peat resources will comprise the footprint of the proposed development.

17.3.9 The study area for material resources used in construction includes the whole of the UK as the main construction material resources include aggregates, concrete, asphalt and steel which have national (and in some cases international) rather than local supply chains.

17.3.10 For the purposes of construction, demolition and excavation (CD&E) waste, it is necessary to ensure that the facilities have the capacity and capability to support the Proposed Development in delivering its waste objectives and targets. A regional viewpoint of the south east of England is considered appropriate as, although it would be preferable for CD&E waste to be managed as close to the site as possible, excavated materials can be reused in a wide variety of projects (for example, roads and railway projects) and as such there may not be a local market.

17.3.11 The study area for operational waste is defined as the area within the recognised administrative boundaries of KCC, including the waste management facilities that could potentially receive waste from the Proposed Development.

Assessment Methodology

17.3.12 Material resources management regards the potential environmental effects that are associated with the extraction and transport of primary raw materials, the manufacture of products, and their subsequent transport to and use on construction sites.

17.3.13 These material resources can be further defined as primary, secondary or recycled aggregate as follows:

- Primary aggregate is defined by the British Geological Society as the term used for aggregate produced from naturally occurring mineral deposits and used for the first time. Primary material resources are those from a non-renewable source.
- Secondary aggregates as defined by Aggregain (free Sustainable Aggregates information service provided by the Waste and Resources Action Programme (WRAP) Aggregates Programme) are derived from a very wide range of material resources that may be used as aggregates.
- Recycled aggregates, as defined by Aggregain, can be sourced from a variety of material resources arising from construction and demolition (concrete and bricks), highway maintenance (asphalt planings), excavation, and utility operations.

17.3.14 It would be outwith the scope of this assessment, to consider the potential environmental impacts that would be associated with the extraction and transport of primary raw materials to the factories and production of products, for example concrete, electrical lighting columns etc. The extraction and

transport stages of such materials lifecycle would already have been subject to an environmental assessment. Instead the assessment would concentrate on the impacts that would occur as a result of the use of primary, secondary and recycled raw materials and manufactured construction products on the proposed Development.

17.3.15 Waste is defined in Article 3 of the European Framework Directive on waste (2008/98/EC) (Ref. 17.2) as "any substance or object which the holder discards or intends or is required to discard", where the term:

- 'waste holder' is defined as the waste producer or the natural or legal person who is in possession of the waste; and
- 'waste producer' is defined as anyone whose activities produce waste (original waste producer) or anyone who carries out pre-processing, mixing or other operations resulting in a change in the nature or composition of this waste.

Approach

17.3.16 The assessment of effects on material resources and from CD&E waste and operational waste would focus on the potential direct impact of material resource degradation and waste arisings on the existing local and regional waste infrastructure.

Assumptions and Limitations

17.3.17 Assessments rely on the most recently available data, which is typically from 2018. In cases where waste has been calculated as a volume, WRAP's waste conversion factors have been applied to convert volume to weight.

17.3.18 At the current stage of design, a definitive list of plant and equipment and associated information (such as exact specification or operation requirements of the construction equipment) is not available. Assumptions therefore have to be made, based on industry standards, about the equipment likely used during construction and their consumption of material resources.

17.3.19 The assessment of impacts would be carried out against the baseline conditions. Forecast data for waste generation from the proposed Development would be estimated based upon proposed land use since actual waste generation data is not available. Assumptions would also be made based upon the nature of uses that would occupy the proposed Commercial and industrial (C&I) units in compliance with the Waste management in buildings – Code of practice BS5906:2005 (Ref. 17.21). This is considered to provide a reliable basis for assessment of the conditions at the proposed Development.

17.3.20 The amount of waste produced during the CD&E phases would be affected by the specific types and methods of construction proposed by the works contractor(s). Given the outline nature of the proposals, assumptions will be made regarding types and methods of construction in order to estimate volumes of waste arising from the CD&E phases.

17.3.21 In the absence of suitable recycling and reuse rate data for Commercial and Industrial (C&I) waste in the region, current recycling and reuse rates for domestic properties in the KCC area would be used to forecast the non-recyclable waste that would be generated by proposed C&I uses. It is anticipated that proposed C&I properties of the proposed Development would meet and exceed existing domestic recycling and reuse rates.

Significance Criteria

17.3.22 The waste infrastructure is therefore the resource or receptor on which impacts would be assessed, and its importance / sensitivity would be dependent on its capacity to absorb additional waste, using the criteria developed, based on DMRB LA110, and provided in Table 17-3.

Table 17-3 Determining the Importance / Sensitivity of Receptors

Significance Category	Topic	Description
Very Large	Material Resources	• No criteria: use criteria for large categories.
	Waste	• >1% reduction or alteration in national capacity of landfill, as a result of accommodating waste from a project; or construction of new (permanent) waste infrastructure is required to accommodate waste from a project.
Large	Material Resources	• The proposed development achieves <70% overall material recovery / recycling (by weight) of non-hazardous Construction and Demolition Waste (CDW) to substitute use of primary materials; and gg • Aggregates required to be imported to site comprise <1% re-used / recycled content; and • Project sterilises ≥1 mineral safeguarding site and/or peat resource.
	Waste	• >1% reduction in the regional capacity of landfill as a result of accommodating waste from a project; and 2) >50% of proposed development waste for disposal outside of the region.
Moderate	Material Resources	• The proposed development achieves less than 70% overall material recovery / recycling (by weight) of non-hazardous CDW to substitute use of primary materials; and aggregates required to be imported to site comprise re-used/recycled content below the relevant regional percentage target (National and regional guidelines for aggregates provision in England from DMRB LA 110 (Ref. 17.19). For South East England they are 26% recycled aggregates).
	Waste	• >1% reduction or alteration in the regional capacity of landfill as a result of accommodating waste from the proposed development; and 1-50% of proposed development waste for disposal outside of the region.
Slight	Material Resources	• The proposed devlopment achieves 70-99% overall material recovery / recycling (by weight) of non-hazardous CDW to substitute use of primary materials; and aggregates required to be imported to site comprise re-used/recycled content in line with the regional percentage target (26%).
	Waste	• ≤1% reduction or alteration in the regional capacity of landfill; and waste infrastructure has sufficient capacity to accommodate waste from a project, without compromising integrity of the receiving infrastructure (design life or capacity) within the region.
Neutral	Material Resources	• The proposed development achieves >99% overall material recovery / recycling (by weight) of non-hazardous CDW to substitute use of primary materials; and aggregates required to be imported to site comprise >99% re-used / recycled content.

	Waste	• No reduction or alteration in the capacity of waste infrastructure within the region.

17.3.23 The classification for the significance of impact is provided in Table 17-4:

Table 17-4 Significance of impact criteria

Significance of impact	Topic	Criteria
Significant (one or more criteria met)	Material resources	Category description met for moderate or large effect.
	Waste	Category description met for moderate, large or very large effect.
Not significant	Material resources	Category description met for neutral or slight effect.
	Waste	Category description met for neutral or slight effect.

Cumulative Effects

17.3.24 There are a range of planned development schemes in the study area of KCC that could potentially have a cumulative impact in-combination with the proposed Development. However, it would not be possible to undertake a meaningful and accurate assessment of these cumulative impacts with regard to material resources and waste arisings because:

- Exact quantities of material resources required by the schemes would not be available;
- Demolition and excavation waste: quantitative data would either not be available on likely volumes of waste to be generated, or data needed to calculate likely volumes would not be available;
- Construction waste: neither quantitative data nor detailed enough schedules would be likely to be available on the construction phases proposed; and
- Operational waste: not enough data would be available in order to estimate the likely quantities or types of waste arisings during the operational phase.

17.3.25 It should be noted that the assessment process inherently captures some of the planned schemes in the study area. The assessment on materials is a prediction of how the consumption of materials associated with the proposed Development would impact on the available supply of these materials in the UK. Data on the available supply is sourced from various datasets that take into consideration future development in the UK in order to predict future trends. Similarly, the assessment on waste predicts how waste arisings associated with the proposed Development would impact on the capacity of waste management facilities and landfill sites in the study area to handle this waste. Publicly available data provided by the waste authorities takes into consideration future development in the UK when predicting the future trends in the capacity of these sites.

17.3.26 It is expected that all planned development schemes in KCC would be in accordance with policy requirements similar to those applicable to the proposed Development, including the requirements to adopt the Waste Hierarchy, maximise reuse and recycling of CD&E waste through a SWMP and the meeting of targets for recycling and composting waste.

Temporal Scope

17.3.27 The assessment covers both the construction and operational phases of the Proposed Development. The assessment would be conducted for specific years, as follows:

- Updated baseline;
- Future baseline (2023 – start of construction);
- Year of opening (assumed to September 2023);
- Intermediate peak construction year(s) during partial occupation;

- End of the Core Strategy period 2037 (led by the transport assessment) and
- Final year of full build out of the proposed Development.

17.4 Baseline Data

17.4.1 This section presents a description of the existing and future baseline within the footprint of the proposed Development and the study area.

Key Baseline Information Obtained

Establishing Baseline Conditions

17.4.2 Current baseline conditions have been established through desk-top research, including the interrogation of key data bases such as Building Research Establishment (BRE) benchmarks and Environment Agency data tables. The baseline conditions are the existing waste management system in KCC, the quantities of waste and recyclables collected, and the performance in terms of the proportion recycled/composted.

17.4.3 The following resources of information has been used to inform the assessment of material resources:

- The Mineral Products Industry at a Glance (2018 Edition) (Ref.17.23);
- The World Steel: 2018 Statistical Yearbook (Ref. 17.24);
- National and regional guidelines for aggregates provision in England from DMRB LA 110 (Ref. 17.25); and
- British Geological Society (BGS) Geology of Britain viewer (Ref. 17.26).

17.4.4 The baseline conditions for waste have been established through desktop research and the following data sources:

- Environment Agency, Waste Management Information 2018 (Ref. 17.27);
- UK Statistics on Waste, 2019, including:
  - ENV23 - UK statistics on waste (Ref. 17.28);
  - ENV18 - Local authority collected waste: annual results (Ref. 17.29);
  - UK Annual Statistics on Waste, March 2017 (Ref. 17.30).
- WasteDataFlow (2019) (Ref. 17.31);
- Environment Agency Landfill Capacity Tool (Ref. 17.32); and
- The List of Wastes (England) Regulations 2005 (SI 2005/895) (Ref.17.33).

17.4.5 The future baseline (i.e. 'without proposed Development' scenario) has been forecasted by qualitatively assessing the potential increases in waste generation within the region. There are no known emerging changes to regulatory policy and frameworks that have been taken into account.

17.4.6 Future targets for CDE waste recycling, composting, other recovery (excluding recycling) and remainder to landfill have been established through desktop research, including the interrogation of documents such as the Waste Needs Assessment on CDE waste published in 2017 (Ref.17.14).

17.4.7 Future baseline conditions for operational waste arisings from CI and residential buildings have been established through desktop research, including the interrogation of documents such as the Waste Needs Assessment report on CI waste (Ref.17.14). and the Kent Waste Disposal Strategy 2017-2035 (Ref.17.15).

Existing Baseline Conditions

Protected Areas

17.4.8 The site is located in a safeguarding area for minerals. The safeguarding map for Shepway from the Kent Country Council, Mineral and Waste Local Plan (KMWLP), indicates that the following minerals are present:

- Silica Sand / Construction Sand – Sandstone (Folkestone Formation) – northern part of the site
- Sandstone (Sandgate Formation) – Central/ northern part of the site

- Limestone Hythe Formation (Kentish Ragstone) – southern part of the site
- Sub-alluvial River Terrace Deposits.

17.4.9 Base on the significance criteria, the proposed Development would give a Large impact on this minerals safe guarded area. Under the KMWLP, Policy DM7 states that "Planning permission will only be granted for non-mineral development that is incompatible with minerals safeguarding, where it is demonstrated that either:

- The mineral is not of economic value or does not exist; or
- That extraction of the mineral would not be viable or practicable".

17.4.10 To support the Outline Planning Application, a Mineral Assessment has been prepared by SLR Consultants. This assessment concluded that, whilst there are some limited mineral reserves existing on site, the lack of demand for these minerals, the timescales over which abstraction would take place, when weighed against the impact of abstraction and the need of the District Council to deliver their strategic housing allocations, it would be unlikely that extraction would be economically viable.

17.4.11 KCC's Post Consultation Planning Report after original scoping stated that "The County Council, as Minerals and Waste Planning Authority, notes that the Mineral Assessment correctly identifies the nature and potential of the economic minerals that are threatened with sterilisation by the non-mineral development proposed at Otterpool Park. It goes on to make the case that their sterilisation is acceptable, in that it can be justified by invoking criterion (5) of Policy DM7 of the of the KMWLP. It is considered that the submitted Mineral Assessment evidence justifies this conclusion and an exemption from the presumption to safeguard the economic minerals present on the site is acceptable."

17.4.12 Although there would be a Large Impact, it is considered that the impact is acceptable under KCC policy DM7 and the impacts on Mineral safeguarded areas are scoped out for further assessment.

17.4.13 The British Geological Society's Geology of Britain viewer indicates that the underlying superficial geology comprises deposits of Head (clay and silt) and of Alluvium (clay, silt, sand and gravel). There are no peat deposits found on site. The impacts on Peat Resources are also not considered further.

Construction Materials

17.4.14 The main materials required for construction of the proposed Development would include metals, bricks, aggregate (including sands and gravels), asphalt, slate (including roofing, cladding), concrete (including blocks, tiles, ready mixed), gypsum (including plasterboard) and soils (see Table 17-5 and Table 17-6). Most of these material resources would originate offsite, purchased as construction products, and some would arise onsite such as excavated soils. Offsite materials would likely be sourced from as close to the Proposed Development as possible but could potentially be sourced nationwide. Materials other than those listed in Table 17-5 would be likely to be used during the construction phase of the Proposed Development but there is uncertainty at this stage what these would include.

Table 17-5 UK sales for material resources in 2016 from the Mineral Products: Industry at a Glance, 2018 (Ref. 17.23)

Materials		Annual UK sales (tonnes)
Aggregates	Total aggregate materials	184,300,000
	Crushed rock	113,000,000
	Sand and gravel – land won	48,600,000
	Sand and gravel – marine won	14,100,000
	Recycled and secondary	70,400,000
Cementitious	Total Cementitious materials	15,000,000
	Cement	12,000,000

Materials		Annual UK sales (tonnes)
	Other cementitious materials (e.g. fly ash, ground clay bricks)	3,000,000
Concrete	Total Concrete materials	81,900,000
	Ready mixed concrete	56,100,000
	Concrete products	25,800,000
Asphalt		25,200,000
Industrial Lime / Limestone and gypsum		1,100,000

17.4.15 The World Steel: 2018 Statistical Yearbook (Ref.17.24) indicates that in 2017, the annual UK sales of Crude Steel was 7,491,000 tonnes.

17.4.16 The availability of aggregate reserves (including sand and gravel, crushed rock and recycled aggregates) are identified by the KCC reports, Local Aggregate Assessment 2018 (Ref. 17.34) and in the 12th Annual Minerals and Waste Monitoring Report 1st April 2017 to 31st March 2018 (Ref. 17.35). These have been summarised in Table 17-6.

Table 17-6 KCC Local Aggregates assessment (Ref. 17.234)

Material Resources	2017 Aggregates Demand (tonnes)	Permitted Reserves of Aggregates End 2017 (tonnes)	Current Landbank based upon 2017 sales alone (years)
Soft Sand	519,414	8,848,820	17.03
Sharp Sand and Gravel	151,165	3,695,500	24.4
Secondary and Recycled Aggregates	900,000	-	-
Hard Rock	1,530,000	Confidential	Confidential

Construction, Demolition and Excavation Waste

17.4.17 At present the UK is committed to recovering (e.g. diverting from disposal) at least 70% of non-hazardous CD&E waste by 2020, as required by the EU Directive on Waste (Ref.17.1). The last published data from 2016 indicated that the England was achieving a recovery rate of 92.1% (Ref.17.28).

17.4.18 The reported CD&E waste arisings from Kent and managed in Kent were just under 2 million tonnes (1.85 million tonnes) in 2015 and outside Kent were just over 400,000 tonnes (403,343 tonnes) in 2015 (Ref.17.14).

17.4.19 The total capacity of permitted landfill sites in Kent that could potentially take CD&E waste is 6,474,205m^3 (Ref.17.32). Table 17-7 contains a non-exhaustive list of landfill sites, within Kent, that could potentially receive CD&E waste arisings from the proposed Development.

Table 17-7 Waste management facilities accepting CD&E waste

Facility Name	Facility Type	Permit Number	Post Code	Distance from Site (km)	Remaining Capacity end of 2018 (m^3)
Allens Bank	Inert landfill	EA/EPR/BS6904IB/V002	TN29 9PU	18.74	709,000
Hermitage Quarry Inert Landfill	Inert landfill	EA/EPR/EB3601KU/V003	ME16 9NT	40.88	609,763
Arnolds Lodge Landfill	Inert landfill	EA/EPR/DB3604XQ/V003	TN12 5HL	43.62	20,000

Operational waste

17.4.20 The majority of the Site is currently undeveloped and is primarily agricultural land. Therefore, waste has only been generated from agricultural activities and the small number of existing residential and business operations. Development of the site for residential, commercial, retail, education, healthcare, hotel and sports facilities use would create a source of waste which would need to be collected and disposed of by F&HDC and KCC.

17.4.21 Currently an alternating weekly collection system for the properties in F&HDC is provided. In 2019, this represented 43,000 households. For households, residual waste and recycling is collected alternate weeks with food waste collected weekly. Garden waste is collected on alternate weeks, for garden waste subscribers. Collection arrangements as shown in Table 17-8:

Table 17-8 Waste collection arrangements for F&HDC households (Ref.17.36)

Waste Stream	Waste Type	Collection arrangements
Co-mingled materials	Clean cans, tins, glass jars and bottles, empty aerosol cans, clean tin foil, plastic containers, tetra-packs	Wheeled bin with purple lid or purple box - collected fortnightly with paper and card
Paper and card	Clean paper and cardboard	Black box - collected fortnightly with co-mingled dry recyclables
Residual waste	Non-recyclable household rubbish	Wheeled green bin - collected fortnightly
Organics	Food waste (raw or cooked)	Green caddy - collected weekly with co-mingled waste or residual waste
Garden	Everyday garden waste (e.g. grass cuttings, leaves, and cut flowers)	Collected fortnightly (subscription service)
Batteries	Domestic batteries	Self-seal recycling bags (provided by F&HDC) or clear food bag - collected fortnightly with co-mingled waste
Bulky waste	Non-commercial white goods (e.g. fridges, freezers and washing machines), cookers, lawnmowers, furniture (including bed frames and mattresses), carpets, TVs and small electrical items (DVD players, toasters and kettle)	Collection on request (chargeable service)

Waste Stream	Waste Type	Collection arrangements
Other	Computer parts and other electrical equipment, Clothes and other textiles, Polystyrene foam, Light bulbs, mirrors and Pyrex glass	Deposit at local household recycling centre

17.4.22 KCC operates 21 bring sites located in Ashford, Canterbury, Chatham, Cuxton, Dartford, Deal, Dover, Faversham, Folkestone, Gillingham, Herne Bay, Maidstone, Margate, New Romney, Pepperhill, Richborough, Sevenoaks, Sheerness, Sittingbourne, Swanley and Tunbridge Wells which can be used free of charge by householders (Ref.17.36). The Folkestone and New Romney sites are located within the F&HDC boundaries.

17.4.23 Department for Environment, Food and Rural Affairs's (Defra) WasteDataFlow (Ref.17.31) is the web-based system for municipal waste data reporting by UK local authorities to government. This resource has been interrogated to determine the current KCC baseline in terms of household (HH) waste, residual waste and recycling rates, as presented in Table 17-9.

Table 17-9 KCC waste arisings data and recycling rates from household collections

Metric	Estimated Waste Arisings (tonnes)		
	2016-17	2017-18	2018-19
Waste collected	689,363	669,408	676,053
Waste recycled	319,490	312,720	319,099
Residual waste	369,873	356,688	356,954
Total households collected from	566,000	566,000	566,000

17.4.24 Table 17-10 shows household waste recycling rates in KCC between 2016-17 and 2018-19. From this it is clear that KCC's recycling rate has gradually exceeded the average rate in England in recent years and is comparable to that of the South East (Ref.17.29).

Table 17-10 F&HDC , KCC, and England Recycling rates

Area	2016-17	2017-18	2018-19
KCC	46.3%	46.7%	47.2%
South East	46.2	46.7	47.2
England	43.7%	43.2%	43.5%

Forecasting the Future Baseline

Material Resources

17.4.25 Despite a potentially slower economic and construction outlook in the medium term as a result of the decision to leave the EU, the Mineral Products Association expects a cumulative demand for aggregates of between 3.2 and 3.8 billion tonnes over the next 15 years. A breakdown of the key material assets likely to be used in the Proposed Development and the projected market sales volumes within the UK (Ref. 17.23) indicate that production of these materials is likely to increase over the next few years.

17.4.26 The KCC Local Aggregates Assessment (Ref. 17.34) advises that there are sufficient permitted reserves of primary aggregate in Kent to meet estimated needs for mainstream and high specification crushed rock and aggregates over the Plan period. There are also likely to be sufficient reserves to meet secondary aggregate needs

Construction Waste

17.4.27 The KCC Waste Needs Assessment 2017 (Ref.17.14) predicts that existing management capacity in Kent was sufficient to meet the targets as translated into the quantity of waste requiring certain types of management in target years in Table 17-11 below.

Table 17-11: CD&E waste management requirements for period 2021 – 2031

Metric	Forecasted waste quantities (tonnes)		
	2021	2026	2031
Recycling	1,560,000	1,560,000	1,560,000
Other recovery (excluding recycling)	728,000	780,000	780,000
Remainder to landfill	312,000	260,000	260,000

17.4.28 The KCC Waste Needs Assessment (Ref.17.14) also sets out targets for CD&E and C&I waste, which is based on the assumption that increasing cost of landfill would make the achievement of higher recycling and recovery rates more realistic. This resulted in the following targets presented in Table 17-12.

Table 17-12: CD&E waste targets for period 2021 – 2031 (Ref.17.14)

Waste Type	Management Method		Waste Target		
			2021	2026	2031
CD&E	Recycling	Inert (recycled aggregate)	48%	52%	56%
		Non-inert (source separated)	12%	13%	14%
	Composting	(Non-inert)	1%	1%	1%
	Other recovery (excluding recycling)	Inert (recovery to land and backfill of mineral workings)	20%	20%	20%
		Non-inert (Energy from Waste)	5%	5%	5%
	Remainder to landfill	Inert	12%	10%	10%
		Non-inert	2%	1%	0.5%

Operational Waste

17.4.29 KCC forecasted a 20% rise in household waste between 2016-2031 as a result of a projected population growth of 17% growth from 2015, the breakdown of these projected figures is presented in Table 17-13.

Table 17-13: Projection of number of dwellings, population and waste forecast for 2021 and 2031

Metric	2021	2031
Dwellings	701,400	785,800
Population	1,635,100	1,799,200
Waste Tonnage	775, 800	869,800

17.4.30 KCC have developed the following waste targets for MHW which will be applied to the proposed Development:

- Household waste arisings: Reduce by at least 10% based on 2010/11 levels
- Recycling and composting: At least 50%
- Household waste to landfill: 5% or less

17.4.31 For C&I waste, KCC forecasted a 10.42% increase in recycling / composting and a 10.36% increase in recovery, with a 12% increase of waste to landfill. The breakdown of these figures is detailed in Table 17-14 with the KCC C&I waste targets.

Table 17-14: C&I waste management requirements and waste targets for period 2021 - 2031 (Ref.17.14)

Metric	Forecasted waste quantities (tonnes)			Waste Targets		
	2021	2026	2031	2021	2026	2031
Recycling / Composting	892,000	937,000	985,000	63%	65%	65%
Other Recovery (excluding recycling and composting)	357,000	375,000	394,000	21%	19%	19%
Remainder to landfill	25,000	27,000	28,000	16%	16%	16%

Further Baseline data to be Obtained

17.4.32 Relevant Local Authorities and the EA would be consulted to obtain additional baseline information and further review the list of potential receptor sites (e.g. landfills, waste management facilities and other projects) for waste arisings from the proposed Development and to establish a final list of receptor sites.

17.4.33 The capacities of soil treatment facilities that could potentially receive and process contaminated soil waste arisings from the proposed Development would also be obtained.

17.4.34 Further information would also be obtained from the design team regarding the following:

- Materials used during construction (Consumption of materials during the construction phase, either using a Bill of Quantities or by back calculating from BRE / SmartWaste wastage rates)
- Waste during construction (Demolition waste, Excavation waste, SmartWaste calculations on waste from construction).

17.4.35 Waste during operation (Likely operational waste based on the Gross Internal Areas (GIA) of buildings etc, Transport calculations (i.e. transport movements caused by waste generation, materials transportation. These will be required by other chapters).

17.5 Description of Possible Significant Effects

Impacts on Mineral Safeguarded Areas and Peat Resources

Construction

17.5.1 With respect to material resources use, potential significant environmental effects are related to the reduction of natural materials which include the extraction and transportation of primary raw materials, the production of construction materials and their ensuing transport to the application site.

17.5.2 In terms of excess material resources and waste, potential environmental effects are primarily related to the production, movement, transport, processing and disposal of waste from the application site. Effects could include the reduction in available material resources, and a decrease in landfill capacity (disposal). This aspect of the assessment is **scoped in**.

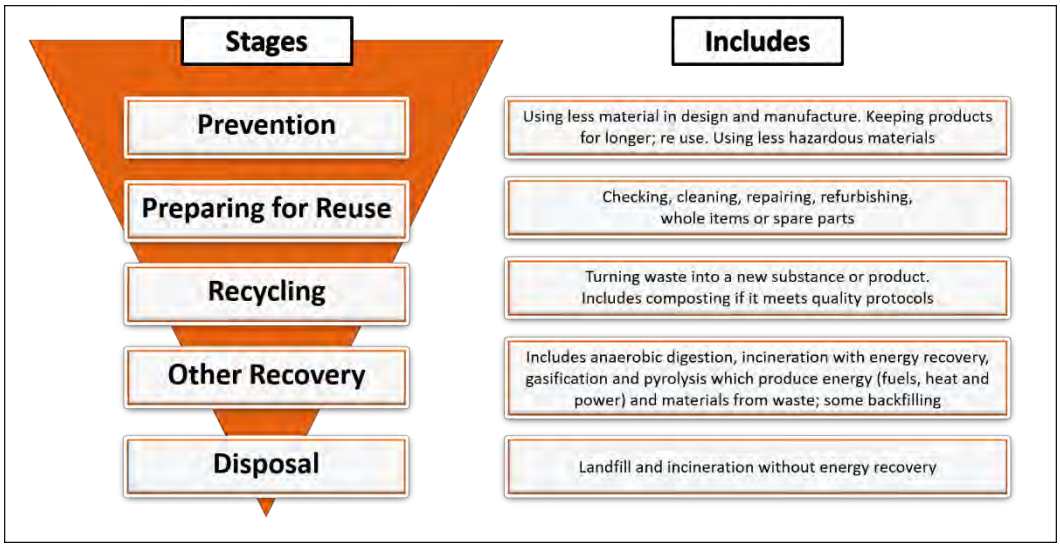
Operation

17.5.3 It is anticipated that, during the lifetime of the proposed Development significant amounts of material resources would be required for maintenance as well as operational municipal and other wastes being generated by the proposed uses. The assessment of operational waste generation is therefore **scoped in**.

17.6 Potential Mitigation Measures

17.6.1 The Waste Framework Directive sets a five-step hierarchy of waste management options (the waste hierarchy), with waste prevention as the preferred option, and then reuse, recycling, recovery (including energy recovery) and safe disposal, in descending order as shown in the waste hierarchy Figure 17.1 below.

Figure 1-1 The Waste Hierarchy



17.6.2 By applying the waste hierarchy to the project, mitigation measures can be developed to reduce the impact on both materials usage and waste production.

Construction

Detailed Design

17.6.3 The detailed design of the proposed Development would play a vital role in reducing the impact of waste, and particular during the construction phase. The proposed Development design would take into consideration the five key principles of the WRAP guidance 'Designing out Waste: A design team guide for Buildings' (Ref.17.37) to decrease the amount of waste arisings via designing out waste and maximising efficient use of materials ultimately to reduce amounts of waste to landfill. These principles are:

- Design for reuse and recovery of materials and components at the end of life use
- Design for off-site construction/manufacture
- Design for materials optimisation
- Design for efficient procurement and delivery systems
- Design for deconstruction, flexibility and adaptation.

17.6.4 By following these principles at the early design stage, the proposed Development can proactively target options likely to achieve significant waste reduction, along with cost savings and other benefits including reduction of the proposed Development's carbon footprint. Key aspects of waste minimisation embedded into the design process include:

- Design complexity: Reduce the complexity of the design to standardise the construction process and reduce the quantity of material resources required (e.g. ensure that floor to ceiling heights are consistent to encourage off-site fabrication, standardising room heights to match plasterboard dimensions and standard brick dimensions).
- Specifications: Avoid over specification and minimise variation in material resources, components and joints; evaluate the reuse and recycling opportunities for the specified material resources before specification (e.g. specify windows that could be recycled in the future) and evaluate the use of materials with high recycled content (e.g. ceramic tiles, reconstituted faced stones and reconstituted slates).
- Alignment, location, level and grading: These should be designed to minimise excavation volumes. The design should enable flexibility in the landscaping, so that it can accommodate the changes in spoil volumes that may arise when site conditions differ from those assumed during the design. Both these approaches should enable all excavation waste (except where contaminated) to be reused onsite where conditions allow.

Targets

17.6.5 The Waste Framework Directive (Ref.17.2) sets a 70% target for reusing, recycling or recovering non-hazardous construction and demolition waste, to be reached by the UK by 2020. Targets are cascaded through national strategies, in this case the Waste Strategy for England.

17.6.6 KCC has also developed waste targets for CD&E waste, as detailed in paragraph 17.4.28. These targets can also be found within the Waste Strategy Report prepared for this planning submission. This Strategy considers the potential impacts that may arise from waste generated during the construction, excavation, demolition and operational phases with the overall aim of developing an approach for legislative and policy compliance and good practice in the segregation, storage, collection, treatment and/or disposal of waste arisings. The Strategy proposes the most appropriate waste collection system for the proposed Development which saves space, provides value for money, minimises greenhouse gas emissions and maximises the recycling and recovery of material.

Code of Construction Practice (CoCP)

17.6.7 During the construction phase the Code of Construction Practice (CoCP) would require the contractors to:

- Promote opportunities for the potential reusing and recycling of all material resources and waste;
- Sort and segregate waste into different waste streams (where technically and economically feasible); and
- Manage material use to maximise the environmental and proposed Development's benefits from the use of surplus materials.

17.6.8 The CoCP mandates subsidiary management plans including a Site Waste Management Plan (SWMP). A Site Waste Management Plan (SWMP) is used to plan, implement, monitor and review waste minimisation and management on construction sites. The SWMP is also used to record how waste is reduced, reused, recycled and disposed of on a construction site. Effective implementation of the plan includes:

- Recording decisions taken to prevent waste through concept and design

- Forecast waste produced on site
- Plan how to reduce, reuse or recover the forecasted waste
- Implement and monitor the planned activity
- Review the SWMP and record lessons learnt.

17.6.9 The SWMP would be a live document and would be updated regularly during the course of the project, usually by the Principal Contractor. Preparing a SWMP at the early planning stage facilitates the identification and implementation of waste minimisation at the design stage. It will also identify reuse and recycling opportunities during on site operations, with the outcome of reducing the quantities of construction waste sent to landfill. Preparing a SWMP also encourages the review of current waste reduction and recovery practice levels, highlighting areas where good and best practice can be achieved.

17.6.10 Other relevant best practice controls during the construction phase, for example segregated materials storage, re-use of inert materials for grading, will be considered and proposed as measures to be incorporated within a Construction Code of Practice (CoCP).

Operation

17.6.11 Waste management control measures to minimise the impacts of operational waste such as those in these are outlined in Table 17-15.

Table 17-15 Operational phase mitigation measures

Impact	Mitigation Measure	Comment
Increased generation of operational waste	Extend the F&HDC recycling and waste collection system to the proposed Development.	The recycling and waste collection system provided by F&HDC achieves a high recycling performance. This successful system would be extended to the proposed Development to utilise existing waste infrastructure and a proven system to increase recycling and reduce waste. The system comprises an alternate weekly collection for recyclable material, food waste and garden waste, and non-recyclable household waste.
	Apply KCC waste targets to the proposed development.	As detailed in the Future Baseline section.

17.6.12 Specific provision for waste recycling and composting would be guided by the number of dwellings provided and location of existing provision in the surrounding area.

17.6.13 Alternative initiatives that could be utilised or undertaken in the future that will be considered include:

- Community composting project – representing the third tier of the waste hierarchy (recycling) a community composting project could possibly be established.
- Public Incentives Scheme – a scheme could be implemented to incentivise participation in recycling including performance-based charging schemes.

18 References

Reference	Title
Ref.4.1	Cabinet Office (2015). National Risk Register of Civil Emergencies.
Ref.4.2	London Resilience Partnership (2017). London Risk Register. Version 6.0
Ref.5.1	Department of Local Communities and Government (2019). The National Planning Policy Framework.
Ref.5.2	Kent County Council (2016). Kent Environment Strategy. A strategy for environment, health and economy.
Ref.5.3	Shepway District Council (2013). Shepway Core Strategy
Ref.5.4	Defra (2009). Safeguarding our Soils: A Strategy for England.
Ref.5.5	Defra (2009). Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.
Ref.5.6	Natural England (2009). Natural England Technical Information Note 049.
Ref.5.7	MAFF (2000). Good Practice Guide for Handling Soils.
Ref.5.8	British Standards Institution (2015). British Standard Specification for Topsoil and Requirements for Use (BS3882:2015).
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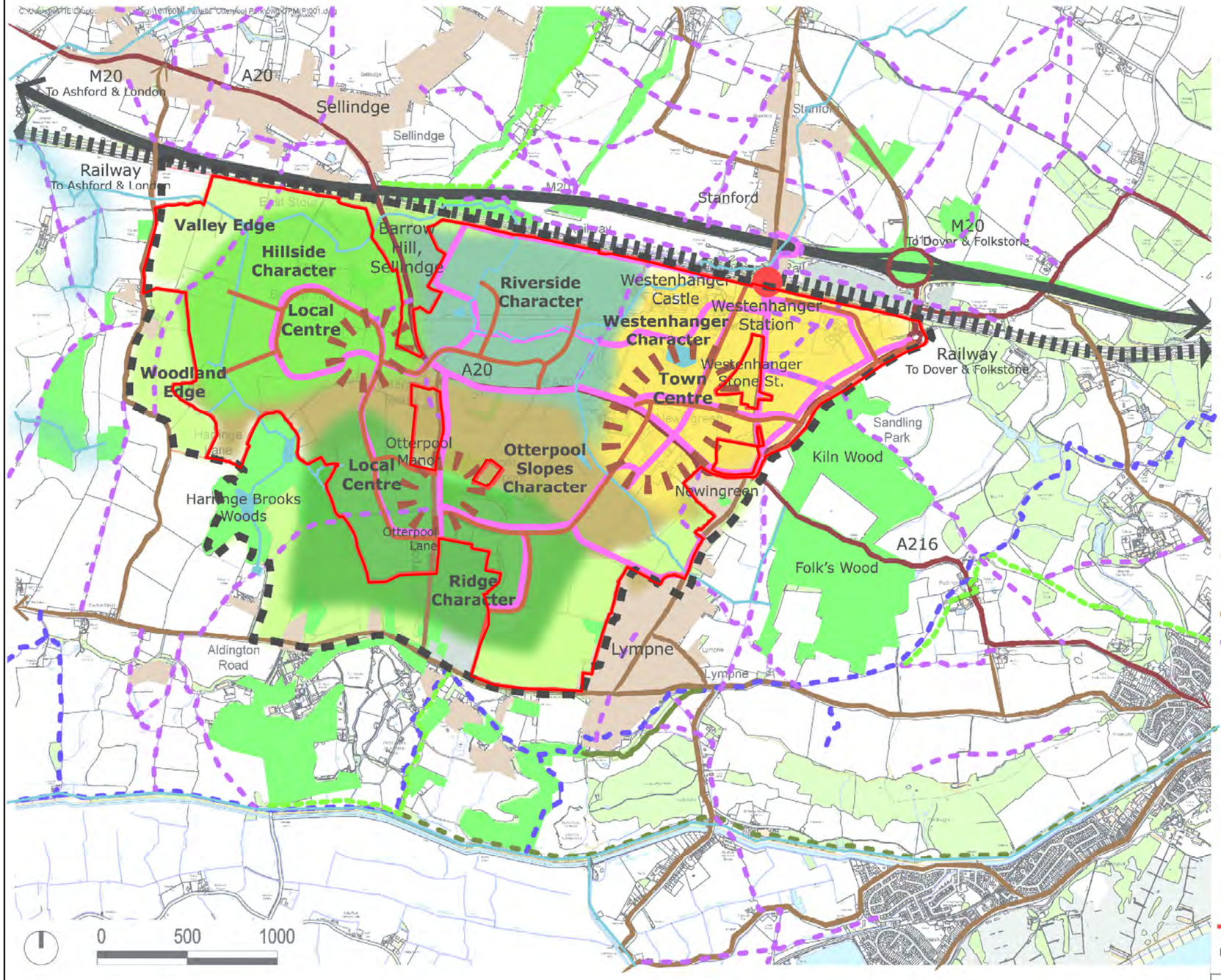
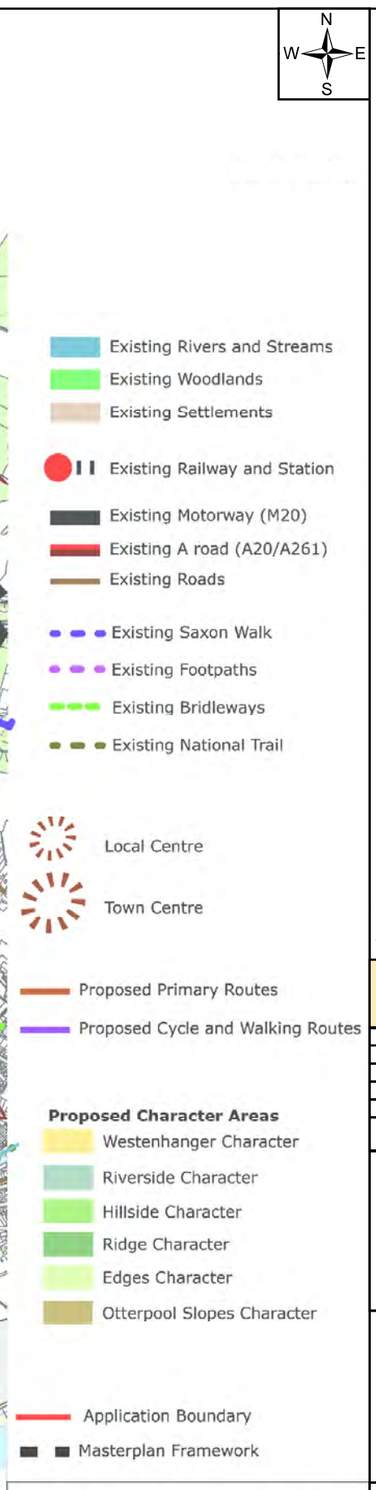
APPENDIX A

Figures





FARRELLS

0 1:25,000 1 km

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ARCADIS Design & Consultancy for natural and built assets
Arcadis House
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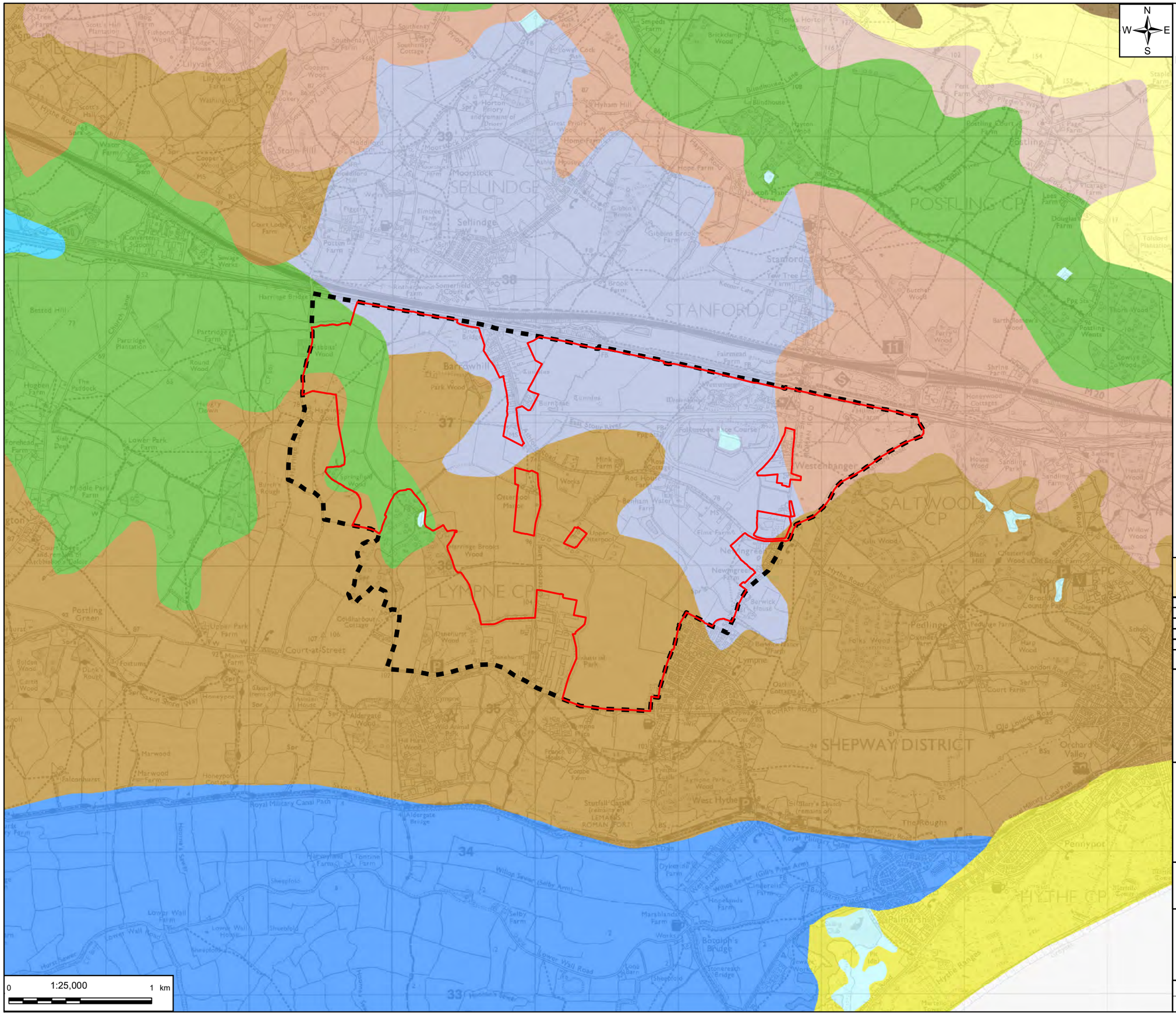
London
N1 9AB

Folkestone & Hythe District Council

OTTERPOOL PARK

Figure 3.1
Proposed Development Character Areas

scale	original size	datum	grid
1:25,000	A3	Sx	BNG



LEGEND

- OUTLINE PLANNING APPLICATION BOUNDARY (OPA)
- FRAMEWORK MASTERPLAN BOUNDARY
- FREELY DRAINING SLIGHTLY ACID BUT BASE-RICH SOILS
- FREELY DRAINING SLIGHTLY ACID LOAMY SOILS
- SLOWLY PERMEABLE SEASONALLY WET SLIGHTLY ACID BUT BASE-RICH LOAMY AND CLAYEY SOILS
- LOAMY AND CLAYEY FLOODPLAIN SOILS WITH NATURALLY HIGH GROUNDWATER
- LOAMY AND CLAYEY SOILS OF COASTAL FLATS WITH NATURALLY HIGH GROUNDWATER
- LOAMY SOILS WITH NATURALLY HIGH GROUNDWATER
- FREELY DRAINING LIME-RICH LOAMY SOILS
- SHALLOW LIME-RICH SOILS OVER CHALK OR LIMESTONE
- SAND DUNE SOILS
- WATER

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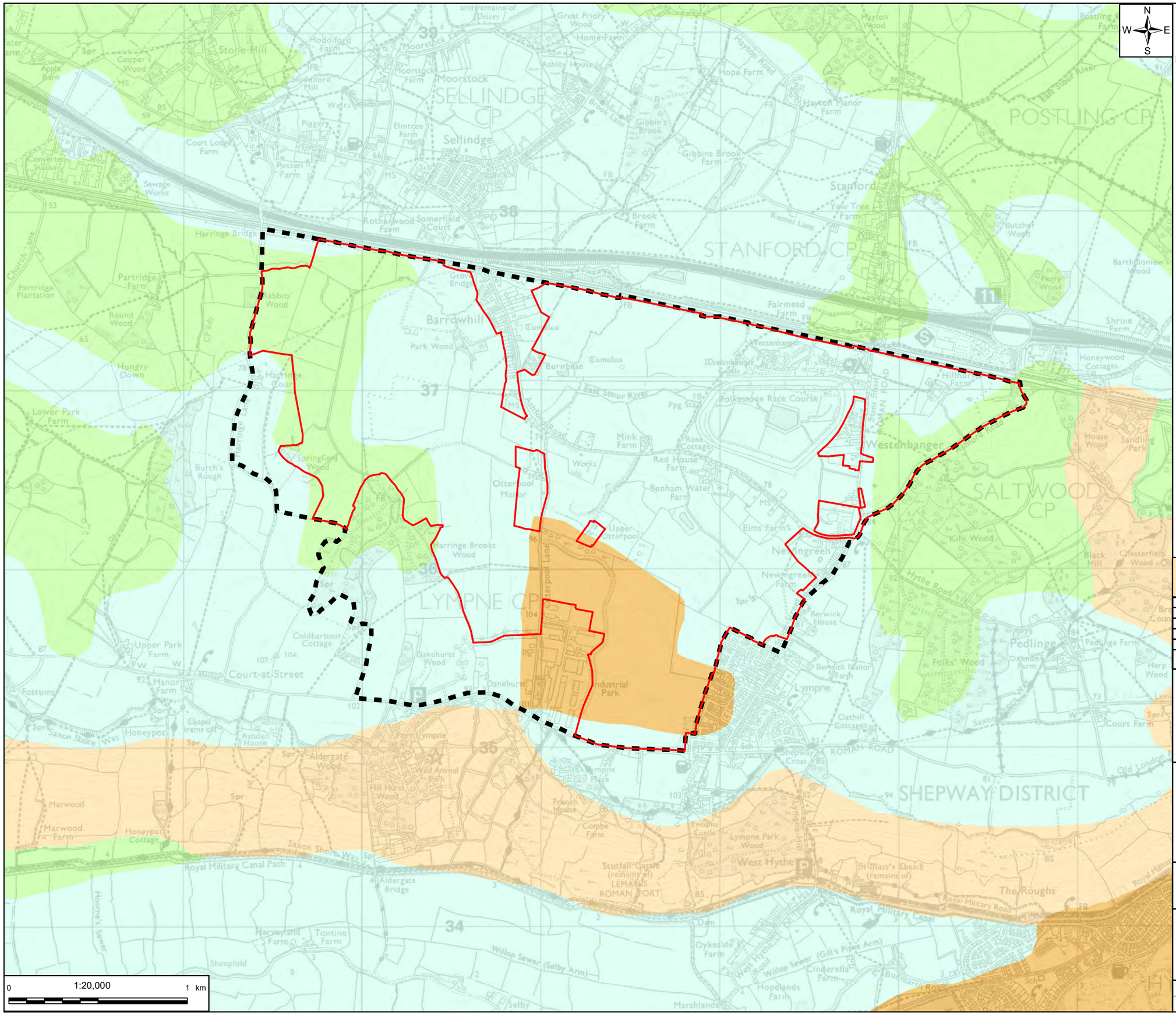
FIGURE 5.1
SOIL TYPES PRESENT

scale	original size	datum	grid
1:25,000	A3	Sx	BNG



LEGEND

OUTLINE PLANNING APPLICATION BOUNDARY (OPA)

FRAMEWORK MASTERPLAN BOUNDARY

PROVISIONAL AGRICULTURAL LAND CLASSIFICATION ALC

GRADE

- GRADE 2
- GRADE 3
- GRADE 4
- NON AGRICULTURAL

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FIGURE 5.2
PROVISIONAL AGRICULTURAL LAND CLASSIFICATION MAPPING

scale	original size	datum	grid
1:20,000	A3	Sx	BNG

N
W E
S

LEGEND

- OUTLINE PLANNING APPLICATION BOUNDARY (OPA)
- FRAMEWORK MASTERPLAN BOUNDARY

AGRICULTURAL LAND CLASSIFICATION (ALC) POST 1988 SURVEY

GRADE

- GRADE 1
- GRADE 2
- GRADE 3A
- GRADE 3B
- OTHER

0 1:20,000 1 km

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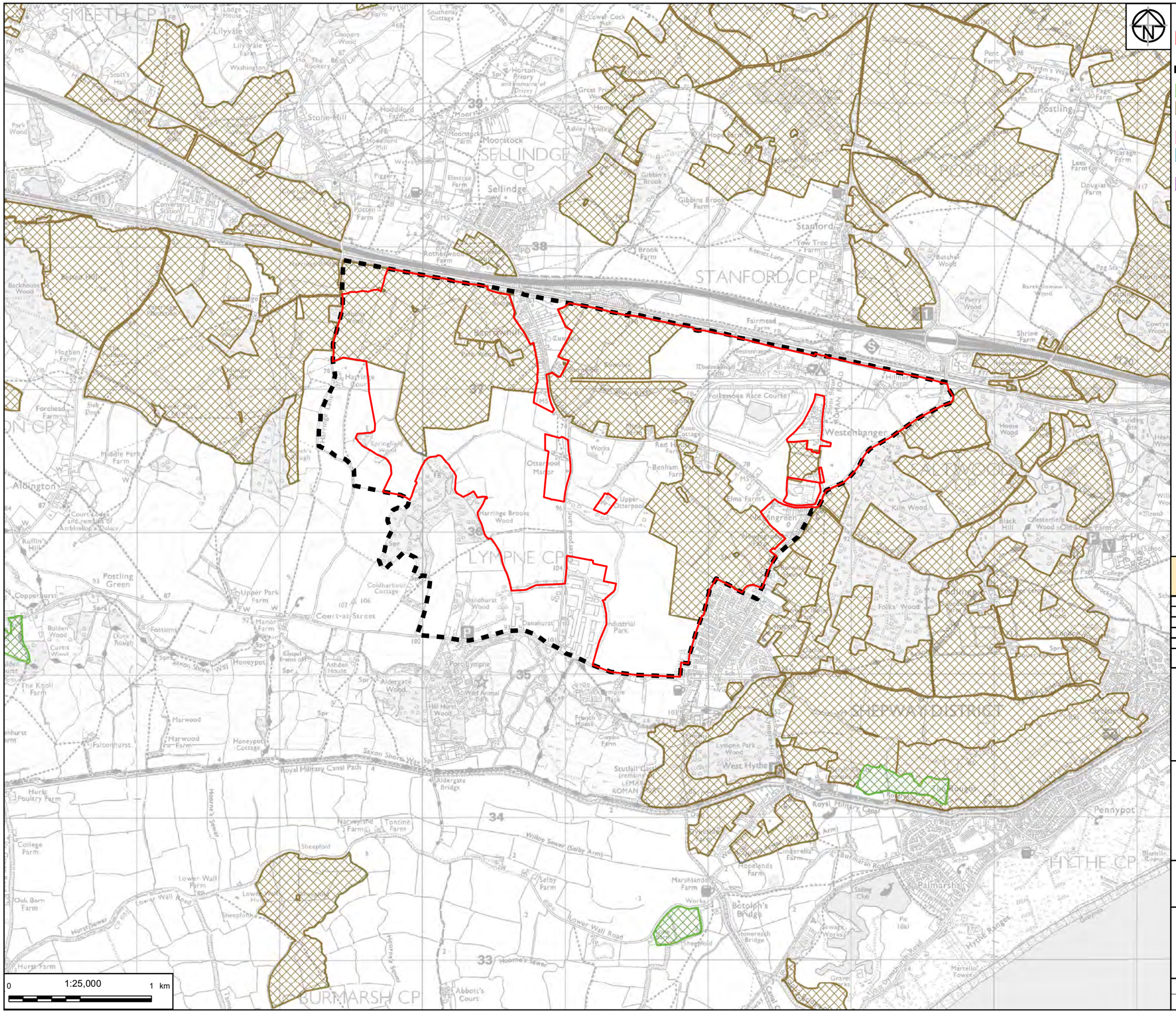
FIGURE 5.3
DETAILED AGRICULTURAL LAND CLASSIFICATION MAPPING

scale	original size	datum	grid
1:20,000	A3	Sx	BNG



LEGEND

- OUTLINE PLANNING APPLICATION BOUNDARY (OPA)
- FRAMEWORK MASTERPLAN BOUNDARY
- ENTRY LEVEL STEWARDSHIP
- ENTRY LEVEL PLUS HIGHER LEVEL STEWARDSHIP
- HIGHER LEVEL STEWARDSHIP
- ORGANIC ENTRY LEVEL STEWARDSHIP
- ORGANIC ENTRY LEVEL PLUS HIGHER LEVEL STEWARDSHIP

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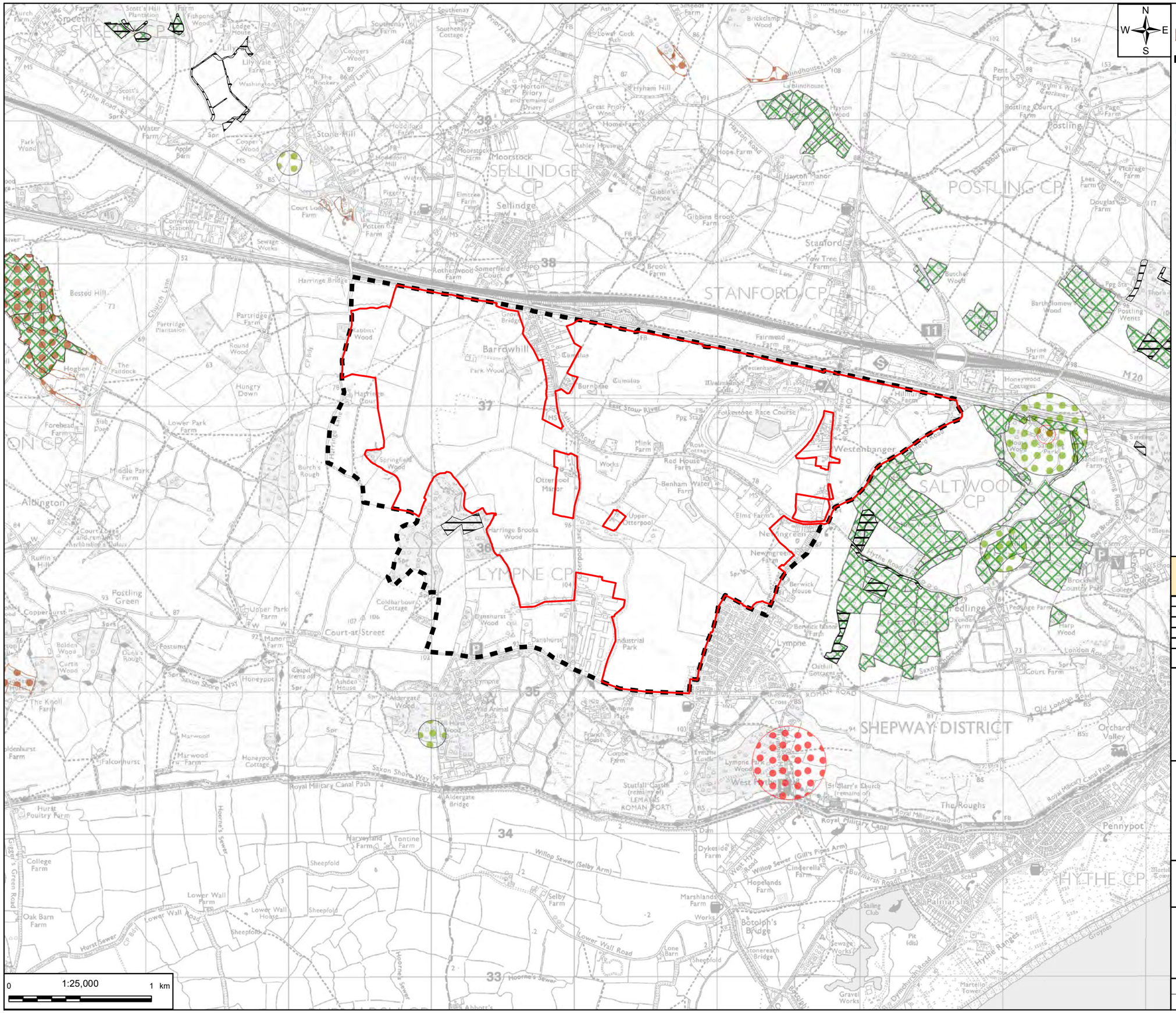
FIGURE 5.4
AREAS UNDER ENTRY LEVEL PLUS HIGHER LEVEL STEWARDSHIP

scale	original size	datum	grid
1:25,000	A3	Sx	BNG



LEGEND

- OUTLINE PLANNING APPLICATION BOUNDARY (OPA)
- FRAMEWORK MASTERPLAN BOUNDARY
- FELLING LICENCE APPLICATIONS
- ENGLISH WOODLAND GRANT SCHEME
- WOODLAND GRANT SCHEME 1
- WOODLAND GRANT SCHEME 2
- WOODLAND GRANT SCHEME 3

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FIGURE 5.5
AREAS UNDER WOODLAND GRANT OR FORESTRY SCHEMES

scale	original size	datum	grid
1:25,000	A3	Sx	BNG

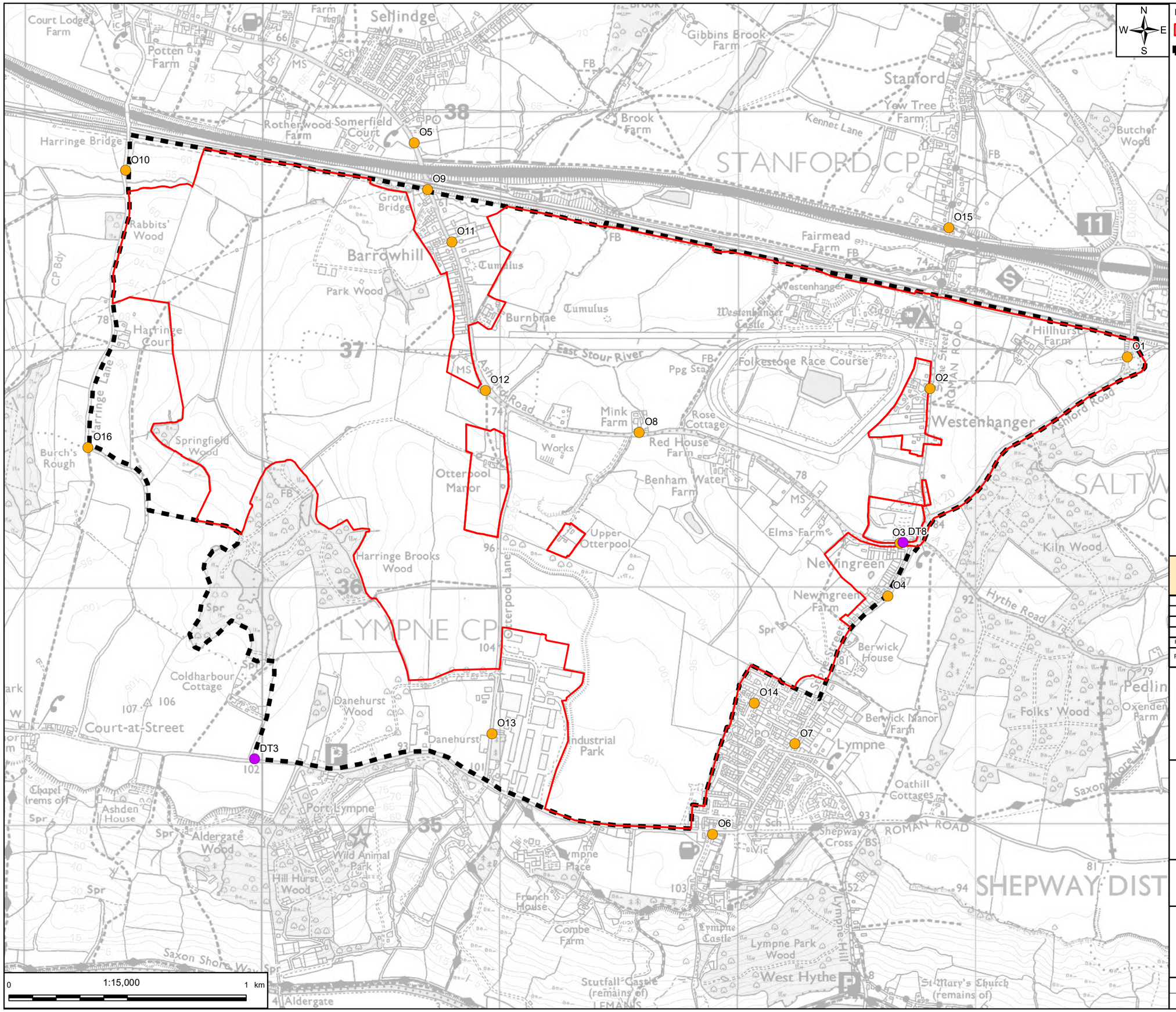

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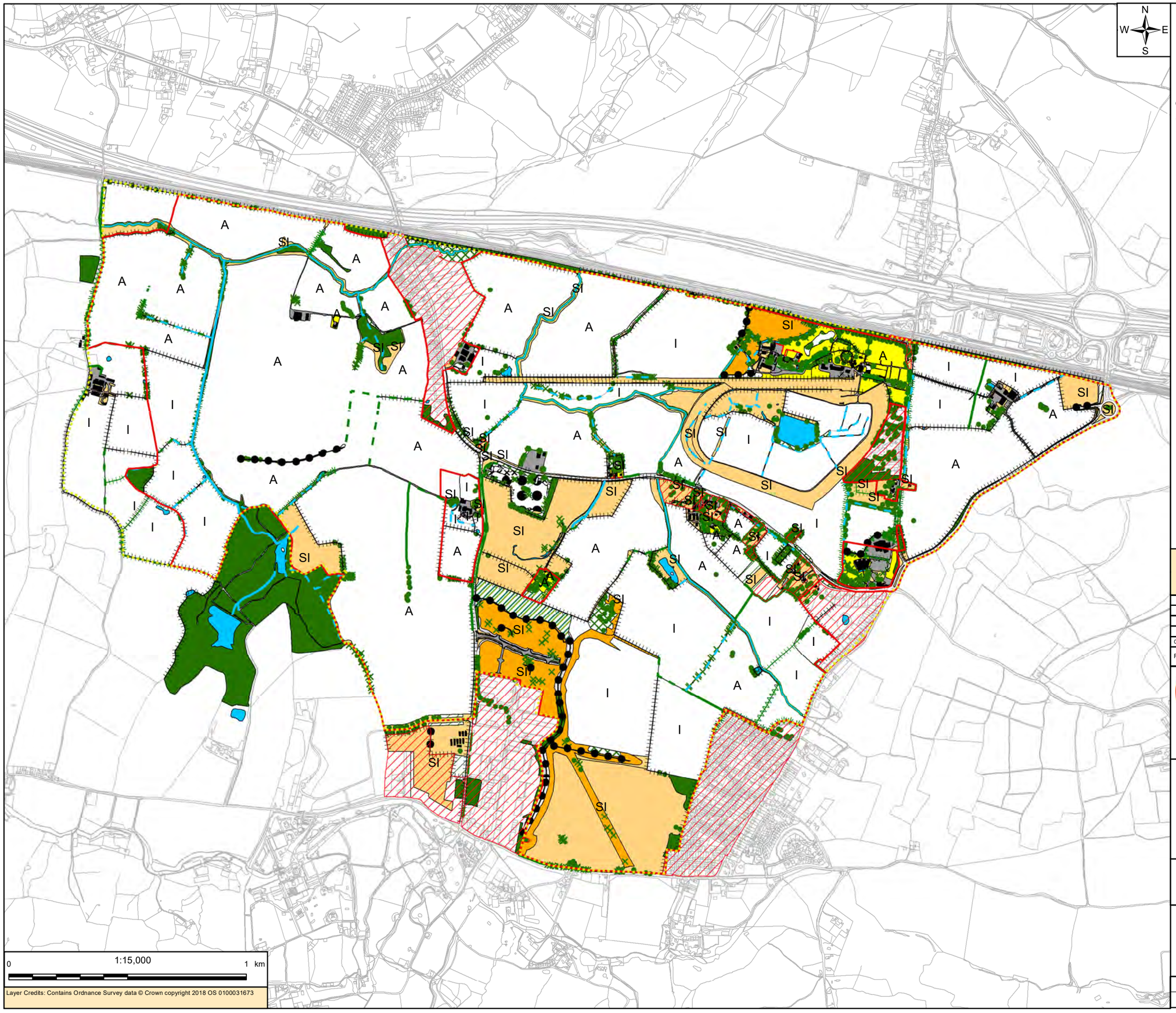
Figure 6.1
Baseline Air Quality Monitoring Sites

scale	original size	datum	grid
1:15,000	A3	Sx	BNG



Legend

- Survey Area
- Outline Planning Application Boundary
- Area not fully surveyed
- Running water
- Ditch
- Earth Bank
- Species poor hedgerow with trees (confier)
- Native species-rich intact hedge
- Species poor intact hedge
- Species poor defunct hedge
- Native species-rich hedge with trees
- Species poor hedge with trees
- Fence
- Wall
- Scattered scrub
- Scattered trees
- Broad-leaved semi-natural woodland
- Broad-leaved parkland scattered trees
- Mixed plantation woodland
- Plantation woodland
- Dense/continuous scrub
- Ephemeral / short-perennial
- A — Amenity grassland
- A — Arable
- SI — Semi-improved neutral grassland
- SI — Species poor semi-improved grassland
- I — Improved grassland
- Bare ground
- Building
- Hardstanding
- Standing water
- Riparian corridor *

* 'Riparian corridor' within the site consists of a 1 - 3m wide stream / river largely surrounded on both banks by trees and scrub.

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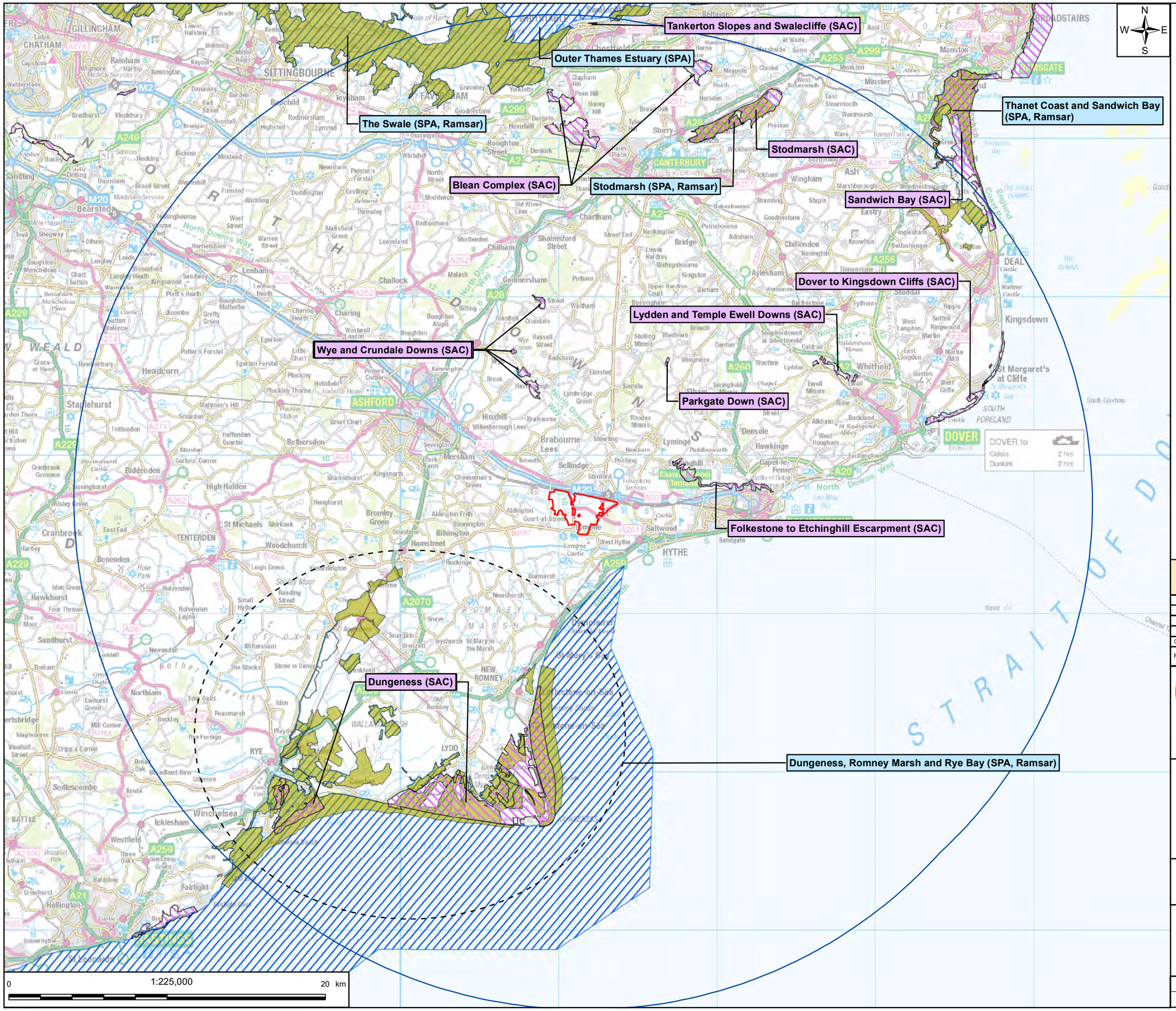
Figure 7.1
Habitat Survey Overview

scale	original size	datum	grid
1:15,000	A3	Sx	BNG



Legend

- Outline Planning Application Boundary
- 30km Study Area
- Special Area of Conservation (SAC)
- Ramsar
- Special Protection Area (SPA)

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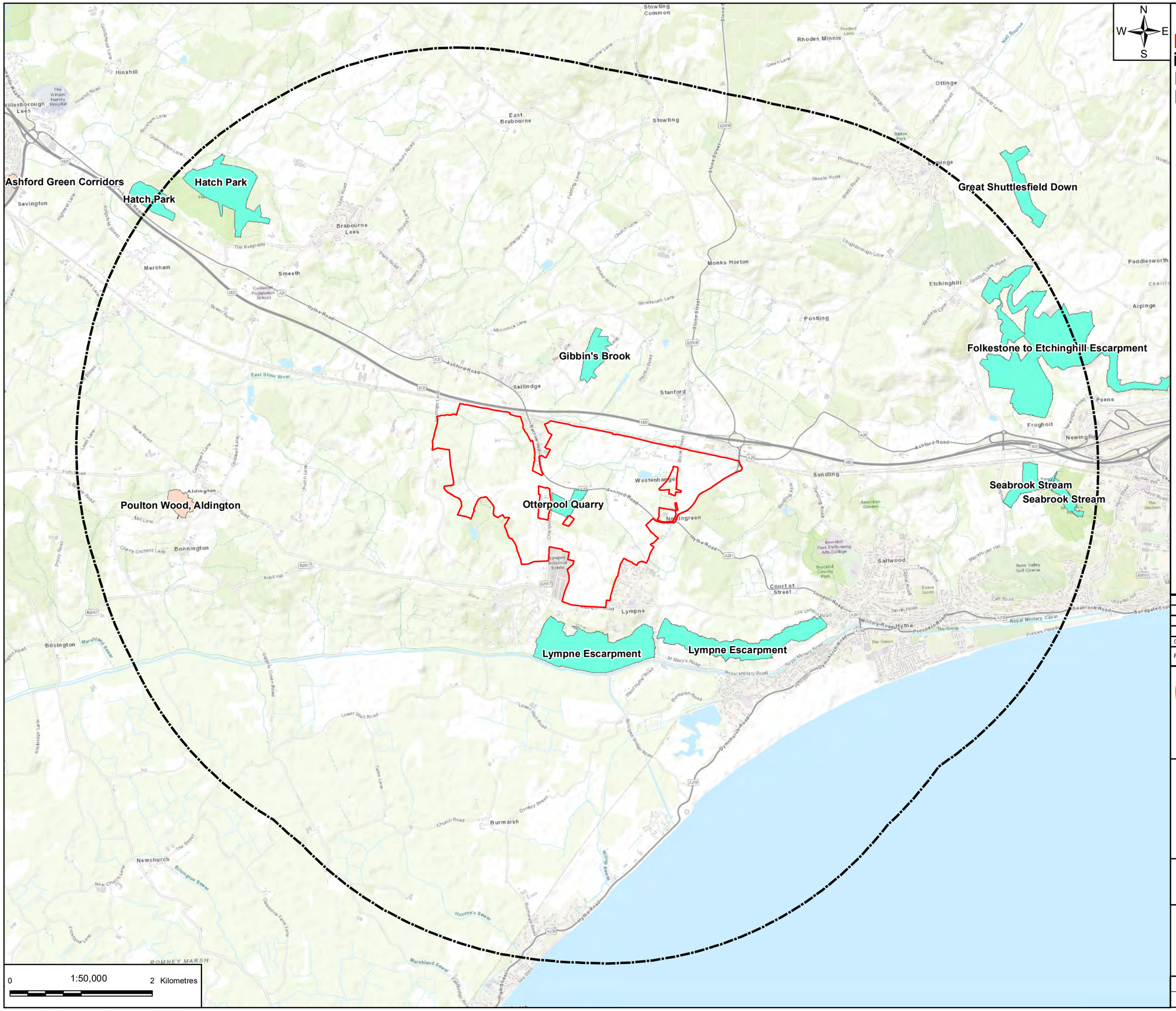
Figure 7.2
International Designated Sites within 30km of Site

scale	original size	datum	grid
1:225,000	A3	Sx	BNG



Legend

- Outline Planning Application Boundary
- 5km buffer from OPA
- Local Nature Reserve (LNR)
- Site of Special Scientific Interest (SSSI)

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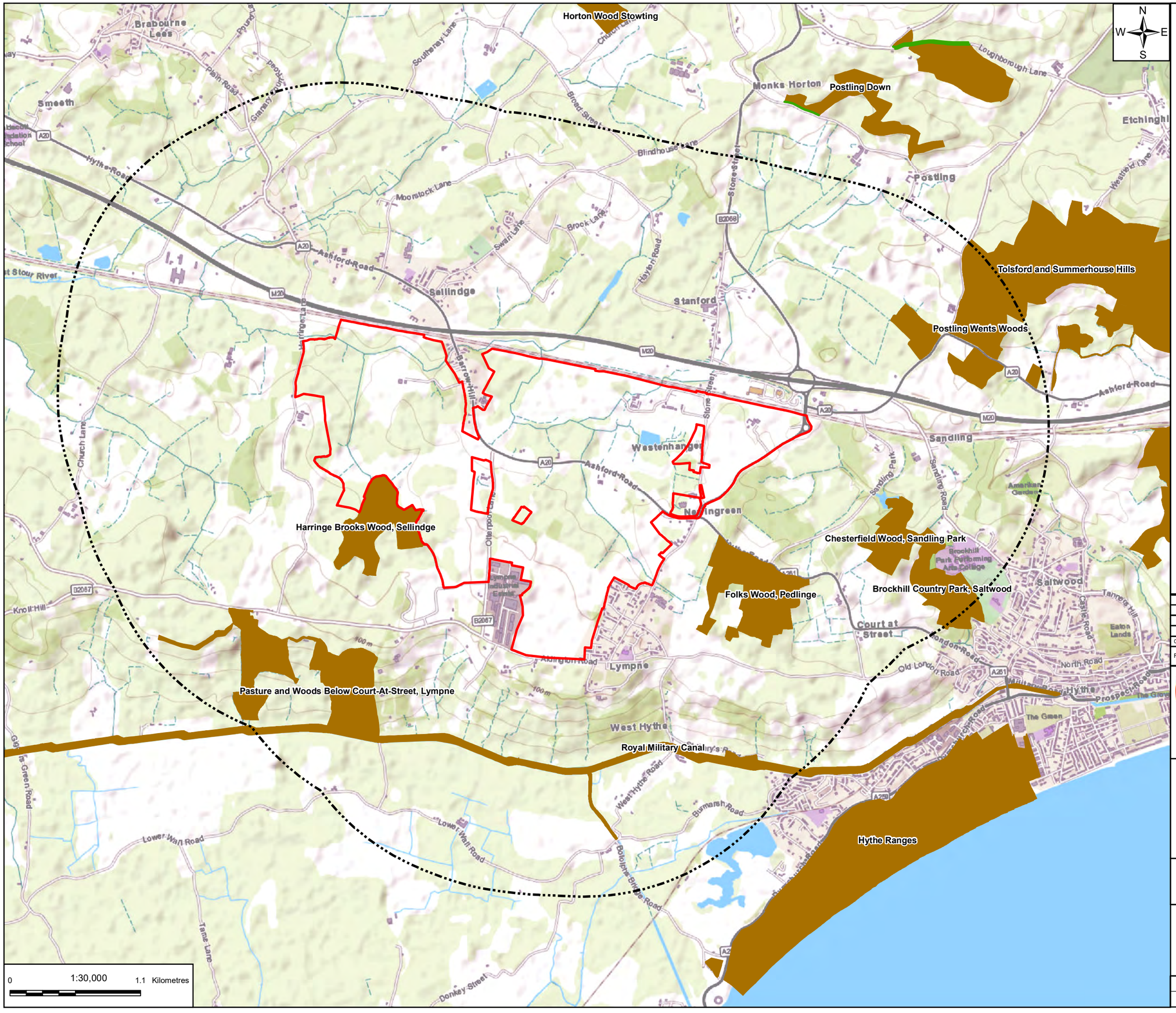
Figure 7.3
International Statutory Sites within 5km of the Study Area

scale	original size	datum	grid
1: 230,000	A3	Sx	OSGB



Legend

- Outline Planning Application Boundary
- 2 km buffer
- Local wildlife sites
- Road side nature reserves

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Figure 7.4
Non-Statutory Designated Sites Within 2km of the Study Area

scale	original size	datum	grid
1:30,000	A3	Sx	OSGB

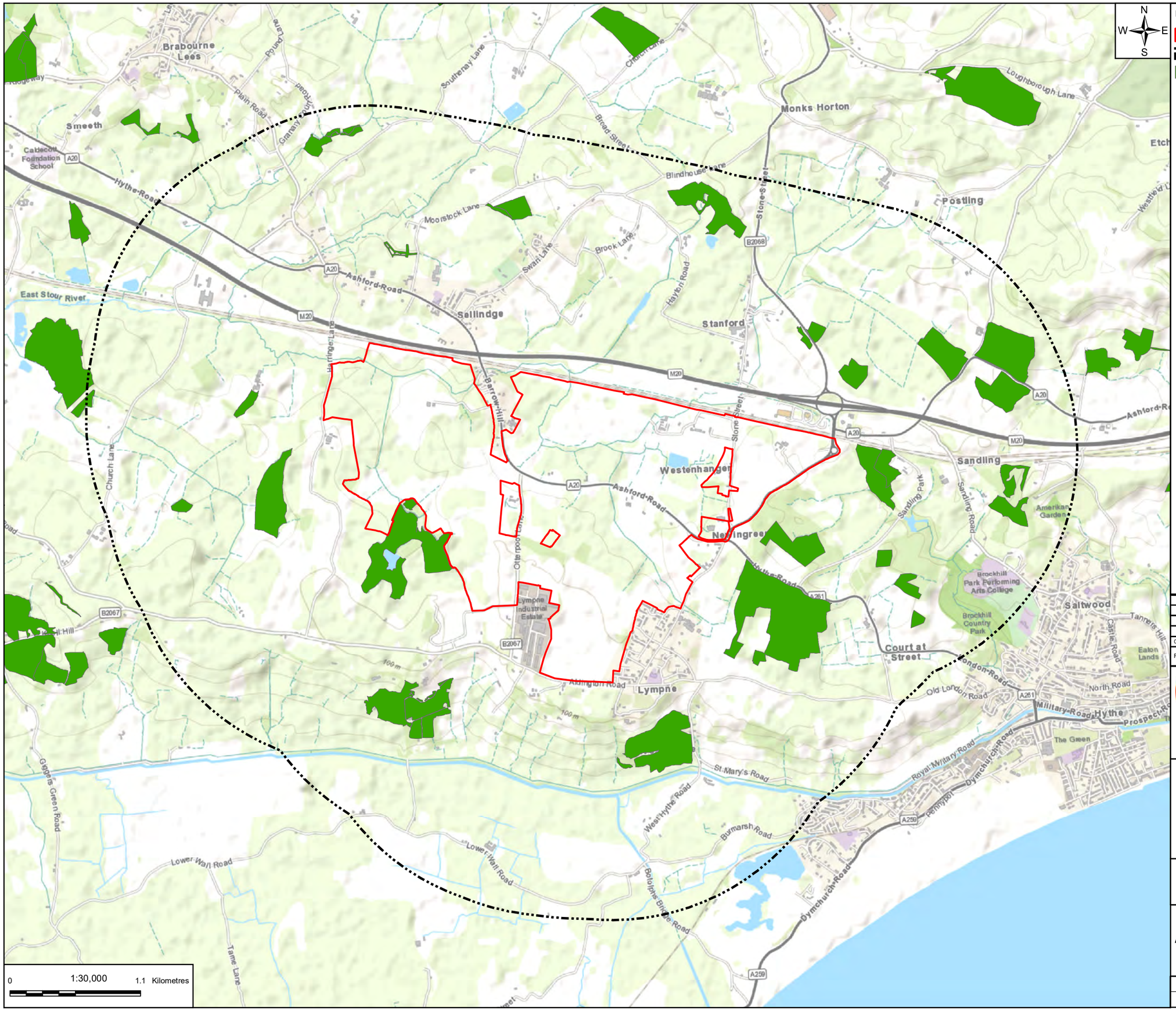

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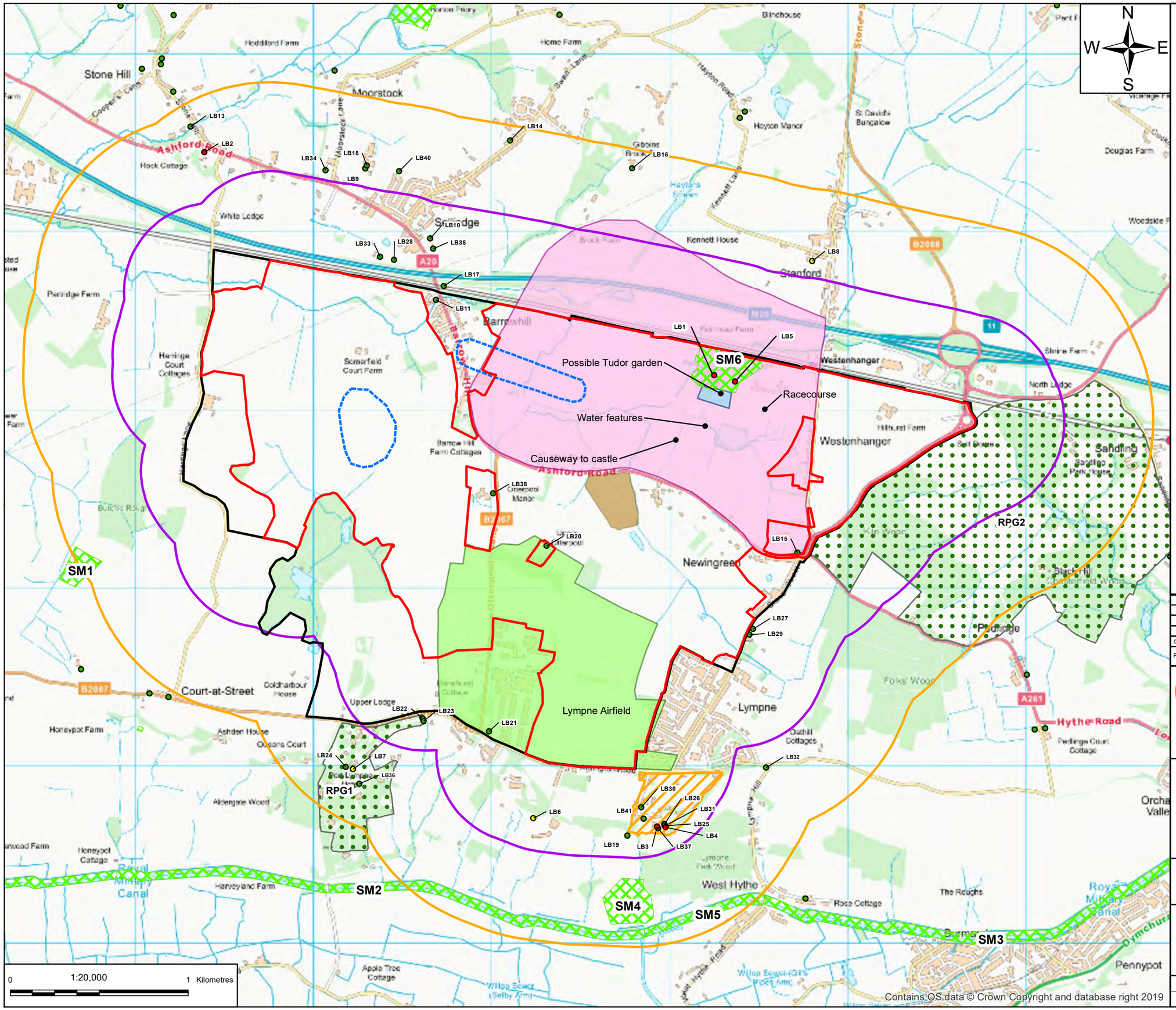
Figure 7.5
Ancient Woodlands listed on the AWI within 2km of the OPA

scale	original size	datum	grid
1:30,000	A3	Sx	OSGB



0 1:20,000 1 Kilometres

Legend

- Redline_2020_03_24
- Outline Planning Application (OPA) boundary
- Framework Masterplan (FM) boundary
- Outline Planning Application 500m Buffer
- Outline Planning Application 1km Buffer
- Area of Barrows

Listed Buildings

Grade

- I
- II
- II*

- Scheduled Monuments
- Lympne Conservation
- Registered Parks and Gardens
- Roman Villa
- Tudor Garden
- Deer Park
- Airfield

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Figure 9.1
Key Heritage Assets

scale	original size	datum	grid
1: 20,000	A3	Sx	OSGB

Mini-excavation to be carried out in 2020

0 1:15,000 0.5 Kilometres

N
W E
S

Legend

- Outline Planning Application (OPA) boundary
- Framework Masterplan (FM) boundary
- Areas that have been trenched (2017-18)
- Areas to be trenched in 2020
- Mini-excavation to be carried out in 2020

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Figure 9.2
Archaeological Trenching Areas

scale	original size	datum	grid
1: 15,000	A3	Sx	OSGB

608 609 610 611 612 613 614 615

139 138 137 136 135 134 133

N W E S

Electrical Sub Station
Sellindge Service Station (inactive)
Vehical Repair Yard
Former Folkstone Racecourse
Former Quarry / Lorry Park
Former Cement Manufacturer
Fuel Station
Vehicle Recovery Operations
Farms, including biodiesel manufacturer
Off-Road Racetrack
Geological SSSI (former quarry)
Former Crosskeys LPG Service Station
Lympne Industrial Park Landfill
Electrical Sub Station
Pits/Ponds (potentially infilled - across site)
Lympne Industrial Estate
Electrical Sub Station
Electrical Sub Station
Quarry Field Landfill
Historical Tank (possibly water storage)
Electrical Sub Station
Historical Tank (possibly water storage)
Electrical Sub Station
Electrical Sub Station
Electrical Sub Station
Historical Tank (possibly water storage)
Rifle Range Facility
Electrical Sub Station
Former RAF Lympne Airbase/ Lympne Airport
Historical Tank (possibly water storage)

0 1:25,000 1 km

Legend

- Site Boundary
- 500m Buffer
- Fuel Stations
- Electrical Sub Station
- Electricity Industry Facilities
- Petroleum Storage Facilities
- Potential Tanks
- Tanks
- Integrated Pollution Prevention and Control
- Local Air Pollution Prevention and
- Pollution Incident Register
- Pollution Incident Controlled Water
- Contemporary Trade Directory Entries
- Discharge Consents
- Electricity production & distribution [inc large transformers]
- General quarrying
- Sewage
- Potentially Infilled Land
- Contaminated Land (Railway)
- Potentially Infilled Land
- Registered Landfill
- Historic Landfill
- Cemetery or Graveyard
- Clay bricks & tiles [manufacture]
- Factory or works - use not specified
- General quarrying
- Quarrying of sand & clay, operation of sand & gravel pits
- Road haulage
- Transport: air and space, cargo and handling and transport support

Note:
1. Potentially contaminated land uses have been identified on desk-based information utilising Landmark Envirocheck
2. Data from GIS system is available data therefore not to be used for detailed design and construction

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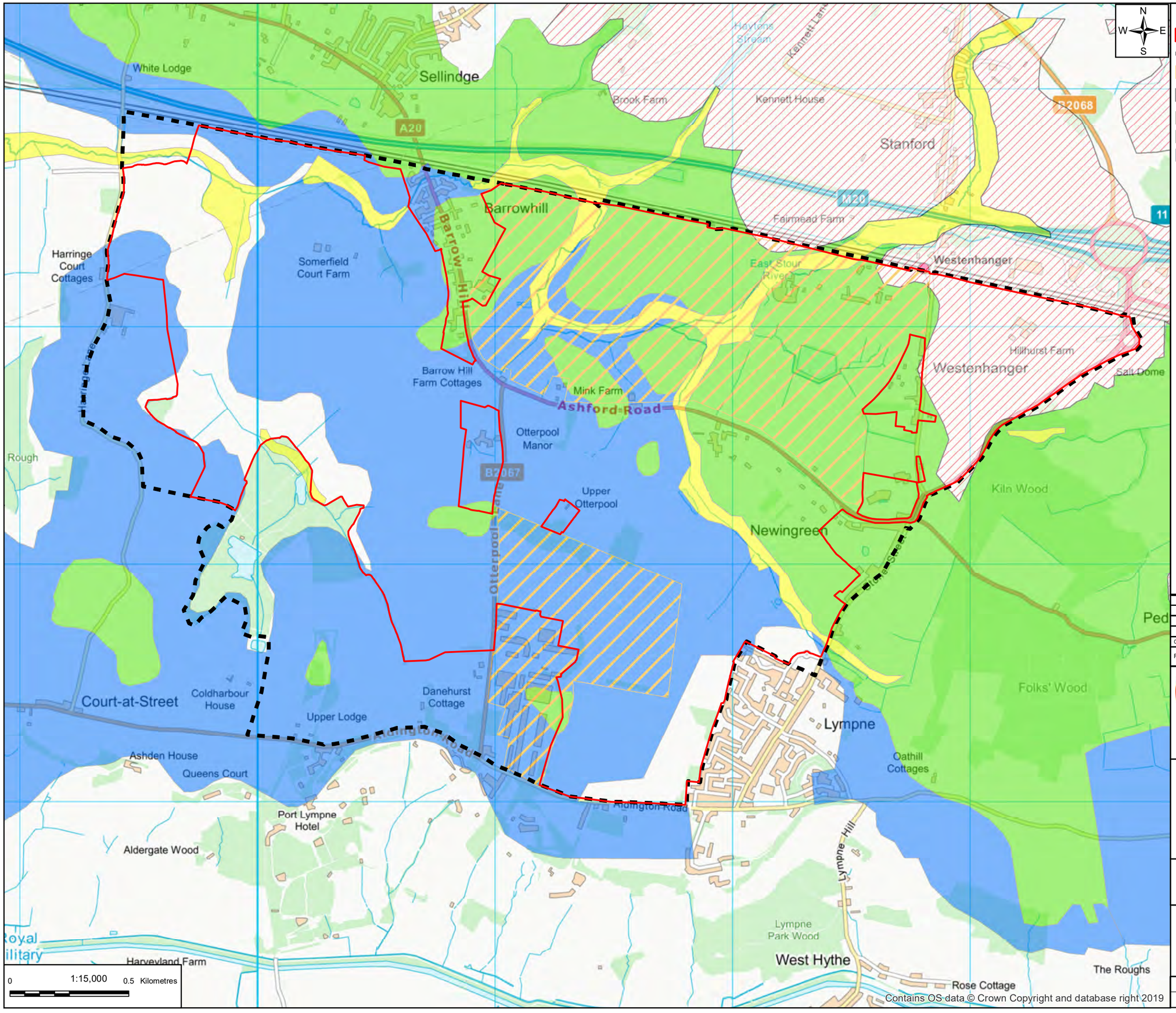
Figure 10.1
Land Quality - Potentially Contaminative Land Uses

scale	original size	datum	grid
1:25,000	A3	Sx	BNG



Legend

- Outline Planning Application Boundary
- Master Plan Framework
- Shepway District Council Land Allocations
- Silica Sand/Construction Sand - Sandstone: Folkestone Formation
- Sub- alluvial River Terrace Deposits
- Sandstone - Sandgate Formation
- Limestone Hythe Formation (Kentish Ragstone)

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Figure 10.2 Mineral Safeguarding Area

scale	original size	datum	grid
1: 15,000	A3	Sx	OSGB

Legend

- Outline Planning Application (OPA) boundary
- Framework Masterplan (FM) boundary
- 1 — Viewpoint Location
- Kent Downs AONB Boundary
- National Trail / Long Distance Path

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Figure 12.1 LVIA Study Area and Viewpoint Location

scale	original size	datum	grid
1:50,000	A3	mAOD	OSGB 27700

100mm on Original

Print Date: 2020-03-27 16:44:29

E:\OneDrive - ARCADIS\Mail_Attachment\Otterpool_template\Data\Figure 12-1\OP_ARC_600_DR_L_P01 Scoping Report Figure 12.1.dwg

610 611 612 613 614

138 137 136 135

N W E S

Legend

- Application Boundary
- Long Term Monitoring
- Short Term Monitoring
- Vibration Monitoring Points

NML04S
Day Somerfield Farm

NML04S
Night Somerfield Farm

NML05L
West Barrow Hill Cottages

VML02

NML03L
Northern Boundary
Westernhanger

VML01

NML01S
Stone Street (North)

NML09S
West of Westernhanger

NML10S
East of Westernhanger

NML01L A20

NML05S
Harringe Brooks Wood

NML06L
Otterpool Manor

NML02S
Ashford Road

NML04L
North of Ind.Estate

NML08S
North of Lympne

NML7S
Otterpool Lane

NML02L
West of Ind. Estate

NML03S
Folkes Wood Way

NML06S
East of Ind.Estate

0 1:15,000 1 km

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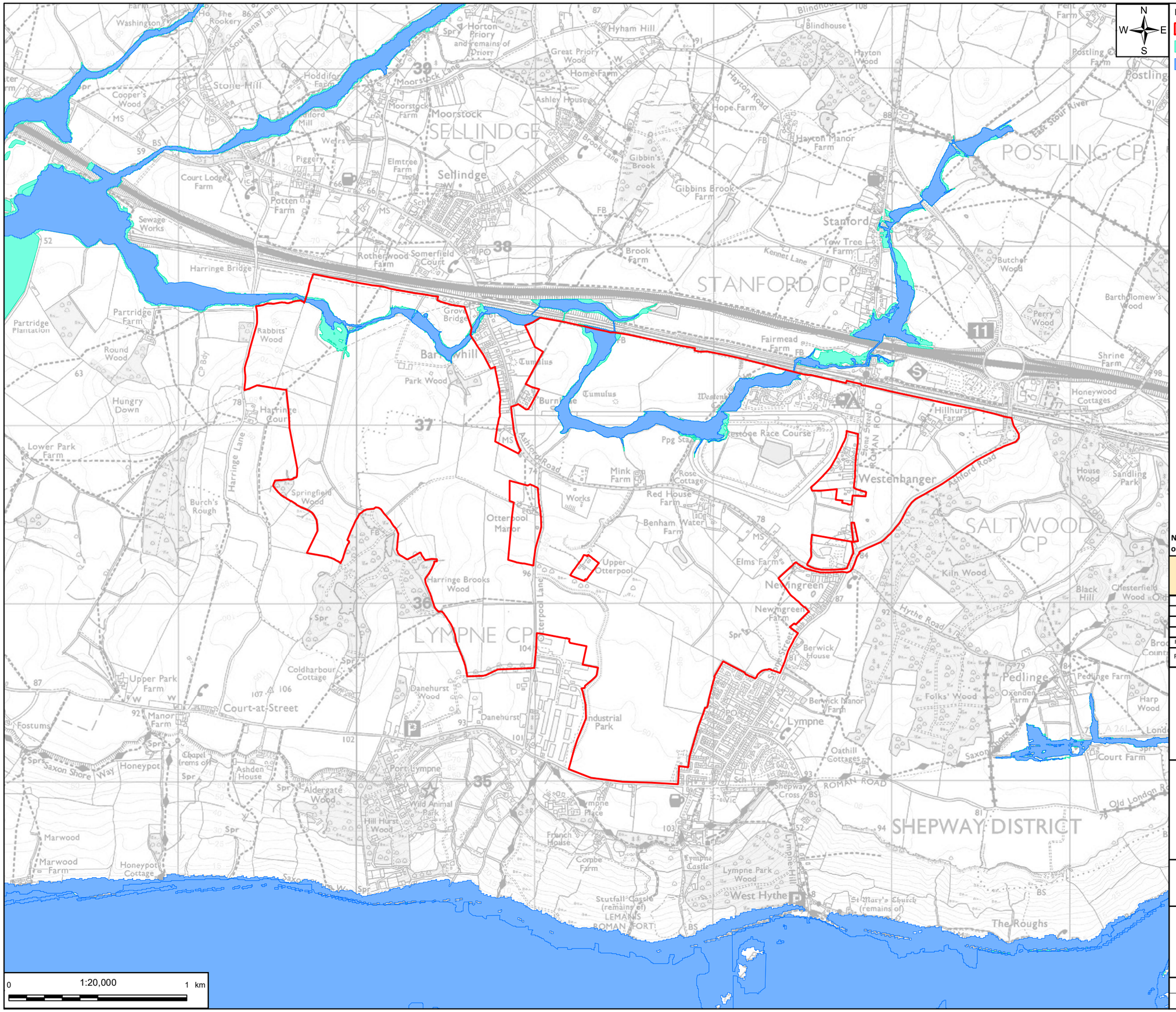
Figure 13.1
Noise and Vibration Monitoring Locations

scale	original size	datum	grid
1:15,000	A3	Sx	BNG



Legend

- Outline Planning Application Boundary
- Flood Zone 2
- Flood Zone 3

Note: Flood Zone 1 is shown as 'clear' on the Flood Map - all land outside Zones 2 and 3.

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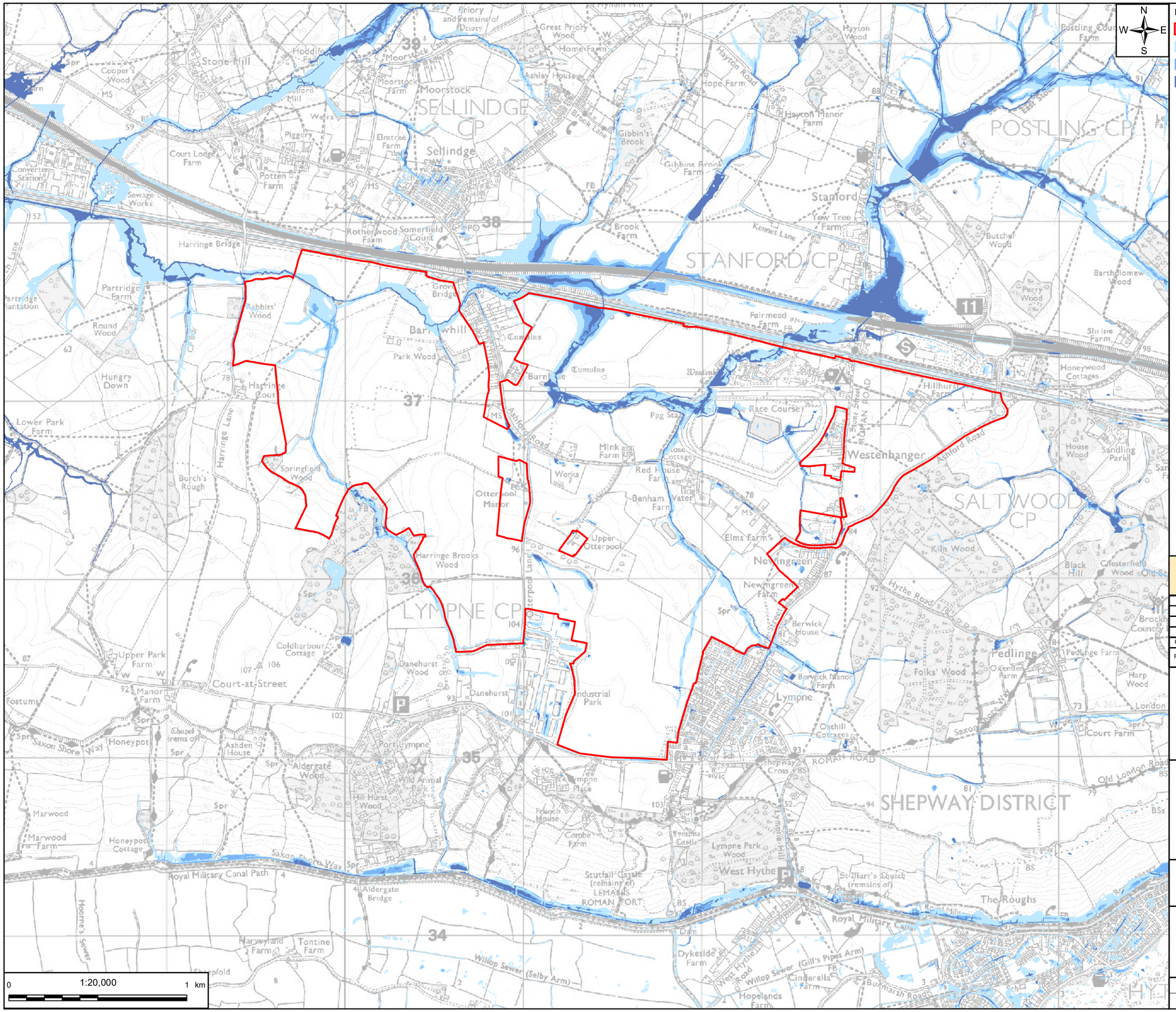
Figure 15.1
Flood Map for Planning

scale	original size	datum	grid
1:20,000	A3	Sx	BNG



Legend

- Outline Planning Application Boundary
- 0.1% AEP Surface Flood Extent
- 1% AEP Surface Flood Extent
- 3.33% AEP Surface Flood Extent

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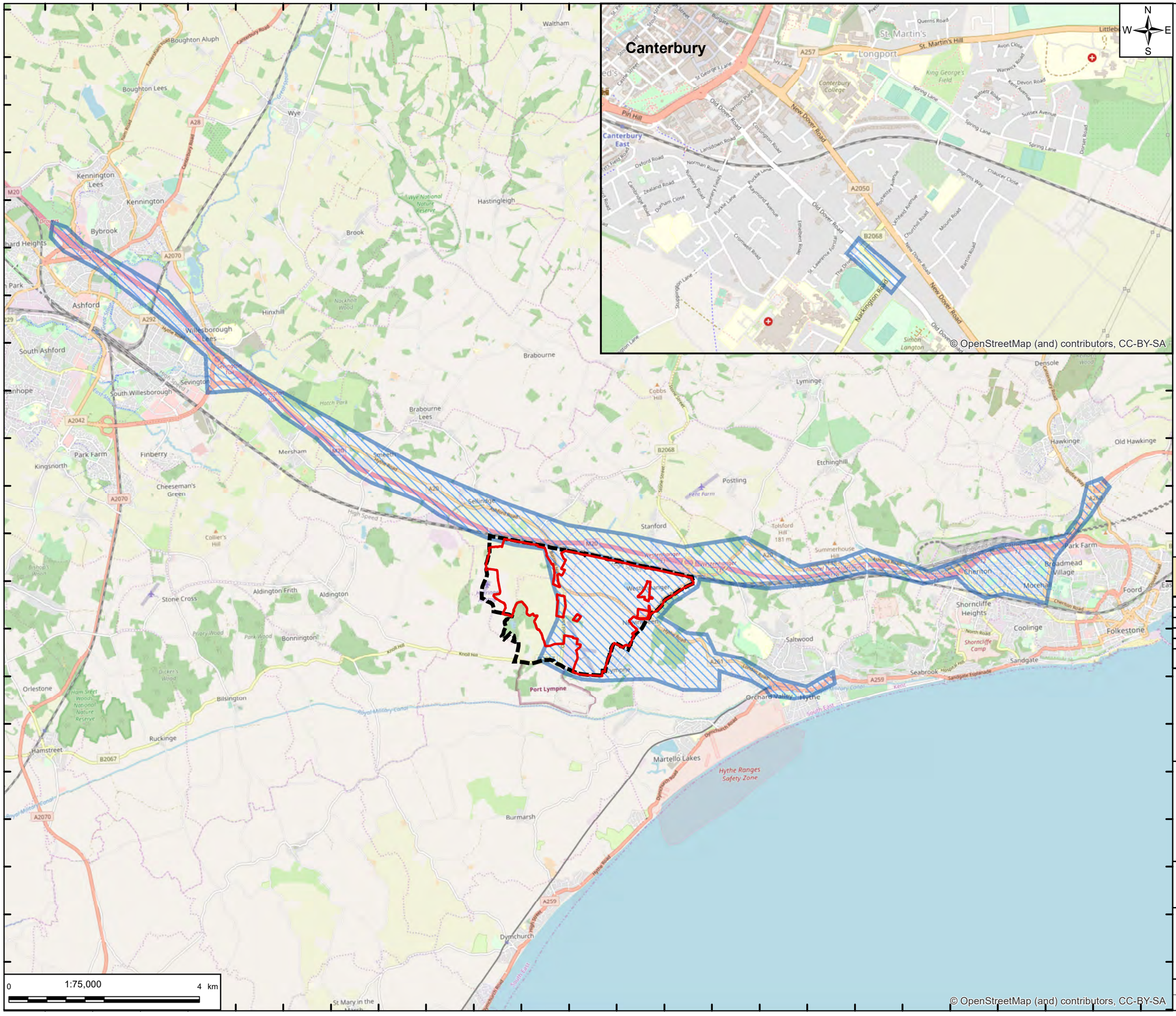
Figure 15.2
EA Long Term Surface Water Flood Risk

scale	original size	datum	grid
1:20,000	A3	Sx	BNG



Legend

- Study Area
- Framework Masterplan Boundary
- Highway Capacity Modelling Study Area

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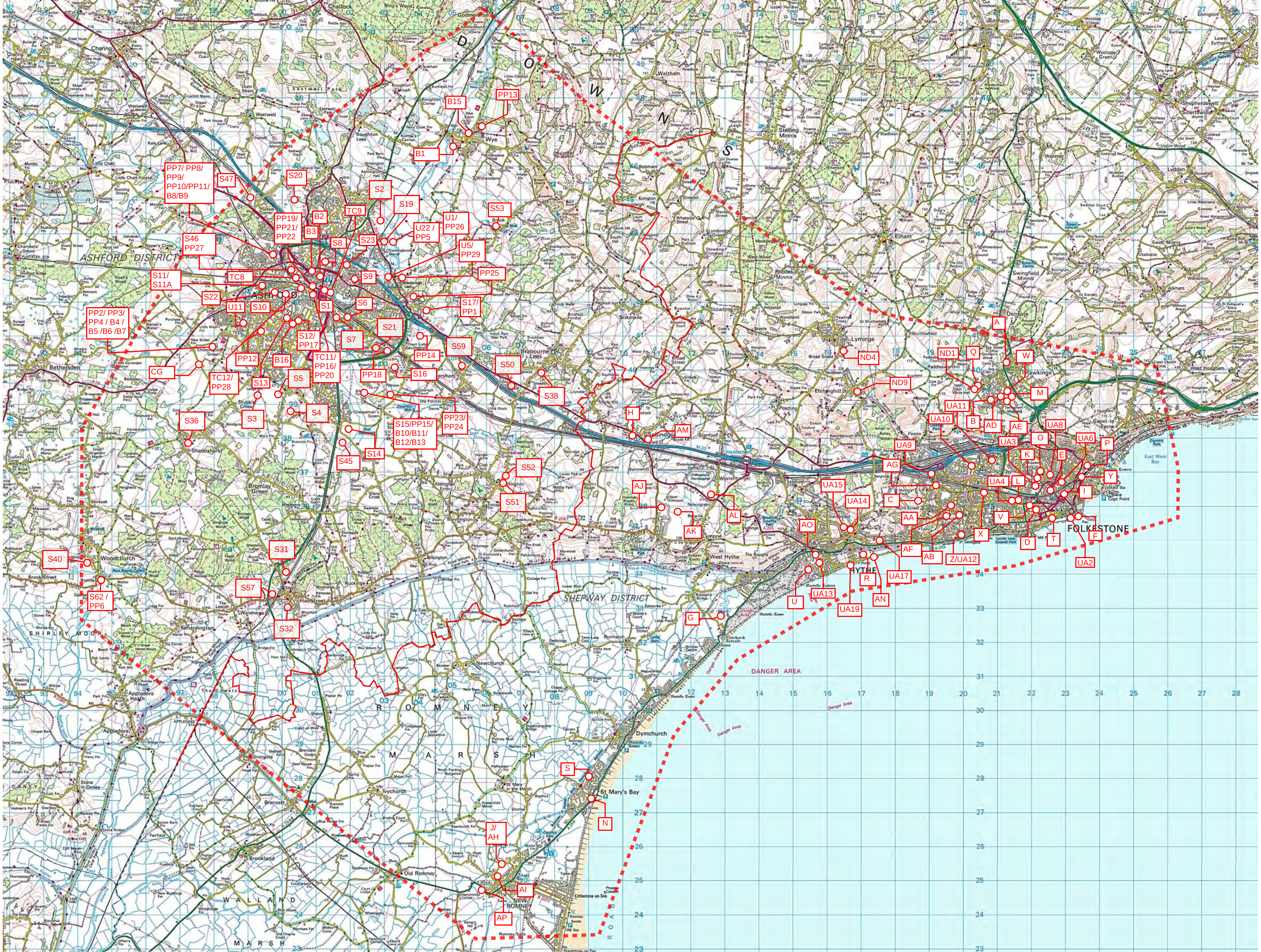
Figure 16.1
Highway Capacity Modelling Study Area

scale	original size	datum	grid
1:75,000	A3	Sx	BNG

APPENDIX B

Cumulative Assessment Information



ASHFORD DISTRICT
SHEPWAY DISTRICT
D O W N S
R O M N E Y M A R S H
WALLAND MARSH
DANGER AREA
FOLKESTONE
HYTHE
Dymchurch
St Mary's Bay
NEW ROMNEY
Littlestone-on-Sea
Ashford
Wye
Charing
Bethersden
Woodchurch
Hamstreet
Appledore
Brenzett
Ivychurch
Old Romney
Lympne
Saltwood
Lyminge
Elham
Hawkinge
Brabourne
Aldington
Smeeth
Sellindge
Mersham
Kingsnorth
Shadoxhurst
Bromley Green
Snargate
Brookland
Stelling Minnis
PP7/ PP8/ PP9/ PP10/PP11/ B8/B9
S47
S20
S2
S19
TC9
PP19/ PP21/ PP22
B2
B3
S8
S23
U22 / PP5
U1/ PP26
S53
U5/ PP29
PP25
S46 PP27
S11/ S11A
TC8
S22
U11
S10
S9
S1
S6
S17/ PP1
PP2/ PP3/ PP4 / B4 / B5 /B6 /B7
S12/ PP17
S7
S21
S59
PP14
CG
PP12
B16
TC11/ PP16/ PP20
TC12/ PP28
S13
S5
PP18
S16
S50
S38
S3
S4
S36
S15/PP15/ B10/B11/ B12/B13
PP23/ PP24
S14
S45
S52
S51
B15
PP13
B1
S31
S40
S57
S62 / PP6
S32
H
AM
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M
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Q
ND4
ND9
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UA10
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AF
AB
Z/UA12
D
T
F
UA2
UA17
R
AN
UA13
UA19
U
S
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J/ AH
AI
AP

Map ID Number	LPA	LPA Reference	Site Address	Proposal	Status	Notes	Total Residential Units	Years				
								Pre 17/18	17/18	18/19	19/20	20/21
CG	Ashford		Chilmington Green	AAP - up to 5,750 homes, District Centre (7,695sqm A1-A5 retail, 6,910sqm B1), 2 Local Centres (total 850sqm A1-A5, 1,700sqm B1), 1 secondary school, 4 primary schools (incl. nurseries), community, health, D2 Sports and fitness uses, Park and Ride	Area Action Plan	2500 dwellings in period 2018/19 - 2029/30, building out at 250/year from 2022/23 onwards. Remainder to be delivered post-2030.	5750					
S1	Ashford	S1	Commercial Quarter	Mixed - 55,000sqm offices, plus small scale retail, leisure, hotel and a multi-storey car park. 214 residential units (Full application 18/01168/AS)	Resolution to grant subject to S106 (20.03.19)	Commencement due in 2020/21, to complete by 2024	244					
S2	Ashford	S2	Land north east of Willesborough Road, Kennington	Resi - 700 units, plus primary school, on 40ha site.	Hybrid application submitted 07/01/2019 (19/00025/AS)	2020/21 - 2028/29	700					
S3	Ashford	S3	Court Lodge Farm	Mixed - 950 units, primary school, local centre incorporating retail and employment space	Outline application submitted 19/12/2018 (18/01822/AS)	Expected commencement 2021/22	950					
S4	Ashford	S4	Land north of Steeds Lane and Magpie Hall Road	Resi - 400 units	Joint planning application with S5	2021/22 - 2027/28	400					
S5	Ashford	S5	Land south of Pound Lane	Resi - 150 units	Joint planning application with S4 submitted 03/09/2015 (15/00856/AS)	See S4	150					
S6	Ashford	S6	Former Newton Works	Mixed - 303 dwellings and 63 serviced apartment units and "substantial" area of commercial floorspace	Full application submitted 16/10/2019 (19/01476/AS)	2021/22 - 2027/28	366					

S7	Ashford	S7	Former Klondyke Works	Full application granted permission for 93 dwellings	Full application granted permission 16/11/2018 (18/00584/AS)	2020/21	93					
S8	Ashford	S8	Lower Queens Road	Resi - 40 units	Allocation in Adopted Local Plan	Unknown	40					
S9	Ashford	S9	Kennard Way, Henwood	Resi - 25 units	Allocation in Adopted Local Plan	Unknown	25					
S10	Ashford	S10	Gasworks Lane	Resi - 150 units	Allocation in Adopted Local Plan	Unknown	150					
S11	Ashford	S11	Leacon Road	Mixed - 100 units and B1 - B8 commercial uses	Allocation in Adopted Local Plan	Unknown	100					
S11a	Ashford	S11a	Former Bomardier Works	Employment - Allocation for mix of operational railway and commercial uses (B1-B8)	Allocation in Adopted Local Plan	Unknown						
S12/PP17	Ashford	S12	Former K College Site	Resi - 160 units Granted Reserved Matters (17/00354/AS) Outline (11/00405/AS)	Under construction	2018/19 - 2023/24	160			64		
S13	Ashford	S13	Former Ashford South School, Jemmett Road	Resi - 110 units, in conjunction with former K College site (S12)	Allocation in Adopted Local Plan	2022/23 - 2025/26	110					
S14	Ashford	S14	Park Farm South East	Resi - 353 units on 11ha site. Full application (18/00652/AS)	Full application granted permission 30/09/2019 (18/00652/AS)	2019/20 - 2022/23	250					
S15	Ashford	S15	Finberry North West	Mixed - 300 units, 8,500sqm B1-B8 as continuation of existing Finberry site from LP2000.	Allocation in Adopted Local Plan	2026/27 - 2029/30	300					

S16	Ashford	S16	Waterbrook	Hybrid planning application for mixed-use development comprising (1) Application for full planning permission for the construction and operation of a 600-space truck stop; a 2,162 sqm GIA service building providing 1,734 sqm GIA of ancillary truck stop service facilities and 878 sqm GIA of B1 offices; buildings providing 6,308 sqm GIA B1 (b and c only), B2 and B8 floorspace for small and medium enterprises; associated access, parking and landscaping, including highway infrastructure works to Waterbrook Avenue and (2) Application for outline planning permission (with all matters reserved) for 8.9ha of employment uses comprising uses falling within use classes B1, B2 and B8, a class A1 superstore of up to 2,323 sqm, drive-through restaurants (use classes A3/A5), a petrol filling station and ancillary convenience store, and car showrooms (sui generis); and up to 400 residential dwellings, with class A1, A3 and A5 neighbourhood retail uses, associated drainage, parking, landscaping and infrastructure	Hybrid application 18/00098/AS	2020/21 - 2025/26	400					

S17/PP1		S17	Willesborough Lees	2 separate applications; full for 192 dwellings (16/01722/AS) and 28 dwellings (19/00702/AS). 192 - Full planning application for a new link road to the rear of the William Harvey Hospital from the A20 and 192 dwellings together with associated open space, play equipment, landscaping, drainage, infrastructure and earthworks.	Both permissions granted	2017/18 - 2021/22	220					
S19	Ashford	S19	Conningbrook Phase 2	Resi - 170 unit allocation	Allocation in Adopted Local Plan	2022/23 - 2026/27	120					
S20	Ashford	S20	Eureka Park	Mixed - 375 units and 20ha commercial (incl. up to 20% B1 uses)	Allocation in Adopted Local Plan	2021/22 - 2027/28	375					
S21	Ashford	S21	Orbital Park	Commercial - B1, B2 and B8 uses, on wider existing employment site	Allocation in Adopted Local Plan							
S22	Ashford	S22	Chart Industrial Estate	Commercial - redevelopment/intensification for B1, B2 and B8 uses, on wider existing employment site	Allocation in Adopted Local Plan							
S23	Ashford	S23	Henwood Industrial Estate	Commercial - redevelopment/intensification for B1, B2 and B8 uses, on wider existing employment site	Allocation in Adopted Local Plan							
	Ashford	S24	Tenterden South Extension Phase B	Resi - 225 units	Allocation in Adopted Local Plan	2021/22 - 2024/2025	225					
	Ashford	S27	Land rear of Rose Cottage Farm, North Street, Biddenden	Hybrid application for 45 dwellings and B1 building (17/00258/AS)	Granted permission 02/05/2018 (17/00258/AS)		45					
	Ashford	S28	Northdown Service Station, Charing	2 applications for 20 dwellings. Outline application for the erection of up to 17 dwellings. Full permission for 3 dwellings	Outline (17 dwellings) 17/01926/AS granted permission, Full (3 dwellings) 17/00865/AS granted permission	Resolving access arrangements to commence work on 2021/22						

Commented [q1]: Sites with this shading are outside the search boundary, and thus not shown on the map but have been included in this table for reference.

	Ashford	S29	Land south of Arthur Baker Playing Field, Charing	Resi - 91 dwellings to include 51 bed care home	Hybrid application 14/01486/AS, outline permission on residential development	2021/22 - 2023/24	91					
S31	Ashford	S31	Land north of St Mary's Close, Hamstreet	Resi - 80 units, plus 60 bed care home (18/00644/AS)	Resolution to grant subject to S106 (16.12.2019)	Phase 1 (50 units) - 2018/19 - 2019/20 Phase 2 (30 units) - 2023/24	80					
S32	Ashford	S32	Land at Parker Farm, Hamstreet	Resi - 10 units	Allocation in Reg.19 Draft Publication Version	2017/18	10					
S33	Ashford	S33	Land East of Hope House, High Halden	Resi - 28 units	Outline 17/00952/AS granted permission 19/07/2018	2020/21 - 2022/23	28					
S36	Ashford	S36	Rear of Kings Head Public House, Shadoxhurst	Resi - 25 units (but trajectory shows 30 in total)	Allocation in Reg.19 Draft Publication Version	2017/18	30					
S38	Ashford	S38	Land south of Church Road, Smeeth	Resi - 35 unit allocation on 1.4ha site Outline planning application (18/01801/AS)	Resolution to grant subject to S106 (31.07.2019)	2021/22 - 2023/24	20					
S40	Ashford	S40	Front Road, Woodchurch	Resi - 8 units	Allocation in Reg.19 Draft Publication Version	2016/17	8					
S45	Ashford	S45	Land South of Brockman's Lane, Bridgefield	Resi - 100 unit allocation on 5ha greenfield site.	Allocation in Adopted Local Plan	2020/21 - 2022/23	100					
S46	Ashford	S46	Chart Road, Ashford	Resi - 25 unit allocation on 0.8ha brownfield site. Full application for 75 bed care home, 9 residential dwellings (19/01307/AS)	Full application submitted 10/09/2019 (19/01307/AS)	2021/22 - 2023/24	50					
S47	Ashford	S47	Land east of Hothfield Mill, A20	Resi - 75 unit allocation on 4ha developable area	Additional allocation in Main Changes consultation		75					
S50	Ashford	S50	Land at Caldecott, A20, Smeet	Resi – 50 unit allocation on 3ha brownfield site	Additional allocation in Main Changes consultation							

S51	Ashford	S51	Land north of Church View, Aldington	Resi - 10 unit allocation on 0.35ha greenfield site	Additional allocation in Main Changes consultation		10					
S52	Ashford	S52	Land south of Goldwell Court, Aldington	Resi - 20 unit allocation on 0.8ha greenfield site	Additional allocation in Main Changes consultation		20					
S53	Ashford	S53	Nats Lane, Brook	Resi - 10 unit allocation on 1.2ha site	Additional allocation in Main Changes consultation							
S55	Ashford	S55	Land adjacent to Poppyfields, Charing	Resi - 180 units	Outline permission (18/00029/AS) for 135 units (Area A). No application for Area B yet		180					
S57	Ashford	S57	Land at Warehorne Road, Hamstreet	Resi - 50 unit allocation on 3ha greenfield site Outline application (18/0056/AS)	Outline application submitted 10/01/2018 (18/00056/AS)	2020/21 - 2022/23	50					
S59	Ashford	S59	Land at Old Rectory Close, Mersham	Resi – 15 unit allocation on 1ha site	Additional allocation in Main Changes consultation							
S62/PP6	Ashford	S62	Appledore Road, Woodchurch	Resi - 30 unit allocation on 1.7ha greenfield site.	Allocation in Adopted Local Plan	2020/21 - 2021/22	30					
TC8	Ashford	TC8	Godinton Way	Resi - 83 units	Completed development		83	31	52			
TC9	Ashford	TC9	Commercial Quarter	Mixed - 55,000sqm offices, 2,500sqm small scale retail and/or leisure, 159 resi	Urban Sites DPD Allocation	2019/20 – 2020/21						

TC11	Ashford	TC11	Former Pledges Mill and South Kent College Site and land south of junction of Beaver Road and, Victoria Road, Ashford, Kent 600992 / 142245	Full planning application (16/01157/AS) for development of a brewery, with shop, bar and restaurant (Use Classes B2/A1/A3/A4), three commercial units (Use Classes A1/A2/B1) and 216 residential units with associated parking, substations, landscaping and access works.	Approved 10 April 2017. Section 106 Agreement signed 17 August 2017. Under Construction		216					
TC12/PP28	Ashford	15/01671/AS	Former Powergen Site, Ashford Town Centre	Hybrid application for five plots comprising: (1) Full and detailed application for plots 1 and 2 comprising: erection of 400 dwellings, a retail kiosk/cafe unit (Use class A1/A3) and associated parking, public surface car park, plant and storage; together with landscaping and access works. (2) Outline application with appearance and landscaping reserved with parameters for plots 3, 4 and 5 comprising: demolition of existing buildings/structures and erection of up to 260 dwellings, associated parking, plant and storage together with landscaping and access works.	Hybrid granted permission 24/11/2016; RM 17/00658/AS granted; full application (extra 14 dwellings) granted 17/01674/AS	2018/19 - 2026/27	674					
U1/PP29	Ashford	U1	Abbey Way	Resi - 23 units Full application 15/00260/AS	Under construction	2017/18 (will complete before 2023/24)	23					
U5/PP29	Ashford	U5	Blackwall Road, Willesborough Lees	Resi - 34 units (14/01456/AS)	Completed development 2018/2019		34	6	26	2		
U11	Ashford	U11	Land at Butt Field Road, Singleton	Resi-20 units	Urban sites DPD allocation for 20 units		20					

U22/PP5	Ashford	U22	Conningbrook	Creation of a country park for recreational and water-sports purposes with a range of associated facilities including an activity centre, a public house/restaurant, change of use of Manor to offices, car parks and other ancillary works and structures including works to the Julie Rose Stadium; construction of 300 dwelling residential development with associated infrastructure and landscaping; and provision of an aggregates storage and distribution facility (12/01245/AS)	Approved 24 October 2014. Section 106 Agreement signed 14 December 2016		300		0	37		
	Ashford	TENT1a	Land south West of Recreation Ground Road and North and East of Smallhythe Road, Tenterden	Resi - 250 units Full application (14/00757/AS)	Under construction		250		20	112		
B1	Ashford	WYE2	Land at Luckley Field, South of 128 Little Chequers, Wye (Wye Neighbourhood Plan)	Resi - 25 units Full application (14/00195/AS)	Granted permission 11/11/2015 (under construction)		25					
B2	Ashford	16/01450/AS	Northdown House, 4 Station Road, Ashford, Kent	Prior Approval for the change of use of B1a to 20 residential units	Granted permission 22/11/2016		20					
	Ashford	Pluckley NP Brickworks	Pluckley Brickworks and Station Garage, Station Road, Pluckley	Outline (14/01116/AS) and Reserved Matters (17/00331/AS) for 25 dwellings	Granted permission 19/07/2017		25					

	Ashford	19/00340/AS	Tillden Gill, Land south and east of Tilden Gill Road, Tenterden	Outline (14/01420/AS) and Reserved Matters (19/00340/AS) for 100 dwellings	Granted permission 19/07/2019		100					
B3	Ashford	14/00899/AS	Charter House, Park Street, Ashford	Full application for mixed use, conversion of Charter House for 234 flats, B1 A1 A2 A3 & D1 floorspace and 110 flats in new buildings	Granted permission 02/04/2015		344					
PP1	Ashford	ROLV1	Halden Field, Tenterden Road, Rolvenden	Reserved Matters (15/01555/AS) and Outline Application (13/00755/AS) for 40 units	Under construction		40			15		

PP2/PP3/PP4/B4/B5/B6?B7	Ashford	12/00400/AS	Land at Chilmington Green, Ashford Road, Great Chart, Kent 597953 / 140353	Outline application for a Comprehensive Mixed Use Development comprising: up to 5,750 residential units, in a mix of sizes, types and tenures; up to 10,000 m² (gross external floor space) of Class Bl use; up to 9,000 m² (gross external floorspace) of Class Al to A5 uses; Education (including a secondary school of up to 8 ha and up to four primary schools of up to 2.1 ha each); Community Uses (class Dl) up to 7,000 m² (gross external floorspace); Leisure Uses (class D2) up to 6,000 m² (gross external floorspace); Provision of local recycling facilities; Provision of areas of formal and informal open space; Installation of appropriate utilities infrastructure as required to serve the development, including flood attenuation works, SUDS, water supply and wastewater infrastructure, gas supply, electricity supply (including substations), telecommunications infrastructure and renewable energy infrastructure (including CHP in the District Centre); Transport infrastructure, including provision of three accesses on to the A28, an access on to Coulter Road I Cuckoo Lane, other connections on to the local road network, and a network of internal roads, footpaths and cycle routes; New planting and landscaping, both within the	Approved 6 January 2017		5750					

				Proposed Development and on its boundaries, and ecological enhancement works; and Associated groundworks where appearance, landscaping, layout and scale are reserved for future approval and where access is reserved for future approval with the exception of the three accesses on to the A28 and the access on to Coulter Road I Cuckoo Lane								
B4	Ashford	17/01170/AS	Land at Chilmington Green	Resi - RM for 346 dwellings	Under construction		346				60	
B5	Ashford	18/01310/AS	Land at Chilmington Green	Reserved Matters for 22 units	Under construction		22				15	
B6	Ashford	18/00207/AS	Land at Chilmington Green	Reserved Matters for 99 units	Granted permission 19/07/2019		99					

B7	Ashford	19/00475/AS	Land at Chilmington Green	Resi - Reserved Matters for 64 dwellings in Parcel Q	Granted permission 18/07/2019		64					
PP7	Ashford	02/01565/AS	Former Rowcroft and Templer Barracks, Templer Way, Ashford, Kent 599630 / 143506	A mixed use development comprising circa 1,250 dwellings, employment uses (circa 2.5HA), retail uses including a supermarket of 2,323 SQ M, community facilities including a community hall and primary school, restoration of Repton Manor, open space, roads (including means of access), cycleways, footpaths and ancillary uses, demolition and remediation.	Approved 17 October 2007. Latest Decision Notice issued for S106 sixth deed of variation 15 May 2013.	See Reserved Matters below	1250					
PP8	Ashford	17/00396/AS	Land Parcels 8 & 10 Former Rowcroft and Templer Barracks site, Templer Way, Ashford, Kent 599788 / 143594	Reserved matters application for 62 residential apartments including affordable housing, together with flexible employment floorspace (B1/ A1/ A2/ A3/ A4 or A5 Use Classes), 7 mixed use units comprising flexible ground floor employment floorspace (A1/A2/A3/A4/A5/B1 or D1 uses classes), associated landscaping, infrastructure and earthworks.	Approved 22 December 2017		62		0	42		
PP9	Ashford	17/00597/AS	Land Parcel 13a, Former Rowcroft and Templer Barracks, Templer Way, Ashford, Kent 599751 / 143542	Reserved matters application for 40 affordable extra care apartments and communal facilities, together with associated landscaping, infrastructure and earthworks.	Approved 22 December 2017; under construction		22					
PP10	Ashford	17/00578/AS	Land Parcel 9 Former Rowcroft and Templer Barracks site, Templer Way, Ashford, Kent 599878 / 143571	Reserved matters application for 31 residential apartments together with flexible employment floorspace (B1/ A1/ A2/ A3/ A4 or A5 Use Classes), associated landscaping, infrastructure and earthworks pursuant to	Approved 22 December 2017; under construction		31					

				outline planning permission 02/01565/AS								
PP11	Ashford	16/00808/AS	Land Parcels 34, 35, 36 and 37 Former Rowcroft and Templer Barracks site, Templer Way, Ashford, Kent 599177 / 143670	Reserved matters application for the development of Parcels 34-37 for 86 dwellings together with associated access roads, footpaths, drainage, car/cycle parking, groundworks and infrastructure.	Approved 22 December 2017; under construction		86			67		
B8	Ashford	15/00315/AS	Former Rowcroft and Templer Barracks	Resi - 104 dwellings (Parcels 31, 32 & 33)	Completed development 2018/19		104	83	11	10		
B9	Ashford	16/00549/AS	Former Rowcroft and Templer Barracks	Resi - 105 dwellings (Parcels 19 - 23)	Completed development 2018/19		105	6	55	44		
PP12	Ashford	10/00715/AS	Hopewell County Primary School, St Stephens Walk, Ashford, Kent, TN23 5AX 599525 / 141205	Erection of 38 dwellings comprising of 36 x 2 storey units and 2 x 2.5 storey units.	Approved 22 August 2013	Completed 2015/2016	38	38				

PP13	Ashford	16/01548/AS	Wye School, Kempe Centre, Olantigh Road, Wye, Ashford, TN25 5EJ 605666 / 147023	Phases 2 and 3 of the proposed Wye School expansion comprising permanent use of the Kempe Centre for school use; refurbishment of the Kempe Centre to include new sixth form accommodation and minor alterations to the external appearance of the building to reflect internal reconfiguration; retention of the two existing temporary classroom cabins until the end of the 2018/2019 academic year; demolition of existing structures and some trees; erection of a new building comprising the main hall, 4-court sports hall and new teaching accommodation; new coach, car and cycle parking provision; new soft and hard landscaping; off-site highways works on Olantigh Road and other associated works.	Approved 17 October 2017	Completed 2018/2019						
PP14	Ashford	14/00906/AS	Land On The North Side Of, Highfield Lane, Sevington, Kent 604000 / 141000	Development to provide an employment led mixed use scheme, to include site clearance, the alteration of highways, engineering works and construction of new buildings and structures of up to 157,616 sq m comprising: up to 140,000 sq m Class B8 (storage and distribution) use; up to 23,500 sq m of B1a/B1c Business (of which a maximum of 20,000 sq m of B1a); up to 15,000 sq m of B2 (general industry); up to 250 sq m of A1 (retail shops) and 5,500 sq m of sui generis to accommodate Kent Wool Growers together with	Approved 18 September 2017; awaiting reserved matters							

				ancillary and associated development including utilities and transport infrastructure, car parking and landscaping.								
PP15	Ashford	16/00124/AS	Bilham Lawn Parcel B9, Land at Cheesemans Green, Cheesemans Green Lane, Kingsnorth, Kent 602442 / 139234	(Bilham Lawn Phase) Construction of 86 new dwellings with associated access, parking, landscaped areas, internal roads for the development, details of part of distributor road C and surface water drainage measures	Approved 11 August 2017; under construction		86					
PP23	Ashford	15/01586/AS	Land at Cheesemans Green, Cheesemans Green Lane, Kingsnorth, Kent 603019 / 139246	Construction of 67 new dwellings including 9 live-work units, Class B1 (office) floorspace, with associated parking, landscaped areas, internal roads for the development, details of distributor roads D, D1 and part of C, and surface water drainage measures	Completed development 2018/19		67		13	54		
PP24	Ashford	02/00278/AS (as amended by 11/00473/AS)	Land at Cheesemans Green, Cheesemans Green Lane, Kingsnorth, Kent 603019 / 139246	Outline planning application for 1100 houses and 70,000 square metres of business floorspace together with mixed use community facilities, access roads, footpaths, cycle routes, landscaping & public open space.	Approved 30 Jan 2006, see reserved matters	2016/17 - 2027/28 - 905 left to deliver	1100					

B10	Ashford	09/00081/AS	Land at Cheesemans Green	Resi - 43 units (Bilham Farm)	Approved 21/08/2009		43					
B11	Ashford	10/01277/AS	Land at Cheesemans Green	Resi - 245 dwellings	Completed development 2019/20		245	62	90	81	12	
B12	Ashford	14/01075/AS	Land at Cheesemans Green	Resi - 113 dwellings (The Grove)	Completed development 2019/20		113	6	54	46	7	
B13	Ashford	16/00125/AS	Land at Cheesemans Green	Resi - 326 dwellings (Captain's Wood phase)	Granted permission (25/07/2019)		326					
PP16	Ashford	16/00981/AS	Former Travis Perkins Trading Co Limited, Victoria Crescent, Ashford 600905 / 142169	Erection of 31 residential apartments with car parking, associated access and landscaping	Approved 2 June 2017	Completed 2018/2019	31			31		
PP18	Ashford	16/01667/AS	Unit 3, Hall Avenue, Orbital Park, Sevington, Ashford, TN24 0AA 603214 / 140606	A new development of 18 small starter industrial / warehouse units with B1(c), B2 and B8 use classifications. The units are to have car parking and external servicing areas.	Approved 22 May 2017	Completed development 2017/2018						
PP20	Ashford	16/01164/AS	Land south of junction of Beaver Road and, Victoria Road, Ashford, Kent 600977 / 142121	Full planning application for a 120 bedroom hotel and associated parking, landscaping, substation and access works.	Approved 10 April 2017; under construction							
PP19/PP21/PP22	Ashford	16/01167/AS	Former Pledges Mill and South Kent College Site, Victoria Road, Ashford, Kent 600992 / 142245	Full planning application for a superstore (Use Class A1) with associated parking, substation, landscaping and access work.	Completed 2018/2019							

PP25	Ashford	16/01136/AS	Plot 2, Land adjacent to the William Harvey Hospital, Kennington Road, Willesborough, Kent 603715 / 142135	Development of the site to provide a care home (Use class C2) together with associated access, car parking and landscaping	Approved 17 March 2017. Section 106 Agreement signed 16 March 2017. Completed Feb 2020.	Completed development Feb 2020	38				38	
PP27	Ashford	16/00562/AS	Site of former Rimmel International Ltd, Cobbswood Industrial Estate, Carlton Road, Ashford, Kent, TN23 1ED 600119 / 142821	Hybrid application comprising: 1. Outline planning permission for 12 industrial units (B1c/B2/B8) on 1.3ha with all matters except access reserved. 2. Full planning permission for a grounds maintenance depot and a ready mix concrete and satellite aggregate depot, internal spine road and improved access points off Carlton Road and Brunswick Road.	Approved 22 July 2016.	Under construction						
	Ashford	18/01861/AS	Land at Playing Fields and Linden Grove Primary School, Stanhope Road, Stanhope, Kent	Outline application with all matters reserved, except 'Access' for the construction of up to 246 no. dwellings including extra care housing and replacement of the Ray Allen Children's Centre, together with the provision of open space, landscaping, drainage, infrastructure and earthworks	EIA not required 19 February 2019;		246					
	Ashford	16/00795/AS	Land North West of Smallhythe House, Longfield, Tenterden	Erection of 36 retirement living apartments	Completed development 2018/2019		36			36		
	Ashford	16/01198/AS	Former Kent Highways Depot, Ashford Road, High Halden	Full application for 25 residential units	Completed development 2018/2019		25			25		

	Ashford	18/00262/AS	Land between Ransley Oast and Greenside, Ashford Road, High Halden	Full application for 43 residential units	Granted permission 04/09/19		43					
B15	Ashford	17/00568/AS	WYE3 - Former Wye College Buildings, High Street, Wye	Full application for the change of use of College buildings into 38 dwellings	Granted permission 24/06/2019		38					
B16	Ashford	19/00516/AS	The Poplars, Kingsnorth Road, Ashford	Full application for the demolition and redevelopment of site for a sheltered housing scheme of 31 apartments.	Granted permission 18/10/19		31					
A	F&H	HO2E	Land at Barnhurst Lane, Hawkinge	Residential development will only be permitted on this site if development will guarantee the construction of the remainder of the Hawkinge relief road from the roundabout on the former aerodrome to the junction with Canterbury Road north of Hawkinge. A Section 106 Agreement will be sought to tie the construction of the road to the development of these two sites.			70					
B	F&H	HO2D	Remainder of land at Aerodrome, Hawkinge	Residential development will only be permitted on this site if development will guarantee the construction of the remainder of the Hawkinge relief road from the roundabout on the former aerodrome to the junction with Canterbury Road north of Hawkinge. A Section 106 Agreement will be sought to tie the construction of the road			345					

				to the development of these two sites.								
C	F&H	Y14/0300/SH	Shorncliffe Garrison, Folkestone	Hybrid application for the redevelopment of land at Shorncliffe Garrison. Application for outline permission (with all matters reserved) for demolition of existing buildings (with the exception of the listed buildings, officers' mess within Risborough Barracks and water tower) and erection of up to 906 dwellings including affordable housing, community services and facilities (use Classes A1/A3/B1a/D1 and D2 uses up to 1,998 sqm), new Primary school and nursery (up to 3,500 sqm), combined new pavilion/cadet hut facility (up to 710 sqm) at The Stadium, retained cricket pitches including mini football pitches, equipped play, associated public open space and toilets, together with, associated accesses/roads, parking, associated services, infrastructure, landscaping, attenuation features and earthworks. Full application comprising demolition of existing buildings and erection of 294 dwellings including affordable housing, open space, improvements to 'The Stadium' sports facilities and new car park, equipped play	NMA Y17/0055/NMC		1200					

				improvements/works to The Backdoor Training Area, associated accesses/roads, parking, associated services, infrastructure, landscaping, attenuation features and earthworks.								
D	F&H	HO2C	Ingles Manor, Jointon Road, Folkestone	Size: 1.6ha (4 acres) Development must be in accordance with Policy FTC3 of the Local Plan.	See hybrid application Y12/0767/SH		**25**					
E	F&H	HO2B	Old gas works site, Ship Street, Folkestone	Size: Main site 1.4ha (3.5 acres) Small site 0.4ha (1acre) Investigation into possible contamination is required and necessary treatment carried out.			**30**					
F	F&H	Y12/0897/SH	Former Rotunda Amusement Park, Marine Parade, Folkestone, Kent 623209 / 135663	Redevelopment of the harbour and seafront to provide a comprehensive mixed use development comprising up to 1,000 dwellings, up to 10,000 sqm of commerical floorspace including A1,A3,A4,A5,B1, D1 and D2 uses as well as seasports and beach sport facilities. Improvements to the beaches, pedestrian and cycle routes and accessibility into, within and out of the seafront and harbour and associated parking.	Non-material amendment Y16/0044/NMC Minor-material amendment Y17/1099/SH		**1000**					
G	F&H	Y06/1079/SH	Nickolls Quarry Dymchurch Road Hythe Kent CT21 4NE	Outline application for mixed use development comprising residential development (1050 dwellings); employment development (use class B1, 15,000 sq.m); local centre (500 sq.m use classes A1/A2, 500 sq.m use classes A3/A4/A5); community centre/community facilities (1,000 sq m use class D1);	Y15/0094/SH		**1050**					

				public open space (8.5 ha), structural open space (10.3 HA); retention and alteration of water bodies (retained area 15.5 HA); provision of two new access points to Dymchurch Road, and site restoration including raising of land levels.								
H	F&H	Y14/0873/SH	Land adjacent to The Surgery, Main Road Sellindge Kent	Hybrid application for the redevelopment of land between the A20 and M20 at Sellindge. Application for outline permission (with all matters reserved except access) comprising up to 200 dwellings including affordable housing, local mixed use centre containing Parish office (use class sui generis up to 1000 sqm), commerical floorspace (use classes A1/A3/A5 - up to 200 sqm), together with access form the A20, associated roads, parking associated earthworks, open space including attenuation features and landscaping. Full application comprising 50 dwellings including affordable housing, village green, equipped play area, access from the A20, associated roads, community car park, parking, associated earthworks, open space including attenuation features and landscaping.	NMA Y18/0009/NMA		250					
I	F&H	Y15/1241/SH	Land Adjoining The Cube & Land Opposite 100 Tontine Street	Multi-storey sports park to include boxing club, skate shop, offices, cafe, three levels of skate park, climbing wall, bouldering room, flexible	Minor-material amendment Y17/0689/SH							

			Folkestone Kent 623194 / 136063	function space, refuse facilities, cycle parking, car parking and hard landscaping) to enable a reduction in overall height, changes to bulk and massing, and amendments to external finishes and floor plans.								
J	F&H	Y17/0674/SH	Land Opposite Dorland Cockreed Lane New Romney Kent 606581 / 125408	Reserved matters application for the construction of 109 dwellings, together with associated landscaping and infrastructure, being details pursuant to outline application Y15/0164/SH (details relating to landscaping, layout, scale, access and appearance)	Outline application Y15/0164/SH		**109**					
K	F&H	Y14/1376/SH	Land Adjoining Park Farm Cottage, Park Farm Road, Folkestone, Kent, CT19 5DN	Outline application for the construction of 130 dwellings (Class C3) following the demolition of the Folkestone Academy (formerly Park Farm Primary School) inclusive of details of access, layout and scale. Y16/0117/NMC - non-material amendments	Y14/1376/SH Y16/0117/NMC		**130**					
L	F&H	Y15/0550/SH	Land Adjoining 8 (formerly Known As Westbrook House 50-56 Shorncliffe Road) Broadfield Road Folkestone Kent 621841 / 136224	Reserved matters application for the approval of appearance (condition 1) and existing and proposed levels (condition 22) of the outline planning permission Y10/0077/SH for the construction of 103 residential dwellings, together with associated car parking, landscaping and open space as amended by application Y15/0563/SH	Minor-material amendments Y15/0563/SH (MMA amended by NMA Y16/0047/NMC) Non-material amentdment Y16/0033/NMC		**103**					
M	F&H	Y14/0336/SH	Land at Hurricane Way, Hawkinge, Kent, CT18 7SU	Erection of a retirement village (C2 use) providing 61 cottages, 50 apartments and associated 3 storey	Non-material amendments Y16/0008/NMC and Y17/0005/NMC		**111**					

				administrative building being details of access, appearance, landscaping, layout and scale pursuant to outline planning permission Y10/0738/SH								
N	F&H	Y07/1566/SH	Land Adjoining Pumping Station, Dymchurch Road, St Marys Bay, Kent	Erection of 85 dwellings and formation of new access.	Minor-material amendment Y17/1388/SH awaiting determination		**85**					
O	F&H	Y14/1094/SH	Folkestone Primary Academy, Park Farm Road, Folkestone, Kent, CT19 5DN	Reserved matters application for details of appearance and landscaping for the construction of 84 dwellings (Class C3) being details pursuant to Phase 1 of outline planning permission reference Y11/1132/SH.	Non-material amendment Y15/0020/NMC		**84**					
P	F&H	Y16/0403/SH	Land Rear Church and Dwight, Caesars Way, Folkestone, Kent 620287 / 137503	Erection of 77 dwellinghouses, construction of estate road and provision of open space, landscaping and parking being details pursuant to outline planning permission Y13/0024/SH (details relating to appearance, layout and scale).	Outline application Y13/0024/SH		**77**					
Q	F&H	Y15/0030/SH	Hawkinge Youth Adventure Centre, Elvington Lane, Hawkinge, Kent 620510 / 139543	Outline application for the erection of 76 residential units incorporating 1.01 ha of open space with matters of appearance, landscaping, scale and layout reserved for future considerations.			**76**					
R	F&H	Y08/1036/SH	Hotel Imperial, Princes Parade, Hythe, Kent, CT21 6AE 616926 / 134430	Alterations and improvements to hotel, including new golf clubhouse, residential development of 75 units, with new access, parking, open space and landscaping.	Y08/1036/SH		**75**					
S	F&H	Y10/0746/SH	Former St Marys Bay Holiday Village, Dunstall Lane, St Marys Bay	Erection of 72 dwellings and associated access being details pursuant to outline planning permission Y02/0981/SH (matters	Non-material amendments Y14/0063/NMC, Y15/0072/NMC and Y15/0059/NMC		**72**					

			, Romney Marsh, Kent, TN29 0QW 609192 / 128219	relating to design, external appearance and landscaping) and approval of conditions 10, 11 and 16 of the above outline permission.								
T	F&H	Y08/1212/SH	The Leas Club, The Leas, Folkestone, CT19 2DP 622662 / 135710	Change of use and conversion of Leas Club from a bar (Class A4) to a gymnasium / health club (Class D2) including alterations and refurbishment of the building together with the erection of a seven storey block of 68 residential apartmnents (5 full storeys, two recessed), parking, bicycle storage and 2 commercial units (Class A1/A3) to the ground floor and the construction of a basement parking level.			**68**					
U	F&H	Y11/0284/SH	The Fishermans Landing Beach, Range Road, Hythe, Ken t, CT21 6HG	Redevelopment of former gas works site following demolition of existing fishmongers and huts to provide a mixed use development of 60 dwellings, 9 commercial and recreational huts and conversion of two former lifeboat stations including change of use from	Non-material amendments Y13/0026/NMC, Y14/0031/NMC, Y14/0045/NMC, Y15/0036/NMC and Y18/0013/NMA Minor-material amendment Y14/0829/SH		**60**					
V	F&H	Y12/0767/SH	Land At Ingles Manor And Land At Folkestone Garden Centre Castle Hill Avenue Folkestone Kent, CT20 2RD	A hybrid application encompassing; 1) Full application for the erection of 13 dwellings with associated parking and landscaping together with 3 two storey office buildings with parking and landscaping forming phases 1 and 3. and 2) Outline application for the erection of 46 dwellings with associated parking and landscaping forming phases 2 and 4 (matters relating to access, landscaping and layout).	Minor-material amendment Y13/0922/SH		**59**					

W	F&H	Y15/1035/SH	Plot 1, Hurricane Way, Hawkinge, Kent, CT18 7SU	Mixed use development comprising 2366sqm of commercial space (Class B1/B8) in five blocks, together with erection of 47 dwellings, with associated car parking, external works and landscaping	Non-material amendments Y16/0042/NMC, Y16/0060/NMC, Y16/0088/NMC, Y16/0096/NMC, Y17/0001/NMC, Y17/0046/NMC, Y17/0060/NMC, Y17/0105/NMC		**47**					
X	F&H	Y14/1149/SH	58 - 60 & 62 Shorncliffe Road Folkestone Kent CT20 2NQ 620957 / 135937	Proposed residential development of 42 flats arranged in three separate four-storey buildings, following the demolition of the existing structures and including the creation of associated vehicular accesses			**42**					
Y	F&H	Y14/0928/SH	East Station Goods Yard Southern Way, Folkestone, Kent 623411 / 136694	Mixed use development comprising 41 dwellings (30% of which will be affordable housing) and 1000sqm commercial space (Class B1/B8) with associated access, car parking and landscaping.			**41**					
Z	F&H	Y16/0447/SH	Land Adjoining 20 Encombe Sandgate Kent, CT20 3DE 619950 / 135235	Erection of three blocks comprising 36 flats pursuant to outline planning permission reference Y11/0122/SH (details relating to appearance and landscaping).			**36**					
AA	F&H	Y13/1301/SH	Lawrence House 15 St Marks Close Folkestone Kent CT20 3LY 619807 / 136094	Reserved matters application for approval of appearance, landscaping, layout and scale, and discharge of conditions 4, 15, 18, 19 and 26 and part approval of condition 13 pursuant to outline planning permission Y11/1156/SH for the erection of 25 dwellings (including 8 affordable units), following demolition of the existing buildings.	Y13/1301/SH		**25**					

AB	F&H	Y16/0463/SH	Shepway Resource Centre, Military Road, Folkestone, Kent, CT20 3SP 620051 / 135846	Proposed development of 23 dwellings and 18 flats, together with associated access and landscaping, following demolition of the existing building	Non-material amendment Y17/0042/NMC		**23**					
AC	F&H	Y14/1428/SH	Land Adjoining Fairlight Terrace, Lydd Road, New Romney, Kent, TN28 8HE 605876 / 124771	Erection of 21 two-storey dwellings	Y14/1428/SH		**21**					
AD	F&H	Y14/0341/SH	Street Record, Hurricane Way, Hawkinge, Kent , CT18 7SU	Erection of 21 dwelings (class C3) together with associated access and landscaping	Y14/0341/SH		**21**					
AE	F&H	Y15/0720/SH	Philbeach House, Tanners Hill, Hythe, Kent, CT21 5UQ 616564 / 135180	Outline application for the erection of 84 extra care flats with access and landscaping. All other matters (appearance, layout and scale) to be reserved for future consideration.	Y15/0720/SH		**84**					
AF	F&H	Y16/1266/SH	Somerset Barracks, North Road Folkestone Kent CT20 3HG 619817 / 135767	Reserved matters application for the construction of 127 dwellings, including affordable housing, a doctors' surgery and commercial floorspace, along with associated landscaping, infrastructure and earthworks at Phase 2b, Somerset Barracks, being details pursuant to outline application Y14/0300/SH (details relating to landscaping, layout, scale, access and appearance)	Hyrbrid application Y14/0300/SH Non-material amendment Y17/0107/NMC		**127**					
AG	F&H	Y17/0248/SH	Land Adjoining 27 Cheriton Court Road Folkestone Kent 618977 / 136429	Reserved matters application for the construction of 40 dwellings along with associated landscaping, infrastructure and earthworks at Phase 1D Northern Training Area, being details pursuant	Hyrbrid application Y14/0300/SH		**40**					

				to outline application Y14/0300/SH.								
AH	F&H	Y15/0710/SH	Romney Marsh Potato Co Ltd Cockreed Lane New Romney Kent TN28 8TN 606647 / 125572	Reserved matters application for the approval of details relating to appearance, access, landscaping, layout and scale of the outline planning permission Y10/0698/SH for the construction of 55 residential dwellings together with associated car parking, landscaping and open space	Outline application Y10/0698/SH		**55**					
AI	F&H	Y14/1411/SH	Land Adjoining Hope All Saints Garden Centre Ashford Road New Romney Kent 606321 / 125184	Outline application for up to 117 dwellings, new proposed vehicular access arrangements, parking, flood attenuation, open space including the retention of 0.7 hectares of existing playing fields and associated works.	Awaiting decision subject to the agreement of a S106 Legal Agreement							
AJ	F&H	Y17/0105/SH	Land Adjoining Enterprise Way Enterprise Way Link Park Lympne Kent	Extension to time limit of planning permission Y09/0145/SH for outline permission for the erection of up to 30,668sqm of employment development (Classes B1, B2 and B8), together with internal access (off recently constructed and adopted spine road) with parking, servicing and structural landscaping and being accompanied by an Environmental Statement.	Approved with conditions 15/09/2017							
AK	F&H	Y15/0880/SH	Land Adjoining The Link Park Lympne Industrial Estate Lympne Kent	Extension to time limit of planning permission Y06/0552/SH for outline permission for the erection of up to 52,000 sq metres of employment development Business (Class B1), General Industry (Class B2) and Storage and Distribution (Class B8) including detailed	Approved with conditions 26/02/2016							

				consideration of access and being accompanied by an Environmental Statement.								
AL	F&H	Y16/0199/SH	Holiday Extras Ashford Road Newingreen Hythe Kent CT21 4JF	Erection of a two storey office building and extension of the car park (alternative to planning permission Y15/0175/SH)	Approved with conditions 09/06/2018							
AM	F&H	Y16/1122/SH	Land Rear Rhodes House Main Road Sellindge Kent	Outline planning application for a neighbourhood extension for the creation of up to 162 houses including affordable, self-build and retirement housing, up to 929 square metres Class B1 Business floorspace, allotments, recreational ground and multi-use games area, nature reserve, and associated access, parking, amenity space and landscaping	15th January 2019		162					
AN	F&H	Y17/1042/SH	Princes Parade Promenade Princes Parade Hythe Kent	Hybrid application accompanied by an Environmental Statement for the development of land at Princes Parade	18th July 2019		150					
AO	F&H	Y16/0794/SH	St Saviours Hospital 71 - 73 Seabrook Road Hythe Kent CT21 5BU	Hybrid application comprising a full planning application for the change of use and conversion of the Dutch House to provide 4 residential units and associated parking, together with an outline application for the demolition of the main hospital buildings and outbuildings to provide up to 47 residential units, associated car parking and landscaping, with details of appearance, layout and scale reserved for future consideration.	22nd November 2019		47					
AP	F&H	Y19/0254/FH	Land Adj Fairlight Terrace Lydd	Erection of 21 two storey dwellings.	17th February 2020		21					

			Road New Romney Kent TN28 8HE									

Folkestone & Hythe – Emerging Places and Policies Local Plan – Site Allocations			
LPA Reference	**Site Address**	**Proposal**	**Total Residential Units**
Urban Area			
UA2	Rotunda and Marine Parade Car Parks, Lower Sandgate Road, Folkestone	The Rotunda Car Park is allocated for residential development with an estimated capacity of 50 dwellings and the Marine Car and Coach Park is allocated for residential development with an estimated capacity of 65 dwellings.	115
UA3	The Royal Victoria Hospital, Radnor Park Avenue, Folkestone	The site is allocated for residential development with an estimated capacity of 42 dwellings. Development will be permitted for 16 new homes through residential conversion of the original Victorian building. The rear part of the site should be cleared to provide approximately 26 new build dwellings.	42
UA4	3-5 Shorncliffe Road, Folkestone	The site is allocated for residential development with an estimated capacity of 20 residential apartments.	20
UA6	Shepway Close, Folkestone	The site is allocated for residential development with an estimated capacity of 35 dwellings and 0.15ha of public open space.	35
UA8	Highview School, Moat Farm Road, Folkestone	The site is allocated for residential development with an estimated capacity of 27 dwellings.	27
UA9	Brockman Family Centre, Cheriton	The site is allocated for residential development with an estimated capacity of 26 houses or 50 apartments.	26/50
UA10	The Cherry Pickers Public House, Cheriton	The site is allocated for residential development with an estimated capacity of 10 houses or 20 apartments.	10/20

UA11	Affinity Water, Shearway Road, Cheriton	The site is allocated for residential development with an estimated capacity of 70 dwellings, 3,500sqm of complementary Class B1a (office) commercial floorspace and an area of public open space.	70
UA12	Encombe House, Sandgate'	The site is allocated for residential development with an estimated capacity of approximately 36 residential apartments	36
UA13	Smiths Medical Campus, Hythe	The site is allocated for mixed-use development with an estimated capacity of approximately 80 dwellings and 2,000sqm of B1 (business) / B8 (storage and distribution).	80
UA14	Land at Station Road, Hythe	The site is allocated for residential development with an estimated capacity of approximately 30 family-sized dwellings.	30
UA15	Land at the Saltwood Care Centre, Hythe	The site is allocated for 84 Class C2 or C3 Extra Care Units	84
UA17	Foxwood School, Seabrook Road, Hythe	Foxwood School is allocated for a landscape-led residential development with an estimated capacity of approximately 150 dwellings.	150
UA19	Hythe Swimming Pool, Hythe	The site is allocated for residential development with an estimated capacity of approximately 50 dwellings.	50
North Downs			
ND1	Former Officers' Mess, Aerodrome Road, Hawkinge	The site is allocated for residential development with an estimated capacity of 70 dwellings.	70
ND4	Land east of Broad Street, Lyminge	The site is allocated for residential development with an estimated capacity of 30 dwellings.	30
ND9	Etchinghill Nursery, Etchinghill	The site is allocated for residential development with an estimated capacity of 30 dwellings, with the provision of a new community use such as a small village store.	30

APPENDIX C

Biodiversity Assessment Scoping Table

Key Ecological Features (IEFs) scoped in to detailed assessment for the EIA

Receptor	Reason the receptor(s) were initially identified for further survey / Assessment.	Baseline surveys / assessments conducted to date	Survey summary to date (baseline)
Designated sites	Presence of statutory and non-statutory designated sites within the vicinity of the site, identified from the data search and from 'magic' mapping.	Initially a 'long-list' of species with the potential to be impacted by the proposed Development will be drawn up, this will include: • International Statutory Designated Study (Areas up to 30km from the Study Area)- SAC, SPA, Ramsar Sites. • National Statutory Designated Study Areas Within 5km of the Study Area (SSSI, NNR, LNR). • Non- Statutory Designated Study Areas Within 2km of the Study Area (LWS, RNR). From this list a short list of sites with the potential to be impacted by the proposed Development (assessed within the ES) will be identified. A desk study conducted using data from Magic mapping and from KBMRC (Kent and Medway Biological Records Centre). Assessments of potential recreational impacts and air quality impacts will be conducted as a component of the ES.	Seventeen European Sites with the potential to be impacted by the proposed Development were identified within 30km from the site. Within 5km of the proposed site, there are seven national statutory designated sites. Within 2km of the site, there are nine non-statutory designated sites. Within 2km of the site, 24 ancient woodland blocks were recorded upon the ancient woodland inventory (AWI).
Ancient Woodlands	Harringe Brooks Wood and Folks / Kiln Woods are identified as ancient woodland on the AWI and are adjacent to the OPA (Outline Planning Application) boundary of the proposed Development.	No dedicated habitat surveys were conducted within ancient woodlands outside of the OPA as these areas are to be retained and buffered. Assessments of potential impacts due to recreational pressures and Development generated	Within 2km of the site, 24 ancient woodland blocks were recorded upon the ancient woodland inventory (AWI).

Receptor	Reason the receptor(s) were initially identified for further survey / Assessment.	Baseline surveys / assessments conducted to date	Survey summary to date (baseline)
		air quality changes will be included within the ES. Information on the presence of woodlands listed on the AWI obtained from Magic Mapping.	
Kent BAP 'Mid Kent Greensand & Gault' biodiversity opportunity area	The Study Area contains areas which are part of the Kent 'Mid Kent Greensand and Gault Biodiversity Opportunity Area'.	No specific baseline surveys were proposed, however the approach to scheme design will consider the targets within the Biodiversity Opportunity Area Statement. Information on BOAs obtained from Kent Nature Partnership.	'Mid Kent Greensand & Gault' biodiversity opportunity area falls partly within the OPA boundary.
Biodiversity Net Gain	Policy and targets set in the 25 Year Environment Plan, emerging local plan and Stakeholder requests require demonstration of biodiversity and environmental net gain	Net gain calculations based on the biodiversity net gain metric v2.0 will be undertaken.	N/A
Habitats	The majority of habitats within the SA are likely to range between Site and Local value but will be fully assessed within the EIA.	An initial Phase 1 habitat survey was conducted in October 2016 by a skilled botanist, this survey was updated with multiple site visits between March and September 2017 (within the optimum season for botanical identification). Indicative species lists were compiled with target notes. Desk Study data obtained from previous surveys and from the Kent Habitat Survey Data held by Kent County Council. Initially visited October 2016, surveys conducted throughout 2016, 2017 and 2018.	Across the site, a range of habitats were recorded. Of these, the largest by area were arable farmland and improved grassland pasture. However, there were also a range of more valuable habitats including hedgerows, ponds, rivers, woodland, wet woodlands and open mosaic habitats.

Receptor	Reason the receptor(s) were initially identified for further survey / Assessment.	Baseline surveys / assessments conducted to date	Survey summary to date (baseline)
		Detailed habitat surveys undertaken June 2018.	
Habitats of Principal Importance	Potential for the proposed Development to impact habitats of principal importance.	Identification and mapping of these habitats has been undertaken. Desk Study data obtained from previous surveys and from the Kent Habitat Survey Data held by Kent County Council. Initially visited October 2016, with update survey visits throughout 2017 and 2018. Detailed habitat surveys undertaken June 2018.	The Study Area supports habitats that although they fall within categories of principal importance the quality of these habitats is generally low and they are common and typical of the wider area. - Arable field margins; - Traditional orchards; - Hedgerows; - Ponds; - Rivers; -Lowland mixed woodlands. Habitats listed on the Kent BAP (now largely archived but still relevant) to be present within the Study Area. Habitats listed on the Kent BAP which may be impacted by the proposed Development include: - Species rich hedgerows; - Built up areas and gardens; - Native woodland; - Standing water; - Traditional orchards.
Arboricultural features	Arboricultural features with value are present around the OPA, including woodlands, hedgerows and individual trees. There are Tree Preservation Orders on individual trees.	An arboricultural scoping survey has been conducted. It was conducted to inform Framework Masterplan development. This separated the site into broad landscape character areas and helped identify potentially important groups of trees for retention.	It is estimated that within the site there are in excess of 500 individual trees, 40 hedgerows and 25 areas of woodland (which vary greatly in size, quality and age). The individual trees within the study area do not have an overall uniformed characteristic. However, there are a significant number of trees within the mature age class throughout the study area.

Receptor	Reason the receptor(s) were initially identified for further survey / Assessment.	Baseline surveys / assessments conducted to date	Survey summary to date (baseline)
		A hedgerow assessment has been undertaken as part of the Habitat Survey. TPO information obtained from the LPA. Arboricultural Scoping Survey was completed in accessible areas in Winter 2016 and Spring 2017. Hedgerow Assessment was completed in February and June 2018.	
Badger	Badgers were recorded within previous surveys conducted on and around the OPA and setts were identified within the initial site surveys.	A full badger survey was undertaken in Spring 2017, with updates throughout 2017 and 2018 by experienced surveyors within the site boundary and was updated via incidental signs of badger found during other surveys. No bait marking, camera trapping etc. will be undertaken for the ES. Desk Study Data obtained from previous applications and surveys in the vicinity of the site. Badger survey was undertaken in Spring 2017, with updates throughout 2017 and 2018	Across the survey area 103 badger setts were recorded, in addition to multiple latrines, hairs, pathways and mammal runs. Of the 103 setts, 18 were classified as active Main setts with the number of entrances ranging from 10 – 35. Eight setts were classified as Annexe, and six Subsidiary setts were classified as active and two as partially used. The remaining 66 setts were all classified as outlier setts. These consisted of three disused setts, 26 partially used setts and 37 active setts. The setts were widely distributed across the survey area, however they were largely associated with woodland, hedgerows or embankments.
Bats	Bat roosts were known to be on and adjacent to the OPA, as are habitats of value for foraging and commuting.	Given the large size of the site area and the stage in the planning application a proportionate level of survey effort was undertaken for bats. Bat activity Transects Five transects were defined which cross the initial Study Area, covering key habitat areas. These transects were conducted at either dusk or dawn once a month from April –	Nine species were recorded and identified to species level. The vast majority of bats recorded were common or soprano pipistrelles. Some rarer and / or less recorded bats were identified, areas of the site important for these species were identified. The most valuable areas appeared to be the following: • The corridor along the East Stour tributary in the south east of the site; • The area around the Folkestone Racecourse Lake;

Receptor	Reason the receptor(s) were initially identified for further survey / Assessment.	Baseline surveys / assessments conducted to date	Survey summary to date (baseline)
		September inclusive, with one dusk and predawn survey within this period. Bat static surveys Fifteen static positions were identified in the Study Area, comprising three per transect. Static monitoring equipment (Wildlife Acoustics SM4's) was positioned in each of these positions (or nearby areas depending upon access etc.) for a minimum of five nights a month between April and September (and in two locations for five nights in October where autumn swarming potential is identified). Five static detectors are being utilised and being moved between positions to ensure coverage of the Study Area and to reduce the risk of vandalism. Data from the static monitors is being analysed using 'sonochiro' software. External ground assessments for buildings Any buildings which will be removed or have a large proportion of the surrounding GI to be removed (hedgerows etc.) as part of the scheme design were scoped into the assessment. These buildings were externally assessed for bat roosting potential. All buildings which are negligible or with low bat roosting potential were scoped out of further assessment within the ES. Internal surveys of buildings were not conducted due to health and safety	• An area around the racecourse buildings, although the activity here was almost all pipistrelles; • An area around Park Wood in the west of the site. Four locations had a notably higher proportion of not common or soprano pipistrelle calls. These locations were: • An area adjacent to Folkestone Racecourse Lake; • Within the bunker area to the west of the site; • Adjacent to Harringe Brooks woodland in the west of the site; • Adjacent to Park Wood in the west of the site. A total of 125 buildings were assessed for bat roosting potential, of which 33 were assessed as having negligible roosting potential, 47 were assessed as having low potential,36 as having moderate potential and 9 as having high roost potential. Of these structures assessed, a subset consisting of those structures with moderate or high roosting potential was selected for emergence and re-entry surveys and backtracking to identify any roosts present. Where individual structures were to be surveyed, a standard emergence / re-entry survey approach was undertaken, where multiple structures were to be surveyed together a backtracking approach was undertaken. During these surveys a total of 13 confirmed / probable roosts and three possible roosts were identified. All but one of these roosts was a small roost of common or soprano pipistrelles, with one roost being a likely maternity roost of brown long eared bats (within building 7j). In addition, the desk study revealed a number of roosts on and around the site which had been recorded previously and within surveys conducted for previous

Receptor	Reason the receptor(s) were initially identified for further survey / Assessment.	Baseline surveys / assessments conducted to date	Survey summary to date (baseline)
		considerations (asbestos, structural condition) and access issues. Bat emergence surveys on buildings Buildings with moderate or high potential for bat roosting that had the potential to be significantly affected within the OPA were surveyed using dusk / dawn emergence surveys where access was permitted. Where buildings were in distinct groups, these were treated as 'woodlands/clusters' and were surveyed through a 'woodland backtracking' approach whereby multiple buildings can be assessed in the survey. These surveys were conducted between Spring 2017 and Autumn 2018, in appropriate seasons / weather conditions. Bat Tree Roost Survey Tree roost assessment was not be undertaken for the OPA ES but will be recommended for trees with potential to be impacted in future phases of the planning process Desk Study Data initially obtained from previous applications and surveys in the vicinity of the site. Data also obtained from KMBRC which utilised KBG (Kent Bat Group) data. Surveys have been completed Spring – Autumn 2018.	planning applications. These included a maternity roost of pipistrelle bats within Lympne Village.
Great Crested Newt (GCN)	Records of GCN were returned within the records search and within surveys of	All ponds on or within 500m of the OPA (other than those isolated from the OPA by significant barriers (or inaccessible)	Eight ponds had confirmed GCN presence. One pond, 15 had a medium population, while the rest were low. The highest peak adult count on any one night of survey

Receptor	Reason the receptor(s) were initially identified for further survey / Assessment.	Baseline surveys / assessments conducted to date	Survey summary to date (baseline)
	ponds within the OPA conducted for previous planning applications.	were assessed using the HSI scoring system. Full population surveys in line with the GCN mitigation guidelines were completed on all suitable ponds with connectivity in Spring 2017 where access was possible / permitted. Additional ponds outside the OPA were scoped in for eDNA assessment in Spring 2018. Population surveys completed in Spring 2017. eDNA surveys conducted in Spring 2018 on off-site ponds.	was 11 found on the 15 April 2017 at Barrow Hill Farm in pond 15.
Birds (wintering and breeding)	The OPA contains habitats of value for bird species, foraging and sheltering habitat for wintering and breeding birds (waterbodies surrounded by large areas of grassland, arable crops, hedgerows, trees and woodlands).	**Wintering bird surveys** Eight visits were undertaken between November and February 2016 / 2017. These were conducted twice monthly, covering either dusk or dawn taking 5 – 8 hours in total. A transect route which covered the key habitats in the Study Area was covered. The start point varied between the visits to obtain a representative survey of the Study Area. The OPA does not support or maintain populations functionally linked to the Dungeness, Romney Marsh and Rye Bay SAC, SPA and Ramsar. An update survey was conducted in November 2019. **Breeding Bird Surveys** Eight visits were undertaken between March and June 2017 at two-weekly	The site supports a varied assemblage of wintering birds typical of a farmland setting, with a total of 69 species being recorded during the wintering bird surveys. Of these, 30 were considered notable. On average, around 2500 birds were recorded on each of the eight surveys. In total 85 bird species were recorded during the breeding field surveys (of which 79 are considered to be breeding birds, the remaining 6 were from an outlying early March survey and are discussed in the wintering bird report). Of these 79, 39 are considered ‘notable’. or maintained by the site. Details located within ES Technical Appendix 7.15.

Receptor	Reason the receptor(s) were initially identified for further survey / Assessment.	Baseline surveys / assessments conducted to date	Survey summary to date (baseline)
		intervals. The surveys commenced one hour before dawn and continued for up to 6 hours. The start point and route of the surveys was varied to give a representative survey of the Study Area. **Barn Owl Assessment** Buildings in the Study Area with the potential to be impacted by the proposed Development were assessed for potential to support nesting barn owls. Where access was possible (and safety could be assured), the inside of these structures was examined for the presence of this species. Inspections at height were not conducted. Barn owl foraging habitat within the site was also assessed. **Wintering bird surveys** November to February 2016 / 2017 and November 2019. **Breeding Bird Surveys** March to June 2017	
Reptiles ('common' species)	Common reptile records were returned from the data search. Previous planning applications identified common reptiles from within the Study Area and a common reptile translocation was conducted as a component of the Link Park development (in the south-west of the OPA).	**Population surveys utilising artificial refugia** Artificial refugia placed in suitable habitats across the Study Area. Some suitable habitat areas were not possible to survey due to access restrictions or the land use of the area (these areas were to be utilised for hay cutting or are impacted by farming practices). In these areas, the population is extrapolated from the results	Across the site, three common reptile species were recorded, common lizard, grass snake and slow worm. In total, over 500 individual records of reptiles were recorded across the site during the surveys.

Receptor	Reason the receptor(s) were initially identified for further survey / Assessment.	Baseline surveys / assessments conducted to date	Survey summary to date (baseline)
		of the surrounding areas with a similar habitat condition 7 / 10 visits conducted between April and September 2017.	
Water vole	Water vole records were returned from the data search. A latrine was identified in the OPA during the initial site survey.	**Field survey of potentially suitable diches and water bodies** A dedicated survey of potentially suitable habitat within the SA was undertaken in Spring 2017, Autumn 2017 and Spring 2018. Latrines, burrows, feeding signs, runs etc. were noted and mapped and a population estimate undertaken. Surveys completed in Spring 2017, and Autumn 2017 and Spring 2018.	Of the 44 water bodies surveyed (on site and in the ZOI of the development) for water vole during the 2017 and 2018 surveys, two water bodies had high water vole populations, three water bodies had medium water vole populations and 19 water bodies had low water vole populations (once all of the survey results were combined).
Otter	No records of otter were returned within the ZoI of the proposed development. A potential otter sign was noted during one of the surveys, additional surveys have been undertaken.	**Otter Survey** Otter surveys were conducted in 2017 and 2018, with a total of six surveys conducted. These surveys initially covered significant water bodies within the site but were extended to include the East Stour River 2km up and down stream. A total of 6 surveys conducted in 2017 – 2018.	Two probable otter signs were identified on the 28 September 2017. These included one otter spraint and one 'anal jelly', located approximately 185m apart, in the north-west corner of the site, along the East Stour River between Harringe Lane and Somerville Court Farm. These results are the first evidence of otter found within the local area (i.e. within 2km of the site) in over 40 years. No other otter signs were observed within the surveys, although anecdotal evidence from local residents suggests that otter have been observed.
Dormouse	One Dormouse record was returned within 1 Km square which may or may not be within the SA within the data search. One dormouse record was returned within a previous planning application	Dormouse Nest Tube Surveys Survey 1 Dormouse nest tubes were utilised to determine the potential presence of dormice across the OPA. A total of 422 dormouse tubes were checked on site	Survey 1 During the surveys, no evidence of dormice within the SA was observed. Survey 2 During Survey 2, no dormice were found within Kiln Wood. However, three dormouse nests were found

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	submission recorded on the eastern edge of Harringe Brooks wood. No dormouse signs have been found within the Arcadis surveys within the SA to date.	within habitats suitable for this species, in and adjacent to the OPA (excluding areas isolated by roads etc.). These tubes were examined approximately every 5 - 6 weeks between April and September to determine the usage of the site by dormice.. Dormouse tubes were installed in April 2017 checked until October 2017. Survey 2 Following consultation comments, an additional survey was conducted within woodlands adjacent to the site, within Harringe Brooks Wood and Kiln Wood. 100 tubes and 20 boxes were placed in each of the woodlands. Within survey 2, a double density of tubes was utilised, in addition to additional nest boxes, in order to ensure the survey results were valid. The nest boxes and tubes in each woodland were checked in August and October / November 2018. During the 2018 surveys (Survey2), no dormice were found within Kiln Wood. However, three dormouse nests were found Harringe Brooks Woods (one nest was recorded twice during the surveys).	Harringe Brooks Woods (one nest was recorded twice during the surveys).
Invertebrates (terrestrial)	The data search returned one protected invertebrate within the vicinity of the SA, the Sussex emerald moth, *Thalera fimbrialis* however the site has no	A walkover of the site was conducted on the 8 of August 2018. The areas that are to be lost or degraded as a component of the proposed Development were visited and photographed along with all the areas that present the most promising	The more interesting habitats for invertebrates in the development site includes species rich hedgerows, semi-improved neutral grassland, woodland, water bodies and riparian habitats. However, with the exception of the riparian corridor there is limited connectivity of these habitats at the landscape scale,

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	potential to support this species which breeds on shingle beaches. The habitat within the SA is largely common and typical of the wider area comprised of intensive agricultural habitats.	habitats for invertebrates. Most of the site has been intensively farmed for many decades (arable/grazing) and is of limited value to invertebrates. The field margins and hedgerows in the intensively farmed areas are species poor and would support impoverished invertebrate communities. Indeed, very few species of conservation concern have been recorded from the site.	which places invertebrates, especially those with limited dispersal abilities, at rick of localised extinction.
Fish	Habitats for fish located within the East Stour River corridor and other water bodies, including the Folkestone Racecourse Lake and a pond south of the A20 (referred to as pond 16 in Technical Appendices of the ES).	Data from EA obtained in January 2017.	The EA data defined the assemblage of aquatic invertebrates within the East Stour as being 'good' no species of particular note were reported. However, the aquatic features on the site are limited in distribution, all of the quality aquatic habitats are retained within the development
Common Toad	Habitats for this species on site.	Desk study data from KMBRC, March 2018 and recorded during GCN survey conducted in 2017.	Records returned from KMBRC. Recorded during the GCN surveys conducted in Spring 2017. Toads were found associated with ponds 15 and 19, the Folkestone Racecourse Lake (OSGR TR 12364 36893 and TR 11138 37095).
Hedgehog	Habitats for this species on site.	Desk study data from KMBRC, March 2018	Recorded on site, but there is relatively limited availability of suboptimal habitat, (i.e. intensively farmed arable land). Likely to be present in discreet areas.
Harvest Mouse	Habitats for this species on site.	Desk study data from KMBRC, March 2018	Recorded on site, but there is relatively limited availability of suboptimal habitat, (i.e. intensively farmed arable land).
Invasive Plants	During the extended Phase 1 habitat survey a range of species listed on Schedule 1 of the WCA (1981 as amended) were identified including:	Data on the distribution of these species was collected during other surveys, including the Phase 1 mapping surveys, in 2016, 2017 and 2018.	The following species were recorded within the site. • Parrot's Feather Myriophyllum aquaticum • Canadian Pondweed *Elodea canadensis*

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	Swamp stonecrop *Crassula helmsii*; Japanese Knotweed *Fallopia japonica*; Parrots feather *Myriophyllum aquaticum*; Canadian Pondweed *Elodea canadensis*; Virginia Creeper *Cotoneaster horizontalis*; Montbretia *Crocosmia x crocosmifolia*; Wall Cotoneaster Crocosmia x crocosmifolia; Giant Rhubarb *Gunnera tinctoria*. There is potential for adverse effects from spread of these species during construction and benefits from the proposed Development from the removal of these species.		• Japanese Knotweed *Fallopia japonica* • Montbretia Crocosmia x crocosmifolia • Cotoneaster (Wall) Cotoneaster horizontalis • Virginia Creeper Parthenocissus quinquefolia • Giant Rhubarb Gunnera manicata • New Zealand Stonecrop *Crassula helmsii* • Variegated Yellow Archangel *Lamiastrum galeobdolon* subsp. Argentatum
Non-native Invasive Animals (listed on schedule 9 of the WCA)	Potential for these species within the site.	Desk study data obtained from KMBRC, March 2018 Incidental records from surveys conducted 2016 - 2018.	Signal Crayfish (*Pacifastacus leniusculus*) records returned by NBN from within the site and presence within the East Stour River was confirmed by the Environment Agency. One trap for signal crayfish was found within the Stour River at OSGR TR09431 37713. Signal crayfish are known to be vectors of crayfish plague, which can have a major impact upon native white clawed crayfish (*Austropotamobius pallipes*) within a catchment. American Mink (*Neovison vison*) records returned from KMBRC. NBN also returned records of this species from within 2km of the site. Evidence of this species including footprints and scats recorded during otter and water vole surveys conducted in 2017 and 2018. Mink are voracious predators and are known to prey upon native fauna, including water voles. Details of signs observed in ES Appendix 7.10.

Receptor	Reason the receptor(s) were initially identified for further survey / Assessment.	Baseline surveys / assessments conducted to date	Survey summary to date (baseline)
			Marsh Frog (*Rana Ridibunda*) found on site during habitat and amphibian surveys (GCN surveys) in ponds including pond 9, pond 16, and pond 19 (OSGR TR 10352 36663, TR 11816 36270 and TR 12364 36893 respectively).

Key Ecological Receptors (IERs) scoped out of detailed assessment for the EIA

Receptor	Details /Reason scoped out of the EIA
Designated sites	Impacts to the following sites have been **scoped out** of the EIA due to their distance from the Site: International Designated sites beyond 30km National Designated sites beyond 5km Non-Statutory Designated Sites beyond 2km.
White clawed crayfish	While the white-clawed crayfish has been recorded from the River Darent, River Stour and River Medway Catchments, populations are now largely limited to the headwaters with only four locations reported. Recent records also exist for the Seabrook Stream near Hythe which is south of the Lympne Escarpment SSSI (Kent Biodiversity Action Plan). Their habitat requirements are for relatively hard, mineral-rich unpolluted water with plenty of refuges, gravel beds being ideal. The East Stour River within the Study Area does not support habitat typical of the requirements for this species. The data search confirmed did not return any records of the presence of white clawed crayfish, however a record of the non-native invasive signal crayfish was returned from within the site. These are the key competitor for resources of the native crayfish and also predate them. Most significantly they carry a crayfish plague (*Aphanomyces astaci*), a fungal disease that can wipe out populations of white-clawed crayfish. The Environment Agency (EA) data request did not return any records crayfish within the Study Area. The EA are the holders of white clawed crayfish data and were subsequently contacted via telephone and the EA confirmed that White-clawed crayfish are absent from the East Stour.
Protected plants	Areas likely to support protected plants based on the Phase 1 habitat surveys (woodlands, species rich grassland etc.) are to be avoided within the Framework Masterplan, in line with the habitats section above.

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