

# A27

## Arundel Bypass

Preliminary Environmental Information Report

Volume 4a

Technical Appendices

11 January 2022 – 8 March 2022



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## About this report

Thank you for taking part in our statutory public consultation on the proposed A27 Arundel Bypass Scheme. This consultation is an important step towards delivering the Scheme, which will bring many benefits to local communities and the region's economy, whilst making journeys quicker and safer, and freeing Arundel town and neighbouring communities from congestion.

To inform this consultation, we have prepared a suite of information which you can find on National Highway's website ([www.nationalhighways.co.uk/our-work/south-east/a27-arundel-bypass](http://www.nationalhighways.co.uk/our-work/south-east/a27-arundel-bypass)), and which includes this Preliminary Environmental Information Report (PEI Report). This report is set out in four volumes and describes the environmental setting of the Scheme and our preliminary assessments of the Scheme's potential significant environmental effects as described below:

Volume 1 - PEI Report Non-Technical Summary (NTS), a short summary which uses non-technical language.

Volume 2 - PEI Report, a detailed technical report (in two parts), which introduces the Scheme and describes its details, the alternatives considered, and the approach taken for the environmental assessment. The PEI Report presents and then summarises the preliminary assessment of the likely significant environmental effects of the Scheme as well as considers the potential inter-relationships between the topics covered, and between the Scheme and other developments in the surrounding area.

Volume 3 – PEI Report Figures, which provide further information in the form of figures to support the initial findings presented in Volume 2.

**Volume 4 – PEI Report Technical Appendices, which provide further information in the form of technical information (in three parts) to support the initial findings presented in Volume 2.**

Each volume's Contents Page lists all the topics discussed. Due to their size, Volume 2 is presented in two parts (2a and 2b) and Volume 4 is presented in three parts (4a, 4b and 4c). It should be noted that those topics that are not included in the individual sub-volumes are greyed out.

This report should be read alongside the other supporting consultation materials such as the consultation brochure, which will explain where you can find more details regarding the Scheme and how to provide your comments.

This consultation is an important opportunity for you to share your comments on the Scheme ahead of submission of our Development Consent Order application, which is expected to happen later in 2022. We'd like to hear what you think, so please share any ideas, local knowledge or concerns that you may have. Your feedback to this consultation is important and will continue to help shape the design of the Scheme.

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## Appendix 1-A EIA Scoping Report

# **A27 Arundel Bypass Environmental Impact Assessment Scoping Report**

**Document No: HE551523-BAM-EGN-ZZ-RP-LE-0002**

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## Glossary

AADT	Annual Average Daily Traffic is a measure used in transportation engineering and is the number of vehicles that will use a new or improved road on an average day
AQMA	Places where air quality objectives are not likely to be achieved. Where an AQMA is declared, the local authority is obliged to produce an Action Plan in pursuit of the achievement of the air quality objectives.
CEMP	A site specific plan developed to ensure that appropriate environmental management practices are followed during the construction phase of a project.
Cumulative Effects	Effects upon the environment that result from the incremental impact of an action when added to other past, present or reasonably foreseeable actions. Each impact by itself may not be significant but can become a significant effect when combined with other impacts.
EIA	Environmental Impact Assessment. A process by which information about environmental effects of a proposed development is collected, assessed and used to inform decision making. For certain projects, EIA is a statutory requirement.
Environmental effect	The consequence of an action (impact) upon the environment such as the decline of a breeding bird population as a result of the removal of hedgerows and trees.
Environmental impact	The change in the environment from a development such as the removal of a hedgerow.
Environmental Statement	A document produced in accordance with the EIA Directive as transposed into UK law by the EIA Regulations to report the results of an EIA.
Flood Zone Three	This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.
Flood Zone Two	This zone comprises land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% – 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% – 0.1%) in any year.
Grade Separated Junction	A junction where the conflicting traffic flows are kept apart, usually by means of a bridge or tunnel.
LA10,18h	The noise level exceeded for 10% of the time between 06:00 and 24:00. It is the noise parameter calculated in the methodology provided in Calculation of Road Traffic Noise (CRTN). A reasonably good correlation has been shown to exist between this index and residents' perception of traffic noise over a wide range of exposures.
Mitigation	Measures including any process, activity, or design to avoid, reduce, remedy or compensate for negative environmental impacts or effects of a development
NSIP	Nationally Significant Infrastructure Projects ("NSIP") are large scale developments such as certain new harbours, power generating stations (including wind farms), highways developments and electricity transmission lines, which require a type of consent known as 'development consent' under procedures governed by the Planning Act 2008 (and amended by the Localism Act 2011).

PEI	PEI is defined in the EIA Regulations as: 'information referred to in Part 1 of Schedule 4 (information for inclusion in environmental statements) which – (a) has been compiled by the applicant; and (b) is reasonably required to assess the environmental effects of the development (and of any associated development).'
Principal Aquifer	These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.
Receptor	A component of the natural or man-made environment that is affected by an impact, including people.
Secondary A aquifer	These are permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.
Secondary B aquifer	These are predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.
Setting	The surroundings within which a heritage asset is experienced and any element which contributes to the understanding of its significance.
Source Protection Zone	Source Protection Zones ("SPZ") show the risk of contamination from any activities that might cause pollution to groundwater sources such as wells, boreholes and springs used for public water supplies. The closer the activity, the greater the risk. SPZs can comprise of up to three main zones (inner, outer and total catchment). A fourth zone of special interest can also occasionally be applied to a groundwater source.
Water Framework Directive	The Water Framework Directive ("WFD") introduced a new system for monitoring and classifying the quality of surface and ground waters. The Directive requires that Environmental Objectives be set for all surface waters and groundwater to enable them to achieve Good Ecological Potential/Status by a defined date.

## Abbreviations

AADT	Annual Average Daily Traffic
AWWT	Average Weekly Working Time
AdDC	Adur District Council
ArDC	Arun District Council
ALC	Agricultural Land Classification
AOD	Above Ordnance Datum
APIS	Air Pollution Information System
AQMA	Air Quality Management Area
AQS	Air Quality Strategy
AQO	Air Quality Objectives
ARN	Affected Road Network
AR5	Fifth Assessment Report
BMV	Best and Most Versatile Agricultural Land
BNL	Basic Noise Level
CDC	Chichester District Council
CDM	Construction (Design and Management) 2015 Regulations
CDW	Construction Demolition Waste
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CIfA	Chartered Institute for Archaeologists
CM	Conceptual Model
CRTN	Calculation of Road Traffic Noise
DCO	Development Consent Order
DCLG	Department for Communities and Local Government
DDMS	Drainage Data Management System
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DM	Do-Minimum
DMRB	Design Manual for Roads and Bridges
DS	Do-Something
EEA	European Economic Association
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
END	Environmental Noise Directive
ES	Environmental Statement
EU	European Union

FRA	Flood Risk Assessment
GAC	Generic Assessment Criteria
GHG	Greenhouse Gases
GLVIA	Guidelines for Landscape and Visual Impact Assessment
GPA	Good Practice Advice
GQRA	Generic Qualitative Risk Assessment
HDC	Horsham District Council
HDV	Heavy Duty Vehicles
HER	Historic Environment Records
HEWRAT	Highways England Water Risk Assessment Tool
HGV	Heavy Goods Vehicle
HLC	Historic Landscape Characterisation
HRA	Habitats Regulations Assessment
HSWA	Health and Safety at Work Act 1974
IAN	Interim Advice Note
IPCC	Intergovernmental Panel on Climate Change
KM	Kilometre
LCRM	Land Contamination Risk Management
LLCA	Local Landscape Character Areas
LNR	Local Nature Reserve
LOAEL	Lowest Observable Adverse Effect Level
LVIA	Landscape and Visual Impact Assessment
LWS	Local Wildlife Site
MAVES	Mid-Arun Valley Environmental Survey
MCA	Mineral Consultation Areas
MPA	Minerals Planning Authorities
MSA	Mineral Safeguarding Areas
NCA	National Character Areas
NERC	Natural Environment and Rural Communities
NHLE	National Heritage List for England
NIA	Noise Important Areas
NMP	National Mapping Programme
NMU	Non-motorised users
NPSNN	National Policy Statement for National Networks
NNR	National Nature Reserve
NOEL	No Observed Effect Level
NOx	Nitrogen Oxide

NPPF	National Planning Policy Framework
NPS	National Policy Statement
NPSE	Noise Policy Statement for England
NRMM	Non-Road Mobile Machinery
NSIP	Nationally Significant Infrastructure Report
NSR	Noise Sensitive Receptors
OEMP	Outline Environmental Management Plan
OS	Ordnance Survey
ONS	Office of National Statistics
PA 2008	Planning Act 2008
PCF	Project Control Framework
PCL	Potential contaminant linkages
PCM	Pollution Climate Mapping
PEIR	Preliminary Environmental Information Report
PM	Particulate Matter
PPG	Planning Policy and Guidance
PPG-N	Planning Practice Guidance on Noise
PPV	Peak Particle Velocity
PRA	Preferred Route Announcement
PRoW	Public Right of Way
RBMP	River Basin Management Plan
RIS	Road Investment Strategy
RSP	Representative Concentration Pathways
RTA	Road Traffic Accident
SAC	Special Area of Conservation
SDNP	South Downs National Park
SERF	South East Historic Environment Research Framework
SNRHW	Selected non-reactive hazardous waste
SOAEL	Significant Observed Adverse Effect Level
SoCC	Statement of Community Consultation
SoCoMMS	The South Coast Multi Modal Study
SoS	Secretary of State
SPA	Special Protection Area
SPD	Supplementary Planning Documents
SPG	Supplementary Planning Guidance
SPZ	Source Protection Zones
SRN	Strategic Road Network

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SSSI	Sites of Special Scientific Interest
SuDS	Sustainable Drainage Systems
TFSE	Transport for the South East
TPO	Tree Preservation Order
TRA	Traffic Reliability Area
UAEL	Unacceptable Adverse Effect Level
WBC	Worthing Borough Council
WBCSD	World Business Council for Sustainable Development
WCB	Walkers, cyclists and horse riders
WSCC	West Sussex County Council
WSHER	West Sussex Historic Environment Record
WFD	Water Framework Directive
WHO	World Health Organisation
WPA	Waste Planning Authorities
WRI	World Resources Institute
ZTV	Zone of Theoretical Visibility
ZVI	Zone of Visual Influence

## 1. Introduction

### 1.1. Overview of the proposed scheme

- 1.1.1. The A27 is the only east-west trunk road south of the M25. It links many of the towns and cities along the south coast, including Portsmouth, Havant, Chichester, Arundel, Worthing, Adur, Brighton and Hove, Lewes and Eastbourne.
- 1.1.2. The A27 also provides access to the wider Strategic Road Network (SRN) and is therefore an important corridor for both longer distance travel and local traffic. Two-thirds (67%) of the traffic that currently uses the A27 between Crossbush roundabout and Causeway roundabout is through-traffic, while the remaining third (33%) is local (Ref 1), which reinforces the strategic nature of the A27.
- 1.1.3. The *A27 Corridor Feasibility Study* (Ref 2) found that, at Arundel, the A27 is already operating at 100%-150% vehicle capacity. The A27 Arundel Bypass is required to improve safety, reduce journey time and minimise uncertainty issues for travellers within the local area of Arundel that arise from current peak hour congestion, which is forecast to increase. In addition, the bypass would help address these same issues for travellers using the wider A27 corridor past Arundel.
- 1.1.4. A series of alternative options for the route of the A27 Arundel Bypass has been explored during previous stages of the project's development, as explained in Section 3: Assessment of Alternatives of this report. On the 15 October 2020, an announcement was made confirming that the 'Grey route' (Option 5BV1) is to be the preferred route (Ref 3), hereafter referred to as the 'proposed scheme'. The proposed scheme comprises approximately 8 km of new dual carriageway located to the south of the existing A27. It would start in the east at the end of the A27 Crossbush Junction and re-joins the A27 east of the A27/A29 Fontwell (East) roundabout. The location of the proposed scheme in the context of administrative boundaries is shown on Figure 1, with key elements of the proposed scheme highlighted on Figure 2. Further details are provided in Section 2 of this report.
- 1.1.5. Highways England is the 'Applicant' for the proposed scheme and the Strategic Highways Company, as defined in the *Infrastructure Act 2015* (Ref 4), charged with modernising and maintaining the highways, as well as managing the network and keeping traffic moving.

### 1.2. Legislative context and need for Environmental Impact Assessment

- 1.2.1. The proposed scheme is defined as a Nationally Significant Infrastructure Project (NSIP) under Section 14(1)(h) and Section 22 of the *Planning Act 2008* (PA 2008) (as amended by *The Highway and Railway (Nationally*

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Ref 1 Highways England, A27 Arundel Bypass Further consultation strategic model (2015 base)

Ref 2 Parsons Brinckerhoff on behalf of Highways Agency, A27 Corridor Feasibility Study (February 2015)

<https://www.gov.uk/government/publications/a27-corridor-feasibility-study-technical-reports> (Accessed October 2020)

Ref 3 Highways England, A27 Arundel Bypass Preferred route announcement (October 2020)

Ref 4 Infrastructure Act (2015) Strategic Highways Companies

*Significant Infrastructure Project*) Order 2013) (Ref 5) by virtue of the fact that:

- it comprises the construction of a highway;
  - the highway to be constructed is wholly in England;
  - the Secretary of State is the highway authority for the highway; and
  - the speed limit for any class of vehicle on the highway is to be 50 miles per hour or greater, and the area for the construction of the highway is greater than 12.5 hectares.
- 1.2.2. In accordance with the legislation, a Development Consent Order (DCO) is therefore required to allow the construction and operation of the proposed scheme.
- 1.2.3. The proposed scheme will be subject to an Environmental Impact Assessment (EIA), and effects reported within an Environmental Statement (ES). It falls within the relevant thresholds of Schedule 2 clause 10 (f) “construction of roads” of the *Infrastructure Planning (Environmental Impact Assessment) Regulations 2017* (the *EIA Regulations*) (Ref 6). Therefore, to establish whether an EIA is required, it is necessary to screen against the Schedule 3 criteria in the *EIA Regulations* to determine if there is the potential for significant environmental effects. As set out in the *Environmental Impact Assessment Screening (Determination)* (Ref 7) produced by Highways England, the proposed scheme is likely to result in significant environmental effects and therefore an EIA is required. Schedule 2 and 3 of the *EIA Regulations* correspond with Annex II and Annex III in *Directive 2014/52/EU* (amending *Directive 2011/92/EU*) (Ref 8).
- 1.2.4. In accordance with Regulation 8(1)(b) of the *EIA Regulations*, Highways England has notified the Secretary of State for Transport (Secretary of State) in a letter to the Planning Inspectorate dated 11 September 2020 that an ES presenting the findings of the EIA will be submitted with the DCO application.
- 1.2.5. The *Localism Act 2011* (Ref 9) appointed the Planning Inspectorate (the Inspectorate) as the agency responsible for operating the DCO process for NSIPs. In its role, the Inspectorate will examine the application for the proposed scheme and then will make a recommendation to the Secretary of State who will make the decision on whether to grant or to refuse the DCO.
- 1.2.6. In accordance with section 104(2) of the *PA 2008* (Ref 5), the Secretary of State is required to have regard to the relevant *National Policy Statement (NPS)*, amongst other matters, when deciding whether or not to grant a DCO. The relevant NPS for the proposed scheme is the *National Policy*

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Ref 5 HM Treasury, Planning Act (2008)

Ref 6 HM Treasury, The Infrastructure Planning (Environmental Impact Assessment) Regulations (2017)

Ref 7 Highways England, Environmental Impact Assessment Screening (Determination) 11 September 2020 (2020)

Ref 8 European Union, DIRECTIVE 2014/52/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (2014)

Ref 9 HM Treasury, Localism Act (2011)

*Statement for National Networks (NPSNN)* which was published in December 2014 (Ref 10).

1.2.7. Other matters that the Secretary of State will consider includes important and relevant national and local planning policy. The *National Planning Policy Framework (NPPF)* published in March 2012 and updated on 19 February 2019 (Ref 11) is relevant national planning policy. The local development plan policy relevant to the proposed scheme consists of the following adopted plans:

- West Sussex County Council – *The West Sussex Plan 2017-2022* (Ref 12);
- West Sussex County Council – *West Sussex Transport Plan 2011 – 2026* (Ref 13);
- Arun District Council – *Arun Local Plan 2011-2031* (Ref 14);
- South Downs National Park Authority – *South Downs Local Plan 2014-2033* (Ref 15);
- West Sussex County Council – *West Sussex Waste Local Plan 2014 – 2031* (Ref 16); and
- West Sussex County Council & South Downs National Park Authority – *West Sussex Joint Minerals Local Plan 2018 – 2033* (Ref 17).

1.2.8. Sections 6-16 of this report describe the national and local planning policies relevant to the assessment for each environmental topic included within the EIA. The purpose of considering planning policy at the scoping stage of the EIA is twofold:

- to identify policy that could influence the sensitivity of receptors (and therefore the significance of environmental effects) and any requirements for mitigation;
- to identify planning policy that could influence the methodology of the EIA. For example, a planning policy may require the assessment of a particular impact or the use of a particular methodology.

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Ref 10 Department for Transport (DfT) (2014), National Policy Statement for National Networks (NPSNN), The Statutory Office

Ref 11 Ministry of Housing, Communities and Local Government (2019), National Planning Policy Framework.

Ref 12 West Sussex County Council, The West Sussex Plan (2017), Available at:

[https://www.westsussex.gov.uk/media/11856/the\\_west\\_sussex\\_plan.pdf](https://www.westsussex.gov.uk/media/11856/the_west_sussex_plan.pdf) (Accessed: October 2020)

Ref 13 West Sussex County Council (2011). West Sussex Transport Plan. Available at: <https://www.westsussex.gov.uk/about-the-council/policies-and-reports/roads-and-travel-policy-and-reports/west-sussex-transport-plan-2011-26-ltp3/> (Accessed:

October 2020)

Ref 14 Arun District Council (2018). Arun Local Plan. Available at: <https://www.arun.gov.uk/adopted-local-plan> (Accessed: October 2020)

Ref 15 South Downs National Park Authority, South Downs Local Plan 2014-33 (2019). Available at:

[https://www.southdowns.gov.uk/wp-content/uploads/2019/07/SD\\_LocalPlan\\_2019\\_17Wb.pdf](https://www.southdowns.gov.uk/wp-content/uploads/2019/07/SD_LocalPlan_2019_17Wb.pdf) (Accessed: October 2020)

Ref 16 West Sussex County Council (2014). West Sussex Waste Local Plan. Available at:

<https://www.westsussex.gov.uk/about-the-council/policies-and-reports/environment-planning-and-waste-policy-and-reports/minerals-and-waste-policy/waste-local-plan/> (Accessed: October 2020)

Ref 17 West Sussex County Council (2018). Joint Minerals Local Plan. Available at: <https://www.westsussex.gov.uk/about-the-council/policies-and-reports/environment-planning-and-waste-policy-and-reports/minerals-and-waste-policy/joint-minerals-local-plan/> (Accessed: October 2020)

### 1.3. Purpose of this report

- 1.3.1. The *EIA Regulations* (Ref 6) set out the requirements for an applicant who proposes to request a scoping opinion from the Secretary of State. Regulation 10(3) requires a scoping report to include:
- a plan sufficient to identify the land;
  - a description of the development, including its location and technical capacity;
  - an explanation of the likely significant effects of the development on the environment; and
  - such other information or representations as the person making the request may wish to provide or make.
- 1.3.2. The purpose of this report is therefore to:
- provide a summary of the proposed scheme and alternatives considered to date;
  - set out the proposed scope of work and methods to be applied in carrying out the EIA;
  - set out the proposed structure and coverage of the ES to be submitted with the DCO application; and
  - support a formal request for a scoping opinion from the Secretary of State under Regulation 10 of the *EIA Regulations*.
- 1.3.3. This report is set out in accordance with guidance provided in Design Manual for Roads and Bridges (DMRB) LA 103 Scoping projects for environmental assessment (Ref 18) and the Inspectorate’s Advice Note 7 Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements (Advice Note 7) (Ref 19).
- 1.3.4. Table 1 lists the suggested requirements identified in *Advice Note 7* and details where they are presented in this report. The requirements of the *EIA Regulations* regarding the content of the ES are also covered within the contents tabulated below.

**Table 1: Contents for the Scoping Report based on Advice Note 7**

Suggested Scoping Report Contents	Location in this Scoping Report
A plan sufficient to identify the land	Figure 1
A description of the proposed scheme, including its location and technical capacity	Section 2
An explanation of the likely significant effects of the proposed scheme on the environment	Sections 6-16

Ref 18 Standards for Highways (2020), Design Manual for Roads and Bridges, LA 103 – Scoping projects for environmental assessment

Ref 19 Planning Inspectorate (2020) Advice Note 7: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements

Suggested Scoping Report Contents	Location in this Scoping Report
An explanation of the approach to addressing uncertainty where it remains in relation to elements of the proposed scheme such as design parameters	Section 2.4: Design Parameters and the Assumptions, limitations and uncertainties subheading in Sections 6-16
Referenced plans presented at an appropriate scale to convey clearly the information and all known features associated with the proposed scheme	Figure 2
An outline of the reasonable alternatives considered and the reasons for selecting the preferred option	Section 3
A summary table depicting each of the aspects and matters that are requested to be scoped out allowing for quick identification of issues	Section 17
A detailed description of the aspects and matters proposed to be scoped out of further assessment with justification provided	Sections 6-16
Results of desktop and baseline studies where available and where relevant to the decision to scope in or out aspects or matters	Sections 6-16
Aspects and matters to be scoped in, the report should include details of the methods to be used to assess impacts and to determine significance of effect, such as criteria for determining sensitivity and magnitude	Sections 5 and 6-16
Any avoidance or mitigation measures proposed, how they may be secured and the anticipated residual effects	Sections 6-16
References to any guidance and best practice to be relied upon	Sections 5 and 6-16
Evidence of agreements reached with consultation bodies (for example, the statutory nature conservation bodies or local authorities)	N/A
An outline of the structure of the proposed ES	Section 5.10
Transboundary screening matrix	Appendix A

## 2. The Proposed Scheme

### 2.1. Need for the proposed scheme

- 2.1.1. East and west of Arundel, the A27 is a dual carriageway with capacity to carry existing traffic flows and more able to cope with future traffic growth. The single carriageway section of the A27 through Arundel creates a bottleneck that creates congestion, which in turn affects commuters, businesses, communities and visitors. As identified in Section 1 of this report, the A27 at Arundel is already operating at 100%-150% capacity.
- 2.1.2. Traffic congestion around Arundel results in some drivers seeking alternative routes which are less suited to higher traffic flows. Residents in local towns and villages are affected by increases in through traffic, while air quality is also a concern, most notably in Storrington which was identified in 2018 using data from 2016 by the World Health Organisation (WHO) as one of the poorest places for air quality in the UK (Ref 20).
- 2.1.3. The A27 currently has a poor safety record, with a higher than average accident rate for rural A-roads. Relatively poor transport connectivity in the area has also contributed to pockets of deprivation by restricting access to employment opportunities. For example, *the West Sussex Joint Strategic Needs Assessment Briefing – Indices of Deprivation* reported that in 2015 Littlehampton had some of the highest levels of deprivation in the country, partly because local people have reduced access to employment (especially higher paid, higher value jobs) than elsewhere in the region (Ref 21 and Ref 22). Improving connectivity could help tackle this inequality.
- 2.1.4. The proposed scheme would address the pinch-point constraint that affects the ability of the wider A27 corridor to function to its potential as a strategic route. It would address safety, journey time and journey time uncertainty for travellers within the vicinity of Arundel that arises from current peak hour congestion, which is forecast to increase. In addition, the proposed scheme would help address safety, journey time and related uncertainty for travellers using the wider A27 corridor.
- 2.1.5. The proposed scheme would help address the impacts of congestion and reduced accessibility that are considered to degrade the perception of Arundel and the local area as a visitor destination. It is also expected to reduce the pressure for traffic to displace onto rural roads along the A27 corridor near Arundel. This displacement already erodes the rural quality of the wider corridor area, including in the South Downs National Park (SDNP). This in turn affects users of those roads, including walkers, cyclists and horse riders as well as affecting the amenity of rural settlements along those roads. The proposed scheme would also help remove the severance issues experienced specifically at Arundel in the area of Ford Road roundabout, but also more generally as a result of the constraints for motorised and non-

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Ref 20 WHO (2018), Air Quality database, Available at:

[http://www.who.int/airpollution/data/aap\\_air\\_quality\\_database\\_2018\\_v12.xlsx?ua=1](http://www.who.int/airpollution/data/aap_air_quality_database_2018_v12.xlsx?ua=1) (Accessed: October 2020)

Ref 21 Highways England, A27 Arundel Bypass Interim Scheme Assessment Report (2019)

Ref 22 West Sussex County Council, West Sussex Joint Strategic Needs Assessment Briefing – Indices of deprivation 2015.

Available at: <https://jsna.westsussex.gov.uk/assets/core/Briefing-Indices-of-Deprivation-2015.pdf> (Accessed: October 2020)

motorised travellers when travelling north-south across the A27 corridor at Arundel.

- 2.1.6. The proposed scheme would support planned growth within Arun District and other local authority areas served by the wider A27 corridor. In the absence of the proposed scheme, this planned growth and the associated benefits may not be fully realised. Failure to deliver the necessary transport infrastructure could result in a constrained housing supply, higher housing costs and reduced accessibility to employment. The proposed scheme would support balanced delivery of housing and employment in the Arun District and adjoining districts by improving accessibility within and to these areas, encouraging investment and reducing demand for long distance outward commuting. It is also considered that the proposed scheme would assist in avoiding the adverse congestion effects associated with planned growth that will take place.
- 2.1.7. The *Road Investment Strategy 2015 (RIS)* (Ref 23) outlines the Government's planned investment in England's Strategic Road Network from 2015 to 2020. The proposed scheme is identified as one of three schemes which aim to address congestion, delays to roads users, community separation, air pollution and the number of accidents along the existing A27. On page 21 and 46 of the *RIS*, it highlights potential improvements on the A27 at Arundel:
- “A27 Arundel bypass - a new dual carriageway bypass to link together the two existing dual carriageway sections of the road. The starting point will be the previous preferred route, subject to consultation with the National Park Authority, local government and the public on this, and alternative options”;
  - “A27 Arundel bypass - replacement of the existing single carriageway road with a dual carriageway bypass, linking together the two existing dual carriageway sections of the road.”
- 2.1.8. Although first identified in the *RIS 2015*, the proposed scheme continues to be a committed scheme under *The Road Investment Strategy 2: 2020-2025* (Ref 24).
- 2.1.9. In its *Economic Connectivity Review* (Ref 25) for the south east, Transport for the South East (TFSE) identifies an improved A27/M27 corridor as one of those crucial to the region's success in coming decades, in order to improve business connectivity, labour market efficiency, enable development, provide access to international gateways and support deprived communities.
- 2.1.10. It is considered that the proposed scheme through increased connectivity, adding capacity and easing travel would support regeneration initiatives in

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Ref 23 Department for Transport (March 2015) Road Investment Strategy: for the 2015/16 – 2019/20 Road Period. Available at: <https://www.gov.uk/government/publications/road-investment-strategy-for-the-2015-to-2020-road-period> (Accessed: October 2020)

Ref 24 Department for Transport (March 2020) Road Investment Strategy 2: 2020-2025. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/951100/road-investment-strategy-2-2020-2025.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/951100/road-investment-strategy-2-2020-2025.pdf) (Accessed: January 2021)

Ref 25 Transport for the South East (July 2018). Economic Connectivity Review Available at: <https://transportforthesoutheast.org.uk/transport-strategy-draft/ecr/> (Accessed: October 2020)

the local area at Littlehampton, and in urban areas served by the A27 further afield in Shoreham and Newhaven, Bognor Regis, Brighton and Hove and in the west at Portsmouth and Chichester.

## 2.2. Proposed scheme objectives

2.2.1. The *RIS* (Ref 23) sets out the Department for Transport's (DfT) aspirations for the strategic road network to be smoother, smarter and sustainable by 2040 (Part 1, Chapter 2). The DfT aims to achieve this by focussing on eight key performance areas (Part 3, Chapter 1):

- Making the network safer;
- Improving user satisfaction;
- Supporting the smooth flow of traffic;
- Encouraging economic growth;
- Delivering better environmental outcomes;
- Helping cyclists, walkers and other vulnerable users of the network;
- Achieving real efficiency; and
- Keeping the network in good condition.

2.2.2. The objectives of the proposed scheme have been set based on the need as summarised in Section 2.1 and to align with the *RIS* aspirations outlined above. The objectives were developed with regard to the *Highways England Delivery Plan 2015-2020* (Ref 26) and through consultation with West Sussex County Council, Worthing and Adur Councils, Arun District Council (ArDC) and the SDNP Authority (Ref 27).

2.2.3. The proposed scheme objectives are to:

- improve the safety of travellers along the A27 and consequently the wider local road network;
- ensure that customers and communities are fully considered throughout the design and delivery stages;
- improve accessibility for all users to local services and facilities;
- respect the SDNP and its special qualities in decision-making;
- deliver a scheme that minimises environmental impact and seeks to protect and enhance the quality of the surrounding environment through its high-quality design;
- improve capacity of the A27 whilst supporting local planning authorities to manage the impact of planned economic growth;
- reduce congestion, reduce travel time and improve journey time reliability along the A27.

## 2.3. Proposed scheme location

- 2.3.1. Figure 1 illustrates the location of the proposed scheme in the context of administrative boundaries.
- 2.3.2. Figure 2 indicates the location of the proposed scheme including key structures in the context of the existing A27. The proposed scheme would feature approximately 8 km of new dual two-lane carriageway located to the south of the existing A27. It would start in the east at the end of the A27 Crossbush Bypass and end east of the A27/A29 Fontwell (East) roundabout to the west of Arundel. The proposed scheme would also include other elements as identified in Section 2.6, including the de-trunking and works to approximately 6.6 km of the existing A27 between the junctions with Tye Lane and Mill Road and Crossbush Junction, subject to an agreement with West Sussex County Council.
- 2.3.3. The current land use and landforms surrounding the proposed scheme are described below. Further detail of land use and landforms in the context of the technical environmental disciplines are discussed in Sections 6 to 15 of this report. Key ecological, heritage, landscape, waste, water and air quality constraints are shown in Figures 3 to 7.

### South Downs National Park

- 2.3.4. The SDNP is an area of land that stretches from Winchester to Eastbourne. The proposed scheme lies outside its boundary but in parts lies adjacent and south of the SDNP boundary. Figure 1 shows the SDNP location in relation to the proposed scheme. The SDNP has been nationally designated due to its seven special qualities (Ref 28):
- Diverse, inspirational landscapes and breath-taking views;
  - A rich variety of wildlife and habitats including rare and internationally important species;
  - Tranquil and unspoilt places;
  - An environment shaped by centuries of farming and embracing new enterprise;
  - Great opportunities for recreational activities and learning experiences;
  - Well-conserved historical features and a rich cultural heritage; and
  - Distinctive towns and villages, and communities with real pride in their area.

### Cultural heritage

- 2.3.5. The area surrounding the proposed scheme has an array of cultural heritage assets which contribute to the heritage value in the area. There are 70 listed buildings within 1 km of the proposed scheme. Elsewhere within Arundel are 11 highly graded listed buildings, including six at Grade II\* and five at Grade I. One of particular note among these is the Grade I listed Arundel Castle

which lies within 1 km of the proposed scheme and lies just north of the existing A27 within the town of Arundel (Arundel Castle is also a scheduled monument and within a Grade II\* Registered Park and Garden (RPG)). Although outside the study area, due to the nature of the asset and wider influence of their setting, there is the potential for these buildings to be influenced by changes associated with the proposed scheme.

- 2.3.6. There are six scheduled monuments within 1 km of the proposed scheme and five conservation areas located within the study area. There are a further 13 Grade I listed buildings, 15 Grade II\* listed buildings and 17 scheduled monuments within the 5 km study area. There are a large number of non-designated heritage assets within the study area. Further details of these cultural heritage assets are provided in Section 7.

### **Biodiversity**

- 2.3.7. The proposed scheme study area for designated sites extends to 20 km from the scheme boundary. Within this area there are a seven internationally designated sites, seven national designated sites and two sites of county designation. Further details of these sites are available in Table 19, Section 9.
- 2.3.8. There are a number of notable terrestrial habitat types located within 2 km of the proposed scheme, including the priority habitats deciduous woodland, wood-pasture and parkland, ancient and veteran trees, ponds, coastal floodplain and grazing marsh and orchard. The River Arun is a notable habitat representing river, coastal saltmarsh, mudflats and intertidal foreshore habitats. The habitats within the study area are known to support a wide variety of protected and notable faunal and flora species as detailed in Table 21, Section 9. Key habitat features along the proposed scheme are shown in Figure 3.

### **Woodland**

- 2.3.9. Whilst it is unlikely that the proposed scheme would have any direct impacts on ancient woodland, there are areas of woodland, including ancient woodland and ancient and veteran trees, which are located within 5 km of the proposed scheme. The woodland is crossed by footpaths facilitating recreational use. Further details of woodland is available in Section 8 and Section 9.

### **Agricultural land**

- 2.3.10. Both grazing and arable land is featured within the study area. This is further discussed in Section 10 of this report, including the consideration of the quality of the agricultural land.

### **Urban areas**

- 2.3.11. The principal urban areas within 5 km of the proposed scheme are Arundel and Littlehampton. A number of smaller settlements and villages are also located within 5 km of the proposed scheme, these include but are not limited to Crossbush, Lyminster, Tortington, Binsted, Walberton, Eastergate, Yapton, Barnham, Fontwell and Slindon. The proposed scheme is located

within the county of West Sussex and the local district of Arun. The population of Arun was 160,758 in 2019, whilst the population of West Sussex was 863,980. Further details of urban areas are given in Section 13 of this report.

### **Watercourses**

- 2.3.12. The River Arun is the largest watercourse located within 5 km of the proposed scheme. The River Arun flows north to south and is tidal at the point the proposed scheme would cross the river. Other watercourses including Binsted Rife and Tortington Rife are located within 5 km of the proposed scheme. A number of ordinary watercourses and drainage ditches are also located within 5 km of the proposed scheme. Further details of watercourses are given in Section 14.

### **Floodplain**

- 2.3.13. Floodplains are present within the River Arun, Binsted Rife and Tortington Rife catchments. The proposed scheme would pass over the River Arun's floodplain. Further floodplain details are given in Section 14.

## **2.4. Rochdale envelope**

- 2.4.1. The Inspectorate's *Advice Note 9: Using the 'Rochdale Envelope'* (*Advice Note 9*) (Ref 29) provides guidance regarding the degree of flexibility that may be considered appropriate within an application for development consent under the *PA 2008* (Ref 5). The advice note acknowledges that there may be aspects of the proposed scheme design that are not yet fixed, and therefore, it may be necessary for the EIA to assess likely worst case variations to ensure that all foreseeable significant environmental effects of the proposed scheme have been assessed.
- 2.4.2. This Scoping Report is based on the emerging preliminary design for the proposed scheme, as described in Section 2.6. The proposed scheme is to be developed further through a reference design stage which will form the basis for the EIA and DCO application.
- 2.4.3. Within the reference design there will need to be sufficient flexibility to provide scope for finalising the detailed design and construction methodology in due course (subject to the award of the DCO). Therefore, when presenting the proposed scheme design in the ES and the accompanying assessment, the requirements of *Advice Note 9* will be complied with to ensure that the likely significant environmental effects of the proposed scheme are assessed on a reasonable worst case basis.

## **2.5. Environmental design**

- 2.5.1. The project team are taking an approach to the environmental design of the proposed scheme which is informed by the following best-practice guidance:
- National Infrastructure Commission (NIC) Design Principles for National Infrastructure (2020);

- Highways England Road to Good Design (2018); and
  - Design Manual for Roads and Bridges (DMRB) (latest revision 2020).
- 2.5.2. Each of these documents recommends a strategic approach to design to get a deeper understanding of an area and develop infrastructure which provides lasting benefits for people, place and nature.
- 2.5.3. Informed by this guidance, Highways England is taking a landscape and environment led approach to reviewing the site context at a landscape-scale, considering landscape character, the stock of natural capital assets in the landscape, and the ecosystem services that those natural capital assets provide.
- 2.5.4. The landscape and environment led approach will ensure that better design decisions are made throughout the evolution of the proposed scheme, by instilling clear environmental objectives to protect and enhance the natural environment within the decision making process. The purpose of this is to maximise the avoidance of environmental impacts where practicable and instil the consideration of environmental enhancements within all aspects of the proposed scheme design; not simply 'bolted-on' mitigation at the end of the process, which can result in less-favourable outcomes.
- 2.5.5. In accordance with the *NPSNN* (Ref 10), the proposed scheme will deliver an integrated environmental design that maximises the available opportunities to provide multiple benefits by:
- delivering environmental and social benefits;
  - investing in locations where the national road network severs communities and acts as a barrier to cycling and walking;
  - maximising the potential for providing beneficial biodiversity or geological features;
  - protecting and enhancing existing habitats and also establishing new habitats of value;
  - incorporating habitats into design that will contribute to the function of ecological networks;
  - using open space for multiple purposes such as amenity, wildlife habitat and flood storage; and
  - providing recreational enhancements through improvements to public rights of way networks.
- 2.5.6. In line with best practice, maximising benefits for biodiversity will involve the avoidance of impact to habitats and fauna wherever practicable, and this may include the integration of existing habitats into the proposed scheme design. Where features of biodiversity importance cannot be retained, then mitigation and compensation measures will be implemented where possible to address the significance of potential effects upon notable flora and fauna and biodiversity as a whole. These approaches include the sensitive management of habitats and species to reduce impacts during construction

and the establishment of new habitats that will maximise biodiversity delivery. The design of habitats delivered within the proposed scheme landscape design will also seek to develop into a functional ecological network, linking to similar habitats in the surrounding landscape.

## 2.6. Proposed scheme description

### Overview

- 2.6.1. The proposed scheme design is still being refined and as a result the details below are subject to change as the design develops. The description below is representative of the 'Grey route' (Option 5BV1) which is the current preferred route.
- 2.6.2. The proposed scheme starts in the east at the end of the A27 Crossbush Bypass and ends east of the A27/A29 Fontwell (East) roundabout to the west of Arundel. It includes the following key features as shown in Figure 2:
- Full grade separated junction at Crossbush with the A27 under the junction;
  - New bridge over the Arun Valley Railway;
  - Approximately 1.55 km crossing of the River Arun floodplain;
  - New bridge over the River Arun;
  - New bridge over Binsted Rife;
  - New grade separated junction with the existing A27 at Tye Lane to the north of Walberton;
  - Closure of Tye Lane south of the proposed scheme; and
  - De-trunking and other works to approximately 6.6 km of the existing A27 between the junctions with Tye Lane and Mill Road and Crossbush Junction, subject to agreement of West Sussex County Council.

### Route of the proposed scheme

- 2.6.3. From the Crossbush junction the proposed scheme bears south west passing over the Arun Valley Railway Line and then descends the eastern valley side of the River Arun to cross the Arun floodplain.
- 2.6.4. The proposed scheme then crosses the River Arun and over Ford Road to the south of the scheduled monument at Tortington Priory. It then bears west, crossing under Tortington Lane between Broad Green cottages and Tortington Manor, before continuing westward over Tortington Rife.
- 2.6.5. It then crosses Binsted Lane to the south of Meadow Lodge and turns north west and re-crosses Binsted Lane near Oakleys Barn. The proposed scheme runs parallel to Binsted Lane passing just to the south of St Marys Church. It then turns west to cross part of Avisford Golf Course at Binsted Rife on a viaduct.
- 2.6.6. The proposed scheme then turns west to pass under Yapton Lane. Passing immediately north of properties located on Yapton Lane the proposed scheme passes through Avisford Golf Course. It turns north west and

crosses under Tye Lane south of Avisford Park House. It then curves towards the west, passing north of Hooe Farm Industrial Estate to re-join the existing A27 near Potwell Copse east of Fontwell (East) Roundabout.

- 2.6.7. A new grade separated junction is provided connecting Tye Lane north of the route and the existing A27 to the proposed A27. This would allow for movements from the existing A27 westbound to the proposed A27 westbound and from the proposed A27 eastbound to the existing A27 eastbound only. Tye Lane would be closed south of the proposed route to prevent it becoming a cut through to the proposed A27. The existing A27 between Copse Lane and Tye Lane would be retained to provide the eastbound off slip.
- 2.6.8. The existing junction at Copse Lane would be closed. To provide alternative access, Copse Lane, to the west of Bridleway 392, would be realigned to the south and parallel to the proposed A27 and would connect to Arundel Road just to the west of the tie-in junction (Ref 30).

#### Side roads and accesses

- 2.6.9. To minimise the number of junctions, minor roads crossed by the proposed scheme would be accommodated by either an underbridge or an overbridge or they would be closed and diverted. The specific treatment at each location is subject to further assessment and design development.
- 2.6.10. The proposed scheme would impact on local accesses and side roads as follows:
- The proposed scheme passes over Ford Road which would remain on its existing alignment.
  - Tortington Lane would have a slightly altered horizontal alignment and pass over the proposed scheme. This is to allow the new bridge to be built offline and to keep the existing road open for as long as possible during the construction stage.
  - Binsted Lane would be realigned so that it runs from east to west and follow footpath 354. It would pass over the proposed scheme which is at grade at this location.
  - Where the proposed scheme crosses the other part of Binsted Lane, Binsted Lane would be realigned to the east of its existing location. This allows the existing road to remain open for as long as possible during the construction stage. At this location the proposed scheme is at grade and Binsted Lane passes over it.
  - Tye Lane to the south of the proposed scheme would be closed as there is an alternative route for access. Tye Lane to the north of the A27 would be used as a connector road for the grade separated junction at the western tie-in.

- Mill Road would remain open and connect to the western tie-in junction via a roundabout.
- Copse Lane to the west of Bridleway 392 would be realigned to the south and parallel to the proposed scheme and would connect to Arundel Road just to the west of the tie-in junction. This would allow the properties to the south of the proposed scheme to retain access.
- The proposed width of side roads would be consulted on with West Sussex County Council.
- There would be no direct side road accesses onto the proposed scheme. The only accesses onto the proposed scheme would be at the grade separated junction at Crossbush and at the western tie-in junction (Ref 30).

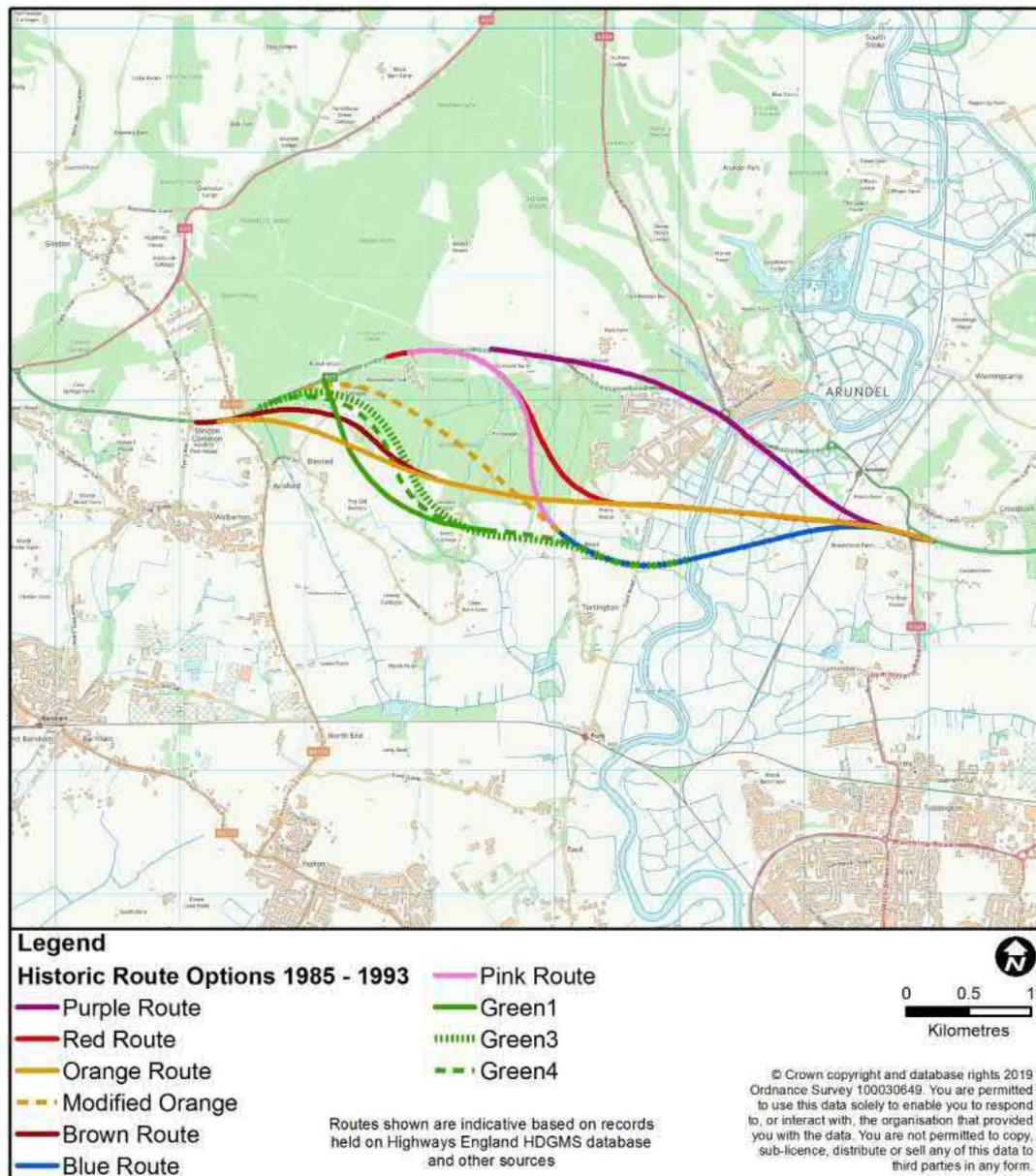
#### Construction activities

- 2.6.11. It is anticipated that construction of the proposed scheme would require multiple temporary working and storage areas, topsoil and material stockpiles, construction compounds (main and satellite), temporary traffic management areas and temporary haul roads. Where possible, the haul roads would be created within the alignment of the proposed scheme to minimise the quantity of temporary land take.
- 2.6.12. The main construction phase roadworks would be separated into the following five sections:
- Section 1: Western Tie-in to Yapton Lane Overbridge;
  - Section 2: Yapton Lane Overbridge to Tortington Rife Underbridge;
  - Section 3: Tortington Rife Underbridge to River Arun Underbridge;
  - Section 4: River Arun Underbridge to Arun Valley Railway Underbridge; and
  - Section 5: Arun Valley Railway Underbridge to Eastern Tie-in.
- 2.6.13. As the proposed scheme design develops, further details regarding construction will become known. Further information will be presented in the Preliminary Environmental Information Report (PEIR) (document prepared to support statutory consultation), prior to construction details being refined and presented in the ES.

### 3. Assessment of Alternatives

#### 3.1. History of the proposed scheme

3.1.1. Proposals for the improvement of the A27 at Arundel have been the subject of extensive study and consultation for many years and a number of routes for a bypass have been proposed. These are illustrated in Plate 1.

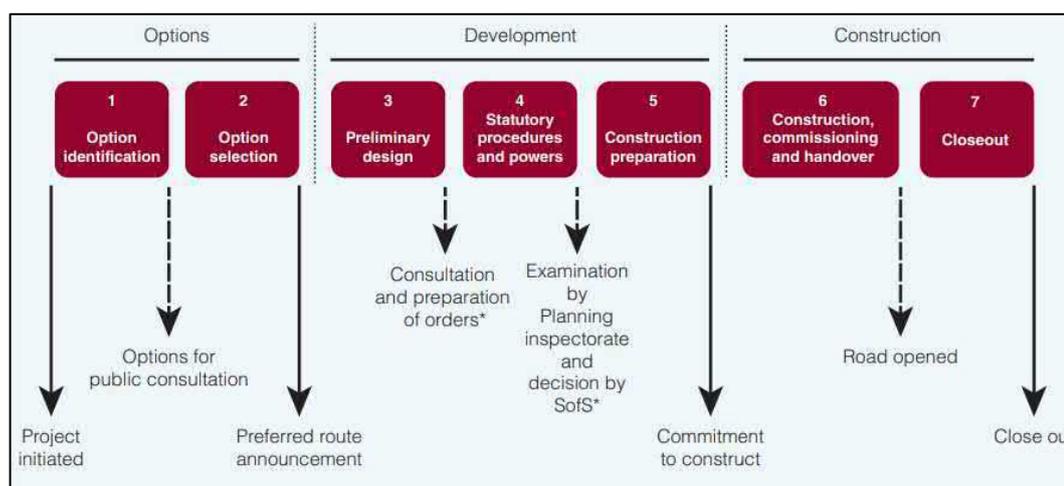


**Plate 1: Historic options 1987 to 1993**

3.1.2. The timeline of the main events associated with these initial proposals are as follows:

- 1987 – First public consultation on three routes termed the ‘orange’, ‘red’ and ‘purple’ routes was carried out. A modified ‘orange’ route was proposed during consultation.

- 1989 – The ‘orange’ route was selected as the preferred route.
  - 1991 – A second public consultation was held on the ‘orange’ route with an alternative route at the eastern end called the ‘blue’ route and an alternative route at the western end termed the ‘brown’ route. The ‘pink’ route was proposed during consultation as an alternative to the ‘brown’ route.
  - 1993 – During a further consultation period three alternative routes for the western end were proposed. These were called the ‘green’ routes.
  - 1993 – The combination of the ‘pink’ and ‘blue routes’ was selected as the preferred route. The ‘pink’ route was identified as the least environmentally damaging compared to the ‘green’ routes for the western end.
- 3.1.3. There was then no further progress as a series of Government reviews of the roads programme and transport strategy resulted in the proposals for a bypass being placed in a long-term category of pipeline projects.
- 3.1.4. In 2002 – 2003, the *South Coast Multi Modal Study (SoCoMMS)* (Ref 31) carried out for the Government as part of a review of transport provision recommended a new bypass at Arundel based on the pink/blue route. The recommendation was rejected by the Secretary of State (due to its environmental impact and further investigation of less environmentally damaging options was requested).
- 3.1.5. During 2005 – 2006, further investigations of options were carried out by the Highways Agency focusing on less environmentally damaging solutions. This included a modified, more environmentally sensitive, version of the pink/blue route.
- 3.1.6. In 2014 – 2015, the *A27 Corridor Feasibility Study* (Ref 2) considered seven route options developed as part of the further investigations undertaken after SoCoMMS and three sustainable transport options. Following a sifting of options two bypass options to the south of the existing A27, including the modified pink/blue route and an option which avoided ancient woodland, were selected for an investment case assessment. Sustainable transport measures were assumed to be provided alongside each option. The two dual carriageway bypass options were evaluated, and it was concluded that an investment case existed for a dual carriageway bypass at Arundel.
- Selection of the proposed scheme**
- 3.1.7. The key decision points in nationally significant infrastructure projects lifecycle are show in Plate 2, aligned to Highways England’s project control framework (PCF) stages. The PCF is a joint Department for Transport (DfT) and Highways England approach for managing major projects. It is designed to help collaboration to develop and deliver major projects.



**Plate 2: Key decision points within the Major Projects lifecycle (Ref 32)**

- 3.1.8. The process of option identification and selection undertaken for the proposed scheme is summarised below. This is split into two Highways England PCF stages as shown in Plate 3.

1 Option identification	Identify options to be taken to public consultation
	Assess options in terms of environmental impact, traffic forecasts and economic benefits
2 Option selection	Refine the cost estimate of options (including an allowance for risk)
	Carry out public consultation including exhibitions
	Analyse comments received and select a preferred option
	Refine the cost estimate for preferred option (including allowance for risk)
	Refine the environmental impact assessment, traffic forecasts, and economic benefits following public consultation if required
	Produce an outline business case
	Announce the preferred route

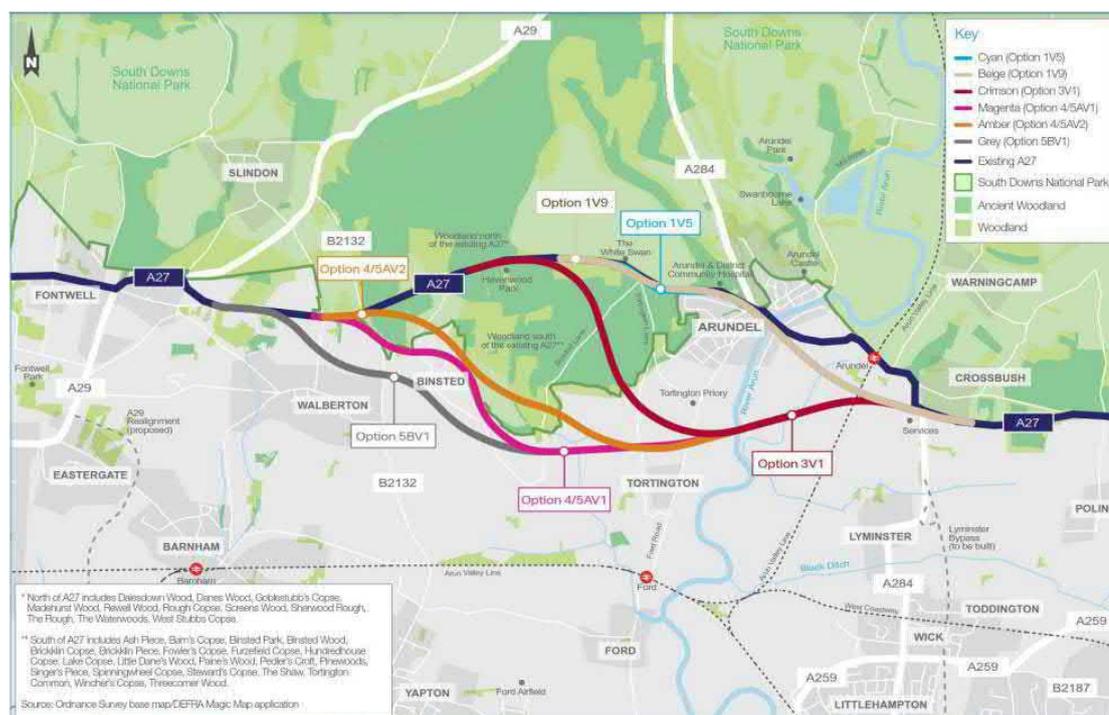
**Plate 3: Option identification and selection process (Ref 32)**

- 3.1.9. The *A27 Corridor Feasibility Study* (Ref 2) informed the pre-project strategy, shaping and prioritisation of the scheme, at the start of Highways England's Project Control Framework (PCF) illustrated in Plate 2. The PCF Stage 0 was completed at the end of 2015, which recommended consideration of seven options at the start of the options phase. In 2017/2018 during PCF Stage 2 there were three route options under consideration, culminating in a Preferred Route Announcement in May 2018.
- 3.1.10. Following that Preferred Route Announcement, Highways England began carrying out further studies and surveys of the then preferred route and surrounding area to progress preliminary design for the scheme.
- 3.1.11. In October 2018, Highways England announced that a further, non-statutory public consultation would be undertaken on the scheme (the Further

Ref 32 Highways England, The project control framework Handbook (2018) Available at: [https://assets.highwaysengland.co.uk/roads/road-projects/A46+Coventry+Junctions+Upgrade/Proofs+of+evidence/J.01+PROJECT+CONTROL+FRAMEWORK+HANDBOOK++V4-NOVEMBER+2018\\_.pdf](https://assets.highwaysengland.co.uk/roads/road-projects/A46+Coventry+Junctions+Upgrade/Proofs+of+evidence/J.01+PROJECT+CONTROL+FRAMEWORK+HANDBOOK++V4-NOVEMBER+2018_.pdf) (Accessed: October 2020)

Consultation) and that the scheme would return to PCF Stage 2 (Option Selection).

- 3.1.12. Through the additional studies and surveys mentioned above, Highways England came across new and important information. Highways England wanted to ensure that the decision on the preferred route was made taking into account this new information and that consultees were given a fair opportunity to comment on the options.
- 3.1.13. The further PCF Stage 2 (Option Selection) (2018/2019) work included the identification of a suite of potential new scheme options. The process for identifying and short-listing the new set of scheme options for consideration in PCF Stage 2 (Option Selection) is set out in the *Highways England PCF Stage 2 Environmental Assessment Report* (Ref 33) and the *Interim Scheme Assessment Report* (Ref 21).
- 3.1.14. The *Interim Scheme Assessment Report* (Ref 21) assessed all scheme options: namely 1V5, 1V9, 3V1, 4/5AV1, 4/5AV2 and 5BV1 in order to inform the further non-statutory public consultation. The options assessed at this stage can be seen in Plate 4.



**Plate 4: PCF Stage 2 Scheme Options (Ref 34)**

- 3.1.15. The methodology used to make the recommendation on the preferred route followed the structure of the *Option Assessment Framework* (Ref 35) contained within the WebTAG Transport Appraisal Process which includes

Ref 33 Highways England, A27 Arundel Bypass Environmental Assessment Report (2019)  
 Ref 34 Highways England, Further Consultation Environmental Assessment Report (2019)  
 Ref 35 Department for Transport (May 2018), Appendix A, Transport Analysis Guidance The Transport Appraisal Process, Available at: <https://www.gov.uk/government/publications/webtag-transport-appraisal-process-may-2018> (Accessed: October 2020)

environmental and policy considerations as well as being based on the five headline assessment criteria from the DfT's *Transport Business Case Five Case Model* (Ref 36):

- Strategic Fit;
- Value for Money (Economic Case);
- Financial Case;
- Delivery Cases; and
- Commercial Case.

3.1.16. This was followed by the selection of the preferred route, option '5BV1' otherwise known as the 'Grey route' on 15 October 2020 that forms the 'proposed scheme' that will be assessed within the ES.

### **3.2. Development of the proposed scheme**

3.2.1. As stated in the section above, Highways England announced the preferred route for the proposed scheme on 15 October 2020.

3.2.2. Design development is ongoing, and is being informed by the iterative EIA process, consultation and evolving knowledge of the environment that would be affected by the proposed scheme. Elements of the design that will be developed going forward include those aspects listed in paragraph 2.6.1 and the following structures:

- Bridlebridge for BR392;
- Western Junction Overbridge;
- Yapton Lane Overbridge;
- Binsted Valley & Public Right of Way (PRoW) Underbridge;
- Binsted Lane West Overbridge;
- Binsted Lane East Overbridge;
- Tortington Rife Underbridge;
- Tortington Lane Overbridge;
- Ford Road Underbridge;
- River Arun Underbridge; and
- Arun Valley Railway Underbridge

## 4. Consultation

### 4.1. Planning context

- 4.1.1. Effective stakeholder engagement and consultation is intrinsic to the *PA 2008* (Ref 5) and fundamental to the success of the proposed scheme.
- 4.1.2. The proposed scheme has a wide range of stakeholders (including landowners, statutory consultees, local communities and specialist interest groups) with differing interests that will require varied levels of information. Specific communication activities therefore need to be focussed to meet the needs of particular individuals and groups. This requires an understanding of the stakeholders and their interest in the proposed scheme.
- 4.1.3. Stakeholder engagement for the proposed scheme is based on the following principles:
- Early and ongoing engagement to inform and influence the proposed scheme development process;
  - Seeking an appropriate level of feedback at each stage in the iterative design process and ensuring that comments received are taken into consideration;
  - Building of long-term relationships with key stakeholders throughout the different stages of the proposed scheme to help better understand their views;
  - Where possible and practicable ensuring concerns are addressed;
  - Ensuring appropriate statutory consultation is undertaken in compliance with requirements of the *PA 2008* (Ref 5) and associated guidance.

### 4.2. DCO consultation requirements

- 4.2.1. The DCO process has a number of statutory requirements regarding consultation. These requirements stipulate that certain stakeholder groups and the community must be consulted as part of the pre-application process, as set out in Sections 42 and 47 of *PA 2008* (Ref 5). Further requirements set out how development proposals must be publicised and specific documents must be produced, including a Statement of Community Consultation (SoCC) and a Consultation Report.

### 4.3. Consultation to date

- 4.3.1. Stakeholders have had previous involvement in the development of the proposed scheme options.
- 4.3.2. Non-statutory public consultation on options 1V5, 1V9, 3V1, 4/5AV1, 4/5AV2 and 5BV1 took place between 30 August and 24 October 2019 - this was called the 'A27 Arundel Bypass Further Consultation'. The purpose of this consultation was to seek feedback from stakeholders, including the local community on the six route options identified via the options identification and selection process.

- 4.3.3. The primary purpose of the Further Consultation was to seek the views of the local community, other key stakeholders, including elected representatives and statutory bodies, and all other interested parties, on the proposed options. Stakeholder views collected through the Further Consultation and ongoing design work have helped to inform decision-making on the new preferred route for the scheme.
- 4.3.4. The responses to the A27 Arundel Bypass Further Consultation were taken into account during the identification of the preferred route option as documented in the *Report on Further Consultation and Preferred Route Announcement Brochure* (Ref 37) released as part of the preferred route announcement in October 2020 along with other documentation demonstrating how views have been taken into account.
- 4.3.5. In addition to non-statutory consultation, significant ongoing engagement has taken place between the project team and key stakeholders including local landowners, local authorities, statutory consultees and heritage groups.
- 4.3.6. Working groups have previously been set up with key stakeholders, including:
- **A27 Steering Group:**  
Comprised of officers representing ArDC and the SDNP Authority as local planning authorities, West Sussex County Council as local highways authority and a number of statutory environmental bodies. The group met regularly, including ahead of the Further Consultation to discuss topics related to the wider A27 corridor, including the Arundel Bypass scheme.
  - **A27 Arundel Bypass Focus Group:**  
Includes representatives from the same organisations as the Steering Group, but with a specific focus on the Arundel Bypass scheme. The group met on several occasions prior to the Further Consultation to discuss different aspects of the scheme, including the proposed and discounted route options. Members offered advice to Highways England on plans for the Further Consultation, including the content of consultation materials.
  - **Elected Representatives' Forum:**  
Includes local elected representatives who meet on a regular basis for the purposes of sharing updates on scheme progress and maintaining dialogue.
  - **One-to-one meetings:**

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Ref 37 Highways England, A27 Arundel Bypass Preferred route announcement (2020), Available at: [https://highwaysengland.citizenspace.com/he/a27-arundel-bypass-preferred-route-announcement/supporting\\_documents/GFD20\\_0090%20Arundel%20A27%20Bypass%20Consultation\\_PRA%20October%2020%20PRINT.pdf](https://highwaysengland.citizenspace.com/he/a27-arundel-bypass-preferred-route-announcement/supporting_documents/GFD20_0090%20Arundel%20A27%20Bypass%20Consultation_PRA%20October%2020%20PRINT.pdf) (Accessed: October 2020)

Comprises meetings with key statutory stakeholder organisations, local representative groups and the business community to provide updates on the progress of the scheme.

- 4.3.7. The approach to the Further Consultation is detailed in the *A27 Arundel Bypass - Approach to Public Consultation* (Ref 38) document which was prepared and published on the A27 Arundel Bypass project webpage and set out how the Further Consultation was publicised and how feedback was collected.
- 4.3.8. The *A27 Arundel Bypass – Approach to Public Consultation* was developed in conjunction with ArDC and the SDNP Authority as local planning authorities, and West Sussex County Council as local highways authority. Further details on the consultation process can be found in the *Report on Further Consultation*.

#### **4.4. Defra bodies single voice letter**

- 4.4.1. On 13 August 2019, the Environment Agency, Forestry Commission, Natural England and the SDNP Authority issued a 'Defra single voice letter' (Ref 39) for the A27 Arundel Bypass to Highways England. The letter provided a single voice position on a range of key issues identified at PCF Stage 2 and provided principles that they collectively wished to see taken forward through the statutory consultation and as the scheme design progresses.
- 4.4.2. The following aspects were discussed within the single voice letter.

##### **Landscape scale approach**

- 4.4.3. As an overarching principle it was advised that any option for the bypass should be considered in an integrated way at a landscape scale. The purpose of this suggestion was to ensure that impacts on a complex and interconnected ecosystem, set within a wider hydrological catchment, can be fully understood alongside any impacts on the historic landscape.
- 4.4.4. In response to this, a landscape and environment led approach to design is being taken to direct the evolution of the proposed scheme's preliminary design and subsequent EIA process.

##### **Severance**

- 4.4.5. The single voice letter states that the PCF Stage 2 options introduce the permanent and significantly harmful severance of the sensitive landscape, cultural heritage and biodiversity. As a result, the letter advised that the scheme will require a tailored approach to mitigation. Further recommendations regarding severance are summarised in the list below:
- Landscape, biodiversity, hydrology and cultural heritage are to be considered together in an environmental masterplan in order to appropriately address severance and resilience and to avoid the potential for addressing one issue to the detriment of another;

- A body or consultancy is appointed to undertake the specific high level and visioning role to manage the effect on severance;
  - Natural capital assets of the area must be included in the assessment;
  - The scheme should clearly follow the mitigation hierarchy, evaluate each option with reference to this and adopt a landscape-scale of assessment;
  - Severance must be considered in terms of functionality of the landscape, and its biodiversity within all habitats affected. Assessments must include the severance of species such as bats from roosting and feeding areas and on habitats such as ancient woodland affecting their resilience and ability of habitats and species to adapt to climate change;
  - The use of quality green bridges in optimal locations will be a minimum requirement for each option.
- 4.4.6. Extensive habitat and protected species surveys have been and will be undertaken to ensure that as robust data as practicable is used to inform the early stages of the proposed scheme design process. This will help to avoid impacts from occurring, but will also inform the design of appropriate environmental mitigation measures for those impacts that are unavoidable.

#### Consideration of a viaduct crossing of the River Arun floodplain

- 4.4.7. The single voice letter states that the design to cross the River Arun through the use of an embankment would have serious and significant negative impacts on hydrology, biodiversity, landscape and cultural heritage. It advises that a viaduct would be more permeable for wildlife, water and people.
- 4.4.8. As indicated by material provided during the preferred route announcement, a number of alternative design solutions are being investigated for the crossing of the River Arun floodplain.

#### Environmental Net Gain

- 4.4.9. The single voice letter advises that the scheme demonstrates a clear ability to deliver considerable net gain and that it is wished that any scheme seeks to provide a betterment from the existing baseline. Notably, improved connectivity of habitats across the existing A27 route.
- 4.4.10. The letter advises that due to the nature and location of this scheme, it is imperative that it is delivered as an exemplar road scheme in line with the aspirations of the Road Investment Strategy (RIS) to deliver schemes that will be “trail-blazers for the future”.
- 4.4.11. Work is currently being undertaken to confirm the extent of the current biodiversity baseline units in order to quantify potential biodiversity implications associated with potential habitat losses. This will help influence the design of the proposed scheme to minimise habitat loss where practicable and to identify at an early stage the ways in which biodiversity delivery can be maximised through implementing the proposed scheme.

#### **4.5. Proposed consultation (statutory consultation)**

- 4.5.1. The Inspectorate will consult on this Scoping Report under the *EIA Regulations* (Ref 6). Views from consultees will be considered and used to inform the scoping opinion to be issued by the Inspectorate.
- 4.5.2. Under Section 42 of the *PA 2008* (Ref 5), Highways England will conduct its own consultation with statutory environment bodies (Natural England, the Environment Agency and Historic England), the relevant planning authorities (ArDC and The SDNP Authority), landowners, and other key consultees.
- 4.5.3. The local community and the wider public will be consulted on the proposed scheme via a statutory consultation programme in accordance with Section 47 of the *PA 2008*. The programme is expected to start in summer/autumn 2021 and will be carried out in accordance with the SoCC which is currently being developed and which will be consulted upon.
- 4.5.4. The approach to Section 47 consultation is currently being finalised, but may include (without being limited to):
- publication of leaflets, reports and other information made available in the local area and online; and
  - public exhibitions at which members of the community can talk to members of the project team.
- 4.5.5. The purpose of this consultation will be to seek comments from the local community and statutory and technical consultees on the proposed scheme. The consultation will include environmental information contained within the PEIR.
- 4.5.6. Feedback received during the consultation will be taken into consideration by the project team and summarised in a consultation report that will be submitted as part of the DCO application.

## 5. Environmental Assessment Methodology

### 5.1. The Design Manual for Roads and Bridges

- 5.1.1. Guidance published by Highways England for the preparation of environmental assessments of proposed road schemes is contained in the *DMRB LA 104 Environmental assessment and monitoring* (Ref 40). This sets out the general process and the methods for environmental assessments. Individual environmental topic guidance is provided in *DMRB LA 105 – LA 116*. This Scoping Report adheres to *DMRB LA 103* (Ref 18).
- 5.1.2. *DMRB LA 105 – LA 116* advise on the environmental topics to be included in an EIA for highways schemes, and the methods to be used in the assessment for each of those topics. The topics identified in Sections 6-16 of this Scoping Report are those required by DMRB and by the *EIA Regulations* (Ref 6).
- 5.1.3. The EIA will adhere to the relevant guidance contained in DMRB as applicable. More details of the methods to be used for each individual topic are provided in Sections 6-16 of this Scoping Report. Should any revisions to the DMRB be issued between scoping and reporting of the EIA, they will be adopted where appropriate, provided that it is reasonable to do so within the programme and governance for the project. Any changes in environmental legislation, such as for example the *EIA Regulations*, will be mandatory, and therefore accommodated.
- 5.1.4. For each topic, the Scoping Report and ES will consider the aspects outlined below in Sections 5.2 – 5.11.

### 5.2. The National Policy Statement for National Networks

- 5.2.1. Strategic roads have their own policy framework, with relevant policy objectives set out in the *NPSNN* (Ref 10). The *NPSNN* is framed in the context of wider Government policies on environment, safety, technology, sustainable transport and accessibility. It provides planning guidance for promoters of NSIPs on the road network, and the basis for the examination by the Examining Authority and decisions by the Secretary of State. The Secretary of State will use the *NPSNN* as the primary basis for making decisions on DCO applications for national networks NSIPs in England. Given the importance of the *NPSNN*, the EIA approach adopted for the proposed scheme takes account of this key policy document. The EIA will have regard to the methodological advice within Chapter 5 of the *NPSNN*.

### 5.3. Existing baseline and future conditions

- 5.3.1. In order to identify the effects of the proposed scheme on the environment, it is important to understand the environment that would be affected by the proposed scheme (the 'baseline conditions'). Understanding the baseline allows the measurement of changes (the 'magnitude of impact') that would be caused by the proposed scheme.

5.3.2. The baseline conditions are not necessarily the same as those that exist at the current time; they are the conditions that would exist in the absence of the proposed scheme either (a) at the time that construction is expected to start, for impacts arising from construction or, (b) at the time that the proposed scheme is expected to open to traffic, for impacts arising from the operation of the proposed scheme. Therefore, the identification of the baseline conditions involves predicting changes that are likely to happen in the intervening period, for reasons unrelated to the proposed scheme. This will entail taking current conditions and committed development into consideration and using experience and professional judgment to predict what the baseline conditions might look like prior to start of proposed scheme construction and operation.

## 5.4. Potential significant environmental effects and mitigation

### Identifying potential environmental effects

- 5.4.1. The EIA Regulations require a “description of the likely significant effects” of the proposed scheme on the environment, covering “the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development”.
- 5.4.2. The temporal scope and the technical scope of the EIA is identified in Section 5.5 of this Scoping Report. The technical scope presents the details of the proposed topic-specific approach.

### Assessing significance of an environmental effect

- 5.4.3. The significance of an environmental effect is typically a function of the ‘value’ or ‘sensitivity’ of the receptor and the ‘magnitude’ or ‘scale’ of the impact.
- 5.4.4. Section 3 ‘Environmental assessment methodology’ of *DMRB LA 104* (Ref 40) provides advice on typical descriptors of environmental value, magnitude of impact and significance of effects. Table 2, Table 3, Table 4 and Table 5 of this Scoping Report reproduce these descriptors and demonstrate how the significance of effect category can be derived. Assessments against these criteria will be made on the basis of professional judgement.

**Table 2: Environmental value (sensitivity) and descriptions**

Value (sensitivity) of receptor/ resource	Typical description
Very High	Very high importance and rarity, international scale and very limited potential for substitution.
High	High importance and rarity, national scale, and limited potential for substitution.
Medium	Medium or high importance and rarity, regional scale, limited potential for substitution.

Value (sensitivity) of receptor/ resource	Typical description
Low	Low or medium importance and rarity, local scale.
Negligible	Very low importance and rarity, local scale.

**Table 3: Magnitude of impact and typical descriptors**

Magnitude of impact (change)		Typical description
Major	Adverse	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements.
	Beneficial	Large scale or major improvement of resource quality; extensive restoration; major improvement of attribute quality.
Moderate	Adverse	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.
	Beneficial	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.
Minor	Adverse	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.
	Beneficial	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring.
Negligible	Adverse	Very minor loss or detrimental alteration to one or more characteristics, features or elements.
	Beneficial	Very minor benefit to or positive addition of one or more characteristics, features or elements.
No Change		No loss or alteration of characteristics, features or elements; no observable impact in either direction.

5.4.5. Table 4 demonstrates how combining the environmental value of the resource or receptor with the magnitude of impact produces a significance of effect category.

**Table 4: Significance of effect matrix**

Environmental value (sensitivity)	Magnitude of impact (degree of change)					
		No change	Negligible	Minor	Moderate	Major
	Very high	Neutral	Slight	Moderate or large	Large or very large	Very large
	High	Neutral	Slight	Slight or moderate	Moderate or large	Large or very large
	Medium	Neutral	Neutral or slight	Slight	Moderate	Moderate or large
	Low	Neutral	Neutral or slight	Neutral or slight	Slight	Slight or moderate
	Negligible	Neutral	Neutral	Neutral or slight	Neutral or slight	Slight

5.4.6. The DMRB recognises that:

“Where relevant, individual environmental factors can set out variations in significance description requirements.”

“The approach to assigning significance of effect relies on reasoned argument, the professional judgement of competent experts and using effective consultation to ensure the advice and views of relevant stakeholders are taken into account”.

“Significant effects typically comprise residual effects that are within the moderate, large or very large categories.”

5.4.7. Table 5 illustrates how the DMRB describes the significance of effect categories. In arriving at the significance of effect, the assessor will also consider whether effects are direct, indirect, secondary, cumulative, short, medium or long-term, permanent or temporary, positive or negative.

**Table 5: Effect significance categories and typical descriptions**

Significance category	Typical description
Very large	Effects at this level are material in the decision-making process.

Significance category	Typical description
Large	Effects at this level are likely to be material in the decision-making process.
Moderate	Effects at this level can be considered to be material decision-making factors.
Slight	Effects at this level are not material in the decision-making process.
Neutral	No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error

- 5.4.8. Effects determined to be slight or neutral are not deemed to be significant, and as such will not be reported in detail in the ES and will not require specific mitigation. The exception to this is where the combination of multiple slight effects has the potential to lead to a significant (moderate or above) cumulative effect.
- 5.4.9. Not all of the environmental topics will use the above criteria or approach. For example, some topics do not use a matrix-based approach, but instead use numerical values to identify impacts (such as noise and vibration) whilst some topics do not have agreed methods of assessment or scales of measurement for either value or sensitivity (such as geology and soils). Therefore, each environmental topic specialist will use the information provided above, their topic specific guidance as well as their professional judgement to assess the significance of effects. However, irrespective of the criteria or approach that a topic requires, the descriptors of significance listed in Table 5 will be used.
- 5.4.10. Further details of the topic specific significance criteria that will be used in the ES are discussed in Sections 6-16 of this report.

#### Mitigation measures, enhancements and residual effects

- 5.4.11. The EIA will take into account any design measures that have been incorporated into the proposed scheme design, as well as any standard management activities that the proposed scheme will implement.
- 5.4.12. Mitigation of potentially significant adverse environmental effects will be an iterative part of the proposed scheme design development following the hierarchy below:
- Avoidance and prevention – design and mitigation measures to prevent the effect, for example, alternative design options or avoidance of environmentally sensitive sites;
  - Reduction – where avoidance is not possible, then mitigation is used to lessen the magnitude or significance of effects, for example, fencing off sensitive areas during construction and implementing the requirements of a Construction Environmental Management Plan (CEMP) to reduce the potential impacts from construction activities;

- Compensation/Remediation – where it is not possible to avoid or reduce a significant effect, then offsetting measures should be considered, for example the provision of replacement of habitat to replace that lost to the proposed scheme or remediation such as the clean-up of contaminated soils; and
- Enhancement – where possible enhancement measures will be incorporated into the proposed scheme design. Enhancement measures are considered to be over and above any avoidance, mitigation and compensation measures required to neutralise the effects of the proposed scheme.

5.4.13. Effects that remain after mitigation are referred to as residual effects. The assessment of the significance of the residual effects after mitigation/enhancement is therefore the key outcome of the assessment.

#### Assessment of cumulative effects

- 5.4.14. Cumulative effects are the result of multiple impacts on environmental receptors or resources. There are principally two types of cumulative impact:
- The combined action of a number of different environmental topic specific impacts upon a single resource/receptor (in combination); and
  - The combined action of a number of different projects, cumulatively with the project being assessed, on a single resource/receptor (cumulative).
- 5.4.15. Further details on the scope of the cumulative effects assessment is provided in Section 16 of this report.

### **5.5. Proposed level and scope of the assessment**

- 5.5.1. This section addresses the level at which environmental topics are to be examined, for example a 'simple' or 'detailed assessment', and establishes which topics can be 'scoped out' (basic assessment) in accordance with the guidance set out in *DMRB LA 103* (Ref 18).
- 5.5.2. Study areas are defined individually for each environmental topic, according to the guidance in DMRB and the geographic scope of the potential impacts or of the information required to assess those impacts.

#### **Temporal scope**

- 5.5.3. The assessment of effects involves comparing a scenario with the proposed scheme against one without the proposed scheme over time. The absence and presence of a proposed scheme are referred to as the 'Do Minimum' and 'Do Something' scenarios respectively. The 'Do Minimum' scenario represents the future baseline with minimal interventions and without new infrastructure.
- 5.5.4. Proposed scheme construction is expected to commence in 2024 (subject to approval) and last until 2027. The construction phase assessment will assess the construction period and the peak year of construction, where appropriate. The peak period will be defined on the basis of the maximum number of Heavy Duty Vehicle (HDV) movements and an indication of the anticipated plant and equipment location on the application site. The peak

period or level of activity will be assessed in terms of traffic, noise and air quality effects to determine the worst-case effects.

5.5.5. Depending on the topic, the operational effects will be assessed for the 'Do Minimum' and 'Do Something' scenarios in the baseline opening year (assumed to be 2027 for the purposes of the EIA) and the future assessment year (assumed to be 15 years after opening).

5.5.6. It is considered highly unlikely that the proposed scheme would be demolished after its design life as the road is likely to have become an integral part of the infrastructure in the area. In the unlikely event of the proposed scheme demolition, this would be part of the relevant statutory process at that time, including EIA as appropriate. It is therefore proposed that demolition of the proposed scheme is scoped out of the EIA.

### **Technical scope**

5.5.7. The environmental topic areas to be considered, the extent of the assessment work proposed and the methodology for each are referred to as the technical scope. The *EIA Regulations* require the ES to describe the likely significant effects of the proposed scheme on the environment resulting from:

- “the construction and existence of the development, including, where relevant, demolition works;
- the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;
- the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;
- the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);
- the cumulation of effects with other existing and/or approved projects, considering any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;
- the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change; and
- the technologies and the substances used.”

5.5.8. The environmental topic areas proposed for inclusion in the ES are as follows:

- Air quality;
- Cultural heritage;
- Landscape and visual;
- Biodiversity;

- Geology and soils;
  - Material assets and waste;
  - Noise and vibration;
  - Population and human health;
  - Road drainage and the water environment;
  - Climate; and
  - Cumulative effects.
- 5.5.9. As detailed in *DMRB LA 104* (Ref 40), heat and radiation are unlikely to be of relevance to the scope of most highway projects. The proposed scheme characteristics have been reviewed, which indicates that neither heat nor radiation are of relevance to the proposed scheme and thus these aspects will be scoped out of the EIA.
- 5.5.10. The EIA will take a landscape led approach which will feed into the Environmental Masterplan (EMP) which will detail the environmental mitigation features integrated into the proposed scheme design. An Outline Environmental Management Plan (OEMP) will be appended to the ES which will outline the industry standard practice and control measures for environmental impacts arising during proposed scheme construction. The control measures detailed in the OEMP will be incorporated into a Construction Environmental Management Plan (CEMP) during the detailed design stage.

#### **SDNP Special Qualities assessment**

- 5.5.11. A SDNP Special Qualities assessment was presented within Highway England's *Stage 2 Environmental Assessment Report, Appendix 1* during PCF Stage 2 (Ref 33), which assessed the six different PCF Stage 2 route options against the seven SDNP Special Qualities. The assessment was previously undertaken as a response to a request set out at item 7 in the position statement on the A27 route corridor produced by the SDNP Authority, namely "In assessing the specific impacts of any detailed options the SDNP Authority will ask the Highways Agency to use the framework of the seven special qualities of the national park" (Ref 41).
- 5.5.12. Ongoing engagement will be undertaken with the SDNP Authority to ensure that the special qualities are considered as part of the PCF Stage 3 design development.

### **5.6. Transboundary Screening**

- 5.6.1. Regulation 32 of the *EIA Regulations* (Ref 6) requires the consideration of any likely significant effects on the environment of another European Economic Association (EEA) State.

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Ref 41 South Downs National Park Authority, 2019. South Downs National Park Authority Position Statement on A27 corridor. Available at: <https://www.southdowns.gov.uk/wp-content/uploads/2015/03/A27-Position-Statement-following-28-October-NPA-meeting.pdf> (Accessed: October 2020)

- 5.6.2. Guidance upon the consideration of transboundary effects is provided in PINS Advice Note 12: Development with significant transboundary impacts consultation (Ref 42).
- 5.6.3. The transboundary screening matrix has been carried out and is shown in Appendix A. The closest EEA states to the proposed scheme are France (135 km south) and Belgium (218 km east). It has been assessed that no impacts are likely to extend beyond the jurisdiction of the UK, with the exception of potential greenhouse gas emissions. It has been assumed that the proposed scheme will make a contribution to level of greenhouse gas emissions in the UK through both operation and construction which will be assessed further in the EIA.

## 5.7. Major events

- 5.7.1. The *EIA Regulations* require the consideration of major accidents and disasters, which are referred to as 'major events' by Highways England.
- 5.7.2. It is considered likely that the changes to the EIA Directive in 2014 to consider major events were made in order to bring certain other statutory requirements, mainly other EU Directives, within the overall 'wrapper' of EIA and the ES. The Directive and domestic regulations cite two specific directives as examples of risk assessments to be brought within EIA, these are Directive 2012/18/EU of the European Parliament and of the European Council (which deals with major accident hazard registered sites) and Council Directive 09/71/Euratom (which deals with nuclear sites). Neither of these directives are relevant to the proposed scheme.

### Highways England guidance

- 5.7.3. The *DMRB LA 104* (Ref 40) forms the latest guidance on major events, which includes both accidents and disasters. The general scope regarding major events should cover the construction and operational effects of:
- vulnerability of the project to risks of major accidents and/or disasters; and
  - any consequential changes in the predicted effects of that project on environmental factors.
- 5.7.4. To achieve this, the instructions identify that projects should:
- apply professional judgement in consultation with the overseeing organisation to develop project specific definitions of major events;
  - identify any major events that are relevant to and can affect a project;
  - where major events are identified, describe the potential for any change in the assessed significance of the project on relevant environmental factors in qualitative terms;
  - report the conclusions of this assessment within the individual environmental factors;

- clearly describe any assumed mitigation measures, to provide an evidence base to support the conclusions and demonstrate that likely effects have been mitigated/managed to an acceptable level.
- 5.7.5. The potential receptors of effects resulting from major events are all reported in the relevant topic chapter, and as such major events is not a topic in itself. The Highways England instruction confirms that a separate chapter is not required. Relevant major events will therefore be reported in the methodology section of the ES, and any consequences for receptors will be reported in each of the topic chapters.

### **Methodology**

- 5.7.6. The methodology to be adopted includes three main stages. Stages 1 and 2 have already been undertaken as part of this Scoping Report (refer to Appendix B), Stage 3 will be undertaken and the results presented in the ES:
- Stage 1: a long list of all possible major events has been developed. This list draws upon a variety of sources, including the UK Government's Risk Register of Civil Emergencies. Major events with little relevance in the UK have not been included. Stage 1 also included an initial review of potential receptors to identify any groups that are not considered necessary to include in the assessment.
  - Stage 2: a screening exercise has been undertaken to review the long list of major events and to give consideration to their relevance to the proposed scheme, and therefore whether they should be included on the project specific short list of events requiring further consideration.
  - Stage 3: where further design mitigation is unable to remove the potential interaction between a major event and a particular topic, the relevant ES chapter will identify the potential consequence for receptors covered by the topic, and give a qualitative evaluation of the potential for the significance of the reported effect to be increased as a result of a major event.

### **Assessment findings**

#### **Stage 1**

- 5.7.7. The long list of major events is presented in Appendix B. Although the majority of these major events are already considered under other legislative or design requirements, this is not considered to be sufficient reason to automatically eliminate the major event from any further consideration. This is consistent with the approach, for example that the need to comply with nature conservation legislation does not mean that ecology and nature conservation do not need to be considered in EIA. However, where it is concluded that the need for compliance is so fundamental, and the risk of any receptors being affected differently so remote, major events on the long list may not need to be included on the shortlist.
- 5.7.8. Likewise, it is considered reasonable and proportionate to exclude certain receptor groups from the outset. Construction workers, as a receptor, can be excluded from the assessment, because existing legal protection is

considered to be sufficient to minimise any risk from major events to a reasonable level. Legislation in force to ensure the protection of workers in the workplace includes:

- Health and Safety at Work etc. Act 1974 (HSWA);
- The Management of Health and Safety at Work Regulations (1999);
- The Workplace (Health, Safety and Welfare) Regulations 1992; and
- Construction (Design and Management) (CDM) 2015 Regulations.

5.7.9. Another potential source of major events related to the proposed scheme is road traffic accidents. These can clearly impact on people through fatalities and serious injury but can also impact on the environment through the spillage of hazardous loads. However, for the proposed scheme the *Scheme Assessment Report* (Ref 30) identified that there would be an improved safety performance of the road which would lead to a reduction in accidents. The *Scheme Assessment Report* states that:

“The objectives of the A27 Arundel upgrade/bypass include to improve safety and operation, to ease congestion and improve journey-time reliability on both the strategic route and local roads in and around the town. It is anticipated that key aspects of PCF Stage 2 design options, including dualling, improved horizontal and vertical route geometrics, reduced points of access to the route, and provision of new/modified layouts for key junctions will significantly improve capacity and flow, as well as having a positive impact on the general safety performance, and specific types of collision reported on this section of the A27.”

5.7.10. The Stage 2 Arundel bypass Further Consultation brochure states that the proposed scheme (option 5BV1 (Grey) route) would result in 676 accidents being avoided when calculated over a 60-year period (from opening in 2027 to 2085) compared to a ‘do minimum’ scenario where 55,484 accidents would occur (Ref 43).

5.7.11. As such, although the EIA will still consider the risk of spillages, the potential for accidents to affect people, as receptors under the topic of human health, is not considered further.

## **Stage 2**

5.7.12. Generally major events, as they relate to the proposed scheme, will fall into three categories:

- Events that could not realistically occur, due to the type of scheme or its location;

- Events that could realistically occur, but for which the proposed scheme, and associated receptors, are no more vulnerable than any other development;
- Events that could occur, and to which the proposed scheme is particularly vulnerable, or which the proposed scheme has a particular capacity to exacerbate.

5.7.13. The screening stage has been undertaken to identify the third group of major events mentioned above. This forms the shortlist of events to be taken forward for further consideration in the EIA, see Table 6.

### Stage 3

5.7.14. Stage 2 of the assessment resulted in a short list of major events to consider further at Stage 3, although this may only mean that the risk needs to remain on the design risk register until it is closed out through detailed design. Specific major events that have been included on the short list and which will be considered in more detail during the EIA are presented in Table 6, although it is unlikely that any will need to be considered further in any of the technical assessments, unless they are already included in the ES.

**Table 6: Major events shortlisted for further consideration**

Major Event	Reason for consideration of Short List	Potential Receptors
Sinkholes	Although this is likely to be covered in the geotechnical design, there are sufficient examples of roads that have been affected by sinkholes to warrant taking this event forward.	Road users
Floods	Both the vulnerability of the proposed scheme to flooding, and its potential to exacerbate flooding, are to be covered in the Flood Risk Assessment (FRA) and will also be reported in EIA terms in the ES, both in terms of the risk to the proposed scheme and increased risk due to the proposed scheme.	Road users, property and people in areas of increased flood risk.
Tsunami/Storm surge	The site is not in a geologically active area. As such tsunamis are not deemed to be a real risk or possibility. As the proposed scheme is located on the floodplain of a tidal part of the River Arun approximately 4.8km from the coast, the risk of tidal flooding including the potential risk of storm surge will be covered in the FRA and also reported within the ES.	Road users, property and people in areas of increased flood risk.
Thunderstorms	As shown in Figure 2, there are a number of bridges associated with the proposed scheme. Therefore, consideration will be given to the potential risk of lightning strikes,	Road users

Major Event	Reason for consideration of Short List	Potential Receptors
	although the risk is not considered to be any greater than any other road bridge, and the consequences are unlikely to be significant.	
Heat Waves	The road surface is directly exposed to the sun and so some sensitivity is attributed to the risk of heat waves.	Road users
Wildfires	There may be some potential for scrub or grassland fires, although the risk is no greater than the existing A27 which runs through Arundel. The reduced accident rate means the risk of an accident causing a fire is reduced although the location of the potential fire would change.	Road users, habitats and species.
Air Quality Events	Although relevant, as vehicles emissions can contribute to poor air quality, it is not considered necessary to undertake any more assessment than is already proposed for the air quality assessment.	Road users and local residents
Solar Flare	Solar flares can interrupt radio and other electronic communications. The increased reliance on roadside technology could mean the proposed scheme is more vulnerable than the existing route.	Road users
Spillages from Road Accidents	The risk posed by spillage from hazardous loads as a result of a road traffic accident such as fuel tankers will be considered in the Road Drainage and the Water Environment chapter of the ES.	Road users and aquatic environment.
Aircraft Disasters	By constructing a new road there is an increased risk of potential aircraft collision but this is not considered to be higher than other roads within the UK.	Road users, pilots and aircraft.
Maritime Disasters	Where the proposed scheme crosses the River Arun there is a risk associated with collisions with vessels commuting up and down the river, although the risk should not be greater than for other bridges along the River Arun.	Road users, boat passengers, boats.
Bridge Failure	As shown in Figure 2, multiple bridge crossings form part of the design of the proposed scheme.	Road users
Flood Defence Failure	The site is located within the River Arun floodplain and over the River Arun itself. The FRA will assess the impact from potential breaches of the flood defences and this will also be reported in the	Road users

Major Event	Reason for consideration of Short List	Potential Receptors
	Road Drainage and the Water Environment chapter of the ES.	
Building Failure or Fire	Any buildings that exist close to the road may have a small increased risk through traffic accident fire.	Road users, nearby buildings and occupants
Utilities Failure (Gas, Electricity, Water, Sewage, Oil and Communications)	It is assumed that there will be no impact on utilities. Any utilities will be identified as part of C2 and C3 consultations and any diversions will take place before proposed scheme construction.	Road users, and those relying on the utilities
Rioting	Although highly unlikely, the contentious nature of the proposed scheme could see some protests during the construction phase.	Construction workers
Cyber Attacks	The increasing reliance on roadside technology could render the proposed scheme more vulnerable to a cyber-attack.	Road users

5.7.15. Where events identified above are not already being considered within the topic-specific ES chapters, they will continue to be reviewed with the design team to ensure the risks are understood and addressed through design as necessary. However, it is considered highly likely that all of these major event types will be able to be removed from the scope of the assessment prior to publication of the ES, as the design will ensure there is no real risk or serious possibility of the event interacting with the proposed scheme. The scoping out of these aspects will be reported in the ES.

## 5.8. Structure of the Environmental Statement

5.8.1. Table 7 presents an indicative structure of the ES for the proposed scheme. While this represents the currently envisaged structure of the ES, it should be recognised that the final structure may vary as a result of decisions made or needs recognised in the course of implementing the work.

**Table 7: Indicative structure of the Environmental Statement**

Chapter	Potential sections
Non-technical Summary	
Volume 1: Main Text	
1 – Introduction	Purpose of the Report Overview of the Proposed Scheme Legislative and Policy Framework Competent Expert Evidence
2 – The Proposed Scheme	Need for the Proposed Scheme Objectives of the Proposed Scheme Proposed Scheme Location

Chapter	Potential sections
	Baseline Scenario Proposed Scheme Description Construction, Operation and Long-term Management
3 – Assessment of Alternatives	Assessment Methodology Reasonable Alternatives Studied Justification for the Chosen Option
4 – Environmental Assessment Methodology	Environmental Scoping Surveys and Predictive Techniques and Methods General Assessment Assumptions and Limitations Significance Criteria Major Events Duplication of Assessment
5 – Assessment (for each environmental topic scoped into the assessment)	Legislative and Policy Framework Study Area Baseline Conditions Assessment Methodology Assessment Assumptions and Limitations Potential Impacts Design, Mitigation and Enhancement Measures Assessment of Effects Additional Mitigation and Monitoring Assessment of Residual Effects and Significance
6 – Assessment of Cumulative Effects	
7 - Summary	
8 – References and Glossary	
Volume 2: Plans and Drawings	
Volume 3: Technical Appendices	

### Supporting Information

5.8.2. The following will be prepared as standalone documents submitted with the DCO application:

- Water Framework Directive Report;
- Traffic Management Plan;
- Flood Risk Assessment (FRA); and
- Habitat Regulations Assessment (HRA).

5.8.3. The above documents will be co-ordinated with the EIA and ES chapters to minimise duplication of information between assessments.

## 5.9. Assumptions and limitations

5.9.1. In undertaking this scoping exercise, the following generic assumptions have been made:

- The Scoping Report has been prepared based on the environmental baseline information available at the time of writing, the design as described in Section 2 and as presented in Figures 1 and 2. Further information will become available as the iterative design and assessment process proceeds and the scope of assessment will be kept under review in light of this;
- Detailed construction methodologies are unknown at present;
- Details of construction site compounds and materials storage areas have not yet been identified, but these will be included and assessed in the ES;
- The need for, and likely areas, of land required for mitigation (such as floodplain compensation, landscape creation and habitat replacement) are not known at this stage. As further details are known, these components of the proposed scheme design will be better defined and will be included and assessed in the ES;
- Depending on the topic, the baseline year for the proposed scheme becoming operational is currently assumed to be 2027 for the purposes of the ES and the future assessment year is assumed to be 15 years after opening.

## 6. Air Quality

### 6.1. Introduction

6.1.1. This section sets out the approach to the assessment of the impacts of the proposed scheme on air quality, both during construction and once the proposed scheme is operational. The purpose of the assessment will be to identify and characterise any relevant local air quality resources, to consider the nature and scale of potential impacts due to the proposed scheme, and to assess the significance of any likely effects. The assessment will also consider the air quality implications of the proposed scheme on compliance with the *Ambient Air Quality Directive* (Ref 44).

### 6.2. Relevant policy

#### Legislation and national planning policy

6.2.1. Legislation and national planning policy relating to air quality and pertinent to the proposed scheme comprises:

- European Union (EU) air quality legislation, which is provided within *The Ambient Air Quality and Cleaner Air for Europe Directive 2008/50/EC* (Ref 45) ('The Air Quality Directive'). This is transcribed into UK legislation by the *Air Quality Standards Regulations 2010* (Ref 46);
- Part IV of the *Environment Act (1995)* (Ref 47), which requires the UK government to produce a national *Air Quality Strategy (AQS)* (Ref 48). The AQS sets out Air Quality Objectives (AQOs) for key pollutants. The most recent strategy is The Department for Environment, Food and Rural Affairs (Defra) *Clean Air Strategy*, published in January 2019 (Ref 49);
- *NPSNN* (Ref 10) published in December 2014; 5.6-5.9 and 5.14-5.15 (air quality); 5.84-5.85 and 5.89 (dust); and
- *NPPF* (Ref 11) published in 2019; section 11, paragraphs 109, 120 and 124 (conserving and enhancing the natural environment).

6.2.2. The *Planning Practice Guidance (PPG)* (Ref 50), updated in November 2019 provides a summary of the air quality issues set out in the *NPPF*. The assessment will include information on the following, in accordance with the *PPG*:

- The existing air quality in the study area (existing baseline);

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Ref 44 European Parliament and Council of the European Union (2008). Council Directive on Ambient Air Quality and Cleaner Air for Europe (2008/50/EC)

Ref 45 European Parliament and Council of the European Union (2008). Council Directive on Ambient Air Quality and Cleaner Air for Europe (2008/50/EC)

Ref 46 H.M. Government (2010) The Air Quality Standards Regulations 2010

Ref 47 H.M. Government (1995) The Environment Act

Ref 48 Department for Environment, Food and Rural Affairs in partnership with the Scottish Executive, Welsh Assembly Government and Department of the Environment Northern Ireland (2007). The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volume 1)

Ref 49 Department for Environment, Food and Rural Affairs (2019) Clean Air Strategy 2019

Ref 50 Ministry of Housing, Communities and Local Government (2019). Planning Practice Guidance, Air Quality. Updated November 2019

- The future air quality without the proposed scheme in place (future baseline); and
  - The future air quality with the proposed scheme in place (with mitigation).
- 6.2.3. The assessment will subsequently summarise the predicted changes in air pollution to ascertain whether the proposed scheme would lead to an unacceptable risk from air pollution, prevent sustained compliance with EU limit values or fail to comply with the requirements of the *Conservation of Habitats and Species Regulations*, in line with the *PPG*. This means that the assessment will also be in accordance with the *NPSNN*.
- 6.2.4. In July 2017, The Department for Environment, Food and Rural Affairs (Defra) released the *UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations* (Ref 51). The plan principally focuses on empowering local councils to make major changes to their road systems. The plan required local authorities to set out initial plans by the end of March 2018, followed by final plans by the end of December 2018. Alongside these plans, Defra published a dataset of predicted pollutant concentrations along specific roads. This dataset is called the *Pollution Climate Mapping (PCM) dataset* (Ref 52) and this will be used to inform the assessment of compliance of the proposed scheme with EU Limit Values.
- 6.2.5. Defra published a supplement to the *NO<sub>2</sub> Plan* in October 2018 (Ref 53) which documents the feasibility studies conducted by a further 33 local authorities, which were predicted to have shorter term NO<sub>2</sub> exceedances. The proposed scheme is not located in one of these local authority areas and nor are any of the adjoining local authorities.

#### **Local planning policy and local air quality action planning**

- 6.2.6. The following Local Plans, all of which include air quality policies (ArDC) and surrounding authorities), will be considered as necessary, to establish if the proposed scheme is consistent with local policies:
- Adur Local Plan 2017 (Ref 54);
  - Arun Local Plan 2011-2031 (Ref 14);
  - Chichester Local Plan: Key Policies 2014-2029 (Ref 55);
  - Draft Horsham District Local Plan 2019-2036 (Ref 56);

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Ref 51 Department for Environment, Food and Rural Affairs (2017). UK plan for tackling roadside nitrogen dioxide concentrations: detailed plan

Ref 52 Department of Environment, Food and Rural Affairs (2020). 2020 NO<sub>2</sub> and PM projections data (2018 reference year)

Ref 53 Department for Environment, Food and Rural Affairs (2018). Supplement to the UK plan for tackling roadside nitrogen dioxide concentrations

Ref 54 Adur District Council (2017). Adur Local Plan 2017. <https://www.adur-worthing.gov.uk/adur-local-plan/>

Ref 55 Chichester District Council (2015). Chichester Local Plan: Key Policies 2014-2029.

[https://www.chichester.gov.uk/media/24759/Chichester-Local-Plan---Key-Policies-2014---2029/pdf/printed\\_version.pdf](https://www.chichester.gov.uk/media/24759/Chichester-Local-Plan---Key-Policies-2014---2029/pdf/printed_version.pdf)

Ref 56 Horsham District Council (2020). Draft Horsham District Local Plan 2019-2036.

<https://strategicplanning.horsham.gov.uk/consult/ti/LocalPlanReview/viewCompoundDoc?docid=10336756&sessionId=&voteid=&partId=10339124>

- Worthing Borough Council Draft Local Plan 2016 – 2033 (Ref 57); and
  - South Downs Local Plan 2014-2033 (Ref 15).
- 6.2.7. There are no additional air quality specific supplementary planning documents (SPD) or guidance (SPG) for any of the above authorities. However, it is noted that there is *Air Quality and Emissions Mitigation Guidance for Sussex* (2020) (Ref 58), which is applicable to those local authorities listed above.
- 6.2.8. Air Quality Action Plans are also of relevance to the proposed methodology. The list of plans will be kept under review up until DCO application submission, but the plans currently anticipated to be of greatest relevance to the proposed scheme are:
- Towards Better Air Quality, An Air Quality Action Plan for Chichester District 2015 – 2020 (Ref 59);
  - Storrington Air Quality Action Plan 2012 (Ref 60) and associated 2017 Proposals Review (Ref 61); and
  - Air Quality Action Plan for Worthing Air Quality Management Area No.2 (Ref 62).

### 6.3. Study area

- 6.3.1. For the assessment of air quality, study areas will be defined on the basis of anticipated changes in traffic conditions (flow, speed and composition) as a result of the proposed scheme. This Do-Something (DS) scenario will be compared to road conditions without the proposed scheme, which is the Do-Minimum (DM) scenario.
- 6.3.2. In the case of the air quality assessment, the study area will be based on predicted changes to traffic conditions in the expected proposed scheme opening year (2027). The specific criteria used will be taken from Highways England *DMRB LA 105 Air Quality* guidance (Ref 63) as set out below:
- Road alignment will change by 5 m or more; or
  - Annual average daily traffic (AADT) flows will change by 1,000 or more; or
  - Heavy duty vehicle (HDV) (vehicles greater than 3.5 tonnes, including buses and coaches) flows will change by 200 AADT or more; or

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Ref 57 Worthing Borough Council (2018). Worthing Borough Council Draft Local Plan 2016 – 2033. October 2018. <https://www.adur-worthing.gov.uk/media/Media,151143,smxx.pdf>

Ref 58 Sussex-air Air Quality Partnership (2020). Air quality and emissions mitigation guidance for Sussex (2020). Version 1 January 2020 [https://www.horsham.gov.uk/\\_data/assets/pdf\\_file/0011/67691/Sussex-AQ-Guidance-V.1-2020.pdf](https://www.horsham.gov.uk/_data/assets/pdf_file/0011/67691/Sussex-AQ-Guidance-V.1-2020.pdf)

Ref 59 Chichester District Council (2015). Towards Better Air Quality, An Air Quality Action Plan for Chichester District 2015 – 2020 <http://www.chichester.gov.uk/chtphandler.ashx?id=6298&p=0>

Ref 60 Horsham District Council (2012). Storrington Air Quality Action Plan 2012. October 2012 [https://www.horsham.gov.uk/\\_data/assets/pdf\\_file/0003/58854/Storrington-Air-Quality-Plan-2012.pdf](https://www.horsham.gov.uk/_data/assets/pdf_file/0003/58854/Storrington-Air-Quality-Plan-2012.pdf)

Ref 61 Horsham District Council (2017). Storrington Air Quality Management Area scheme proposals review. June 2017 [https://www.horsham.gov.uk/\\_data/assets/pdf\\_file/0004/58855/Storrington-AQMA-scheme-proposals-review\\_2017.pdf](https://www.horsham.gov.uk/_data/assets/pdf_file/0004/58855/Storrington-AQMA-scheme-proposals-review_2017.pdf)

Ref 62 Worthing Borough Council (2015). Air Quality Action Plan for Worthing Air Quality Management Area No.2. November 2015. <https://www.adur-worthing.gov.uk/media/Media,138133,smxx.pdf>

Ref 63 Standards for Highways, Highways England (2019). DMRB, LA 105 Air Quality Revision 0

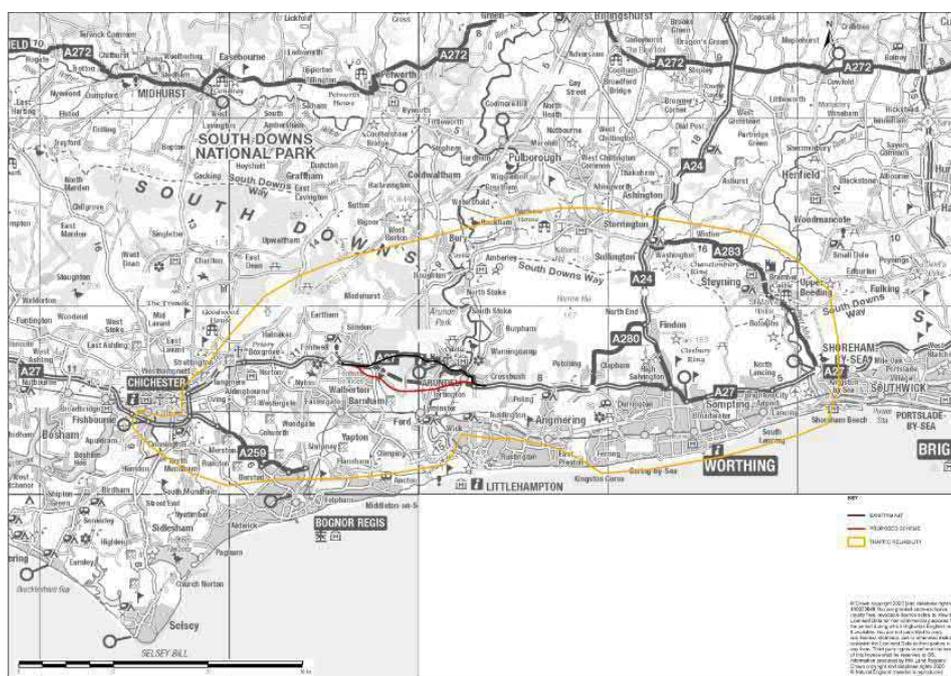
- There will be a change in speed band.
- 6.3.3. The assessment will be based on the opening year as this is expected to be the worst-case year of operation. This is because the influence of improving vehicle exhaust emission standards is likely to be greater than any additional growth in traffic in subsequent operational assessment years.
- 6.3.4. The local air quality study area will be defined, based on the above criteria, for those links that have relevant sensitive receptors within 200 m of either side of road carriageways. All road links within 200 m of these receptors will then be included in the air quality assessment and will form the overall study area. A distance of 200 m from roads is used as at distances greater than this, pollutant contributions from roads are difficult to distinguish from background pollutant concentrations.
- 6.3.5. The construction phase for the proposed scheme is programmed to last three years. This triggers the need to consider construction phase traffic impacts for local air quality. This is based on *DMRB LA 105* guidance (Ref 63), where if traffic changes during construction are expected to last more than two years (e.g. due to phasing or temporary re-routing), air quality effects have the potential to be significant or impact on compliance and therefore require further assessment (see *DMRB LA 105* paragraph 2.60 and associated note) (Ref 63). The same traffic screening approach set out in paragraph 6.3.2 will be used to determine the potential local air quality study area for the construction phase. The approach will consider changes in traffic movements due to additional construction vehicles and/or due to traffic management measures being implemented.
- 6.3.6. Traffic data are not yet available to determine the study area for this stage of assessment (known as the affected road network or ARN) and so scoping has focused on the approximate area of the Traffic Reliability Area (TRA) from the previous stage of assessment. *DMRB LA 105* guidance (Ref 63) describes a TRA as ‘...the area of traffic data reliable for inclusion in an environmental assessment’. The TRA has not yet been confirmed for this stage of assessment and may vary from the previous stage of assessment. However, the use of the previous approximate TRA is considered to provide a good indication of the air quality constraints around the proposed scheme and will adequately inform the required air quality assessment methodology.
- 6.3.7. The previous approximate TRA covered areas of the following local authorities:
- Adur District Council (AdDC);
  - Arun District Council (ArDC);
  - Chichester District Council (CDC);
  - Horsham District Council (HDC); and
  - Worthing Borough Council (WBC).

## 6.4. Baseline conditions

6.4.1. Baseline air quality data for the area around the proposed scheme has been gathered from the following sources:

- Boundaries of Air Quality Management Areas (AQMAs) (Ref 64);
- Defra Pollution Climate Mapping (PCM) Model GIS data;
- Defra air pollution background concentration maps (Ref 65);
- Local Authority monitoring data (Ref 66,67,68,69,70); and
- Highways England monitoring data (Ref 71).

6.4.2. Baseline air quality information has been gathered from within the previous approximate TRA. The TRA extent is presented on Plate 5.



**Plate 5: Traffic Reliability Area**

Ref 64 Department of Environment, Food and Rural Affairs (2020) The 2020 AQMA dataset <https://uk-air.defra.gov.uk/aqma/maps/>

Ref 65 Department for Environment, Food and Rural Affairs (2020). 2018-based background maps for NO<sub>x</sub>, NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>

Ref 66 Adur District Council (2020). 2020 Air Quality Annual Status Report (ASR). September 2020. [https://www.adur-worthing.gov.uk/media/Media\\_158123.smxx.pdf](https://www.adur-worthing.gov.uk/media/Media_158123.smxx.pdf)

Ref 67 Arun District Council (2020). 2020 Air Quality Annual Status Report (ASR). June 2020 <https://www.arun.gov.uk/download.cfm?doc=docm93ijim4n15545.pdf&ver=15975>

Ref 68 Chichester District Council (2020). 2020 Air Quality Annual Status Report (ASR). June 2020. [https://www.chichester.gov.uk/media/33788/Draft-Annual-Status-Report-2020/pdf/ASR\\_2020.pdf](https://www.chichester.gov.uk/media/33788/Draft-Annual-Status-Report-2020/pdf/ASR_2020.pdf)

Ref 69 Horsham District Council (2020). 2020 Air Quality Annual Status Report (ASR) for Horsham District Council. June 2020 [https://www.horsham.gov.uk/\\_data/assets/pdf\\_file/0005/58829/2020-Annual-Status-Report-for-Horsham-District-Council.pdf](https://www.horsham.gov.uk/_data/assets/pdf_file/0005/58829/2020-Annual-Status-Report-for-Horsham-District-Council.pdf)

Ref 70 Worthing Borough Council (2019). 2019 Air Quality Annual Status Report (ASR). June 2019. [https://www.adur-worthing.gov.uk/media/Media\\_154330.smxx.pdf](https://www.adur-worthing.gov.uk/media/Media_154330.smxx.pdf)

Ref 71 Highways England (2019). A27 Arundel Bypass Environmental Assessment Report. Appendices 5.1 to 5.10. August 2019 <https://assets.highwaysengland.co.uk/roads/road-projects/A27+Arundel+Improvement/EAR2019/EAR+Chapter+5+Appendices+5.1+to+5.10.pdf>

### **Air Quality Management Areas and compliance**

- 6.4.3. There are no AQMAs within the proposed scheme extents and ArDC has not declared any AQMAs. However, five AQMAs are located within the previous approximate TRA. Two of these are located along the A27 leading to the proposed scheme, namely the Worthing Grove Lodge/Lyons Farm AQMA declared by WBC, approximately 10 km east of the eastern extent of the proposed scheme and the Chichester (Stockbridge Roundabout) AQMA located approximately 16 km to the west of the western extent of the proposed scheme as declared by CDC. A third AQMA is also located in Storrington (Horsham AQMA No1) approximately 10 km to the north east of the proposed scheme declared by HDC. Two additional AQMAs are located towards the centre of Chichester (Chichester St Pancras AQMA and Chichester (Orchard St) AQMA). All the AQMAs have been declared due to concern over annual mean concentrations of nitrogen dioxide (NO<sub>2</sub>). AdDC has declared two AQMAs, but these are located outside the previous approximate TRA.
- 6.4.4. Information on areas exceeding EU limit value thresholds is available from Defra's PCM Model. This model provides 'road contributed' concentrations of pollutants. There are a number of PCM links within the previous approximate TRA. There are no PCM links in Arundel immediately adjacent to the proposed scheme. There are PCM links on the A27 leading to the proposed scheme towards both Chichester and Worthing. The closest PCM links are located to the south of the proposed scheme in Wick, approximately 2.4 km away. None of the links exceed the NO<sub>2</sub> EU limit value of 40µg/m<sup>3</sup> in 2020.

### **Continuous monitoring**

- 6.4.5. Continuous air quality monitoring is undertaken within the previous approximate TRA by CDC, HDC and WBC.
- 6.4.6. The CDC continuous monitoring for NO<sub>2</sub> comprises Westhampnett Road, Orchard Street in the centre of Chichester and one monitor is close to Stockbridge Roundabout AQMA on the A27, which also monitors for particulates (PM<sub>10</sub> - particulate matter with an aerodynamic diameter of 10 microns or less). In addition, there is a rural ozone monitor in Lodsworth. All NO<sub>2</sub> concentrations are well within the annual mean objective in 2019, with the highest concentration recorded 28 µg/m<sup>3</sup> at Stockbridge Roundabout and no 1-hour exceedances were recorded. At Stockbridge Roundabout an annual mean of 19 µg/m<sup>3</sup> was recorded for PM<sub>10</sub>, which is approximately half of the relevant annual mean objective. No 24-hour exceedances were recorded.
- 6.4.7. HDC has one continuous monitoring site close to the Storrington (Horsham AQMA No1) AQMA, which is part of the Automatic Urban and Rural Monitoring Network (AURN). In 2019, the most recent year of monitoring, air quality was within relevant air quality objectives, with 22 µg/m<sup>3</sup> NO<sub>2</sub> annual mean concentrations and no 1-hour NO<sub>2</sub> exceedances recorded.
- 6.4.8. WBC has one continuous monitoring location within the Worthing Grove Lodge/Lyons Farm AQMA. This site monitors NO<sub>2</sub> and fine particulates

(PM<sub>2.5</sub>). In 2018, the most recent year of monitoring, air quality was within relevant air quality objectives, with 37 µg/m<sup>3</sup> NO<sub>2</sub> annual mean concentrations and no 1-hour NO<sub>2</sub> exceedances. Whilst a PM<sub>2.5</sub> annual mean of 10 µg/m<sup>3</sup> was recorded compared to an objective of 25 µg/m<sup>3</sup>.

### Passive diffusion tubes

6.4.9. Passive diffusion tube data for NO<sub>2</sub> is collected in the previous approximate TRA by all four local authorities. A total of 123 sites have data available for either 2018 or 2019. This includes 27 sites by AdDC, 20 sites by ArDC, 18 sites by CDC, 21 sites by HDC and 37 sites by WBC. The data show that generally air quality is within the relevant air quality objective value for NO<sub>2</sub>. There are a number of exceptions to this including:

- HDC Tube Name 'jct of A283 Manleys Hill and School Hill', tube ID Storrington 19n with a monitored concentration of 47.7 µg/m<sup>3</sup>. This is located approximately 10 km to the north east of the proposed scheme;
- CDC Tube Name 'St Pancras', tube ID 10 with a monitored concentration of 42 µg/m<sup>3</sup>. Located in Chichester approximately 16 km west of the proposed scheme; and
- WBC Tube Names N30A, N44A and N44B. Diffusion tube N30A is called Grove Lodge Cottages and the two other tubes are located on the continuous monitoring site at this AQMA. The tubes range in concentration from 60.1 µg/m<sup>3</sup> at Grove Lodge Cottages to 40.8 µg/m<sup>3</sup> at the continuous monitor. These tubes are all located in the WBC AQMA located approximately 10 km to the east of the proposed scheme.

6.4.10. A further seven local authority tubes are also close to the annual mean air quality objective value for NO<sub>2</sub> with concentrations of more than 36 µg/m<sup>3</sup>.

6.4.11. NO<sub>2</sub> diffusion tube surveys have previously been undertaken by Highways England in the area of the previous approximate TRA. This includes surveys undertaken between January 2016 to July 2016, January 2016 to February 2017 and June 2018 to September 2018. These surveys comprised a total of 50 diffusion tube locations. The findings of these surveys described as a 2016 annual mean are that most of the locations were within the relevant air quality objective value for NO<sub>2</sub>. The exceptions to this are three diffusion tubes located in Arundel near the proposed scheme:

- Tube A27Ar\_023\_0116 with an NO<sub>2</sub> concentration of 53.9 µg/m<sup>3</sup>;
- Tube AR-DT2 with an NO<sub>2</sub> concentration of 49.8 µg/m<sup>3</sup>; and
- Tube AR-DT3 with an NO<sub>2</sub> concentration of 46.7 µg/m<sup>3</sup>.

6.4.12. A further four diffusion tubes are also close to the annual mean air quality objective value for NO<sub>2</sub> with concentrations of more than 36 µg/m<sup>3</sup>.

### Sensitive receptors

6.4.13. Public exposure locations close to the proposed scheme include Arundel, Havenwood Park, Binsted, Walberton, Tortington, Crossbush and Fontwell. In the wider area there are other locations of public exposure to the east

including: Durrington, High Salvington and Salvington and to the west including: Boxgrove, Tangmere, Portfield, Whyke and Stockbridge. Other locations of exposure will be identified as the ARN for the proposed scheme is determined in the later stages of assessment.

- 6.4.14. There are four Sites of Special Scientific Interest (SSSI) in the approximate area of the previous TRA, which contain features that are sensitive to air pollutants. These are Amberley Mount to Sullington Hill, Arun Banks, Fairmile Bottom and Arundel Park SSSIs. In addition, two Local Nature Reserves (LNR), Fairmile Bottom and The Brooks, have also been identified, with ancient woodlands and veteran and ancient trees also noted. Further detailed reviews of designated habitats will be undertaken once the ARN for the proposed scheme is determined in later stages of assessment.

## **6.5. Potential impacts**

- 6.5.1. The proposed scheme has the potential to affect local air quality, both during construction and once in operation, in the following ways:

- Increased emissions of dust during construction of the proposed scheme from dust-raising activities on site;
- Emissions associated with non-road mobile machinery (NRMM) undertaking construction works;
- Changes in traffic flows during construction, as a result of temporary traffic management measures and/or additional vehicles travelling to and from the construction site transporting materials, plant and labour;
- Air quality could be affected (beneficially or adversely) by changes in vehicle activity (flows, speeds and composition) as a result of the proposed scheme being operational; and
- Changes in the distances between sources of emissions and air quality sensitive receptors.

## **6.6. Design, mitigation and enhancement measures**

- 6.6.1. There is some potential for adverse effects during proposed scheme construction. However, any impacts on human health related to air quality would be temporary (during the period of the construction works only) and could be suitably minimised by the application of industry standard mitigation measures, which will be included in the CEMP. The need for control measures in addition to standard dust mitigation, will be identified as part of the assessment and will be included in the OEMP, which will be appended to the ES.
- 6.6.2. Construction vehicle and plant emissions (NRMM) are unlikely to be significant, particularly in comparison to levels of similar emissions from vehicle movements on the road network. These emissions will be managed through the application of standard best practice mitigation.
- 6.6.3. Operational impacts on air quality may be difficult to avoid, but in some circumstances it is possible to reduce or repair impacts on air quality with appropriate mitigation measures, particularly if impacts are focused in a

small geographic area rather than spread across the extent of the air quality study area.

## **6.7. Description of the likely significant effects**

- 6.7.1. The proposed scheme has the potential to cause significant effects both beneficial and adverse due to construction and operational traffic changes.
- 6.7.2. The proposed scheme has the potential to increase traffic flows and cause congestion on the surrounding and wider road networks due to diversions and re-routing.
- 6.7.3. The proposed scheme will reduce both traffic flows and congestion within Arundel. This may be significantly beneficial at Arundel as locations of poor air quality will be bypassed. Conversely, increases in traffic flows that could be associated with the proposed scheme could cause a deterioration in air quality at locations of poor air quality, such as the AQMAs located along the A27 at Stockbridge Roundabout in CDC and at Worthing Grove Lodge/Lyons Farm in WBC.

## **6.8. Assessment methodology**

- 6.8.1. *LA 105* guidance (Ref 63) sets out the requirements for assessing and reporting the effects of highways projects on air quality. This guidance document will be used to assess the air quality impacts associated with the proposed scheme. The document provides a framework for assessing, mitigating and reporting the effects of the proposed scheme on air quality by:
  - determining whether the impacts on human health or designated habitats will trigger a significant air quality effect;
  - determining whether the impacts will affect the UK's reported ability to comply with the Air Quality Directive in the shortest timescale possible; and
  - determining whether construction activities associated with the delivery of the proposed scheme will trigger a significant air quality effect on nearby sensitive receptors.

### **Construction dust**

- 6.8.2. The assessment of potential impacts from dust emissions generated during the construction phase of the proposed scheme will be based on *DMRB LA 105* guidance (Ref 63). This will constitute a qualitative assessment of sensitive receptors within 200 m of the site boundary.
- 6.8.3. The locations of any sensitive human receptors such as housing, school, hospitals and ecological sites, within 0-50 m, 50-100 m and 100-200 m of all construction activity will be identified on a constraints plan. The construction dust risk at human receptors will then be identified, taking into consideration the construction dust risk potential and distance from construction activities. The construction dust risk will be used to inform the mitigation measures required to support the construction phase.

## Pollutants and level of assessment

- 6.8.4. The local air quality assessment during operation of the proposed scheme will focus on emissions of the key pollutants NO<sub>2</sub> and PM<sub>10</sub> as these are the principal pollutants of concern with regards to emissions from road traffic. Additionally, the nearby AQMAs identified have been declared due to concern over NO<sub>2</sub>. PM<sub>2.5</sub> will not be assessed with air quality modelling as it is not a requirement of *DMRB LA 105*. The UK currently meets its legal requirements for the achievement of the PM<sub>2.5</sub> air quality thresholds and the modelling of PM<sub>10</sub> can be used to demonstrate that the proposed scheme does not impact on the PM<sub>2.5</sub> air quality threshold. Baseline data in the approximate area of the previous TRA also indicates PM<sub>2.5</sub> concentrations are well within the relevant air quality objective.
- 6.8.5. The determination of the level of assessment required has been carried out following the methodology illustrated in Figure 2.10 in *DMRB LA 105* guidance. This methodology considers both project risk and receiving environment sensitivity. The project risk potential is defined as high as the proposed scheme is a new bypass. The receiving environment is of medium to high sensitivity. The receiving environment is considered to be of medium to high sensitivity because:
- there are numerous residential receptors close to roads that may be affected within 50 m;
  - baseline monitoring shows some locations with measured NO<sub>2</sub> concentrations of more than 36 µg/m<sup>3</sup>;
  - there are some locations of exceedances of the annual mean NO<sub>2</sub> objective (>40 µg/m<sup>3</sup>) within declared AQMAs; and
  - it is anticipated that some exceedances may persist in the proposed scheme opening year.
- 6.8.6. Taking the above into consideration, a detailed level air quality assessment will be undertaken.

## Sensitive receptor selection

- 6.8.7. Sensitive receptors will be identified from *Ordnance Survey (OS) MasterMap* (Ref 72) and *AddressBase* (Ref 73), aerial photography (Ref 74) and Natural England's website (Ref 75). The selection of designated habitats will be undertaken in consultation with the biodiversity specialists. The selected receptors will generally include those placed closest to the ARN as these will represent worst-case impacts. The receptors that will be considered in the local air quality assessment include public exposure receptors and designated habitats.

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Ref 72 Ordnance Survey (2020) MasterMap  
Ref 73 Ordnance Survey (2020) AddressBase  
Ref 74 Google (2020) Google Earth  
Ref 75 Natural England (2020). MAGIC <https://magic.defra.gov.uk/home.htm>

- 6.8.8. Public exposure receptors are sensitive locations where relevant exposure for the air quality criteria being assessed could occur, such as residential properties or schools. These locations are defined by Defra *Local Air Quality Management Technical Guidance (LAQM.TG16)* (Ref 76).
- 6.8.9. Designated habitats include: SSSI, Special Areas of Conservation (SAC), Special Protection Areas (SPA) and sites listed under the Convention on Wetlands and Wildfowl (Ramsar), local nature reserves, local wildlife sites, nature improvement areas, ancient woodland and veteran trees.
- 6.8.10. For the construction phase of the proposed scheme, sensitive receptors that may be affected include those outlined above and other receptors that may be sensitive to the deposition of dust such as parks.
- 6.8.11. Construction dust can include particles that contribute to ambient PM<sub>10</sub> concentrations, and also far coarser particles. There are no statutory criteria for deposition rates, however dust from wet or dry deposition on receptor surfaces can result in a loss of amenity, and as such is considered a statutory nuisance under the *Environmental Protection Act 1990* (Ref 77).
- 6.8.12. The air quality objectives (as set out in the *Air Quality Standards Regulations 2010*) have been set at concentrations that provide protection to all members of society, including more vulnerable groups such as the very young, elderly or unwell. As such, the sensitivity of receptors was considered when setting the objectives and therefore no additional subdivision of human health receptors on the basis of building or location type is necessary.

### **Assessment scenarios**

- 6.8.13. The key scenarios to be considered for local air quality are:
- the baseline situation (2015);
  - opening year (2027) Do-Minimum (without the proposed scheme); and
  - opening year (2027) Do-Something (with the proposed scheme)
- 6.8.14. The local air quality assessment will include cumulative impacts from committed developments as committed development traffic will be included in the traffic model.
- 6.8.15. The need for a construction phase traffic air quality assessment will be confirmed in later stages of assessment, following the criteria referred to in paragraph 6.3.5, as further information becomes available regarding the construction phase.

### **Modelling approach**

- 6.8.16. Road sources included in the traffic model will be explicitly modelled using ADMS-Roads. The model requires input of emission rate data as well as the road width and geometry (mapped in GIS software) and hourly sequential meteorological data (obtained from a representative nearby met station).

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Ref 76 Department for Environment, Food and Rural Affairs (2018). Local Air Quality Management Technical Guidance (LAQM.TG16)

Ref 77 H.M. Government (1990) Environmental Protection Act 1990

- 6.8.17. Emission rate data will be derived from the traffic data for the proposed scheme, using speed banded emission factors.
- 6.8.18. Local air quality modelling predictions using the ADMS-Roads software (Ref 78) will provide estimates of the contribution from road traffic emissions to annual mean concentrations of NO<sub>x</sub> at the selected receptors; these concentrations will be combined with Defra estimates of background concentrations, to derive total annual mean NO<sub>2</sub> concentrations. NO<sub>x</sub> to NO<sub>2</sub> conversion will be carried out according to guidance from Defra (Ref 79).
- 6.8.19. Base year modelled estimates will be verified, with comparison against baseline air quality monitoring data as described in Section 6.3 with reference to the *LAQM.TG16* (Ref 76). Where systematic bias is clearly evident in base year verification, adjustment will be applied to bring modelled concentrations more into line with monitored concentrations. Details of the adjustment applied will be described in the ES.
- 6.8.20. Annual nitrogen deposition will be considered at ecological receptors in accordance with *DMRB LA 105* guidance. Comparison of results will be made with the critical level for NO<sub>x</sub> and the critical load for nitrogen deposition, which will be obtained from the *Air Pollution Information System (APIS)* (Ref 80) where available or estimated by the biodiversity specialists where not available.
- 6.8.21. A key element of the local operational detailed air quality impact assessment is the rate of improvement in air quality over time as cleaner vehicles enter the national vehicle fleet. The methodology outlined within *DMRB LA 105* guidance on the assessment of future NO<sub>x</sub> and NO<sub>2</sub> projections will be used in this assessment.
- 6.8.22. The methodology, known as 'Gap Analysis', involves the completion of air quality modelling and verification as described above. Predictions are then adjusted to represent the observed long-term trend profile described in the *DMRB LA 105* guidance. The adjusted results from this gap analysis will be presented in the ES. These results are considered to present a realistic 'worst-case' scenario, as only a portion of the full anticipated improvements in air quality by Defra guidance are assumed to occur in the gap analysis results by the opening year. In addition, the proposed rates of improvement in air quality will be reviewed against local long-term air quality monitoring trends to ensure local applicability.

### **Results presentation and evaluation of significance**

- 6.8.23. Results will be presented in the ES in tabular format showing predicted concentrations at the selected sensitive receptors in the relevant scenarios modelled, together with interpretative text.
- 6.8.24. A comparison of the modelled concentration of NO<sub>2</sub> and PM<sub>10</sub> at each receptor between the Do Something (DS) and Do Minimum (DM) scenarios

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Ref 78 Cambridge Environmental Research Consultants Ltd (2020) ADMS-Roads

Ref 79 Department for Environment, Food and Rural Affairs (2020) NO<sub>x</sub> to NO<sub>2</sub> Calculator

Ref 80 UK Centre for Ecology and Hydrology (2020). Air Pollution Information Services. <http://www.apis.ac.uk/>

will be undertaken. This magnitude of change at each receptor is classified as:

- small – where the change in concentration is more than  $0.4 \mu\text{g}/\text{m}^3$ ;
- medium – where the change in concentration is more than  $2 \mu\text{g}/\text{m}^3$ ; or
- large – where the change in concentration is more than  $4 \mu\text{g}/\text{m}^3$ .

6.8.25. *LA105* includes Table 2.92N, which sets out a guideline for the number of properties informing a judgement of a significant effect, which is replicated in Table 8.

**Table 8: Guideline bands for the number of properties informing a judgement of significant air quality effects**

Magnitude of Change in NO <sub>2</sub> or PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	Number of Receptors with:	
	Worsening of air quality already above objective or creation of a new exceedance	Improvement of air quality already above objective or the removal of an existing exceedance
Large (>4)	1 to 10	1 to 10
Medium (>2 to 4)	10 to 30	10 to 30
Small (>0.4 to 2)	30 to 60	30 to 60

6.8.26. To ensure that the aggregated number of properties are compared to the guideline bands, receptors in the medium and large bands are include in lower bands too.

6.8.27. An evaluation of the significance of the local air quality assessment findings at sensitive receptors will be undertaken in accordance with *DMRB LA 105*. This guidance evaluates the significance of air quality effects using the total estimated pollutant concentrations at sensitive receptors and the magnitude of change estimated to occur as a result of the proposed scheme using framework guideline bands (see Table 8). Only receptors which are predicted to experience concentrations above the annual mean objectives contribute to significance.

#### **Additional survey requirements**

6.8.28. The anticipated study area includes good coverage of air quality monitoring data as identified above. The only data collection proposed is a small targeted survey in the immediate vicinity of the proposed scheme within Arundel and close to the proposed scheme alignment. These locations will be agreed with Highways England and discussed with relevant Environmental Health Officers (EHOs).

### **6.9. Assumptions, limitations and uncertainties**

6.9.1. The main limitations of scoping for air quality are that the TRA has not yet been established and the ARN within the TRA has not been confirmed. This information will be available at the later stages of assessment when traffic

data are available. This means that the specific receptors (public exposure and designated habitat) that will be considered in the assessment cannot yet be confirmed and nor can it be confirmed whether these receptors will be in locations of poor air quality. However, the approach proposed, focusing on the approximate area of the previous TRA, is considered to be appropriate to inform on the range of potential locations that may be assessed for the proposed scheme within the EIA.

## 7. Cultural Heritage

### 7.1. Introduction

7.1.1. This section sets out the proposed approach to the assessment of the proposed scheme's impacts on cultural heritage (comprising built heritage, archaeology and the historic landscape). The purpose of the assessment will be to identify and characterise any relevant cultural heritage resources; to consider the nature and scale of potential impacts due to the proposed scheme; and to assess the significance of any likely effects.

7.1.2. This section has been produced using guidance from the *DMRB LA106 – Cultural Heritage assessment* (Ref 81) and *LA104* (Ref 40). Guidance from the Chartered Institute for Archaeologists (CIfA) *Standards and Guidance for Historic Environment Desk-based Assessment* (Ref 82) has also been considered to inform the assessment methodology.

### 7.2. Planning policy context

7.2.1. Legislation and planning policy relating to cultural heritage and pertinent to the proposed scheme comprises:

#### Legislation:

- Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (the APFP Regs 2009) (Ref 83);
- Planning Act 2008 (as amended by the Localism Act 2011) (the '2008 Act') (Ref 5);
- Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Ref 84);
- Ancient Monuments and Archaeological Areas Act 1979 (Ref 85) (amended by the National Heritage Act 1983 (Ref 86) and 2002 (Ref 87)); and
- Planning (Listed Buildings and Conservation Areas) Act 1990 (Ref 88).

7.2.2. Normal planning procedures within the above legislation are disapplied by the DCO which, would encompass all of the normal consents.

#### National planning policy:

- NPSNN (Ref 10); and

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Ref 81 Standards for highways, Design Manual for Roads and Bridges: LA 106 Cultural heritage assessment (Revision 1). Highways England (2020) <https://www.standardsforhighways.co.uk/prod/attachments/8c51c51b-579b-405b-b583-9b584e996c80>

Ref 82 Chartered Institute for Archaeologists (2020). Standard and guidance for historic environment desk-based

Ref 83 Infrastructure Planning (2009) The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 No. 2264

Ref 84 Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Statutory Instrument 2017/572)

Ref 85 Her Majesties Stationary Office (HMSO) (1979). Ancient Monuments and Archaeological Areas Act 1979

Ref 86 Her Majesties Stationary Office (HMSO) (1983). National Heritage Act 1983

Ref 87 Her Majesties Stationary Office (HMSO) (2002). National Heritage Act 2002

Ref 88 Her Majesties Stationary Office (HMSO) (1990). The Planning (Listed Buildings and Conservation Areas) Act 1990

- NPPF (Ref 11) – with particular reference to Section 16: Conserving and enhancing the historic environment.

#### **National guidance:**

- Planning Practice Guidance (Ref 89);
- Historic Environment Good Practice Advice in Planning Note 2 (Ref 90);
- Historic Environment Good Practice Advice in Planning Note 3 (Ref 91); and
- Historic England Advice Note 12 (Ref 92).

#### **Local plan policy:**

- Arun Local Plan 2011-2031, 2018 (Ref 14), with particular reference to Policy SD SP1a (Sustainable Development Strategic Approach), Policy HER SP1 (the Historic Environment) and Policies HER DM1 through DM6 which protect all aspects of the designated and non-designated historic environment resource. Also relevant are Policy LAN DM1 (Protection of Landscape Character) and Policy LAN DM2 (the Setting of Arundel).
- South Downs Local Plan 2014-2033 (Ref 15), with particular reference to Policy SD12 (Historic Environment), SD13 (Listed Buildings), SD15 (Conservation Areas) and SD16 (Archaeology).

### **7.3. Study area**

- 7.3.1. The study area for non-designated cultural heritage assets will extend to 500 m from the proposed scheme limits, while the study area for designated assets will extend to a distance of 1 km from the site boundary. A study area of 5 km from the site boundary will be used for assets of the highest value (as defined by the *NPSNN*; Ref 10), including those listed of a Grade I or Grade II\* rating as well as scheduled monuments and world heritage sites in recognition of the increased sensitivity of their setting. This will be guided by the Zone of Theoretical Visibility (ZTV) for the proposed scheme as referred to in Section 8, but will also consider physical and historical connectivity and relationships, changes to noise levels, air quality and traffic.

### **7.4. Baseline conditions**

- 7.4.1. There are 275 listed buildings within 1 km of the proposed scheme (Figure 4). This includes 202 listed buildings within Arundel. Beyond the settlement are one building listed at Grade I (Parish Church of St Mary, Walberton NHLE1274629) and three buildings listed at Grade II\* (Walberton House

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Ref 89 Ministry of Housing, Communities and Local Government (2019) Revised National Planning Policy Framework (NPPF) Planning Practice Guidance (PPG)

Ref 90 Historic England (2015) Historic Environment Good Practice Advice in Planning Note 2. Managing Significance in Decision Taking in the Historic Environment

Ref 91 Historic England (2017) Historic Environment Good Practice Advice in Planning Note 3 (2<sup>nd</sup> Edition). The Setting of Heritage Assets

Ref 92 Historic England (HE) (2019) Statements of Heritage Significance: Analysing Significance in Heritage Assets. Advice Note 12

NHLE 12222531, Priory Farmhouse NHLE 1034405 and Tortington Priory Barn, to the north of Priory Farm NHLE 1221996).

- 7.4.2. The remaining listed buildings are Grade II and include a combination of structures located within the surrounding settlements and isolated buildings, such as farmhouses. Those within settlements include 20 within Walberton and six within Slindon to the north west. It also includes six within the part of Arundel which falls within the study area. Elsewhere within Arundel are 11 highly graded listed buildings, including six at Grade II\* and five at Grade I. Notable among these are the Grade I listed Arundel Castle (also a scheduled monument and within a Grade II\* Registered Park and Garden (RPG)). Although outside the study area, due to the nature of the asset and wider influence of their setting, there is the potential for these buildings to be influenced by changes associated with the proposed scheme.
- 7.4.3. There are six scheduled monuments within 1 km of the proposed scheme. Arundel Castle (NHLE 1012500), Maison Dieu (NHLE 1005865), Goblestubbs Copse Earthworks (NHLE 1005895) and Madehurst Woods Earthworks (NHLE 1003736) are all located north of the existing A27 Arundel and the proposed scheme. The Ringwork 400 m NNW of Batworthpark House (NHLE 1012177) is located approximately 950 m north east of the eastern extent of the site. The nearest scheduled monument and most likely to be impacted by the proposed scheme is the Tortington Augustinian Priory and Ponds (NHLE 1021459), located approximately 150 m north of the site.
- 7.4.4. The Grade II\* Arundel Castle RPG is the only RPG within 1 km of the proposed scheme and lies just north of the existing A27 within the town of Arundel.
- 7.4.5. There are five conservation areas located within the study area. This includes conservation areas at Slindon and Lyminster and two in Walberton (Walberton Green and Walberton Village). There is also a conservation area in Arundel, encompassing the area to the south of the River Arun.
- 7.4.6. There are a further 16 Grade I listed buildings, 17 Grade II\* listed buildings and 17 scheduled monuments within the 5 km study area (Figure 6).
- 7.4.7. There are a large number of non-designated heritage assets within the study area (Figure 4). A minority of these heritage assets are non-designated historic buildings, but most are archaeological in character, including upstanding monuments and buried archaeological remains. They include settlements, barrows, field systems, hillforts and water meadows, and span from the Palaeolithic period through to the modern era.
- 7.4.8. The existing data regarding cultural heritage assets will be refined during the assessment stage in order to establish the cultural heritage baseline.

## **7.5. Potential impacts**

- 7.5.1. The proposed scheme crosses a landscape rich in known archaeological and built heritage assets. The proposed scheme has the potential to result in direct permanent impacts to cultural heritage assets within the footprint of the proposed scheme as well as impacts to the heritage significance of

assets within the defined study area through changes to their setting. Heritage significance, or value, is discussed below in paragraphs 7.8.7 to 7.8.14. In addition, the proposed scheme could also result in some beneficial impacts through the redirection of traffic away from Arundel and its associated high-value heritage assets.

7.5.2. Construction of the proposed scheme has the potential to affect heritage assets in the following ways:

- partial or total removal of heritage assets;
- compaction of archaeological deposits by construction traffic and structures; and
- both beneficial and adverse effects on the setting of heritage assets including changes to visual intrusion, noise, air quality, severance, access and amenity as a result of the works on the existing A27, the construction of the proposed scheme, and other construction works.

7.5.3. Operation of the proposed scheme has the potential to result in impacts on the setting of heritage assets. These impacts would commence during construction of the proposed scheme and continue during operation; however, the degree of impact may vary between phases. Such impacts could include:

- both beneficial and adverse changes to the surroundings of certain heritage assets or the general character of their setting; and
- changes to access to, or the management or viability of, heritage assets.

## **7.6. Design, mitigation and enhancement measures**

7.6.1. Mitigation will be embedded within the design of the proposed scheme to minimise impacts to heritage assets and their setting as far as possible. This includes a scheme wide landscape strategy being developed as part of the design (see Section 2.5). This will be agreed in consultation with the relevant local planning authorities, including ArDC and the SDNP Authority.

7.6.2. An appropriate archaeological mitigation strategy, for the identified impacts from construction activities upon heritage assets, will be agreed with the relevant stakeholders, including Historic England and the West Sussex County Council Archaeology Service.

## **7.7. Description of the likely significant effects**

7.7.1. There is the potential for the proposed scheme to result in both physical impacts to identified assets and impacts to setting. No designated assets will be physically impacted, limiting the potential for significant effects; however, there are a number of designated assets that will be indirectly impacted.

7.7.2. This includes highly graded assets located within Arundel and north of the existing A27 where both adverse and beneficial effects are anticipated. In addition, the proposed scheme passes close to the scheduled monument at Tortington Priory and the Grade II\* listed Tortington Priory Barn, alongside a number of Grade II listed structures.

- 7.7.3. Mitigation measures will be developed as part of the evolving proposed scheme design in order to limit any significant effects to these designated assets.
- 7.7.4. Furthermore, there are several potential and previously recorded non-designated archaeological assets within the site that will be directly impacted by the proposed scheme through their removal or truncation as a result of intrusive activities. Their extent and significance will be assessed through a programme of archaeological investigations agreed to in consultation with Historic England and the West Sussex County Council Archaeology Service. It is likely that construction activities will result in significant effects to some of these assets depending on their value and degree of truncation.
- 7.7.5. Mitigation measures through avoidance will be considered for high value archaeological assets throughout the evolving proposed scheme design. Where avoidance or preservation *in situ* is not possible, a programme of archaeological excavation and recording, to a level commensurate to the significance of the remains, may be employed to offset the impact to the archaeological resource. This will be agreed in consultation with Historic England and the West Sussex County Council Archaeology Service.

## 7.8. Assessment methodology

### Scope and level of assessment

- 7.8.1. The above discussion establishes that there is the potential for significant effects on heritage assets (both beneficial and adverse) from the construction and operation of the proposed scheme.
- 7.8.2. Given the importance of the heritage assets potentially affected by the proposed scheme, there is a requirement for further assessment of cultural heritage as part of the EIA (as stipulated by *DMRB LA 106*) (Ref 81). As such, all aspects of cultural heritage (archaeological remains, historic buildings, and historic landscapes) will be scoped into the EIA.

### Assessment standards

- 7.8.3. The further assessment required by the *LA106* will be prepared in line with national and local planning policy, national guidance and with the *ClfA Code of Conduct* (Ref 93) and the *ClfA Standard and Guidance for Historic Environment Desk-based Assessment* (Ref 82).

### Baseline

- 7.8.4. A fully illustrated desk-based assessment baseline will be prepared. It will identify all designated and non-designated heritage assets within the defined study areas. This will involve the collation of information from the data gathering exercise, alongside a map regression and walkover survey.
- 7.8.5. The known archaeological and heritage assets will be visited to record their survival, extent, condition, setting and value and confirm their location and relationships to other heritage assets, alongside the identification of any previously unrecorded assets. Land access agreements will be sought from

the landowner for site access. Should this not be possible, heritage assets will be viewed from nearby public rights of way or accessible vantage points. The site's ground conditions and evidence for previous disturbance, where this is relevant, will also be assessed utilising available geotechnical investigation reports and previous, ongoing and proposed archaeological evaluation. The results will be incorporated within the cultural heritage baseline and an assessment of the likely survival of archaeological remains will be made.

- 7.8.6. Consultation will be undertaken with the ArDC and the SDNP Conservation Officers, West Sussex County Council Archaeology Service and Historic England. Mitigation measures will be agreed as necessary and appropriate.

#### **Assessment of value (or significance)**

- 7.8.7. The value of a building, monument, area, site, place or landscape reflects its significance as a historic asset and therefore its sensitivity to change.
- 7.8.8. The *NPSNN* (Ref 10) requires the significance of heritage assets to be assessed and defines this as “those elements of the historic environment that hold value to this and future generations because of their historic, archaeological, architectural or artistic interest are called ‘heritage assets’”. Significance derives not only from a heritage asset’s physical presence, but also from its setting”.
- 7.8.9. The requirement to assess the significance of heritage assets is also set out within ClfA guidance.
- 7.8.10. The *NPPF* (Ref 11) defines the significance of heritage assets as “the value of a heritage asset to this and future generations because of its heritage interest. Significance derives not only from a heritage asset’s physical presence, but also from its setting.” It also sets out criteria which should be considered when assessing the significance of cultural heritage assets, which include archaeological, architectural, artistic and historic values.
- 7.8.11. The assessment of the setting of heritage assets for the EIA will be undertaken in accordance with principles set out in the Historic England’s good practice advice (GPA) guide *GPA3: The Setting of Heritage Assets* (Ref 91). In the broadest terms, the setting of a heritage asset comprises of the objects and conditions around it, and within which it is perceived and experienced; and in this sense all heritage assets have settings. Not all settings, however, make a beneficial or adverse contribution to the significance (or value) of the assets they encompass.
- 7.8.12. Setting is a combination of views, other historic features and their relationships to the asset, ambience (topography, vegetation, noise, and other sensory experiences such as smell and vibration) and context (what is known or thought about the asset, but not immediately experienced through the senses). A baseline setting assessment will be prepared for identified heritage assets that will be made with reference to both visual and non-visual impacts, including aural (noise) impacts and sensory experiences such as smell and vibration.

- 7.8.13. In order to facilitate the selection of heritage assets where visual aspects of setting are potentially affected, the ZTV model (as referred to in Section 8) will be used as a guide, but consideration will also be given to physical and historical connectivity and relationships.
- 7.8.14. Certain types of heritage asset have a level of significance that justify official designation, such as scheduled monuments and listed buildings; however, the absence of designation does not necessarily mean heritage assets are of a lower value or significance. Professional judgement based on knowledge and experience of comparable highway schemes will be used to identify the value and significance of assets, guided by legislation, national planning policy, standards, official designations, and the assessment criteria contained in *DMRB LA 106* (Ref 81) (reproduced in Section 5, Table 2, of this report).

#### **Assessment of the impacts, mitigation measures and significance of effects**

- 7.8.15. Following desk-based assessment, the potential impacts of the proposed scheme on the value and setting of the identified heritage assets will be assessed and reported within the ES.
- 7.8.16. Impacts relate to the predicted changes to key elements of an asset and/or its setting. These can, for example, derive from temporary or permanent actions such as the physical destruction of buried archaeology during construction works, and the introduction of new highway infrastructure into the historic setting of a building. The identification of impacts takes account of the effectiveness of embedded mitigation measures.
- 7.8.17. The magnitude of impact will be assessed using the criteria contained in *DMRB LA 104* (Ref 40) (reproduced in Section 5, Table 3 of this report).
- 7.8.18. The potential resultant effects of the proposed scheme on the heritage asset will be assessed on the basis of their type (direct, indirect, and cumulative), nature (beneficial, neutral or adverse) and longevity (reversible, short-term or long-term; irreversible, permanent) as per the requirements set out in *DMRB LA 104* (Ref 40). The assessment will take into account the value of the heritage asset and the magnitude of impact. The assignment of effects involves combining the value of an asset with the predicted magnitude of impact, guided by the significance matrix set out in the *DMRB LA 104* (Ref 40) (reproduced in Section 5, Table 4, of this report).
- 7.8.19. Mitigation measures designed to prevent, reduce or offset adverse effects will be proposed, and the significance of effects will be assessed taking into account the likely effectiveness of the mitigation proposed.

#### **Desk-based sources**

- 7.8.20. Sources of information that will be consulted include, but will not be limited to:
- the National Heritage List for England (NHLE);
  - west Sussex Historic Environment Record (WSHER), including the West Sussex Historic Landscape Characterisation (HLC);

- national Mapping Programme (NMP) and other aerial photographic sources as relevant;
- cartographic sources;
- relevant primary and secondary sources;
- published and unpublished reports from archaeological investigations; and
- the South East Historic Environment Research Framework (SERF; currently in under consultation) (Ref 94).

### **Field investigation**

7.8.21. Field investigation will be undertaken to refine and augment the desk-based data. In outline, field investigation components will comprise:

- field walkover survey;
- archaeological field walking (surface artefact collection survey);
- geophysical survey;
- archaeological evaluation;
- archaeological monitoring of geotechnical investigations; and
- geoarchaeological and palaeo-environmental assessment.

7.8.22. The scope and specification of the field investigations will be set out in a separate Archaeological Evaluation Strategy and appropriate Written Schemes of Investigation (WSIs), which will be subject to agreement with the West Sussex County Council Archaeology Service and Historic England.

### **7.9. Assumptions, limitations and uncertainties**

7.9.1. The assessment has been based on data received from databases held and maintained by third parties. It is assumed that this data is appropriate for use.

7.9.2. The proposed scheme has not been subject to a cultural heritage site walkover at this preliminary stage. This will be undertaken during further stages of assessment.

7.9.3. It is assumed that there will be access to all required land to undertake both intrusive and non-intrusive archaeological surveys, and that the results of the surveys will be available to incorporate within the EIA and ES.

## 8. Landscape and Visual

### 8.1. Introduction

- 8.1.1. This section sets out the proposed approach to the assessment of the impacts of the proposed scheme on landscape (including townscape) character and visual amenity, the character of the night sky and night-time views, and arboriculture. The purpose of the assessment will be to identify and characterise any relevant landscape, townscape, visual and arboriculture resources, to consider the nature and scale of potential impacts due to the proposed scheme, and to assess the significance of any likely effects.
- 8.1.2. Landscape effects relate to changes to the fabric or individual elements of the landscape, including land use, vegetation, landform and the aesthetic and perceptual qualities of the landscape, which contribute to the landscape character.
- 8.1.3. Visual effects relate to changes to existing views of identified visual receptors ('people'), from the loss or addition of features within their view due to the proposed scheme.
- 8.1.4. Arboriculture can be defined as the cultivation and management of trees. In this context it relates to the assessment of all tree related features across the site to include individual trees, groups of trees, woodlands and hedgerows. The arboricultural assessment will accord with *BS 5837: 2012 Trees in relation to design, demolition and construction* (Ref 95).
- 8.1.5. The landscape and visual impact assessment (LVIA) will be undertaken in accordance with Highways England's *DMRB LA 107 Landscape and Visual Effects*, revision 2, (Ref 96) (LA 107). *DMRB LA 107* has been influenced by the Landscape Institute's '*Guidelines for Landscape and Visual Impact Assessment*', Third Edition, (GLVIA 3) (Ref 97) and reference therefore will also be made to GLVIA 3 where required by *DMRB LA 107*.

### 8.2. Relevant policy

- 8.2.1. The assessment will set out the policies that are relevant to landscape and visual matters and arboriculture. These will include:
- *NPSNN* (Ref 98). Paragraphs 5.143 to 5.161 provide landscape guidance for development within or in the setting of nationally designated areas (such as a National Park) and requires great weight to be given to conserving landscape and scenic beauty, noting a strong presumption against any significant road widening within such areas. Paragraph 5.32

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Ref 95 British Standards Institution, (2012). *Trees in relation to design, demolition and construction – Recommendations*. BSI Standards Limited

Ref 96 Standards for Highways, DMRB (2020). *LA 107 – Landscape and visual effects*. [Online] Available at: < <https://www.standardsforhighways.co.uk/dmrbs/search/bc8a371f-2443-4761-af5d-f37d632c5734> > [Last accessed 16 November 2020]

Ref 97 Landscape Institute and Institute of Environmental Management & Assessment, (2013). *Guidelines for Landscape and Visual Impact Assessment*. [Online] Available at: < <https://www.landscapeinstitute.org/technical/glvia3-panel/> > [Last accessed 16 November 2020]

Ref 98 Department for Transport, (2014). *National Policy Statement for National Networks*. [Online] Available at: < [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/387222/npsnn-print.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/387222/npsnn-print.pdf) > [Last accessed 16 November 2020].

sets policy on the protection for ancient woodland and veteran trees. Paragraph 5.87 sets policy on the protection of dark landscapes and the impacts of light pollution;

- *NPPF* (Ref 11) Relevant policies include paragraph 170 requiring the planning system to protect and enhance valued landscapes and paragraph 172 stating that 'great weight' should be given to conserving and enhancing landscape and scenic beauty in National Parks;
- *PPG Natural Environment* (Ref 99) with respect to trees and woodland (paragraph 029-035) and ancient woodland standing advice;
- *Arun Local Plan 2011-2031* (Ref 100). Relevant policies including GI SP1: Green Infrastructure and Development, LAN DM1: Protection of Landscape Character, LAN DM2: The Setting of Arundel, HER SP1: The Historic Environment, ENV SP1: The Natural Environment, ENV DM4: Protection of Trees and QE DM2: Light Pollution;
- *South Downs Local Plan 2014-2033* (Ref 15). Relevant policies include Strategic Policy (SP) SD4: Landscape Character, SP SD5: Design, SP SD6: Safeguarding Views, SP SD7: Relative Tranquillity and SP SD8: Dark Night Skies; and
- The South Downs Partnership Management Plan, 2014-2019 (Ref 101).

### 8.3. Study area

#### Landscape and visual study area

- 8.3.1. *LA 107* (Ref 96) sets out that the landscape study area should be proportionate to the proposed scheme boundary, the wider landscape setting, potential visibility and the full extent of the setting of adjacent landscape receptors.
- 8.3.2. Similarly, the visual study area should be proportionate to the visual envelope of the proposed scheme, which is the area from which the proposed scheme may be visible.
- 8.3.3. The purpose of both the landscape and visual study area is to identify the area across which there may be significant landscape and visual effects as associated with the proposed scheme.
- 8.3.4. At this stage, it is proposed that the study area extends:
  - across the SDNP, to elevated ridgelines approximately 7 km to the north of Arundel and the existing A27;
  - to Poling, approximately 2 km to the east of Arundel and the Crossbush junction;

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Ref 99 Ministry of Housing, Communities & Local Government, (2019). Planning Practice Guidance - Natural Environment. [Online] Available at: < <https://www.gov.uk/guidance/natural-environment> > [Last accessed 16 November 2020].

Ref 100 Arun District Council, (2018). Adopted Arun Local Plan 2011-2031. [Online] Available at: < <https://www.arun.gov.uk/download.cfm?doc=docm93ijim4n12844.pdf&ver=12984> > [Last accessed 16 November 2020]

Ref 101 South Downs National Park Authority, (2013). The South Downs Partnership Management Plan, 2014- 2019. [Online] Available at: < <https://www.southdowns.gov.uk/wp-content/uploads/2015/01/SDNP-Partnership-Management-Plan-2014-19.pdf> > [Last accessed 16 November 2020]

- to Littlehampton, Yapton, Barnham, Walberton, Ford, Eastergate and Westergate, up to 3 km to the south of the existing A27; and
- to include Fontwell and Slindon, approximately 5.5 km to the west of Arundel.

8.3.5. The extent of the study area will also be refined with reference to the biodiversity, cultural heritage and road drainage and the water environment assessments, to ensure an integrated approach to environmental design and mitigation.

8.3.6. The assessment will set out the rationale for any amendments to the extent of the study area (such as the proposed scheme not being perceived or visible from a certain location) following subsequent discussions with the local planning authority and other stakeholders.

#### **Arboriculture study area**

8.3.7. The arboriculture study area includes any trees with the potential to be impacted by any temporary or permanent works associated with the proposed scheme. At this stage this equates to the consideration of trees within 100 m of the proposed scheme.

8.3.8. The study area will be reviewed as the proposed scheme develops and the final study area to be used for the arboricultural assessment will ensure all works, including haul routes and construction compounds, and mitigation/compensation areas are considered.

#### **8.4. Baseline conditions**

8.4.1. The following section summarises the extent of existing features within the study area and should be read in combination with Figures 4, 6 and 7.

##### **Landform and hydrology**

8.4.2. The River Arun is the principal watercourse, located in the eastern part of the study area, between Arundel and Crossbush Roundabout. The River Arun meanders across generally low-lying land at approximately 2 m Above Ordnance Datum (AOD), as part of the northern extent of the coastal plains which extend across the southern part of the study area.

8.4.3. Within the SDNP, the plains of the River Arun are bordered by steeply rising landform, as part of the River Arun valley system. The landform rises across Arundel Park up to 135 m AOD. Arundel is situated between the SDNP and the River Arun, with Arundel Castle in a relatively elevated position in the northern part of Arundel.

8.4.4. This pattern of elevated and undulating landform continues across the SDNP chalk escarpment, which forms the northern part of the study area. Within the SDNP, the landform rises to ridgelines up to 220 m AOD at Bignor Hill and across Burton Down.

8.4.5. From these ridgelines the landform falls towards the existing A27, interspersed with a complex pattern of hills and undulating landform, including Rewell Hill, Nore Hill and Halnaker Hill.

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- 8.4.6. The existing A27 is situated across the base of the escarpment, between approximately 20 m AOD and 40 m AOD.
- 8.4.7. To the south of the existing A27, the Binsted Rife and Tortington Rife form shallow valleys with narrow watercourses that flow eastwards towards the River Arun. In the lower Arun valley, unnamed drainage ditches and watercourses drain the floodplain towards the River Arun.
- 8.4.8. Many of the settlements are situated across localised areas of more elevated landform above these watercourses, including Walberton at approximately 20 m AOD, Binsted and Poling at approximately 10 m AOD and Crossbush at 25 m AOD.

### **Settlement pattern and infrastructure**

- 8.4.9. Arundel is situated at the base of Arundel Park and adjacent to the River Arun, concentrated to the north and south of the existing A27. A smaller extent of Arundel's settlement pattern is located on the east side of the River Arun.
- 8.4.10. The south of the study area includes a string of villages west of Littlehampton which sit on the coastal plain between the SDNP and the English Channel; Ford, Yapton, Barnham and Eastergate. Between these villages and the existing A27 are the settlements of Crossbush, Tortington, Binsted, Walberton and Fontwell, which approximately follow the route of the proposed scheme.
- 8.4.11. Across the SDNP, the settlement pattern is much smaller in scale, characterised by either small linear villages or individual farms.
- 8.4.12. The existing road network in the eastern part of the study area consists of the A27 and A284, which converge at Crossbush Roundabout. From Crossbush Roundabout, the A27 crosses the London to Portsmouth railway line and the River Arun to connect with the A27, A284 and Ford Road at the 'Ford Road Roundabout'. The A284 extends northwards, across Arundel Park into the SDNP, whilst Ford Road extends southwards, towards Tortington and Ford and approximately forms the western boundary of the Arun valley floodplain.
- 8.4.13. The railway line crosses the River Arun to the immediate east of Ford, where it connects with the railway line from Arundel station (Arundel Junction) and from Littlehampton (Littlehampton Junction). To the west of Ford, the railway line extends to Barnham and Woodgate, to the south of Eastergate.

### **Land use**

- 8.4.14. In general, the landscape across the north of the study area retains a more rural character and land uses reflecting its designation as a national park, whilst in the south of the study area there is increased development and larger-scale commercial plant nurseries, solar farms and small industrial areas around Barnham, Yapton, Littlehampton.
- 8.4.15. Avisford Park Golf Club lies to the north of the village of Walberton and extends towards Binsted in the east.

8.4.16. There are employment land uses at Crossbush Services and at Crossbush Lane.

### **Vegetation**

8.4.17. In the eastern part of the study area and to the south of the existing A27, the agricultural land use results in a generally open character to the landscape between Poling and the River Arun. The vegetation patterns consist of hedgerow and tree-lined field boundaries and small areas of woodland e.g. Decoy Wood. In contrast, mature woodland extends to the north of the existing A27 via plantations and copses, such that there is a well-vegetated character to this part of the landscape, which is also within the SDNP.

8.4.18. There are extensive tracts of woodland to the north of Arundel and to the south of the existing A27, across the SDNP and central part of the study area. Many of these woods are designated as ancient woodland, including Little Dane's Wood and Barn's Copse (to the north of Walberton) and Binsted Wood, to the south of the existing A27. The area is also characterised by mature, ancient and veteran trees in field and road boundaries.

8.4.19. The vegetation patterns across the western part of the study area are similar to those in the eastern part, consisting of fields which are open in character and divided by hedgerows and trees, with smaller areas of mature woodland.

### **Public rights of way**

8.4.20. With reference to West Sussex County Council on-line Public Rights of Way (PRoW) (Ref 102) mapping, there is an extensive network of routes across the study area, connecting many of the villages and extending across the SDNP and the coastal plain.

8.4.21. Long distance paths or promoted routes include the South Downs Way National Trail and the Monarch's Way long distance recreational trail.

8.4.22. In relation to the alignment of the proposed scheme, PRoW that cross the proposed scheme corridor include:

- PRoW (footpath) no.2207, between Lyminster and Arundel Station;
- PRoW (footpath) no.206, adjacent to the River Arun;
- PRoW (footpath) no. 3403 north of Tortington;
- PRoW (footpath) no. 354. in the south of Binsted;
- PRoW (footpath) no. 350 between Walberton and Binsted; and
- PRoW (bridleway) no.392, to the north-west of Walberton.

### **Designations**

8.4.23. The SDNP was designated in 2010 in recognition of its exceptional natural beauty, as well as for the opportunities to learn about and appreciate its

special qualities, and as a landscape of national importance. The SDNP extends across the northern part of the study area, including Binsted Woods to the south of the A27, and across the northern part of Arundel and to the north of Crossbush Roundabout. The proposed scheme corridor does not pass through the SDNP.

- 8.4.24. The South Downs International Dark Sky Reserve was designated in May 2016. Whilst the designation covers all of the SDNP, the designation is largely defined by the 'darkest skies' and a stated 'critical core and buffer' which extend across the central part of the SDNP.
- 8.4.25. With reference to the *Arun District Local Plan 2011-2031*, there are no 'Areas of Special Character' in close proximity to the proposed scheme. The closest 'Area of Special Character' is in Eastergate.
- 8.4.26. There are many heritage assets across the study area as described in Section 7 of this report. This includes Arundel Castle and its grounds. The Castle is in an elevated position within the townscape, with views across the wider landscape to the south of Arundel. The castle is a visitor attraction and has been depicted in art and literature, including paintings by J.M.W. Turner which depict the Castle and the River Arun as seen from the present day SDNP.
- 8.4.27. Other heritage features include:
- Arundel, Walberton and Lyminster Conservation Areas;
  - Listed buildings at Arundel, Crossbush, Binsted, Tortington, Walberton and Fontwell; and
  - Arundel Castle Registered Historic Park and Garden (Grade II), to the north of Arundel and for which the listing notes there are extensive views from within the grounds.
- 8.4.28. With reference to the *Arun District Local Plan 2011-2031*, there are many Tree Preservation Orders (TPOs) across the study area, including to the north of Walberton and within Binsted. Havenwood Park and Paine's Wood, to the south of the existing A27 are also large areas of woodland covered by TPOs.
- 8.4.29. The *Woodland Trust Ancient Tree Inventory* (Ref 103) identifies multiple recorded veteran or notable trees across the central part of the study area.

### **Tranquillity**

- 8.4.30. *GLVIA 3* defines tranquillity as 'a state of calm and quietude associated with peace, considered to be a significant asset of landscape.'
- 8.4.31. With reference to tranquillity mapping published by CPRE (Ref 104), and the SDNP Authority *Tranquillity Study* (Ref 117), the relative tranquillity across the study area is varied. These studies have assessed the tranquillity as

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Ref 103 Woodland Trust, (2020). Ancient Tree Inventory. [Online] Available at: < <https://ati.woodlandtrust.org.uk/> > [Last accessed 16 November 2020]

Ref 104 Campaign to Protect Rural England, (2007). Tranquillity Map – England. [Online] Available at: < [https://www.cpre.org.uk/wp-content/uploads/2019/11/tranquillity\\_map\\_england\\_regional\\_boundaries\\_1.pdf](https://www.cpre.org.uk/wp-content/uploads/2019/11/tranquillity_map_england_regional_boundaries_1.pdf) > [Last accessed 16 November 2020]

'low' around the boundaries of the SDNP and larger settlements, whilst increasing to 'high' in the central sections of the SDNP.

### **Published Landscape Character Assessments (LCA)**

8.4.32. The study area is covered by a number of published landscape character assessments, which have been undertaken by various organisations at national, county and district scales. The following published LCAs will be reviewed as part of the assessment, with the relevant LCA assessed as part of the landscape assessment, along with the recommendations for future management and statements of environmental opportunity incorporated within the iterative design process:

- Natural England National Character Area's (NCA) 125: South Downs (Ref 105) and NCA 126: South Coast Plain (Ref 106);
- The South Downs Integrated Landscape Character Assessment (updated) Technical Report (Ref 107);
- The Arun Landscape Study (Ref 108); and
- A Strategy for the West Sussex Landscape (Ref 109).

### **Local Landscape Character Areas (LLCA)**

8.4.33. To provide an additional level of detail to the geographic areas identified by the published landscape character areas, the assessment will identify local landscape (or townscape) character areas across the study area.

### **Other relevant studies**

8.4.34. Other relevant studies that will be reviewed as part of the assessment to inform the analysis of the existing landscape character, visual receptors and iterative design process will include:

- Highways England *Road to Good Design* (Ref 110);
- Climate, People, Places, Value, Design Principles for National Infrastructure (Ref 111);

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Ref 105 Natural England, (2015). NCA 125 South Downs. [Online] Available at: < <http://publications.naturalengland.org.uk/publication/7433354>> [Last accessed 16 November 2020]

Ref 106 Natural England, (2015). NCA 126 South Coast Plain. [Online] Available at: < <http://publications.naturalengland.org.uk/publication/4923911250640896>> [Last accessed 16 November 2020]

Ref 107 Land Use Consultants, (2011). South Downs Integrated Landscape Character Assessment (updated) Technical Report. [Online] Available at: < <https://www.southdowns.gov.uk/wp-content/uploads/2015/03/ILCA-Technical-Document.pdf> > [Last accessed 16 November 2020].

Ref 108 Hankinson Duckett Associates, (2006). Arun Landscape Study. [Online] Available at: < <https://www.arun.gov.uk/landscape-planning-policy/>> [Last accessed 16 November 2020]

Ref 109 West Sussex County Council, (2005). A Strategy for the West Sussex Landscape. [Online] Available at: < [https://www.westsussex.gov.uk/media/1771/landscape\\_strategy.pdf](https://www.westsussex.gov.uk/media/1771/landscape_strategy.pdf)> [Last accessed 16 November 2020]

Ref 110 Highways England, (2018). The Road to good design. [Online] Available at: < <https://www.gov.uk/government/publications/the-road-to-good-design-highways-englands-design-vision-and-principles> > [Last accessed 16 November 2020]

Ref 111 National Infrastructure Commission, (2020). Climate, People, Places, Value, Design Principles for National Infrastructure. [Online] Available at: < <https://nic.org.uk/app/uploads/NIC-Design-Principles-Final.pdf> > [Last accessed 16 November 2020]

- DMRB Introduction and general requirements for sustainable development and design (Ref 112);
- Landscape Institute's Technical Guidance Note 20-4 Infrastructure (Ref 113);
- DMRB LD117 Landscape Design (Ref 114);
- DMRB LD118 Biodiversity Design (Ref 115);
- SDNP Authority View Characterisation and Analysis (Ref 116);
- SDNP Authority *Tranquillity Study* (Ref 117);
- SDNP Authority Dark Skies Technical Advice Note (Ref 118);
- SDNP Position Statement on the A27 (Ref 41);
- Arun Green Infrastructure Study (Ref 119);
- Conservation Area Supplementary Planning Guidance and associated Conservation Area Maps; and
- Neighbourhood Development Plans and Village Design Statements.

### Visual amenity and receptors

- 8.4.35. Detailed fieldwork will be undertaken during the winter (day and night), this is to account for a worst case scenario as the tree cover will be minimal during the winter months. The final location of the viewpoints and associated visual receptors will be presented to the local planning authority and other stakeholders for agreement prior to statutory consultation.
- 8.4.36. Viewpoints will be from publicly accessible areas. The assessment of impacts on receptors on private or inaccessible land will be undertaken based upon the professional judgement of suitably qualified and experienced landscape assessors in combination with a review of mapping and Zones of

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Ref 112 Department of Transport, (2019). GG103 - Introduction and general requirements for sustainable development and design. [Online] Available at: < <https://www.standardsforhighways.co.uk/dmrb/search/89d10ef2-7833-44df-9140-df85cd6382b9> > [Last accessed 16 November 2020]

Ref 113 Landscape Institute, (2020). Infrastructure, Technical Guidance Note 20-4. [Online] Available at: < <https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2018/01/LI-Infrastructure-TGN-FINAL-200924.pdf> > [Last accessed 16 November 2020]

Ref 114 Department for Transport, (2020). LA 117 – Landscape design. [Online] Available at: < <https://www.standardsforhighways.co.uk/dmrb/search/82073bde-ec0c-4d4f-8eeb-afe0ace3c639> > [Last accessed 16 November 2020].

Ref 115 Department for Transport, (2020). LA 118 – Biodiversity design. [Online] Available at: < <https://www.standardsforhighways.co.uk/dmrb/search/9317652b-4cb8-4aaf-be57-b96d324c8965> > [Last accessed 16 November 2020].

Ref 116 Land Use Consultants, (2015). South Downs National Park: View Characterisation and Analysis. [Online] Available at: < <https://www.southdowns.gov.uk/wp-content/uploads/2015/10/Viewshed-Study-Report.pdf> > [Last accessed 16 November 2020].

Ref 117 South Downs National Park Authority, (2017). Tranquillity Study 2017. [Online] Available at: < <https://www.southdowns.gov.uk/wp-content/uploads/2017/03/13-04-17-South-Downs-National-Park-Tranquillity-Study.pdf> > [Last accessed 16 November 2020].

Ref 118 South Downs National Park Authority, (2018). Dark Skies, Technical advice note. [Online] Available at: < <https://www.southdowns.gov.uk/wp-content/uploads/2018/04/TLL-10-SDNPA-Dark-Skies-Technical-Advice-Note-2018.pdf> > [Last accessed 16 November 2020].

Ref 119 Land Use Consultants, (2012). Arun Green Infrastructure Strategy. [Online] Available at: < <https://www.arun.gov.uk/download.cfm?doc=docm93ijim4n6854.pdf&ver=6567> > [Last accessed 16 November 2020].

Theoretical Visibility (ZTV) for the construction and operational phases of the proposed scheme.

- 8.4.37. Where appropriate, the same visual receptors will be grouped together, at points where they are likely to experience the same view, and therefore impacts and effects, to retain a proportionate assessment.
- 8.4.38. From initial fieldwork, the visual amenity varies from the broad expansive views to the south coast and coastal plain from elevated parts of SDNP, to truncated or largely filtered views across the landscape due to roadside vegetation or woodlands.
- 8.4.39. Table 9 sets out the visual receptor groups which are proposed to form the basis of the visual assessment.

**Table 9: Visual receptors**

Visual Receptor Type	Visual Receptor Groups
Residents	Arundel, including adjacent to the existing A27 and on the southern edge of Arundel. Binsted, including Binsted Lane, Yapton Lane and Hedgers Hill. Walberton, including residents on the northern edge of Walberton and Avisford Park Road. Tortington and Ford, including adjacent to Tortington Lane, Ford Lane and Priory Lane.
Motorists and Transport Users	Road networks across the SDNP and study area, including the existing A27. Rail users.
Recreational Users	Users of PRoW across the study area, including between the villages and within the SDNP.
Visitors	Visitors to the SDNP, Arundel Castle and Arundel Park.
Employment	People working across the study area, including at Crossbush.

- 8.4.40. The visual assessment will not consider future road users of the proposed scheme as these are not representative of the existing baseline. The visual assessment will not consider views from parts of recreational routes that may be closed during the construction phase or re-routed in the operational phase.

#### **Additional survey requirements**

- 8.4.41. A walkover tree survey undertaken in accordance with *BS 5837: 2012* (Ref 95) will identify the quality and value of the trees on site and the likely spatial constraints associated with them.

### **8.5. Potential impacts**

#### **Construction phase (winter)**

- 8.5.1. The construction assessment will be based on a single point of time, assuming a worst-case scenario and precautionary approach of the

maximum construction activity being implemented across the proposed scheme. The assessment will be based on the winter seasons, when visibility is greatest, due to deciduous vegetation not being in leaf. This represents a worst-case assessment scenario in accordance with *DMRB LA 107* (Ref 96).

8.5.2. Impacts from the construction phase are likely to include:

- changes and alteration to surface landform, including topsoil stripping and excavation;
- loss of vegetation (whilst retained vegetation would be protected via best practice measures);
- presence of construction vehicles, machinery, and associated compounds;
- construction vehicle haul routes;
- reductions in tranquillity; and
- temporary lighting resulting in additional light sources within the landscape.

8.5.3. The above are likely to result in localised, temporary adverse effects to landscape and visual receptors, including the character of the night sky.

#### **Operation phase year 1 (winter)**

8.5.4. The assessment will consider the proposed scheme at year 1 of the operation phase (when built out and in use). The assessment will also be based on the winter seasons, when visibility is greatest. Again, this represents a worst case assessment scenario in accordance with *DMRB LA 107*.

8.5.5. The likely impacts will be:

- increased highway infrastructure (and associated signage);
- new highways structures across the coastal plain;
- vehicles crossing the landscape;
- a reduction in tranquillity;
- change in setting to the SDNP and settlements;
- a change in Arundel's townscape character, including the tranquillity within Arundel, due to reduced traffic volumes; and
- additional light sources from new highways signage and lighting, and vehicles crossing the landscape.

8.5.6. There will also be new planting, although at year 1, this will be low in height and will not have established. There is the potential for significant adverse landscape and visual effects at year 1 associated with some of the likely impacts as listed above.

- 8.5.7. Future maintenance activities are not considered likely to have the potential to result in significant adverse landscape or visual effects and are therefore scoped out of the assessment.

#### **Operation phase year 15 (summer)**

- 8.5.8. The assessment will consider the proposed scheme at year 15 and in summer. In accordance with *DMRB LA 107* (Ref 96) this accounts for seasonal change in the landscape with existing and proposed vegetation being in leaf.
- 8.5.9. Compared to the operation year 1 assessment, the year 15 assessment assumes the successful establishment of the proposed environmental design. This will include new planting being taller in height than at year 1. Therefore, the proposed scheme will be integrated within the landscape to a greater degree and less visible in comparison to the year 1 assessment. Whilst some significant adverse landscape and visual effects may remain at year 15, the overall extent is predicted to be lower than compared to the year 1 assessment.

#### **8.6. Design, mitigation and enhancement measures**

- 8.6.1. The iterative design process for the proposed scheme will be environmentally led, as part of the landscape strategy work being undertaken (as described in Section 2.5). This has already been demonstrated via the preferred route announcement avoiding the SDNP and areas of ancient woodland.
- 8.6.2. Specific landscape and visual mitigation will include localised siting of the route and earthworks, design of structures and opportunities for new planting and recreation, as part of a wider green infrastructure approach.
- 8.6.3. Notwithstanding the permanent introduction of new highways infrastructure, the design will aim to provide the opportunity for beneficial change to the landscape.
- 8.6.4. The assessment will form part of the iterative design process to identify landscape and visual mitigation, based upon the mitigation hierarchy of avoiding, reducing and compensating for significant adverse landscape and visual effects.
- 8.6.5. Arboricultural mitigation such as the use of specialist construction techniques may be applied to reduce the extent of tree removals where new features such as footways, embankments and utilities are required in proximity to tree features.
- 8.6.6. Unavoidable tree loss will be addressed with new planting, which can help to improve the diversity and resilience of the local tree population, particularly in the face of climate change and the emerging threat of new pests and diseases impact on trees. New planting can utilise stock of a provenance and genetic diversity, which will help to increase climate resilience in the long-term.
- 8.6.7. Mitigation may also include new or increased proactive management of existing trees of value to increase quality, biodiversity value and resilience.

8.6.8. The assessment will set out the relevant mitigation which is embedded in the proposed scheme design (primary mitigation), along with standard construction and operational management practices. The assessment will be based on the proposed scheme with these embedded mitigation measures.

## **8.7. Description of the likely significant effects**

8.7.1. The likely landscape and visual significant effects associated with the proposed scheme are:

- temporary adverse effects to the local landscape character and visual receptors during the construction phase, due to the implementation of the proposed scheme.
- adverse effects to the local landscape character and visual receptors at operation due to the change in land use and introduction of additional road infrastructure. Beneficial effects to the local Arundel townscape character due to the reduction in vehicles.

## **8.8. Assessment methodology**

### **Landscape and visual impact assessment (day-time)**

- 8.8.1. The assessment will be undertaken in accordance with *DMRB LA 107* (Ref 96), with landscape and visual matters assessed separately.
- 8.8.2. The assessment will include desk-based reviews of the relevant policy, published landscape character assessments and supporting evidence base documents and extensive fieldwork.
- 8.8.3. The assessment will identify a proportionate and representative range of landscape and visual receptors, including an assessment of the proposed scheme in relation to the special qualities of the SDNP. These will be presented to the local planning authority and other stakeholders with the intention to agree the study area and landscape and visual receptors.
- 8.8.4. The landscape assessment will also consider tranquillity as part of the analysis of the existing landscape character and the potential impact as a result of the proposed scheme. Reference will be made to the noise and vibration ES Chapter (see Section 13 of this report) and its conclusions on existing and predicted noise levels.
- 8.8.5. Agreement will also be sought on the locations for photomontages (which are visual representations of the proposed scheme) to be undertaken in accordance with the Landscape Institute's *Technical Note 06/19: Visualisation of Development Proposals*, 2019 (Ref 120).

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Ref 120 Landscape Institute, (2020). *Visual Representation of Development Proposals 6/19*. [Online] Available at: <[https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI\\_TGN-06-19\\_Visual\\_Representation.pdf](https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf)> [Last accessed 16 November 2020].

## Sensitivity of Landscape Receptors

- 8.8.6. The methodology for determining the sensitivity of landscape receptors is derived from *DMRB LA 107* (Ref 96) in combination with professional judgement to determine landscape value and susceptibility in accordance with *DMRB LA 107* Figure 3.17N.
- 8.8.7. The methodology takes the five classifications of landscape sensitivity (very high to negligible) set out in *DMRB LA 107* Table 3.22, whilst separating the list of stated 'typical descriptors' from Table 3.22 into tables providing descriptors of landscape value and landscape susceptibility, to inform the judgement on landscape sensitivity. The assessment methodology is set out below.

### Landscape Value

- 8.8.8. Table 10 sets out the criteria for determining landscape value.

**Table 10 Landscape Value**

Landscape Value	Typical descriptor derived from LA 107
Very High	Landscapes of very high international/national importance and rarity or value (i.e. national parks, internationally acclaimed landscapes - UNESCO World Heritage Sites).
High	Landscapes of high national importance containing distinctive features/elements (i.e. designated areas, areas of strong sense of place - registered parks and gardens, country parks).
Moderate	Landscapes of local or regional recognition of importance (i.e. features worthy of conservation, some sense of place or value through use/perception).
Low	Local landscape areas or receptors of low to medium importance (i.e. non-designated or designated areas of local recognition or areas of little sense of place).
Negligible	Landscapes of very low importance and rarity.

### Landscape Susceptibility

- 8.8.9. Table 11 sets out the criteria for determining visual susceptibility.

**Table 11 Landscape Susceptibility**

Landscape Susceptibility	Typical descriptor derived from LA 107
Very High	Landscapes with no or very limited ability to accommodate change without substantial loss/gain.
High	Landscapes with limited ability to accommodate change without incurring substantial loss/gain.
Moderate	Landscapes able to accommodate some change.
Low	Landscapes with ability to accommodate change.
Negligible	Landscapes able to accommodate change.

### Landscape Sensitivity

- 8.8.10. From the consideration of the landscape value and landscape susceptibility, the sensitivity of a landscape receptor is classified as per Table 12.

**Table 12: Landscape sensitivity**

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

### **Magnitude of Landscape Impact**

- 8.8.11. The landscape magnitude of impact (change) will be considered in relation to the size/scale, geographic extent and duration and reversibility of the proposed scheme. The criteria for the magnitude of impact will be derived from *DMRB LA 107* (Ref 96) as set out in Table 13.

**Table 13: Landscape magnitude of impact**

Magnitude of Impact (change)		Typical Descriptions
Major	Adverse	Total loss or large-scale damage to existing landscape character or distinctive features or elements; and/or addition of new uncharacteristic, conspicuous features or elements (such as road infrastructure).

Magnitude of Impact (change)		Typical Descriptions
	Beneficial	Large scale improvement of landscape character to features and elements; and/or addition of new distinctive features or elements, or removal of conspicuous road infrastructure elements.
Moderate	Adverse	Partial loss or noticeable damage to existing landscape character or distinctive features or elements; and/or addition of new uncharacteristic, noticeable features or elements (such as road infrastructure).
	Beneficial	Partial or noticeable improvement of landscape character by restoration of existing features or elements; or addition of new characteristic features or elements or removal of noticeable features or elements.
Minor	Adverse	Slight loss or damage to existing landscape character of one (maybe more) key features and elements; and/or addition of new uncharacteristic features and elements.
	Beneficial	Slight improvement of landscape character by the restoration of one (maybe more) key existing features and elements; and/or the addition of new characteristic features.
Negligible	Adverse	Very minor loss, damage or alteration to existing landscape character of one or more features and elements.
	Beneficial	Very minor noticeable improvement of character by the restoration of one or more existing features and elements.
No Change		No noticeable alteration or improvement, temporary or permanent, of landscape character of existing features and elements.

### Sensitivity of Visual Receptors

8.8.12. The methodology for determining the sensitivity of visual receptors is derived from *DMRB LA 107* (Ref 96) in combination with professional judgement to

determine visual value and susceptibility in accordance with *DMRB LA 107* Figure 3.38.

- 8.8.13. The methodology takes the five classifications of visual sensitivity (very high to negligible) set out in *DMRB LA 107* Table 3.41, whilst separating the list of stated ‘typical descriptors’ from Table 3.41 into tables providing descriptors of landscape value and landscape susceptibility, to inform the judgement on landscape sensitivity. The assessment methodology is set out below.

#### Visual Value

- 8.8.14. Table 14 sets out the criteria for determining visual value.

**Table 14 Visual Value**

Visual Value	Typical descriptor derived from LA 107
Very High	Important viewpoints from and of a national/international designated landscape or cultural/historical site, likely to be identified in a published view management framework; and/or; Important viewpoints from and of major tourist attractions or landmarks, likely to be identified in a published management strategy.
High	Views from and of a nationally designated landscape or conservation areas, likely to include rare characteristics.
Moderate	Views from and of a regionally designated landscape and /or likely to be identified in a Local Plan.
Low	Views which are likely to be representative of local characteristics or character management strategies where there is likely to be limited variety or distinctiveness in the view.
Negligible	Views from and of degraded or detracting landscapes with no variety or distinctiveness.

#### Visual Susceptibility

- 8.8.15. Table 15 sets out the criteria for determining visual susceptibility.

**Table 15 Visual Susceptibility**

Visual Susceptibility	Typical descriptor derived from LA 107
Very High	People visiting important viewpoints for the purpose of experiencing the view; and People engaged in specific activities for enjoyment of dark skies.
High	Recreational users of national trail/ recreational trails; Recreational users of public open spaces for enjoyment of the countryside; Residents of dense residential areas; and

Visual Susceptibility	Typical descriptor derived from LA 107
	Recreational users of designated public open space or recreational areas who have longer transient views across the landscape.
Moderate	Residents of less populated residential areas; People at school or other institutional buildings and their outdoor areas; People at work in the landscape; People using public open space, scenic roads, railways, and waterways; People using local/regional designated tourist routes; and Recreational users of public rights of way with transient views across the landscape.
Low	People travelling along main roads or main arterial transport routes with views across the landscape; People at work indoors; Recreational users of sports facilities where the landscape is secondary to enjoyment of the sport; Recreational users of public rights of way with limited views across the landscape; Recreational users of local public open spaces.
Negligible	People travelling along main roads or main arterial transport routes with limited or fleeting views across the landscape; People visiting or passing through industrial areas; and People passing through land awaiting re-development.

### Visual Sensitivity

- 8.8.16. From the consideration of the visual value and visual susceptibility, the visual sensitivity of a receptor is classified as per Table 16.

**Table 16: Visual sensitivity**

Visual Sensitivity (susceptibility and value)	Typical descriptor derived from LA 107
Very High	Activity focused on a specific interest or appreciation of the view (e.g. people visiting important viewpoint or to see dark skies) and/or a very high value of existing view (e.g. an important view in an internationally or nationally designated landscape, or towards a major tourist attraction or landmark).
High	Activity resulting in a particular interest or appreciation of the view (e.g. residents or people engaged in outdoor recreation whose attention is focused on the landscape) and/or a high value of existing view (e.g. a designated landscape or conservation area designation).

Visual Sensitivity (susceptibility and value)	Typical descriptor derived from LA 107
Moderate	Activity resulting in a general interest or appreciation of the view (e.g. residents or people engaged in outdoor recreation or outdoor work, that does have an appreciation of the landscape and/or a medium value of existing view (e.g. landscapes of regional importance).
Low	Activity where interest or appreciation of the view is secondary to the activity (e.g. people at indoor work or motorists travelling through the area on main roads, public transport and main arterial routes) and/or low value of existing views (e.g. landscapes of local importance).
Negligible	Activity where interest or appreciation of the view is inconsequential (e.g. drivers from fast moving vehicles with transient views) and/or very low value of existing view (e.g. industrial areas or derelict land as land awaiting development).

### Magnitude of Visual Impact

- 8.8.17. The visual magnitude of impact (change) will be assessed in terms of the scale and nature of the change to the view; the duration and distance from the receptor; the intervening screening, direction and focus of the view and whether the receptor is static or moving. The criteria for the magnitude of visual impact will be based on *DMRB LA 107* (Ref 96) as set out in Table 17.

**Table 17: Magnitude of visual impact**

Magnitude of Visual Impact	Typical Descriptions
Major	The proposed scheme, or a part of it, would become the dominant feature or focal point of the view
Moderate	The proposed scheme, or a part of it, would form a noticeable feature or element of the view which is readily apparent to the receptor.
Minor	The proposed scheme, or a part of it, would be perceptible but not alter the overall balance of features and elements that comprise the existing view.
Negligible	Only a very small part of the proposed scheme or activity would be discernible or being at such a distance it would form a barely noticeable feature or element of the view.
No Change	No part of the proposed scheme or activity would be discernible.

### Landscape and visual significance of effects

- 8.8.18. The significance of landscape and visual effects will be based on the relationship between the sensitivity of a receptor and the magnitude of impact.
- 8.8.19. Table 18 will be used as a guide for establishing this relationship, based upon *DMRB LA 103* (Ref 18).

**Table 18: Landscape and Visual significance of effects matrix**

Landscape or Visual Receptor Sensitivity	Magnitude of Impact				
	No Change	Negligible	Minor	Moderate	Major
Very High	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large
High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight

- 8.8.20. In cases where an effect could be one degree or another, professional judgement will be used to determine the significance of effect, based on reasoned justification.
- 8.8.21. Where professional judgement considers that the assessment should differ from the above table, a reasoned justification will be provided in the assessment narrative.
- 8.8.22. A moderate, large or very large effect is considered 'significant', with the remaining categories of slight and neutral considered 'not significant'.

### Landscape and visual impact assessment (night-time)

- 8.8.23. A qualitative assessment of the lighting associated with the proposed scheme will be undertaken in respect of the character of the night sky and visual receptors.
- 8.8.24. The assessment will be undertaken for the same study area as the daytime assessment and using the same landscape and visual receptors. The methodology will also be the same as set out above.
- 8.8.25. With reference to the SDNP Authority *Dark Skies Technical Note*, the night-time assessment will assess the proposed lighting in relation to landscape and visual receptors in terms of:
- sky glow – this is the brightening of the night sky which can be seen emanating in the horizon from cities or other brightly illuminated areas;

- glare – this is the brightness of a light source when viewed against a contrasting darker background; and
- light intrusion – this is the ‘trespass’ of light spilling beyond the area being lit.

8.8.26. The night-time visual assessment will be undertaken for residents and recreational users within the SDNP. All other recreational users will be scoped out of the night-time assessment as they are not located within a designated ‘Dark Sky’ landscape.

#### **Arboricultural methodology**

- 8.8.27. The *Arboricultural Report* (Ref 121) set out an assessment approach following *DMRB Volume 11: Environmental Assessment* (Ref 122), which is now superseded, with the assessment of effects applied as per Table 2.4 of DMRB Section 2, Part 5.
- 8.8.28. However, within the arboricultural profession there is no formal guidance or recognised best practice in relation to the application of this approach and it is not typically applied in practice. For this reason and also to align with *ArDC Policy ENV DM4* it is proposed that the standard methodology for the consideration of trees and development is instead employed.
- 8.8.29. A walkover tree survey to *BS 5837: 2012 Trees in relation to design, demolition and construction* (Ref 95) will identify the quality and value of the trees on site and the spatial constraints associated with them. This will include the identification of any potential ancient or veteran trees across the study area. Tree dimensions, health and structural condition, quality category and likely remaining useful contribution (in years) will be considered. This will provide essential information to the design team to allow the retention of the highest value trees where feasible.
- 8.8.30. A Tree Constraints Plan will be produced to set out the spatial constraints associated with arboricultural features on and immediately adjacent to the site. This will include identification of any feature with an important statutory or non-statutory designation and any relevant buffer zone.
- 8.8.31. The likely future impact of trees will need to be fully considered in the design process to ensure well placed tree retention and to minimise unnecessary conflicts associated with trees. Trees will continue to grow and increase in stature and must be provided reasonable space for their likely future dimensions to avoid pressure for tree removal or ongoing onerous tree pruning works which would have a negative impact on the health or amenity value of the trees.
- 8.8.32. These considerations will also apply to newly planted trees which should be selected to promote a diverse and resilient tree cover for the site and be located to maximise future benefits (for example, amenity and ecosystem services) and minimise the likelihood of future conflicts in accordance with

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Ref 121 Highways England, A27 Arundel Bypass Environmental Assessment Report, Chapter7, Appendix 7.3 (2019)

Ref 122 Highways Agency, Assessment and Management of Environmental Effects HA 205/08, Design Manual for Roads and Bridges Volume 11, Section 2, Part 5 (August 2008)

the recommendations of Table A.1 within Annex A of *BS 5837: 2012* (Ref 95).

- 8.8.33. Following a design freeze for the proposed scheme an Arboricultural Impact Assessment will be developed to consider the likely direct and indirect impacts of the proposed scheme on trees. This will constitute a desktop analysis of the proposed scheme overlaid onto the Tree Constraints Plan which will identify those trees to be removed in relation to the proposed scheme, as well as consider how trees to be retained are to be protected throughout the construction phase. Suitable mitigation measures will be recommended as appropriate.
- 8.8.34. A Tree Protection Plan will set out the spatial positioning of protective measures to protect retained trees and will identify trees for removal. Full consideration of the spatial constraints associated with trees and well implemented and maintained tree protection measures throughout the construction phase, will ensure that important trees can be successfully retained and incorporated into the proposed scheme.
- 8.8.35. The Arboricultural Impact Assessment (including the Tree Constraints Plan and Tree Protection Plan) will be included as a stand-alone report as an appendix to the ES.
- 8.8.36. An Arboricultural Method Statement will be developed in support of the OEMP which will also to form an appendix to the ES.

## **8.9. Assumptions, limitations and uncertainties**

### **Landscape and visual**

- 8.9.1. This section has been undertaken via desk-based study and initial fieldwork in October 2020, whilst deciduous vegetation was in leaf.
- 8.9.2. The desk-based study has included a review of Highway England's *Stage 2 Environmental Assessment Report, Appendix 1 SDNP Special Quality Assessment* (Ref 33) and Defra's *A27 Arundel Bypass - single voice letter* (Ref 39).
- 8.9.3. This section is therefore a high level review of the key landscape and visual matters. A more detailed desk-based study will be undertaken along with detailed fieldwork during the winter, when deciduous vegetation is not in leaf and the extent of visibility is greater than in summer.
- 8.9.4. Following this, the proposed study area and landscape and visual receptors will be presented to the local planning authority and other stakeholders to seek agreement on the scope of the assessment. This accords with *GLVIA 3*, which sets out that at the scoping stage, the study area will be defined in a preliminary way and this is likely to be modified as more detailed analysis is undertaken, in combination with discussions with the local planning authority and other stakeholders.

### **Arboriculture**

- 8.9.5. Should access be restricted due to land access agreements, dense vegetation or other restrictions, then trees will be surveyed from the nearest feasible vantage point and conditions and dimensions will be estimated.
- 8.9.6. Important hedgerows (as per the Hedgerow Regulations) will be determined and assessed in the biodiversity and heritage assessments as applicable (see Section 9 and Section 7 of this report).
- 8.9.7. The level of topographical survey detail will also have an impact on how much detail can be feasibly recorded especially for trees within woodlands and tree groups.
- 8.9.8. Where trees form a coherent group feature, they will be recorded as a group and be assigned maximum dimensions.
- 8.9.9. The loss of companion shelter and any additional tree management to address this will need to be considered following site clearance works and may result in the requirement for additional tree loss or management.

## 9. Biodiversity

### 9.1. Introduction

- 9.1.1. This section describes the potential effects of the proposed scheme on biodiversity. The purpose of the assessment will be to identify and characterise any relevant ecological resources, to consider the nature and scale of potential impacts due to the proposed scheme, and to assess the significance of any likely effects. In addition to this assessment a separate Habitat Regulations Assessment (HRA) will also be undertaken.
- 9.1.2. The proposed scheme has the potential to give rise to direct physical impacts, such as the use of land for construction, with its potential for habitat loss or fragmentation and also indirect impacts such as noise, lighting or changes in air quality, which have the potential to disturb wildlife or degrade the quality of habitats.
- 9.1.3. The proposed scheme has the potential to include benefits for biodiversity, both through the retention and management of existing features of biodiversity importance and the establishment of new habitats. This may include the creation of species-rich grasslands, woodlands and wetlands that serve to inter-connect habitats, forming part of a functional ecological network. Together these measures will provide new opportunities for Priority Species and contribute to maximising biodiversity delivery.

### 9.2. Relevant policy

- 9.2.1. The following planning policies have been taken into account as part of identifying the biodiversity assessment methodology, receptor selection/sensitivity, potential significant environmental effects and mitigation:
- *NPSNN* (Ref 10)– paragraphs 5.22 to 5.29 and 5.31 to 5.38 in relation to biodiversity and ecological conservation and 5.84 to 5.89 in relation to dust, odour, artificial light, smoke and steam; in addition, paragraph 5.192 in relation to noise and vibration.
  - *NPPF* (Ref 11)– paragraph 150, 170 to 172, 174 to 177 and 180 in relation to conserving and enhancing the natural environment.
  - *Arun Local Plan 2011-2031* (Ref 14) – Policy SD SP1 (Sustainable Development), Policy SD SP1a (Strategic Approach), Policy SP1 (Countryside), Policy G1 SP1 (Green Infrastructure and development), Policy SO DM1 (Soils), Policy ECC SP1 (Adapting to Climate Change), Policy ENV SP1 (Natural Environment), Policy ENV DM1 (Designated Sites of Biodiversity or Geological Importance), Policy ENV DM3 (Biodiversity Opportunity Areas), Policy ENV DM4 (Protection of Trees), Policy ENV DM5 (Development and Biodiversity), Policy W DM3 (Sustainable Urban Drainage Systems), Policy QE DM1 (Noise Pollution) and Policy QE DM2 (Light Pollution).
  - *South Downs Local Plan 2014-2033* (Ref 15) – Core Policy SD1: Sustainable Development, Core Policy SD2: Ecosystem Services, Strategic Policy SD9: Biodiversity and Geodiversity, Strategic Policy

SD10: International Sites, Development Management Policy SD11: Trees, Woodland and Hedgerows, Strategic Policy SD17: Protection of Water Environment, Strategic Policy SD45: Green Infrastructure and Strategic Management Policy SD54: Pollution and Air Quality.

- 9.2.2. These policies identify that the proposed scheme should seek to avoid significant harm to nature conservation, including through mitigation, compensation and consideration of reasonable alternatives.
- 9.2.3. In addition, Policy ENV DM3 of the *Arun Local Plan* (Ref 14) identifies Biodiversity Opportunity Areas where developments should make reasonable steps to include enhancement for biodiversity. This enhancement may include the sympathetic incorporation of important habitats into the overall design while minimising disturbance to those habitats.

### 9.3. Study area

- 9.3.1. The proposed scheme has been reviewed in order to identify the spatial scale at which ecological features could be affected. In accordance with *DMRB LA 108 Biodiversity* (Ref 123) and other best practice guidance from the *Chartered Institute of Ecology and Environmental Management (CIEEM)* (Ref 124), the study area has been defined by determining a zone of influence encompassing all likely biophysical changes that will occur as a result of the proposed scheme. This will include those effects occurring by land take and habitat loss or degradation and those which will occur through disturbance, such as altered air quality or noise.
- 9.3.2. Figures 3, 5 and 7 illustrate the biodiversity desk study areas relevant to the proposed scheme.
- 9.3.3. In accordance with *DMRB LA 115 Habitat Regulations Assessment* (Ref 125), desk study information is being collated for sites designated at an International/European level (Special Area of Conservation (SAC), possible SACs, Special Protection Area (SPA), potential SPAs and Ramsar) using the following criteria:
- the European site or its functionally linked land are located within 2 km of the proposed scheme;
  - the European site is designated for bats and is located within 30 km of the proposed scheme;
  - the proposed scheme crosses or lies adjacent to, upstream of, or downstream of, a watercourse which is designated part or wholly as a European site;
  - there are potential hydrological or hydrogeological linkages to a European site that may require further assessment in accordance with

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Ref 123 Standards for Highways (2020), Design Manual for Roads and Bridges, LA 108 - Biodiversity  
Ref 124 Chartered Institute of Ecology and Environmental Management (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater and Marine (Versions 1.1 – Updated September 2019). CIEEM  
Ref 125 Standards for Highways (2020), Design Manual for Roads and Bridges, LA 115 - Habitat Regulations Assessment

*DMRB LA 113 Road Drainage and the Water Environment* (Ref 126);  
and

- there is the possibility that the ARN will require assessment for effects on European sites in accordance with *DMRB LA 105* (Ref 63).
- 9.3.4. The desk study also includes other designated sites of nature conservation importance as follows:
- sites designated at a national level (Site of Special Scientific Interest (SSSI) and National Nature Reserve (NNR)) up to 2 km from the proposed scheme;
  - sites designated at a local level (Local Nature Reserve (LNR)) up to 2 km from the proposed scheme;
  - non-statutorily designated Local Wildlife Sites (LWSs) provided by Sussex Biodiversity Records Centre up to 2 km from the proposed scheme; and
  - data on ancient woodlands from the Ancient Woodland Inventory for England up to 2 km from proposed scheme.
- 9.3.5. The search distances described above are considered sufficient to identify features of importance for biodiversity, including those which may be directly affected due to their occurrence on land required for the proposed scheme, or those which may be indirectly affected by emissions such as drainage, noise or changes in air quality.
- 9.3.6. The desk study areas include the proposed scheme in its entirety, including areas that are likely to be used for construction compounds, landscaping and habitat creation. Defining the zone of influence with regards to potential ecology and nature conservation impacts is an iterative process and the extent varies depending on the individual ecological features.
- 9.3.7. For terrestrial habitats, the zone of influence will generally be within 200 m of the land required for construction of the proposed scheme and the ARN (Chapter 6). Air quality modelling on other schemes has indicated that most of the nitrogen oxides (NO<sub>x</sub>) which have the potential to affect the composition of vegetation occur within this distance from the highway. The zone of influence for watercourses extends further downstream due to the potential for greater pollution dispersal and the sensitivity of the species and habitats present. Therefore, up to 2 km downstream will be considered.
- 9.3.8. The zone of influence for protected and priority species and priority habitats (habitats and species of principal importance in England as listed under the *Natural Environment and Rural Communities (NERC) Act 2006*, Section 41), considers the direct effects of habitat loss due to the construction of the proposed scheme and potential indirect impacts, such as severance of territories or routes of dispersal. As such, the extent varies according to species.

## 9.4. Baseline conditions

- 9.4.1. The current baseline conditions in the study area, including assessment of importance reported in Table 19 and Table 21, for the proposed scheme are based on the existing data presented in Chapter 8 of the *Environmental Assessment Report* (Ref 127). Additional surveys have been completed over the period 2019 to 2020 and these and other surveys planned for 2021 are described in Table 22.

### Designated sites

- 9.4.2. The designated sites of nature conservation importance that are located within the desk study area are described in Table 19 and illustrated in Figures 5 and 7.

**Table 19: Designated sites of nature conservation importance**

Site	Importance	Direction & Distance	Description
Singleton and Cocking Tunnels SAC	International	11.2 km north-west	Qualifying features: presence of hibernating populations of the Annex II species barbastelle and Bechstein's bats
The Mens SAC	International	15.6 km north	Qualifying features: the Annex I habitat Atlantic acidophilous beech forest with Ilex and sometimes also Taxus in the shrub layer Presence of the Annex II barbastelle bat species
Ebernoe Common SAC	International	18.3 km north	Qualifying features: the Annex I habitat Atlantic acidophilous beech forest with Ilex and sometimes also Taxus in the shrub layer Presence of maternity colonies of the Annex II barbastelle and Bechstein bat species
Arun Valley Ramsar	International	7.1 km north	Qualifying features: Presence of British Red Data Book species Ditch system supporting diverse and rich flora Internationally important assemblage of wintering waterfowl Nationally important wintering population of Northern pintail <i>Anas acuta</i>

Site	Importance	Direction & Distance	Description
Arun Valley SPA	International	7.1 km north	Qualifying features: Internationally important population of Bewick's swan <i>Cygnus columbianus bewikii</i> Internationally important assemblage of waterfowl
Arun Valley SAC	International	7.1 km north	Qualifying feature: Whirlpool ramshorn snail <i>Anisus vorticulus</i>
Solent and Dorset Coast SPA	International	5.3 km south	Important areas at sea used by three tern species
Arundel Park SSSI	National	1.4 km north	Old deer park supporting chalk grassland and woodland. Designated for bird, invertebrate and floral communities.
Fairmile Bottom SSSI	National	2 km north	Yew woodland, yew scrub and chalk grassland. Designated for woodland, chalk grassland and invertebrates.
Binsted Wood Complex LWS	National	100 m north	Mixture of ancient woodland and recent woodland
Rewell Wood Complex LWS	National	300 m north	Mix of woodland, including ancient woodland, and chalk grassland
Poling Copse LWS	National	600 m east	Woodland
Warningcamp Hill and New Down LWS	National	1.8 km north-east	Ancient woodland and chalk grassland
Arun Valley, Watersfield to Arundel (includes Arundel Wetland Centre) LWS	County	300 m north	Wetland and wet grassland associated with ditch system and unimproved grassland
Slindon Bottom LWS	National	800 m west	Ancient woodland with rich flora
Notable Road Verge	County	400 m west	Assumed to be species-rich grassland

- 9.4.3. There are three sites of international importance that are designated for bats and located within 30 km of the proposed scheme, namely Singleton and Cocking Tunnels SAC, The Mens SAC and Ebernoe Common SAC. The Arun Valley SAC/SPA/Ramsar and Solent and Dorset SPA are located upstream and downstream of the proposed scheme, respectively.
- 9.4.4. Two statutory designated sites of national importance are located within 2 km of the proposed scheme; Arundel Park SSSI and Fairmile Bottom SSSI. There are no Local Nature Reserves located within 2 km of the proposed scheme.
- 9.4.5. There are six non-statutory designated Local Wildlife Sites located within 2 km of the proposed scheme; Binsted Wood Complex LWS, Rewell Wood Complex LWS, Poling Copse LWS, Warninghill Camp and New Down LWS, Arun Valley Watersfield to Arundel (including Arundel Wetland Centre) LWS and Slindon Bottom LWS. Where individual LWSs are known to support features of greater ecological interest, they have been classified as being of National importance. There is also a single Notable Road Verge site within 2 km that is assumed to support species-rich grassland.
- 9.4.6. Areas of ancient woodland present within 2 km of the proposed scheme are largely located within the boundary of designated sites, including Arundel Park SSSI, Fairmile Bottom SSSI, Binsted Wood Complex LWS, Rewell Wood Complex LWS, Poling Copse LWS, Warninghill Camp and New Down LWS and Slindon Bottom LWS. Other areas of ancient woodland are present within 2 km, the closest of which are located within 50 m of both the eastern and western ends of the proposed scheme.

#### **Notable habitats**

- 9.4.7. Table 20 lists the notable habitats and their importance that are located within 2 km of the proposed scheme and also all habitat types that are located within the study area. The notable terrestrial habitat types located within 2 km of the proposed scheme include the priority habitats deciduous woodland, wet woodland, wood-pasture and parkland, ancient and veteran trees, ponds, coastal floodplain and grazing marsh, traditional orchard and lowland meadow. The River Arun supports a number of notable habitats, including river, coastal saltmarsh, mudflats and intertidal foreshore habitats.
- 9.4.8. The habitats of the study area are dominated by farmland, with extensive areas of woodland. The farmland consists of a mix of intensively managed arable fields and grassland, with a network of well-established hedgerows. There is potential for ancient or veteran trees of up to national importance to be present within the study area. Improved grasslands dominate the floodplain habitats around the River Arun, while semi-improved grasslands are associated with some individual fields and the Rifes in the central areas of the proposed scheme. Reedbed habitat is present within the ditches in the Arun floodplain and a mosaic of swamp and marshy grassland forms lowland fen in Binsted Rife.

**Table 20: Notable habitats within 2 km of the proposed scheme and habitats within the study area**

Habitat	Importance
Ancient woodland, veteran trees and Habitats of Principal Importance	
Ancient woodland and veteran trees	National
Deciduous woodland and wet woodland	National (where feature comprises ancient woodland or LWS) Local (woodland outside the boundary of any LWS)
Wood pasture and parkland	National
Traditional orchard	County
Hedgerows	County (hedges meeting LWS criteria) Local (all other hedges)
Ponds	Local
River	County
Coastal floodplain and grazing marsh (including reedbed and lowland fen)	County
Coastal saltmarsh	Local
Mudflats and intertidal foreshore	National
Lowland meadow	County
Arable field margins	County (where populations of notable plants occur) Local (other examples of this habitat)
Other habitats of local importance	
Semi-improved grassland	Local
Mature trees	Local
Watercourses	Local
Habitats of less than local importance	
Improved grassland and amenity grassland	Less than local
Arable fields	Less than local

### Protected and notable species

- 9.4.9. The habitats within the study area are known to support protected and notable floral and faunal species. Details of the species surveys completed over the period 2017 to 2018 are provided separately in the *Environmental Assessment Report* (Ref 33). The notable species recorded or assumed to be present within the study area and their ecological importance are outlined in Table 21.

**Table 21: Protected and notable species within study area**

Species or Group	Importance	Description
Aquatic ecology (fish, invertebrates)	County to Local	Waterbodies within study area are generally of limited diversity, supporting small numbers of priority species, including swollen spire snail.
Badgers	Local	Widespread throughout the study area
Bats	National to International	An assemblage of at least 14 species present, including the Annex II species barbastelle bat, Bechstein's bat and greater horseshoe bat. Breeding roosts, commuting habitat and core foraging areas for bats are known to occur within the study area
Birds (breeding and wintering)	Local	An assemblage of widespread species, including birds specially protected under Schedule 1 of the Wildlife and Countryside act 1981 (as amended) and priority species
Common toad	Local	Species records and suitable breeding habitat located within study area
Great crested newt	Up to County	Species records and potential breeding habitat present within 500 m of proposed scheme
Hazel dormouse	County	Known to be present in suitable habitats across the study area
Invertebrates	Up to Regional	Assemblage of invertebrates in the surrounding area, including ancient woodland specialists and Red Data Book species. Fen habitats of Binsted Rife provides potential habitat for specialist invertebrates
Otter	Local	Suitable habitat provided by the Rifes and associated terrestrial habitat, although not confirmed to be present
Reptiles	County	Study area includes areas of reptile habitat that supports assemblages of common reptile species
Water vole	County	Ditches in the Arun floodplain habitat and Binsted Rife are known to provide habitat for water vole
Other notable mammals	Local	Brown hare, harvest mouse and hedgehog are known to occur within the study area
Notable plant species	Up to County	Wetland plant species recorded in association with Binsted Rife and notable arable weeds within fields south of the Binsted Wood complex

### Additional survey requirements

- 9.4.10. A more detailed assessment of effects on biodiversity will be undertaken as part of the EIA, due to the potential for significant effects on the features of ecological importance within the proposed scheme boundary and adjacent land. The scope of these ecological surveys has been determined in

accordance with guidance set out in *DMRB LA 108 Biodiversity* (Ref 123) and *DMRB LD 118 Biodiversity Design* (Ref 128).

- 9.4.11. An updated desk study will be carried out using data from Sussex Biodiversity Records Centre and also by consulting other holders of relevant biodiversity information, including publicly available data sources and the Mid-Arun Valley Environmental Survey (MAVES). These records will be mapped to determine potential effects and to identify habitats which may support protected species and those that may be functionally connected.
- 9.4.12. The scope of additional field surveys that are required to update the existing baseline information are described in Table 17. These surveys will focus on addressing gaps in the existing baseline information and confirming data for selected ecological features. Some of these surveys have already been commenced in 2019 and 2020.

**Table 22: Scope of additional ecological surveys**

Survey Target	Survey Type	Description
Habitats	Phase 1 Habitat Survey	Survey of all habitat located within 100 m of proposed scheme
	Habitat Condition Assessment	Condition assessment according to the criteria for Biodiversity Net Gain Assessment (Crosher <i>et al</i> 2019) (Ref 129)
Botany	National Vegetation Classification (NVC)	Targeted survey of woodland and grassland habitats following completion of Phase 1 habitat survey
	Aquatic Macrophytes	Walkover survey of the River Arun, ditches in Arun floodplain and Rifes
	Lower plants	Targeted survey of fungi, mosses and lichens, focusing on woodland habitat
Amphibians	Great Crested Newt	eDNA survey of waterbodies, with habitats suitability assessment, presence/absence survey and population size-class assessment completed for ponds where presence confirmed
Birds	Breeding Birds	Transects within representative habitats across the proposed scheme
	Wintering Birds	Transects within representative habitats across the proposed scheme
	Barn Owl	Survey of suitable breeding and foraging habitat, including survey status of suitable breeding sites in proximity to the proposed scheme

Survey Target	Survey Type	Description
Invertebrates	Terrestrial invertebrates	Survey focusing on general terrestrial invertebrates in suitable habitats, including the fen habitats of Binsted Rife
	Aquatic invertebrates	Sampling of representative habitats within wetland habitats of Arun floodplain and other watercourses and ponds (excluding the marine environment of the River Arun)
Fish	Fish	Survey of ditches within Arun floodplain and the watercourses of Binsted and Tortington Rifes (excluding the marine environment of the River Arun)
Reptiles	Reptiles	Survey of selected locations of suitable habitat in the central and western areas of the proposed scheme
Mammals	Badger	Survey within suitable habitat, including selected bait marking to determine territories
	Bats	Surveys focused on confirming habitat use by individual bat species: Activity transects and passive monitoring; Trapping and radio-tracking; Crossing point surveys; and Roost surveys of structures and trees.
	Hazel Dormouse	Nest tube and nut check surveys to provide further information on hazel dormouse habitat use within the study area
	Otter	Survey of suitable habitat that crosses the proposed scheme, including ditches of Arun floodplain and the Rifes (excluding the marine environment of the River Arun)
	Water vole	Survey of suitable habitat that crosses the proposed scheme, including ditches of Arun floodplain and the Rifes

- 9.4.13. The River Arun falls within a tidal reach and although it is not directly impacted by the proposed scheme there is potential for some indirect impacts. Baseline information to inform the assessment of effects upon the River Arun will consist of a desk study and walk-over to confirm the habitats present. As potential impacts are considered to be indirect, the existing data on River Arun habitats and associated fauna, including fish, are considered likely to be sufficient to inform the assessment and mitigation that may be required.
- 9.4.14. Surveys for arable weeds have been scoped out as it is considered that there is already sufficient evidence to inform the ecological assessment. Previous surveys completed in 2017 confirmed that fields located within the current study area support arable weed communities that are typical of widespread cereal crops in southern Britain (Ref 127). Species listed as vulnerable in the England Red Data Book were present and several

individual fields included a noteworthy diversity of arable weeds. Although the western extent of the proposed scheme has not been covered by specific arable weed surveys, it is considered that the habitats present are not substantially different from those that have been surveyed and therefore further survey is unlikely to alter the evaluation of the arable weeds as being of up to county importance.

- 9.4.15. Consultation with key stakeholders is currently ongoing as part of the EIA process. A Stakeholder Engagement strategy is in place with meetings proposed with an Environment Stakeholder group. Further details of the consultation process are described in Section □ of this report.

## 9.5. Potential impacts

- 9.5.1. The western extent of the proposed scheme falls within 12 km of Singleton and Cocking Tunnels SAC and in accordance with the *Sussex Bat SAC Planning and Landscape Scale Enhancement Protocol* (Ref 130), the potential for significant effects should be considered in terms of severance and the flight lines for the qualifying Annex II bat species of the SAC. The proposed scheme passes through a number of habitats that may be regularly used by both Bechstein's bat and barbastelle bat. Therefore, there is potential for impacts to supporting habitat of the SAC. Further survey and assessment is required to evaluate the likelihood of any adverse effects on the SAC and to determine the requirement for mitigation over and above that which would otherwise be required for the design of the proposed scheme. Consultation with Natural England has confirmed that there are unlikely to be any significant effects upon the internationally important bat populations that are qualifying features of The Mens SAC and Ebernoe Common SAC.
- 9.5.2. Natural England have confirmed that there is potential for the proposed scheme to result in indirect impacts upon the Arun Valley SAC/SPA/Ramsar. This may occur through changes brought about as a result of the proposed scheme upon the tidal influence of the River Arun on the Arun Valley SAC/SPA/Ramsar and its supporting habitat. Further assessment is necessary to evaluate the likelihood of any adverse effects and to determine the requirement for mitigation over and above that which would otherwise be required for the design of the proposed scheme.
- 9.5.3. Detailed survey presented in the *Environmental Assessment Report* (Ref 33) have demonstrated that the habitats in proximity of the proposed scheme do not represent functionally linked land of the qualifying bird species of the Arun Valley SPA/Ramsar. Therefore, there is considered to be no likelihood of adverse effects upon the bird populations that are qualifying features of the Arun Valley SPA/Ramsar and no further assessment or mitigation is required.
- 9.5.4. It is unlikely that there will be direct loss to any designated sites of nature conservation importance, including areas of designated ancient woodland, as a result of the proposed scheme. The potential for the loss of any veteran

trees is currently unknown, although the emphasis will be on the retention of these features where possible. However, the proposed scheme has the potential to lead to indirect ecological impacts upon designated sites of nature conservation importance through the degradation of habitats, which may occur because of alterations in air quality and hydrology (including water quality).

- 9.5.5. Construction of the proposed scheme will result in the loss and severance of habitat. This includes direct impacts to priority habitats and the notable species supported by those habitats, which may include, but are not limited to, bats, hazel dormouse, reptiles and water vole. The severance of important habitat linkages may undermine the conservation status of species by restricting their ability to disperse between important ecological features that are a functional part of their life cycle.
- 9.5.6. Operation of the proposed scheme has the potential to result in the degradation of priority habitats through alterations in hydrology (including water quality) or air quality. Priority species and other notable species may also be impacted through increased incidence of accidental mortality as a result of vehicle collisions or displacement from favoured habitats through increased levels of noise or light disturbance.

## **9.6. Design, mitigation and enhancement measures**

- 9.6.1. The development of biodiversity design and mitigation measures will follow the principles outlined in *LD 118* (Ref 128). In accordance with this guidance, best practice and national planning policy, the proposed scheme will implement the mitigation hierarchy, with design focusing on avoiding significant effects to important ecological features.
- 9.6.2. Potential measures for reducing or offsetting effects on important ecological features are as follows:
- minimising the loss of features that are regularly used by bats;
  - avoiding or minimising the effects of the loss or severance of habitats, through habitat creation to link and extend existing areas of habitat;
  - minimising the land required for construction of the crossing of the River Arun, Binsted Rife and Tortington Rife, and design of the crossings to maintain the ecological functions of these features;
  - provision of replacement habitat for faunal species;
  - drainage design to avoid the risk of pollution; and
  - provision of a dedicated habitat management plan as part of the proposed scheme's contribution towards maximising biodiversity delivery.
- 9.6.3. There is potential to achieve ecological enhancements through the establishment of new habitats that form linkages with similar features in the surrounding landscape. These new habitats may include woodland, grassland and wetland, and will provide opportunities for Priority Species known to occur in the local area, such as bats, birds and invertebrates.

Establishing a network of habitats as an integral part of the design of the proposed Scheme, including stepping stone habitat and wildlife corridors, has the potential to contribute to maximising biodiversity delivery.

## **9.7. Description of the likely significant effects**

9.7.1. Following the implementation of embedded mitigation and standard control measures, it is considered that significant adverse effects upon important ecological features could be limited to the following:

- potential loss of ancient or veteran trees (if identified);
- the direct loss or degradation of wetland habitats, including priority habitats;
- disturbance of aquatic ecology through hydrological changes occurring during construction or operation;
- the loss or fragmentation of habitat during construction that supports priority species, including bats, barn owl, hazel dormouse, water vole and notable plant species;
- disruption of the habitats used by notable bat populations; and
- increased risk of accidental mortality of barn owl during operation of the proposed scheme.

9.7.2. If required, compensatory habitat creation will be considered at every opportunity to offset some of these potentially significant adverse biodiversity effects, in particular for those where there is reasonable certainty the ecological functionality can be replaced.

## **9.8. Assessment methodology**

9.8.1. The proposed scheme could affect internationally designated sites and therefore likely significant effects will be considered through a formal HRA process, in accordance with *DMRB LA 115 Habitat Regulations Assessment* (Ref 126). The HRA will be provided as a separate document. European sites will also be considered as part of the assessment of impacts presented as part of the EIA process. Early consultation with Natural England is currently being planned to inform this.

9.8.2. The assessment of impacts and their significance will follow the guidance set out in *DMRB LA 108* (Ref 123). This outlines the process for the reporting of baseline information, evaluation of features and the assessment of impacts and effects. In line with this and other best practice guidance from *CIEEM* (Ref 125), a significant ecological effect is an effect that either supports or undermines the biodiversity conservation objectives for important ecological features or biodiversity in general. Broadly this comprises impacts upon the structure and function of defined sites, habitats and species and the conservation status of habitats and species (including extent, abundance and distribution).

9.8.3. In accordance with this guidance the ecological assessment will report both the current baseline, as determined by the desk study and ecological field

surveys, and also the future baseline. The importance of ecological features (resources), will be evaluated at different geographical scales (international, national, regional, county or local) using the guidance set out in Table 3.19 of *DMRB LA 108* (Ref 123). This will include reference to the policy set out in the *NPSNN*, *NPPF*, *Arun Local Plan* and *South Downs Local Plan* and also relevant criteria set out in national and local guidelines for the evaluation of habitats and species.

- 9.8.4. The level of impact on ecological features during construction and operation of the proposed scheme will be determined in accordance with CIEEM (2018), taking account of the following characteristics:
- Beneficial or adverse;
  - Duration;
  - Reversibility;
  - Extent/magnitude; and
  - Frequency and timing.
- 9.8.5. The significance of ecological effects will depend upon the importance of ecological features and the level of impact to them. Professional judgement will be used where there is either a lack of sufficient baseline data and/or scientific evidence to adequately inform the assessment. Where there is a reasonable level of doubt a precautionary approach will be made to the evaluation of impacts and assessment of effects. The significance of effect will be reported according to the matrix set out in Table 3.13 of *DMRB LA 108 Biodiversity* (Ref 123), which is reproduced in Table 23.

**Table 23: Significance matrix [reproduced from Table 3.13 of DMRB LA 108 Biodiversity (Ref 123)]**

Importance	Level of impact				
	No change	Negligible	Minor	Moderate	Major
International or European	Neutral	Slight	Moderate or large	Large or very large	Very large
UK or national	Neutral	Slight	Slight or moderate	Moderate or large	Large or very large
Regional	Neutral	Neutral or slight	Slight	Moderate	Moderate or large
County or equivalent authority	Neutral	Neutral or slight	Neutral or slight	Slight	Slight or moderate
Local	Neutral	Neutral	Neutral or slight	Neutral or slight	Slight

- 9.8.6. The mitigation hierarchy will be applied as part of the impact assessment. Best practice ecological mitigation principles will be taken into account as part of the assessment, and will include initial consideration of design

mitigation, habitat creation and habitat management. Opportunities for benefits/enhancement of biodiversity will also be considered.

Recommendations for monitoring will be made where appropriate, to inform future management and the body of evidence.

- 9.8.7. The HRA, the ES and protected species mitigation licences will be prepared in draft for advisory comment from Natural England, all of which will form part of the DCO application for the proposed scheme.

## **9.9. Assumptions, limitations and uncertainties**

- 9.9.1. This report is based on ecological baseline data established as part of the *Stage 2 Environmental Assessment Report* (Ref 33) and feedback from consultees. Currently the proposed scheme includes a number of unfixed design elements that have the potential to influence the final ecological assessment. At this scoping stage there remains some uncertainty about the ecological receptors until completion of proposed baseline surveys. However, there is sufficient information to scope the potential ecological features and impacts. The iterative process of the design development and the detailed surveys currently being undertaken will progressively reduce these uncertainties.

## 10. Geology and Soils

### 10.1. Introduction

10.1.1. This section sets out the approach to the assessment of the proposed scheme's impacts on geology and soils. The purpose of the assessment will be to identify and characterise any relevant geology and soils resources, including contaminated land, and to consider the nature and scale of potential impacts due to the proposed scheme. An assessment of significance of any likely effects will also be made.

10.1.2. This section considers the potential for the:

- effects on bedrock geology and superficial deposits, including geological designations and sensitive or valuable non-designated features;
- effects on soil resources; and
- effects from contamination on human health, surface water and groundwater.

### 10.2. Relevant policy

10.2.1. The following planning policies have been considered as part of identifying the assessment methodology, receptor selection/sensitivity, potential significant environmental effects and mitigation for this assessment:

- *NPSNN* (Ref 10) – paragraphs 5.117, 5.118 and 5.119 in relation to land instability; 5.168 in relation to agricultural land and land contamination; and 5.169 in relation to safeguarding of mineral resources;
- *NPPF* (Ref 11) – paragraphs 170, 171, 172 and 173 in relation to conserving and enhancing the natural environment;
- *Arun Local Plan 2011-2031* (Ref 14) – Policy SO DM1 Soils; Policy ENV SP1 Natural Environment; Policy ENV DM1 Designated Sites of Biodiversity or Geological Importance; Policy ENV DM3 Biodiversity Opportunity Areas; and Policy QE DM4 Contaminated Land; and
- *South Downs Local Plan 2014-2033* (Ref 15) – Strategic Policy SD9: Biodiversity and Geodiversity; Development Management Policy SD11: Trees, Woodland and Hedgerows; Strategic Policy SD17: Protection of the Water Environment; Strategic Policy SD48: Climate Change and Sustainable Use of Resources; and Development Management Policy SD55: Contaminated Land.

10.2.2. These policies identify the need for site specific land contamination and ground instability assessments. These are required to provide information on the level of risk to the natural and local environment from soil and water pollution or land instability that may be caused by both new and existing development. Should contaminated or unstable land be identified during assessments, the policies state that it is the responsibility of the developer, or landowner, to remediate and mitigate as appropriate to secure a safe development.

- 10.2.3. After remediation, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990 (Ref 131). Water resources must be protected throughout the proposed scheme construction and operational phases and the quality and quantity must be maintained.
- 10.2.4. The *NPPF PPG* (Ref 11) sections on 'land affected by contamination' and 'land instability' have been taken into account and provide further detail regarding the approach to assessing and managing land contamination and instability. The *PPG* also explains how planning can take account of the quality of agricultural land and safeguard soils. Reference is made to the Agricultural Land Classification (ALC) system (Ref 132) which assesses the quality of farmland to enable informed choices to be made about its future use within the planning system. Planning policies and decisions should take account of the economic and other benefits of the 'best and most versatile agricultural land' (BMV) agricultural land. The guidance also confirms that Natural England has a statutory role in advising local planning authorities about agricultural land quality issues.
- 10.2.5. The *PPG* also highlights that soil is an essential natural capital asset that provides important ecosystem services such as a growing medium for food, timber and other crops, a store for carbon and water, a reservoir of biodiversity and a buffer against pollution. Reference is made to the *Construction Code of Practice for the Sustainable Use of Soils on Construction Sites* (Ref 133) which provides advice on the use and protection of soil in construction projects, including the movement and management of soil resources at all stages of the construction process. The sustainable use and management of soil resources during construction can help with the re-establishment of soil functions following their storage or movement, including food production, habitat provision and support, and natural cycling of elements such as carbon and nitrogen.

### 10.3. Study area

- 10.3.1. The study area for the geological and land contamination assessment comprises the proposed scheme and an additional radial zone of 250 m. A radial zone of 1 km has been considered for groundwater, surface water and potable water abstractions within the context of identifying potential receptors to any contamination. This is considered appropriate for the consideration of historical and current land uses which may have resulted in contamination within the study area.
- 10.3.2. The extent of the study area has been developed using professional judgement on the basis that contamination migration beyond this distance is likely to be minimal or could be mitigated.
- 10.3.3. For the remainder of the topic, the study area comprises the working area of the proposed scheme; since the remaining receptors (those identified other

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Ref 131 Her Majesty's Stationery Office (HMSO), (1990). Part IIA of the Environment Protection Act 1990 Contaminated Land Statutory Guidance (April, 2012)

Ref 132 Ministry of Agriculture, Fisheries and Food (MAFF), (1988). Agricultural Land Classification of England and Wales: Revised criteria for grading the quality of agricultural land (ALC011)

Ref 133 DEFRA, (2009). Construction Code of Practice for the Sustainable Use of Soils on Construction Sites

than groundwater and surface water receptors) are only likely to be impacted where the proposed scheme directly crosses or interfaces with them.

#### 10.4. Baseline conditions

##### Geology

- 10.4.1. Made ground is not mapped within the study area. However, it is anticipated to be present in areas of previous and existing developments and along existing roads. There is also the potential for made ground associated with infilled ground and within cuttings along the Arun Valley Railway. There may be also buried river channels within the River Arun floodplain.
- 10.4.2. A complex sequence of quaternary superficial deposits is present underlying the proposed scheme. This includes Raised Marine Deposits within the floodplain of the River Arun, which is in the east of the proposed scheme. Raised Beach Deposits are indicated across the eastern edge and central part of the proposed scheme with River Terrace Deposits shown in the central part of the proposed scheme. Alluvium surrounds the primary watercourses (except for the River Arun, which is surrounded by Raised Marine Deposits), towards the central and western parts of the proposed scheme. Head deposits are present underlying the proposed scheme across its western extent, typically following the dry valley bottoms associated with former/seasonal surface water and/or groundwater flow. Raised Storm Beach Deposit are indicated in the study area, adjacent north of the proposed scheme, at Binsted.
- 10.4.3. The bedrock underlying the study area (beneath the superficial deposits) comprises the London Clay Formation (Thames Group) (between 80 m and 115 m thick), the Lambeth Group and the White Chalk Subgroup. No faults are indicated in the study area. The geology within the study area is summarised in Table 24.

**Table 24: Summary of the published geology (source: British Geological Survey)**

Geological Strata	General Composition	Series/Age Million years ago (Mya)
Superficial Deposits		
Raised Marine Deposits	Clay, silt, sand and gravel	Quaternary Period/up to 3 Mya
Raised Beach Deposits	Sand and gravel	Quaternary Period/up to 3 Mya
River Terrace Deposits	Sand, silt and clay	Quaternary Period/up to 3 Mya
Alluvium	Clay, silt, sand and gravel	Quaternary Period/up to 3 Mya
Head Deposits	Gravel, sand, silt and clay	Quaternary Period/up to 3 Mya
Raised Storm Beach Deposit	Gravel	Quaternary Period/up to 3 Mya

Geological Strata	General Composition	Series/Age Million years ago (Mya)
Bedrock		
London Clay Formation of the Thames Group	Clay, silt and sand	Palaeogene Period/48 to 56 Mya
Lambeth Group	Clay, silt and sand	Palaeogene Period/48 to 59 Mya
White Chalk Subgroup	Chalk	Cretaceous Period/72 to 94 Mya

10.4.4. Information contained within the *Groundsure Geo Insight Report* (Ref 134) indicates that the following natural ground subsidence hazards may exist across the study area:

- there is a negligible to moderate-high potential for shrinkage/swelling of clays;
- there is a very low to moderate-high potential for landslides;
- there is a negligible to very low potential for ground dissolution of soluble rocks;
- there is a negligible to moderate-high potential for compressible deposits;
- there is a negligible to low potential for collapsible deposits; and
- there is a negligible to low potential for running sands.

#### Site designation

10.4.5. There are no geological SSSIs within the study area.

10.4.6. The SDNP, the Binsted Wood Complex LWS and ancient woodland are identified in the study area. A detailed review of these receptors is presented in Section 9 of this report.

#### Hydrogeological and hydrological conditions

10.4.7. Groundwater within most of the quaternary superficial deposits, which directly underlie the study area, are classified by the Environment Agency as Secondary A aquifers. Secondary (undifferentiated) aquifers are also indicated along a few watercourses at the western edge of the study area and these are associated with the Alluvium. The bedrock beneath the quaternary superficial deposits is classified as unproductive strata (London Clay Formation), Secondary A aquifer (Lambeth Group) and Principal aquifer (White Chalk Subgroup).

10.4.8. The Environment Agency's Groundwater Vulnerability Map (Ref 135) shows that the vulnerability of groundwater to a pollutant discharged at ground level

Ref 134 Groundsure Enviro Insight Report, (April 2015). Ref. 2016 PO86494. Included within Appendix 9-1: Geology and Soils - Baseline Information of the Environmental Assessment Report (Chapter 9 – Geology and Soils A27 Arundel Bypass – PCF Stage 2 Further Consultation)

Ref 135 Department for Environment, Food, and Rural Affairs, (2020). Magic Map online application <http://magic.defra.gov.uk/magicmap.aspx>. Accessed October 2020

is rated as low to medium-low for the majority of the study area, where the proposed scheme overlies quaternary deposits over the London Clay Formation or the Lambeth Group. In the southern edge of the study area, where superficial deposits directly overlie the chalk, the vulnerability is shown as medium to medium-high.

10.4.9. There are two groundwater Source Protection Zones (SPZs) for public drinking water supply abstractions within 1 km of the proposed scheme. These are presented on Figure 4, and detailed as follows:

- one SPZ located north of Fontwell, at the western edge of the study area (SPZ3, SPZ2 and SPZ1, located approximately 160 m north of the western end of the proposed scheme); and
- one SPZ located east of Warningcamp (SPZ3 and SPZ2, located approximately 850 m north-east of the proposed scheme).

10.4.10. The *Groundsure Report* (Ref 134) indicates that there are two groundwater and six surface water abstraction licences within 1 km of the proposed scheme, for spray irrigation, water bottling and pond throughflow. A summary of the abstraction licence details is provided in Table 25.

**Table 25: Groundwater and surface water abstractions within 1 km of the proposed scheme**

Source	Type of Use	Licence Number	Location
Groundwater	Spray irrigation - direct	10/41/411009	Tortington Park, Arundel, approximately 140 m from the proposed scheme.
Groundwater	Water bottling	10/41/411009	Tortington Park, Arundel, approximately 140 m from the proposed scheme.
Surface water	Spray irrigation - direct	10/41/411010	River Arun, adjacent south of the proposed scheme.
Surface water	Spray irrigation - direct	10/41/411020	Binsted Rife Priory Farm, 50 m north of the proposed scheme.
Surface water	Spray irrigation - direct	10/41/411102	Broomhurst Farm, 20 m south of the proposed scheme, to the east of River Arun.
Surface water	Fish Farm/Cress Pond Throughflow	27/183	Park Bottom, Arundel, 200 m north of the proposed scheme.
Surface water	Spray irrigation - direct	0/41/411020	Internal ditches at Tortington, 600 m south of the proposed scheme.

Source	Type of Use	Licence Number	Location
Surface water	Spray irrigation - direct	10/41/411022CA	Drainage ditches at Tortington, 600 m south of the proposed scheme.

10.4.11. The proposed scheme crosses the River Arun in the eastern part of the study area, and the Binsted Rife and Tortington Rife watercourses (partly designated main rivers) in the western part of the study area. Furthermore, there are a number of drains and ponds, that are understood to be fed mainly or entirely by groundwater and are therefore vulnerable to changes in groundwater level and quality. A detailed review of the water environment is provided in Section 14 of this report. The location of relevant water bodies is presented on Figure 7.

### Soils and agricultural land classification

10.4.12. The agricultural land quality of the study area has been reviewed with reference to agricultural land classification (refer to *Appendix 9-2 Agricultural Land Report* of the previous *Stage 2 Further Consultation*) (Ref 136).

10.4.13. As defined in Natural England's *Agricultural land classification: protecting the best and most versatile agricultural land* (Ref 137), agricultural land in England and Wales is graded between 1 and 5, depending on the extent to which physical or chemical characteristics impose long-term limitations on agricultural use. Grade 1 land is excellent quality agricultural land with very minor or no limitations to agricultural use, and Grade 5 is very poor quality land, with severe limitations due to adverse soil, relief, climate or a combination of these. Grade 3 land is subdivided into Subgrade 3a (good quality land) and Subgrade 3b (moderate quality land). Land which is classified as Grades 1, 2 and 3a is identified as BMV within the *NPPF* (Ref 11).

10.4.14. The study area is principally agricultural, dominated by grazing and arable farming.

10.4.15. ALC mapping shows most of the agricultural land that would be affected by the proposed scheme to be Grade 3. Land mapped as Grade 2 is also indicated and will be crossed by the proposed scheme, east of Walberton, south of Binsted and at Tortington.

10.4.16. As indicated in Figure 1 of the *Agricultural Land Report* (Ref 136) the proposed scheme will cross Wigton Moor and Batcombe soils, which are likely to be of BMV quality. Other soils series encountered are of the Newchurch, Wickham and Binsted series. These soils are classified as heavy loams.

Ref 136 Highways England (August 2019). Appendix 9-2. A27 Arundel Bypass Agricultural Land Report. Included within the Geology and Soils - A27 Arundel Bypass – PCF Stage 2 Further Consultation  
Ref 137 Natural England, (January 2013). *Agricultural Land Classification: protecting the best and most versatile agricultural land* (TIN049). Available at <http://publications.naturalengland.org.uk/publication/35012>

## Land contamination sources

10.4.17. Publicly available online mapping and data from the Environment Agency and the local authority, presented in the Groundsure Report included in the *Geology and Soils Baseline Information* (Ref 138), have been reviewed to identify current and historical potential contaminative land uses. A summary of the key areas of potential contaminated land in the study area is presented in Table 26.

**Table 26: Summary of potential sources of contamination within the study area**

Potential Sources Within the Study Area	Number of Features Within the Proposed Scheme
Four farms/farm buildings.	None within the proposed scheme.
An active fuel retail site (BP Crossbush Service Station) situated adjacent south of the proposed scheme, in the eastern edge of the study area, near Crossbush roundabout. The site also contains a carwash, jet wash and vehicle park.	Adjacent to a proposed retaining wall for the proposed scheme.
Two historical landfills (Ref 139, 138 and 140) are located within the study area:  Days landfill, which includes two distinct areas (WD27/110 and WA/10/87), along the southern boundary of the existing A27 Arundel Road, at the western edge of the proposed scheme. The landfill is located at Fontwell, (approximately centred at NGR 496889, 106820 and NGR 496618, 106852) and was licenced between 30/09/1988 and 15/07/1988. The licence was issued on the 27/04/1988. The operator is not provided. <i>Appendix 9-1 Geology and Baseline Information</i> (Ref 138) states that the receiving waste was inert.  Hooe Farm landfill (WD27/223), located at Tye Lane, Walberton, (NGR 496839, 106718), 30 m south of the existing A27 Arundel Road, at the western edge of the proposed scheme. The landfill was licenced between 31/12/1955 and 31/12/1960. The licence was issued on the 01/01/1976. The operator is not provided. <i>Appendix 9-1 Geology and Baseline Information</i> (Ref 138) states that the landfill received inert commercial and household waste.	Both the landfills are within the proposed scheme.
Industrial/Commercial Uses* (current) including:  Current firewood supplier (Stubbs Copse Woodyard) (eastern edge of the study area). The Groundsure Report in <i>Appendix 9-1 Geology and Baseline Information</i> (Ref 138) indicates that this is a composting facility (licence number: ROB001), issued in March 1994.  Current granite supplier (County Stone Granite Ltd) (western part of the study area, partially within the proposed scheme).	One current commercial activity (County Stone Granite Ltd - granite supplier) partially within the proposed scheme.

Ref 138 Highways England, (August 2019). A27 Arundel Bypass Environmental Assessment Report. Chapter 9 – Geology and Soil. Appendix 9-1 Geology and Baseline Information

Ref 139 Defra Spatial Data website

<https://environment.data.gov.uk/DefraDataDownload/?mapService=EA/HistoricLandfill&Mode=spatial>. Accessed October 2020

Ref 140 Groundsure Enviro Data Viewer Beta website. <https://groundsure.io/#>. Accessed October 2020

Potential Sources Within the Study Area	Number of Features Within the Proposed Scheme
<p>Current vehicle repair shop (K L Motors) (western part of the study area, 100 m west of the proposed scheme).</p> <p>Current car body shop (Herbert Keith) (western part of the study area, 100 m west of the proposed scheme).</p> <p>Current furniture maker (Woodcraft Furniture Frames) (western part of the study area, adjacent south of the proposed scheme).</p> <p>Current construction company (Fordingbridge plc - canopies, walkways and statement buildings) (western edge of the study area, 50 m south of the proposed scheme).</p>	
<p>Current Arun Valley railway (also known as the Mid Sussex line), in the eastern part of the study area.</p>	<p>Within the proposed scheme.</p>
<p>Two current electrical substations, situated adjacent south of the proposed scheme, in the eastern edge of the study area, near Crossbush roundabout and 150 m south of the proposed scheme in Tortington.</p>	<p>None within the proposed scheme.</p>

\*Data gap for historical commercial and industrial uses within 250 m of the proposed scheme may exist, as the historical maps included in the Groundsure Report within *Appendix 9-1 Geology and Baseline Information* do not cover the entire study area.

10.4.18. The *Groundsure Report* (Ref 134) data shows the following features to be absent from the study area:

- authorised landfills;
- industrial facilities with Integrated Pollution Prevention and Control;
- Control of Major Accident Hazards facilities; and
- hazardous substance consents.

10.4.19. According to the *Groundsure Report* (Ref 134) a pollution incident was recorded in the study area to the north of Tortington in July 2001, relating to sewage sludge impacting air (Category 3, minor incident). No impact (Category 4) is indicated for land and water for this incident.

#### Identified receptors

10.4.20. Human receptors are considered to comprise residents, workers in and visitors to commercial properties, members of the public accessing areas of open space (including a golf course), future recreational users of any new cycling/walking routes on the existing carriageway and future maintenance workers. Construction workers represent additional human receptors during the construction phase only.

10.4.21. Controlled waters receptors in the study area comprise groundwater and surface water. Groundwater receptors includes Secondary A and Secondary (undifferentiated) aquifers. Surface water receptors include the River Arun, the Binsted Rife and Tortington Rife watercourses and a number of drains and ponds located within the study area. A detailed review of the water

environment is provided in Section 14 of this report. The location of relevant water bodies is presented on Figure 7. The ancient woodland, the SDNP and the Binsted Wood Complex LWS identified in the study area are potential receptors to land contamination. A detailed review of potential ecological receptors is presented in Section 9 of this report.

- 10.4.22. Receptors in the study area also comprise residential and commercial properties, agricultural crops and infrastructure such as below ground utilities.

### **Value of the environmental resources and receptors**

#### Geology

- 10.4.23. The quaternary deposits are located within a Mineral Safeguarding Area (MSA). They are a source of aggregates, including sharp sand and gravel. These are discussed further in Section 11 of this report and no further consideration of the MSA is undertaken in this section.
- 10.4.24. No geological SSSIs have been identified in the study area. At this stage, it is not possible to determine the presence of geological sites of local importance/interest, which may have a low sensitivity, within the study area. Consultation with local authorities and local groups will confirm the presence of these assets within the study area.
- 10.4.25. Resource value of the aquifers underlying the proposed scheme is discussed in Section 14 of this report.

#### Land contamination

- 10.4.26. Residents are considered to be the most sensitive human receptors to potential land contamination. Workers in commercial properties and people accessing areas of public open space are of lower sensitivity due to their different typical exposure scenarios.
- 10.4.27. Groundwater within the Secondary A aquifers represents the environmental receptor of highest value and sensitivity in relation to land contamination. Secondary A aquifers are classified by the Environment Agency as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. Watercourses, groundwater and water abstraction points and SPZs have been identified within the 1 km study area. These are all considered to be potential receptors to any mobilisation of contaminants during the construction and operational phases of the proposed scheme.
- 10.4.28. The ancient woodland, the SDNP and the Binsted Wood Complex LWS identified in the study areas are potential receptors to land contamination and they are of high environmental value and sensitivity.

## **10.5. Potential impacts**

### **Geology**

- 10.5.1. There is currently uncertainty regarding the presence of geological sites of local importance/interest within the study area. During construction, there is the potential for physical damage of these assets (if any). Consultation will

be undertaken with local authorities and local groups to locate any geological sites in the study area; and an approach will be agreed to address any potential impacts to these sites (if any).

### **Soil resources**

- 10.5.2. During proposed scheme construction, there is the potential for physical damage to soil and soil compaction as a result of heavy construction vehicle movements and exacerbation of soil erosion through handling and storage of soils. The potential effect is considered to be temporary and will be avoided, prevented and reduced through the implementation of standard mitigation measures to be incorporated into a CEMP (and outlined in the OEMP).
- 10.5.3. The proposed scheme will also result in the permanent loss of agricultural land.

### **Land contamination**

#### Construction impacts

- 10.5.4. There is the potential for construction to affect human and controlled waters receptors and for the ground conditions to impact on the design of the proposed scheme.
- 10.5.5. Potential impacts include but are not limited to:
- mobilising existing contamination in soil and groundwater as a result of ground disturbance (due to the installation of foundations/retaining walls/structures) and dewatering (if needed) during construction;
  - increasing the potential for contaminants in unsaturated soils to leach to groundwater in open excavations during construction;
  - increasing the potential for contaminated surface run-off to migrate to surface water and groundwater receptors as a result of leaching from uncovered stockpiles;
  - discharge of water from dewatering to surface watercourses;
  - introducing new sources of contamination, such as fuels and oils used in construction plant;
  - creating preferential pathways for the migration of contamination and gases, for example along new below ground service routes, service ducts and as a result of dewatering; and
  - introducing new human health receptors such as site staff during construction.

#### Operational impacts

- 10.5.6. By the operation stage of the proposed scheme, conditions may have altered from the baseline as a result of, but not limited to:
- introducing road users, recreational users of any new cycling/walking routes on the existing carriageway, operational maintenance staff and the road infrastructure as new receptors; and

- contamination that has been encountered having been removed or remediated.

## 10.6. Design, mitigation and enhancement measures

10.6.1. A number of environmental design and management measures will be employed as standard best practice to minimise impacts to human health, controlled waters and soil resources during the construction of the proposed scheme. These will be incorporated into the CEMP to be prepared pre-construction. Potential environmental impacts that will be avoided, prevented, reduced or offset through the implementation of these mitigation measures include:

- human exposure through direct contact/inhalation/dermal uptake of contaminants;
- creation of preferential pathways and mobilisation of contamination;
- contamination of natural soils, contamination of groundwater with concrete, paste or grout;
- pollution and degradation of water quality of any underlying aquifer;
- infiltration and/or runoff into the local drainage/sewerage network - pollution of drainage and sewerage network and any adjacent surface water features;
- run-off and infiltration of contaminants from material stockpiles;
- contamination of drainage and sewerage network and/or groundwater; and
- spread of nuisance dusts and soils to the wider environment and local roads.

10.6.2. A ground investigation will be completed to characterise existing ground conditions (to include consideration of soil, groundwater, ground gas and geotechnical parameters). The works will be completed in accordance with BS10175:2011+A2:2017 (Ref 141), the Environment Agency's Land Contamination Risk Management (LCRM) (Ref 142), online guidance as well as other relevant standards and guidance. Such investigations would be undertaken in conjunction with geotechnical investigations in order to provide additional data upon which risks and impacts can be assessed. The investigation will allow a quantitative assessment as to whether any of the potential risks identified are present and are of material concern to the proposed scheme. Subject to the findings of future intrusive investigations, a site-specific remediation strategy (and subsequent verification reporting) may be required if contamination is encountered or considered to pose a risk.

10.6.3. Substances potentially present in the ground (particularly where made ground and landfill material has been identified) which have the potential to

degrade concrete could constrain the design of the proposed scheme. Laboratory analysis would be completed to characterise the concentration of these determinants in soil and groundwater during detail design, to fully assess the risks to materials and services and enable the correct specification and selection of materials.

- 10.6.4. No mitigation measures are available to address the permanent loss of agricultural land, other than minimising land take. However, land temporarily required for site compounds and temporary access roads would be returned to agricultural use post construction in a good condition. Defra *Code of Practice for Sustainable Use and Management of Soils on Construction Sites* (Ref 143) will be used, and includes good practice for soil handling, storage and restoration.
- 10.6.5. Opportunities for enhancement regarding soils and geology include remediation of contaminated land, where appropriate, in order to protect and enhance valued landscapes, sites of biodiversity and soils.

## **10.7. Description of the likely significant effects**

- 10.7.1. The *Stage 2 Environmental Assessment Report* (Ref 33) identified the following potential significant adverse effects, during proposed scheme construction:
- moderate adverse effect on soil (agricultural land), resulting from minor loss or detrimental alteration;
  - moderate adverse effect on soil resources, resulting from “loss or inappropriate re-use of soil so principal social, economic or environmental services are diminished”.
- 10.7.2. The above potential significant effects during construction have been considered persist into proposed scheme operational phase.
- 10.7.3. The above potentially significant effects on geology and soils will be reassessed as part of the EIA.

## **10.8. Assessment methodology**

### **Proposed level and scope of assessment**

- 10.8.1. The scoping assessment has identified that:
- it is uncertain at this stage if the proposed scheme will affect any designated geological sites (other than geological SSSIs, which are not located in the study area);
  - the proposed scheme is likely to affect the function or quality of soil as a resource;
  - the proposed scheme is likely to affect agricultural land classified as BMV or prime land;
  - the proposed scheme is likely to disturb historical contamination; and

- it is unlikely that the proposed scheme will introduce significant sources of contamination.

10.8.2. In accordance with the *DMRB LA109 Geology and Soils* (Ref 144), given the above considerations, further assessment will be undertaken within the EIA.

#### Geology

10.8.3. Geology will be assessed using published information, existing information from historical investigation and assessment reports (if any), the *Preliminary Sources Study Report* (Ref 145) undertaken as part of the previous phase of works and available data from any additional ground investigations that may be undertaken during the impact assessment period.

10.8.4. Further research and consultation with local authorities and local groups is required to ascertain the presence of any local geological sites within the study area. At this stage, the potential for these features is therefore scoped into the assessment.

10.8.5. An assessment of structural/engineering geology will be carried out separately to inform the design and development of the proposed scheme and will not be addressed further within the EIA.

#### Soil resources

10.8.6. The effects on the soil resources will be assessed according to the degree to which soils can continue to fulfil their primary functions other than food and fibre production. These other functions comprise: a) the storage, filtration and transformation of many substances and elements, including water, carbon and nitrogen; b) support of ecological habitats and biodiversity; c) support for the landscape; d) protection of cultural heritage; e) providing raw materials; f) providing a platform for human activities, such as construction and recreation.

10.8.7. ALC mapping shows the agricultural land that would be affected by the proposed scheme to be of Grade 3 and Grade 2. Therefore, given BMV agricultural land is likely to be impacted, soil resources are scoped into the assessment. A detailed ALC survey of the land associated with the proposed scheme will be completed to inform the baseline scenario.

10.8.8. The effects on the viability of farm holdings is considered as part of Chapter 13: Population and Health of this report.

10.8.9. It is proposed to scope out of the assessment effects on soil resources during operation, as the operation of the proposed scheme is not anticipated to result in further loss or impact on soil resources.

#### Land contamination

10.8.10. Potentially contaminative land uses have been identified within the study area. The *NPSNN* (Ref 10) requires that 'for developments on previously

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Ref 144 Highways England (2019). *DMRB LA109 Geology and Soils*. Revision 0.

Ref 145 WSP (2019). *Preliminary Sources Study Report A27 Arundel Bypass – PCF Stage 2 Further Consultation (HE551523\_WSP\_HGT\_SWI\_RP-CE-0001, dated August 2019)*. HAGDMS Ref: 30936

developed land, applicants should ensure that they have considered the risk posed by land contamination and how best to address this'.

10.8.11. In line with the *LCRM* (Ref 142), assessment of land contamination will take the form of a tiered, risk- based approach, as summarised below:

- Tier 1: preliminary risk assessment based on a desktop study of available information to identify potential sources of contamination, receptors to contamination and potential pathways between them. The identified sources, pathways and receptors are presented in the form of an initial Conceptual Site Model (CM) showing the potential contaminant linkages (PCL);
- Tier 2: If PCL are identified, this means there is a theoretical risk to receptors from contamination. Therefore, intrusive investigation should be used to provide data to inform a generic quantitative risk assessment (GQRA). The GQRA involves comparison of site-specific, laboratory analytical data against appropriate generic assessment criteria (GAC) for human health and/or controlled waters which represent minimal or tolerable risk; and
- Tier 3: detailed quantitative risk assessment to identify whether contamination identified above minimal or tolerable risk levels represents an unacceptable risk and therefore requires remediation.

10.8.12. It is proposed to scope out of the assessment effects from land contamination on construction and maintenance workers during proposed scheme construction (and during future proposed scheme operation), as these workers will be protected under Health and Safety legislation. Any potential effect is considered to be temporary and will be avoided, prevented and reduced through the implementation of standard mitigation measures to be incorporated into a CEMP.

10.8.13. It is considered that the proposed scheme will use materials that are appropriate for the identified ground conditions. As such, the effects of land contamination on construction materials has been scoped out of the assessment.

### **Impact assessment**

10.8.14. The assessments for geology and soils will be undertaken in accordance with the *DMRB LA109 Geology and Soils* (Ref 146) and the *England National Application Annex to LA109*. Reference to *DMRB LA104* (Ref 40) will also be made.

10.8.15. For each of the potential impacts identified, an assessment will be made of the likely classification and significance of resulting effects on the receptor. The definition of effect classification and significance takes into account the sensitivity of the receptor (refer to Table 27) and the magnitude of the predicted impact (refer to Table 28), using the matrix presented in Table 29

in conjunction with professional judgement of the site-specific factors that may be of relevance.

### Assessment of value (sensitivity)

10.8.16. In terms of geology and soils, the criteria for assessing receptor sensitivity is defined in Table 27.

**Table 27: Environmental value (sensitivity) and descriptions (source: Table 3.11 of LA109 Geology and Soils)**

Receptor value (sensitivity)	Description
Very high	<p><b>Geology</b> Very rare and of international importance with no potential for replacement (UNESCO World Heritage Sites, UNESCO Global Geoparks, Sites of Special Scientific Interest (SSSI's) and Geological Conservation Review (GCR), where citations indicate features of international importance). Geology meeting the international designation citation criteria which is not designated as such.</p> <p><b>Soils</b> 1) soils directly supporting an EU designated site, such as a Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar; and/or 2) ALC grade 1 and 2 or Life Cycle Assessment (LCA) grade 1 and 2</p> <p><b>Contamination</b> 1) human health: very high sensitivity land use such as residential or allotments; 2) surface water: relevant sensitivity criteria from Table 3.70 in <i>Road Drainage and Water Environment LA 113</i> (Ref 126); and 3) groundwater: use sensitivity criteria in <i>Road Drainage and the Water Environment LA 113</i>.</p>
High	<p><b>Geology</b> Rare and of national importance with little potential for replacement (geological SSSI, Areas of Special Scientific Interest (ASSI), National Nature Reserves (NNR)). Geology meeting national designation citation criteria which is not designated as such.</p> <p><b>Soils</b> 1) soils directly supporting a UK designated site, e.g. SSSI; and/or 2) ALC grade 3a, or LCA grade 3.1.</p> <p><b>Contamination</b> 1) human health: high sensitivity land use such as public open space; 2) surface water: use sensitivity criteria in <i>Road Drainage and the Water Environment LA 113</i> (Ref 126); and 3) groundwater: use sensitivity criteria in <i>Road Drainage and the Water Environment LA 113</i>.</p>
Medium	<p><b>Geology</b> Geology of regional importance with limited potential for replacement (e.g. Regionally Important Geological Sites (RIGS)). Geology meeting regional designation citation criteria which is not designated as such.</p>

Receptor value (sensitivity)	Description
	<p>Soils</p> <p>1) soils supporting non-statutory designated sites, e.g. Local Nature Reserves (LNR), Local Geological Sites, Sites of Nature Conservation Importance (SNCIs); and/or</p> <p>2) ALC grade 3b or LCA grade 3.2.</p> <p>Contamination</p> <p>1) human health: medium sensitivity land use such as commercial or industrial;</p> <p>2) surface water: use relevant sensitivity criteria in Table 3.70 of Road Drainage and the Water Environment LA 113 (Ref 126); and</p> <p>3) groundwater: use relevant sensitivity criteria in Table 3.70 of <i>Road Drainage and the Water Environment LA 113</i>.</p>
Low	<p>Geology</p> <p>Geology of local importance/interest with potential for replacement (e.g. non designated geological exposures, former quarry's/mining sites).</p> <p>Soils</p> <p>1) ALC grade 4 &amp; 5 or LCA grade 4.1 to 7; and/or</p> <p>2) soils supporting non-designated notable or priority habitats.</p> <p>Contamination</p> <p>1) human health: low sensitivity land use such as highways and rail;</p> <p>2) surface water: use sensitivity criteria in Road Drainage and the Water Environment LA 113 (Ref 126); and</p> <p>3) groundwater: use sensitivity criteria in Road Drainage and the Water Environment LA 113.</p>
Negligible	<p>Geology</p> <p>No geological exposures, little/no local interest.</p> <p>Soils</p> <p>Previously developed land formerly in 'hard uses' with little potential to return to agriculture.</p> <p>Contamination</p> <p>1) human health: undeveloped surplus land/no sensitive land use proposed;</p> <p>2) surface water: use sensitivity criteria in Road Drainage and the Water Environment LA 113 (Ref 126); and</p> <p>3) groundwater: use sensitivity criteria in Road Drainage and the Water Environment LA 113.</p>

### Magnitude of impact (change)

10.8.17. The magnitude of change or how considerable the change to the geology and soils is in comparison to the baseline conditions, as a result of the construction and operation of the proposed scheme, will be classified as either being: major, moderate, minor or negligible. The criteria and their respective magnitude of change classification which will be applied are detailed within Table 28.

**Table 28: Magnitude of impact and descriptions (source: Table 3-12 magnitude of impact and typical descriptions of LA109 Geology and Soils; supplemented with Table E/2.1 Magnitude of impact and typical description)**

Magnitude of Impact (Change)	Example Criteria
Major	<p>Geology Loss of geological feature/designation and/or quality and integrity, severe damage to key characteristics, features or elements.</p> <p>Soil Physical removal or permanent sealing of &gt;20ha of agricultural land.</p> <p>Contamination 1) human health: significant contamination identified. Contamination levels significantly exceed background levels and relevant screening criteria (category 4 screening levels) within SP1010 (Ref 147) with potential for significant harm to human health. Contamination heavily restricts future use of land; 2) surface water: refer to sensitivity criteria in Road Drainage and Water Environment LA 113 (Ref 126); and 3) groundwater: refer to sensitivity criteria in Road Drainage and Water Environment LA 113.</p>
Moderate	<p>Geology Partial loss of geological feature/designation, potentially adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.</p> <p>Soils 1) physical removal or permanent sealing of 1ha - 20ha of agricultural land; or 2) permanent loss/reduction of one or more soil function(s) and restriction to current or approved future use (through degradation, compaction, erosion of soil resource)</p> <p>Contamination 1) human health: contaminant concentrations exceed background levels and are in line with limits of relevant screening criteria (category 4 screening levels) in SP1010. Significant contamination can be present. Control/remediation measures are required to reduce risks to human health/make land suitable for intended use; 2) surface water: refer to sensitivity criteria in LA 113 (Ref 126); and 3) groundwater: refer to sensitivity criteria in LA 113.</p>
Minor	<p>Geology Minor measurable change in geological feature/designation attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.</p> <p>Soils</p>

Ref 147 CL:AIRE 2014. Contaminated Land: Applications in real environments (CL:AIRE). SP1010, 'Development of category 4 screening levels for assessment of land affected by contamination'

Magnitude of Impact (Change)	Example Criteria
	<p>Temporary loss/reduction of one or more soil function(s) and restriction to current or approved future use (through degradation, compaction, erosion of soil resource.)</p> <p>Contamination</p> <p>1) human health: contaminant concentrations are below relevant screening criteria (category 4 screening levels) in SP1010. Significant contamination is unlikely with a low risk to human health. Best practice measures can be required to minimise risks to human health;</p> <p>2) surface water: refer to sensitivity criteria in LA 113 (Ref 126); and</p> <p>3) groundwater: refer to sensitivity criteria in LA 113.</p>
Negligible	<p>Geology</p> <p>Very minor loss or detrimental alteration to one or more characteristics, features or elements of geological feature/designation. Overall integrity of resource not affected.</p> <p>Soils</p> <p>No discernible loss/reduction of soil function(s) that restrict current or approved future use.</p> <p>Contamination</p> <p>1) human health: contaminant concentrations substantially below levels outlined in relevant screening criteria (category 4 screening levels) in SP1010. No requirement for control measures to reduce risks to human health/make land suitable for intended use;</p> <p>2) surface water; refer to sensitivity criteria in LA 113 (Ref 126); and</p> <p>3) groundwater: refer to sensitivity criteria in LA 113.</p>
No Change	<p>Geology</p> <p>No temporary or permanent loss/disturbance of characteristics features or elements.</p> <p>Soils</p> <p>No loss/reduction of soil function(s) that restrict current or approved future use.</p> <p>Contamination</p> <p>1) human health: reported contaminant concentrations below background levels;</p> <p>2) surface water; refer to sensitivity criteria in LA 113 (Ref 126); and</p> <p>3) groundwater: refer to sensitivity criteria in LA 113.</p>

### Significance of effects

10.8.18. The classification and significance of the effect resulting from the impact will be determined in accordance with the matrix shown in Table 29. Where Table 29 includes two classification categories, professional judgement will be used to support the reporting of a single classification.

**Table 29: Criteria for assessing the significance of effects upon Geology and Soils (source: Table 3.8.1 significance matrix of the LA104 Environmental Assessment and Monitoring)**

Environmental value (sensitivity)	Magnitude of impact (degree of change)					
	No change	Negligible	Minor	Moderate	Major	
Very high	Neutral	Slight	Moderate or large	Large or very large	Very large	
High	Neutral	Slight	Slight or moderate	Moderate or large	Large or very large	
Medium	Neutral	Neutral or slight	Slight	Moderate	Moderate or large	
Low	Neutral	Neutral or slight	Neutral or slight	Slight	Slight or moderate	
Negligible	Neutral	Neutral	Neutral or slight	Neutral or slight	Slight	

10.8.19. Effects also have the potential to be temporary or permanent. A short-term temporary effect relates to an activity with a duration from several weeks to a few months, a medium-term temporary effect is estimated to have a duration from several months to a year and a long-term temporary effect is estimated to have a duration of several years. The effects also have the potential to be reversible or irreversible.

10.8.20. Significant effects typically comprise residual effects that are within the moderate, large or very large categories. Effects predicted to be slight are considered to be manageable and are therefore 'not significant'.

10.8.21. Effects also have the potential to be adverse or beneficial. For example, in terms of beneficial effects, a development may provide extensive restoration, and improve the resource quality.

## 10.9. Assumptions, limitations and uncertainties

10.9.1. This geology and soils section of the Scoping Report has been prepared based on the collation and evaluation of readily available documentation provided to date by the Environment Agency, BGS and other data sources made available, including the information included in the *EAR* (Ref 148), undertaken as part of the previous phase of works. The *EAR* (including the Groundsure Report) does not cover the western part of the study area. The Groundsure Report is also dated April 2015 and therefore may not include the most up to date data. Further information will be obtained as the proposed scheme develops and will be assessed in the EIA.

10.9.2. This report is based on the legislation, statutory requirements and/or industry good practice applicable at the current time. Any subsequent changes in this legislation, guidance or design may necessitate the approach to be reassessed in the light of these circumstances.

## 11. Material Assets and Waste

### 11.1. Introduction

- 11.1.1. This section sets out the proposed approach to the assessment of the proposed scheme's impacts on material assets and waste. The purpose of the assessment will be to identify and characterise any relevant material assets and wastes, to consider the nature and scale of potential impacts due to the proposed scheme, and to assess the significance of any likely effects.
- 11.1.2. This section applies the guidance and methodology set out in *DMRB LA 110 Material Assets and Waste LA 110* (Ref 149).
- 11.1.3. The construction, improvement and maintenance of the road network can result in environmental effects associated with the consumption and use of material assets and the management of waste. Environmental assessment provides a framework for assessing and managing these effects by reducing the overall impacts and improving the efficiency of resource use and by preventing and reducing waste arising and managing waste in line with the waste hierarchy and circular economy principles.
- 11.1.4. For the purpose of this Scoping Report, material assets and waste are defined as comprising:
- the consumption of materials and products (from primary, recycled or secondary, and renewable sources); and
  - the generation and management of waste.
- 11.1.5. Waste is defined by Article 1(a) of the revised *European Waste Framework Directive (2008/98/EC)* (Ref 150) as “any substance or object (in the categories set out in Annex I) which the holder discards or intends to discard or is required to discard”.

### 11.2. Relevant policy

- 11.2.1. Relevant planning policies include those outlined below that have been considered in defining the material assets and waste assessment methodology, receptor selection/sensitivity, likely significant environmental effects and potential mitigation.

#### National policy

- *NPSNN* (Ref 10): including paragraphs 5.39 to 5.45 in relation to waste management and paragraphs 5.119, 5.169 and 5.182 in relation to minerals safeguarding;
- *NPPF* (Ref 11);

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Ref 149 Highways England, Transport Scotland, Welsh Government, Department An Roinn Bonneagair, 2019. Design Manual for Roads and Bridges (DMRB), LA 110 Material assets and waste. Revision 0  
Ref 150 Directive 2008/98/EC of the European parliament and of the council of 19 November 2008 on waste and repealing certain directives. The European Parliament and the Council of the European Union (2008)

- National Planning Policy for Waste (Ref 151);
- Waste Management Plan for England (Ref 152);
- National Policy Statement for Hazardous Waste (Ref 153); and
- Our Waste, Our Resources: A Strategy for England (Ref 154).

### Local policy

- West Sussex Joint Minerals Local Plan 2018 (Ref 17);
- *West Sussex Waste Local Plan 2014* (Ref 16);
- Review of the West Sussex Waste Local Plan 2014 (May 2019) (Ref 155);
- West Sussex Waste Local Plan. Minerals and Waste Safeguarding Guidance (Ref 156);
- *Arun Local Plan 2011-2031* (Ref 14);
- *South Downs Local Plan 2014–2033* (Ref 15); and
- SDNP Authority Position Statement on A27 Corridor (Ref 41).

### 11.3. Study area

- 11.3.1. The study area for the consideration of the sterilisation of mineral safeguard sites and peat resources and for the use of material assets in the construction of the proposed scheme is defined by the proposed scheme boundary (including any temporary land requirements during construction such as temporary offices, compounds and storage areas). The study area for alternative materials (secondary and recycled aggregates) is the south east England region (comprising Berkshire, Buckinghamshire, East Sussex, Hampshire, Isle of Wight, Kent, Oxfordshire, Surrey and West Sussex).
- 11.3.2. The study area for waste arising from the proposed scheme is defined by the proposed scheme boundary (including any temporary land requirements), within which waste would be generated.
- 11.3.3. The study area for waste management comprises the wider region within which waste management infrastructure (specifically landfill capacity) is located and comprises the south east England region as defined above. For hazardous waste management, the study area is defined as the whole of England.

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Ref 151 Department for Communities and Local Government (2014). National Planning Policy for Waste. October 2014.

Available at: <https://www.gov.uk/government/publications/national-planning-policy-for-waste>

Ref 152 Department for the Environment Food and Rural Affairs (2013). Waste Management Plan for England. December

2013. Available at: <https://www.gov.uk/government/publications/waste-management-plan-for-england>

Ref 153 Department for Environment, Food and Rural Affairs (2013). National Policy Statement for Hazardous Waste: A framework document for planning decisions on nationally significant hazardous waste infrastructure. June 2013. Available at: <https://www.gov.uk/government/publications/hazardous-waste-national-policy-statement>

Ref 154 Department for the Environment Food and Rural Affairs (2018). Our Waste, Our Resources: A Strategy for England. Available at: <https://www.gov.uk/government/publications/resources-and-waste-strategy-for-england>

Ref 155 West Sussex County Council and South Downs National Park Authority (2019). Review of the West Sussex Waste Local Plan 2014. May 2019. Available at: [https://www.westsussex.gov.uk/media/14003/wlp\\_review.pdf](https://www.westsussex.gov.uk/media/14003/wlp_review.pdf)

Ref 156 West Sussex County Council and South Downs National Park Authority (2020). West Sussex Joint Minerals Local Plan, West Sussex Waste Local Plan: Minerals and Waste Safeguarding Guidance. March 2020. Available at: [https://www.westsussex.gov.uk/media/13437/mw\\_safeguarding\\_guidance.pdf](https://www.westsussex.gov.uk/media/13437/mw_safeguarding_guidance.pdf)

## 11.4. Baseline conditions

- 11.4.1. The types and quantities of materials used and waste arisings associated with the operation of the existing road network and the existing site are currently unknown. Material use is expected to include materials required for routine maintenance and also for intermittent repairs and refurbishment, with associated limited waste arisings. The quantities of material use and waste arisings are expected to be small when compared to regional and national data and are therefore considered within this wider geographic context.
- 11.4.2. Information on previously developed land and potential sources of contamination that could give rise to materials and waste that require specific handling, storage and management arrangements, are set out in Section 0 of this report.

### **Material assets: safeguarded mineral sites and peat resources**

- 11.4.3. The *West Sussex Joint Minerals Local Plan* (Ref 17) covers the period to 2033 and sets out the vision and strategic objectives associated with minerals supply developments in West Sussex. The Plan states that mineral resources must be safeguarded, as well as mineral infrastructure including wharves and railheads. Policy M9: Safeguarding Minerals states that existing mineral extraction sites will be safeguarded against non-mineral development that prejudices their ability to supply minerals in the manner associated with the permitted activities. Policy M9 also states that soft sand (including potential silica sand), sharp sand and gravel, brick-making clay, building stone resources and chalk reserves are safeguarded against sterilisation. Policy M10: Safeguarding Minerals Infrastructure details limitations for development on, or near to sites hosting permanent minerals infrastructure.
- 11.4.4. The *West Sussex Joint Minerals Local Plan and Waste Local Plan: Monitoring Report 2018/19* (Ref 157) identifies 46 safeguarded mineral sites, 41 of which are active, within the West Sussex local authority area. These sites include sand and gravel, soft sand, clay/brickworks, building stone, oil and gas, concrete batching, mineral wharves and railheads. None of these sites are located within 1 km of the proposed scheme.
- 11.4.5. MSAs are defined in the *West Sussex Joint Minerals Local Plan* as areas of known mineral resources that are of sufficient economic or conservation value to warrant protection for generations to come. Sand and gravel, chalk, clay and sandstone are considered to have economic importance in West Sussex and are safeguarded in order to prevent potential sterilisation. An MSA for sharp sand and gravel is present across the western part of the proposed scheme.
- 11.4.6. The *West Sussex Joint Minerals Local Plan* also identifies a Petroleum Exploration and Development Licence area across the western part of the proposed scheme.

11.4.7. The *West Sussex Minerals and Waste Safeguarding Guidance* (Ref 156) sets out the locations of Mineral Consultation Areas (MCA). The MCAs define when the Minerals Planning Authority should be consulted on proposals for non-mineral development, on or close to (including a 250 m buffer) minerals infrastructure and MSAs, as identified in the *West Sussex Joint Minerals Local Plan* and *The West Sussex Joint Minerals Local Plan and Waste Local Plan: Monitoring Report 2018/19* (Ref 158).

11.4.8. The *West Sussex Minerals and Waste Safeguarding Guidance* (Ref 156) confirms that:

- there are no Minerals Infrastructure Consultation Areas within 1 km of the proposed scheme;
- a Sharp Sand Resource Consultation Area is present across the western part of the proposed scheme; and
- an Oil and Gas Sites Mineral Consultation Area arising from Petroleum Exploration and Development Licence areas is present across the western part of the proposed scheme.

11.4.9. The *British Geological Survey Geoindex Onshore* (Ref 159) indicates that there are no peat resources located in proximity to the proposed scheme.

#### **Material assets: recovery of non-hazardous construction and demolition waste**

11.4.10. The national target for recovery of construction and demolition waste is 70% by weight, as set out in the *Revised European Waste Framework Directive* (Ref 150) and the *Waste Management Plan for England* (Ref 152). Uncontaminated excavated soil and stones (European Waste Catalogue code 17 05 04) are specifically excluded from this target.

11.4.11. *LA 110* (Ref 149) *Annex E/2* states that projects in England should aim to achieve at least 90% (by weight) material recovery of non-hazardous construction and demolition waste.

11.4.12. Defra reports on performance against the national target for the recovery of non-hazardous construction and demolition waste. The most recent report (Ref 160) estimates that, in England, in 2016, 92.1% (approximately 55 million tonnes) of non-hazardous construction and demolition waste was recovered.

#### **Material assets: alternative aggregates**

11.4.13. The baseline guidelines for alternative aggregates (comprising both secondary aggregates (by-products from industrial and mining operations)

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Ref 158 West Sussex County Council and South Downs National Park Authority (Undated). *West Sussex Joint Minerals Local Plan and Waste Local Plan: Monitoring Report 2018/19*. Available at:

<https://www.westsussex.gov.uk/media/14612/amr2018to2019.pdf>

Ref 159 British Geological Survey. *Geoindex Onshore – Mineral resources: Peat*. Available at:

<https://mapapps2.bgs.ac.uk/geoindex/home.html#>

Ref 160 Department for the Environment Food and Rural Affairs, 2020. *UK Statistics on Waste*, 19 March 2020

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/918270/UK\\_Statistics\\_on\\_Waste\\_statistical\\_notice\\_March\\_2020\\_accessible\\_FINAL\\_updated\\_size\\_12.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/918270/UK_Statistics_on_Waste_statistical_notice_March_2020_accessible_FINAL_updated_size_12.pdf)

and recycled aggregates (produced from construction waste) are set out in the *National and Regional Guidelines for Aggregates Provision in England 2005 to 2020* (Ref 161), in *DMRB LA 110 Annex E/1* (Ref 149) and are summarised in Table 30. The relevant target for the proposed scheme is the 26% guideline for the south east region.

**Table 30: National and regional guidelines for aggregate provision (Ref 149, Ref 161)**

Region	Total aggregate provision (million tonnes)	Alternative materials targets (secondary and recycled aggregates)
South East	502	26%
London	197	48%
East	382	31%
East Midlands	784	14%
West Midlands	370	27%
South West	656	22%
North West	392	30%
Yorkshire & the Humber	431	31%
North East	193	26%
England (total)	3,908	25%

11.4.14. Data on the production of aggregates is published by the Mineral Products Association and, in 2018 (Ref 162), it estimated that the supply of aggregates in Great Britain totalled 251 million tonnes, of which 71 million tonnes (28%) were from recycled (25%) and secondary (3%) sources.

11.4.15. The *West Sussex Joint Minerals Local Plan* (Ref 17) defines a strategic objective (Strategic Objective 2) to maximise and prioritise the supply and use of secondary and recycled aggregates before supply and use of primary sources, in particular to reduce reliance on land-won aggregates. Policy M26: Maximising the Use of Secondary and Recycled Aggregates states that proposals for development will be permitted provided that opportunities for the use of secondary and recycled aggregates, and building products made from secondary and recycled aggregates are maximised.

11.4.16. The *West Sussex Minerals and Waste Safeguarding Guidance* (Ref 156) identifies MCAs in West Sussex for active and permitted aggregate recycling

Ref 161 Ministry of Housing, Communities and Local Government, 2009. National and regional guidelines for aggregates provision in England 2005 - 2020. Available at: <https://www.gov.uk/government/publications/national-and-regional-guidelines-for-aggregates-provision-in-england-2005-to-2020>

Ref 162 Mineral Products Association, 2020. The Contribution of Recycled and Secondary Materials to Total Aggregates Supply in Great Britain in 2018. Available at: [https://mineralproducts.org/documents/Contribution\\_of\\_Recycled\\_and\\_Secondary\\_Materials\\_to\\_Total\\_Aggregates\\_Supply\\_in\\_GB\\_in\\_2018.pdf](https://mineralproducts.org/documents/Contribution_of_Recycled_and_Secondary_Materials_to_Total_Aggregates_Supply_in_GB_in_2018.pdf)

sites (including 250 m buffer). No MCAs for aggregate recycling sites are identified within 1 km of the proposed scheme.

### Waste: landfill capacity and inputs

- 11.4.17. The Environment Agency's 2019 *Waste Data Interrogator* (Ref 163) 2019 *Waste Summary Tables for England* summarises landfill capacity (for all landfill types) at the end of 2019, as set out in Table 31 and landfill inputs for 2019, as set out in Table 32.
- 11.4.18. For the south east England region, total landfill capacity at the end of 2019 was approximately 67 million cubic metres, with just under 0.3 million m<sup>3</sup> of that capacity located within West Sussex.
- 11.4.19. Although non-hazardous landfill capacity has depleted to zero in West Sussex, an allocation for further landfill remains in the *West Sussex Waste Local Plan 2014* (Ref 16) and the authorities continue to monitor the situation in the south east region (Ref 157).

**Table 31: Remaining permitted landfill capacity at the end of 2019 ('000s m<sup>3</sup>) (Ref 163)**

Landfill type	West Sussex	South East region	England
Hazardous Merchant	-	181	18,443
Hazardous Restricted	-	140	833
Non-hazardous with SNRHW* cell	-	24,180	69,447
Non-hazardous	-	13,962	134,291
Non-hazardous Restricted	-	-	25,869
Inert	295	28,525	122,375
Total	295	66,989	371,258

\*Some non-hazardous sites can accept some stable non-reactive hazardous waste (SNRHW) into a dedicated cell, but this is usually a small part of the overall capacity of the site.

**Table 32: Landfill inputs in 2019 ('000s tonnes) (Ref 163)**

Landfill type	West Sussex	South East region	England
Hazardous Merchant	-	16	865
Hazardous Restricted	-	22	22
Non-hazardous with SNRHW* cell	-	2,718	6,896
Non-hazardous	140	2,546	20,121
Non-hazardous Restricted	-	-	490

Landfill type	West Sussex	South East region	England
Inert	319	4,270	17,465
Total	459	9,572	45,859

\*Some non-hazardous sites can accept some stable non-reactive hazardous waste (SNRHW) into a dedicated cell, but this is usually a small part of the overall capacity of the site.

### Waste: waste management infrastructure

- 11.4.20. The *West Sussex Minerals and Waste Safeguarding Guidance* (Ref 156) sets out the locations of Waste Infrastructure Consultation Areas for allocated and permitted waste sites (including 250 m buffer). There is a waste infrastructure consultation area adjacent to the eastern end of the proposed scheme.
- 11.4.21. The Environment Agency's *2019 Waste Data Interrogator* (Ref 163) *Wastes Received* data set collates the operator waste returns information as reported for the year 2019. Table 33 provides a summary of the types of waste management facility located in the south east of England that reported receiving construction, demolition or excavation waste (waste code chapter 17) during 2019, and the quantity of waste that was received. This data provides an indication of the operational capacity of the waste management infrastructure located in the south east of England that can manage construction, demolition or excavation wastes.

**Table 33: Construction, demolition and excavation waste (waste code chapter 17) received by waste management facilities in the south east of England in 2019**

Waste management facility type		Construction, demolition and excavation waste (waste code chapter 17) received by waste management facilities located in the south east of England		
Site category	Facility type	Waste code 17 05 04 soil and stones (not containing hazardous substances)	Other non-hazardous waste (excluding 17 05 04)	Hazardous waste
Storage	Temporary storage	-	57,949	-
Transfer	Waste transfer	590,659	1,883,742	43,335
Treatment	Waste transfer/treatment	257,725	996,734	651
	Biological treatment	1,753	231	1,574
	Composting	7,000	4,026	-
	Material recycling facility	139,711	646,804	137
	Physical/physical-	791,913	2,297,314	973

Waste management facility type		Construction, demolition and excavation waste (waste code chapter 17) received by waste management facilities located in the south east of England		
Site category	Facility type	Waste code 17 05 04 soil and stones (not containing hazardous substances)	Other non-hazardous waste (excluding 17 05 04)	Hazardous waste
	chemical treatment			
Mobile plant	Mobile plant - landspreading	-	6,679	-
	Mobile plant - treatment	4,821	3,104	5,698
Metal recycling site	Metal recycling site	827	307,426	173
On/in land	Deposit of waste to land (recovery)	2,286,718	92,564	-
Incineration	Incineration	4	63,703	50
Combustion	Combustion	-	50,368	-
Landfill	Hazardous merchant	7,288	-	8,594
	Non-hazardous (SNRHW)*	1,047,935	136,040	21,250
	Non-hazardous	1,512,834	116,926	-
	Inert	4,036,585	171,048	6,821

\*Some non-hazardous sites can accept some stable non-reactive hazardous waste (SNRHW) into a dedicated cell, but this is usually a small part of the overall capacity of the site.

Note: Waste can move through the waste management supply chain and can therefore be reported as being received by more than one facility, for example, where it is moved from a transfer facility to a treatment facility, or a treatment facility to a recovery or disposal facility. Total waste arising does not equal the sum of all wastes received. Some waste that is received by facilities located in the south east of England will have arisen outside of the south east region, and some waste that arises in the south east of England will be received by facilities located outside of the south east region.

## 11.5. Potential impacts

### Construction

11.5.1. There is potential for the following impacts on material assets and waste to occur during construction of the proposed scheme:

- impacts on the availability of primary material resources;
- impacts on the availability and use of reused, recycled and secondary aggregate materials;
- impacts from on-site generated materials (such as excavated materials and soils) and waste arisings on the remaining capacity of landfill infrastructure; and

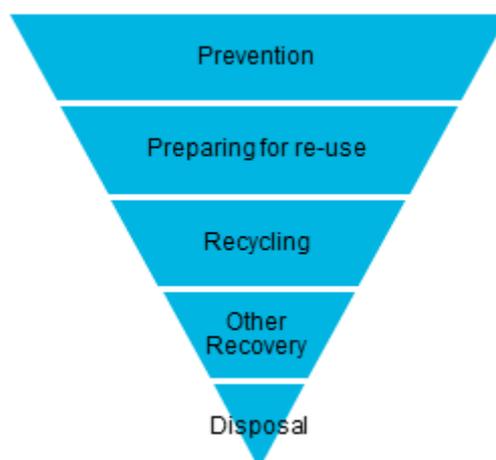
- impacts on the operation and capacity of existing and proposed future waste management infrastructure.

## Operation

- 11.5.2. The exact types and quantities of material use and waste arisings that are likely to be associated with the operation of the proposed scheme are currently unknown. Routine maintenance will include activities such as gully emptying and litter collection and periodic maintenance activities, such as resurfacing, will be required. Material use and waste arising from these maintenance activities is expected to be generally the same (in both type and quantity) to that generated by the existing road network, and the wastes will be managed using established procedures and facilities that are used across the county and region.
- 11.5.3. Therefore, potential impacts on material assets and waste during operation of the proposed scheme are scoped out of the assessment.

## 11.6. Design, mitigation and enhancement measures

- 11.6.1. The proposed scheme will aim to prioritise waste prevention, followed by preparing for re-use, recycling and recovery and lastly disposal to landfill in accordance with the waste hierarchy (see Plate 6).



### Plate 6: The waste hierarchy (Ref 164)

- 11.6.2. Adoption of the following mitigation measures will be considered and implemented where applicable during the design phase and subsequent construction work:
- design for reuse and recovery: identifying, securing and using materials that already exist on site, or can be sourced from other projects;
  - design for materials optimisation: simplifying layout and form to minimise material use, using standard design parameters, balancing cut and fill, maximising the use of renewable materials and materials with recycled content;

- design for off-site construction: maximising the use of pre-fabricated structures and components, encouraging a process of assembly rather than construction;
- design for the future (deconstruction and flexibility): identify how materials can be designed to be more easily adapted over an asset lifetime and how deconstructability and demountability of elements can be maximised at end of first life;
- design for waste and material asset efficient procurement: identify and specify materials that can be acquired responsibly, in accordance with a recognised industry standard; and
- engineering plan configurations and layouts that show how the most effective use of materials and arisings can be achieved.

11.6.3. Potential mitigation measures for waste include:

- early engagement during design to identify possible mitigation and enhancement measures, and to identify opportunities to reduce waste;
- ensuring waste arisings generated are handled, stored, managed and re-used or recycled as close as possible to the point of origin;
- identifying areas for stockpiling and storing arisings that will minimise degradation, damage and loss;
- specifying management requirements for construction materials, site arisings and waste in the CEMP/OEMP; and
- capturing information and data on site arisings recovered/diverted from landfill and waste sent to landfill as part of the CEMP/OEMP.

11.6.4. The OEMP will be drafted as part of the development of the proposed scheme. It will include construction mitigation measures, which will be defined in part by the requirements which will arise from the technical assessments presented in the ES. A CEMP will be produced based upon the OEMP prior to construction works commencing and will be updated throughout the works as required.

## 11.7. Description of the likely significant effects

11.7.1. Table 34 summarises the likely types of materials used and wastes that may potentially be generated during construction of the proposed scheme. Future design development will enable further quantification of material use and waste arising for the proposed scheme and assessment of the likely significant effects.

**Table 34: Estimated types of materials used and waste arising from the construction of the proposed scheme**

Activity	Materials	Waste arisings
Site remediation/ preparation/ earthworks	Fill material for construction purposes.	Surplus excavated materials such as soils.

Activity	Materials	Waste arisings
	Primary aggregates for ground stabilisation.	Stripping of topsoil and subsoil.
Demolition	Materials are not required for demolition works.	Waste arisings from the demolition of any existing infrastructure, buildings or structures.
Site construction	<p>Construction materials including:</p> <ul style="list-style-type: none"> <li>• Concrete</li> <li>• Asphalt and bituminous material</li> <li>• Cement bound granular material</li> <li>• Well graded granular material</li> <li>• Precast concrete kerb</li> <li>• Timber</li> <li>• Plywood</li> <li>• Cementitious grout</li> <li>• Reinforcing steel</li> <li>• Reinforcing fabric</li> <li>• Geotextile</li> <li>• Geo-composite drainage system</li> <li>• Pipe bedding aggregate</li> <li>• Filter drain material</li> </ul>	<p>Packaging material.</p> <p>Excess construction materials and broken/damaged construction materials.</p> <p>Existing highway infrastructure and technology as removed by excavation works.</p> <p>Waste oils from construction vehicles.</p> <p>Construction worker generated wastes.</p>

11.7.2. LA 110 (Ref 149) provides a set of questions to be addressed during scoping in order to understand the potential for significant environmental effects and the need for further assessment. provides commentary against each of the scoping questions based on information available to date for the proposed scheme.

**Table 35: Scoping questions and commentary**

Scoping question	Commentary
Is the project likely to recover/reuse little on site material thereby requiring materials to be imported to site?	<p>The cut and fill balance of excavated material is not yet known for the proposed scheme.</p> <p>The EAR (Ref 33) estimated that the earthworks cut and fill balance may require the export of approximately 338,000m<sup>3</sup> of earthworks materials and the import of 449,000m<sup>3</sup> of granular fill.</p> <p>Further assessment is required.</p>
Is the project likely to use little/no recycled/ secondary materials thereby requiring the majority of material used on the project to comprise primary materials?	<p>The OEMP for the proposed scheme will set a target for the use of reused/recycled/secondary aggregates in the construction of the proposed scheme.</p> <p>The EAR (Ref 33) was not able to provide an estimate of recycled content as there was</p>

Scoping question	Commentary
	<p>insufficient information available at the time of writing. Further assessment is required.</p>
<p>Is the project likely to sterilise (substantially constrain/prevent existing and future use of) mineral sites or peat resources?</p>	<p>Initial baseline studies have identified that:</p> <ul style="list-style-type: none"> <li>• there are no Minerals Infrastructure Consultation Areas within 1 km of the proposed scheme alignment;</li> <li>• a Sharp Sand Resource Consultation Area is present across the western part of the proposed scheme;</li> <li>• an Oil and Gas Sites Mineral Consultation Area arising from Petroleum Exploration and Development Licence areas is present across the western part of the proposed scheme; and</li> <li>• there are no peat resources within 1 km of the proposed scheme alignment.</li> </ul> <p>Further assessment is required.</p>
<p>Would the project generate large quantities of waste relative to landfill capacity?</p>	<p>The exact construction, demolition and excavation waste types and quantities are not yet known. The <i>EAR</i> (Ref 33) estimated that the earthworks cut and fill balance may require the export of approximately 338,000m<sup>3</sup> of earthworks materials. Estimates of demolition and construction waste were not available at the time of writing. Further assessment is required.</p>
<p>Will the project have an effect on the ability of waste infrastructure within the region to continue to accommodate waste from other sources?</p>	<p>Initial baseline studies have identified that a Waste Infrastructure Consultation Area is adjacent to the eastern end of the proposed scheme. Further assessment is required.</p>

11.7.3. Due to the limitations on information available at this stage, further assessment is required in relation to the construction phase of the proposed scheme.

## 11.8. Assessment methodology

11.8.1. The scoping exercise has identified potential for significant effects relating to material assets and waste during the construction phase of the proposed scheme and, therefore, an assessment will be undertaken in accordance with the guidance in *DMRB LA 110* (Ref 149).

11.8.2. When assessing the impacts on material assets and waste, the following factors need to be considered:

- waste producers have a legal duty of care to manage their waste in accordance with current regulations and to ensure that any waste leaving the site of production is transferred to a suitably licensed facility for further treatment or disposal;
- facilities transferring, treating or disposing of waste must be either licensed or apply for an exemption from a license. Impacts arising from

the operation of waste management facilities are considered elsewhere as part of the planning and permitting process for such facilities;

- as part of their planning function, Waste Planning Authorities (WPAs) are required to ensure that sufficient land is available to accommodate facilities for the treatment of all waste arising in the area, either within the WPA area, or through export to suitable facilities in other areas;
- Minerals Planning Authorities (MPAs) are similarly required to ensure an adequate supply of minerals, sufficient to meet the needs of national and regional supply policies, and local development needs.

11.8.3. The receptors for this assessment are:

- existing, proposed and safeguarded mineral sites and resources in proximity to the proposed scheme;
- materials used for the construction of the proposed scheme;
- landfill capacity in the south east England region; and
- waste management infrastructure in proximity to the proposed scheme.

11.8.4. When considering the potential for significant effects on waste management infrastructure from the management of waste arising during construction of the proposed scheme, landfill capacity will be considered rather than all waste management infrastructure capacity for the following reasons:

- disposal to landfill is a permanent impact and the landfill capacity is no longer available (and in most cases is irreversible);
- impacts on other types of waste management infrastructure such as material recovery facilities, are temporary in nature. The impacts occur over a period of months or years; and
- other types of waste management infrastructure are better placed to react to waste management market demands (by provision of additional plant and equipment).

### **Magnitude of impacts and significance of effects**

11.8.5. The magnitude of material asset impacts and the significance of effects will be assessed by:

- establishing whether any identified mineral safeguarding sites will be sterilised;
- estimating the likely types and quantities of the main construction materials that would be required by the proposed scheme;
- estimating the likely proportion of construction and demolition waste that would be recovered;
- estimating the proportion of secondary or recycled aggregate that would be used for construction of the proposed scheme; and,
- comparing the likely recovery rate and proportion of recycled and secondary aggregate to the relevant national targets.

11.8.6. The magnitude of waste management impacts and the significance of effects will be assessed by:

- establishing the baseline for landfill capacity in the south east region;
- estimating the likely types and quantities of waste that would be generated by the proposed scheme;
- comparing the likely waste arisings from the proposed scheme to the baseline landfill capacity and assessing the likely effects on that capacity; and
- establishing whether the operational capacity of existing waste management infrastructure will be directly affected by the proposed scheme.

11.8.7. The criteria used for assessing the significance of effects are shown in Table 36, as set out in *DMRB LA 110* (Ref 149).

**Table 36: Classification and significance of effect criteria for material assets and waste**

Classification of effect	Significance of effect	Material assets criteria	Waste criteria
Neutral	Not significant	Project achieves >99% overall material recovery/recycling (by weight) of non-hazardous construction and demolition waste (CDW) to substitute use of primary materials. Aggregates required to be imported to site comprise >99% re-used/recycled/secondary content.	No reduction or alteration in the capacity of waste infrastructure within the region.
Slight	Not significant	Project achieves 70-99% overall material recovery/recycling (by weight) of non-hazardous CDW to substitute use of primary materials. Aggregates required to be imported to site comprise re- re-used/recycled/secondary content in line with the relevant regional percentage target.	≤1% reduction or alteration in the regional capacity of landfill. 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.
Moderate	Significant	Project achieves <70% overall material	>1% reduction or alteration in the

Classification of effect	Significance of effect	Material assets criteria	Waste criteria
		recovery/recycling (by weight) of non-hazardous CDW to substitute use of primary materials. Aggregates required to be imported to site comprise re-used/recycled/secondary content below the relevant regional percentage target.	regional capacity of landfill as a result of accommodating waste from a project. 1-50% of project waste for disposal outside of the region.
Large	Significant	Project achieves <70% overall material recovery/recycling (by weight) of non-hazardous CDW to substitute use of primary materials. Aggregates required to be imported to site comprise <1% re-used/recycled/secondary content. Project sterilises ≥1 mineral safeguarding site and/or peat resource.	>1% reduction in the regional capacity of landfill as a result of accommodating waste from a project. >50% of project waste for disposal outside of the region.
Very large	Significant	Not applicable	>1% reduction or alteration in the national capacity of landfill as a result of accommodating waste from a project. Construction of new (permanent) waste infrastructure is required to accommodate waste from a project.

## 11.9. Assumptions, limitations and uncertainties

- 11.9.1. The material assets and waste assessment will be undertaken based on the information available at the time of the assessment. It is anticipated that some of the information required may not be known during the EIA. Any assumptions and limitations will be reported in the ES.
- 11.9.2. The chapter has assumed that all third-party data used to generate the baseline is fit for purpose, and accurately reflects the current status of material assets and waste in the study area.

- 11.9.3. Waste arising from extraction, processing and manufacture of construction components and products will be scoped out of the assessment. It is assumed that these products and materials are being produced at sites with their own waste management plans, facilities, and supply chain, which are potentially in different regions of the UK or the world, and therefore outside of the geographical scope of the assessment.
- 11.9.4. The environmental impact of waste management at established third party waste management facilities will be scoped out of the assessment. It is assumed that these facilities will be operating under the relevant planning and permitting authorisations and will therefore have been subject to site-specific assessments.

## 12. Noise and Vibration

### 12.1. Introduction

- 12.1.1. This section sets out the approach to the assessment of the proposed scheme's impacts in terms of noise and vibration. The proposed scheme has the potential to affect noise and vibration levels during construction and noise levels during operation. The purpose of the assessment will be to identify relevant noise and vibration sensitive receptors and to consider the nature and scale of potential impacts of the proposed scheme. An assessment of the significance of any likely noise and vibration effects will also be made.
- 12.1.2. The proposed scope and methodology of the assessment is based on the guidance set out within the *DMRB LA 111 Noise and Vibration* (Ref 165).
- 12.1.3. Tranquillity is considered within Section 8 of this report. Human health impacts are addressed in Section 13. Noise impacts on cultural heritage assets are considered within Section 7 and impacts on ecologically sensitive receptors are addressed in Section 9. These technical assessments will incorporate data produced as part of the noise and vibration assessment.

### 12.2. Relevant policy

- 12.2.1. The following planning policies have been considered in identifying the noise and vibration assessment methodology, receptors and their sensitivity, potential impacts, significant effects and mitigation:

- *NPSNN* (Ref 10);
- *NPPF* (Ref 11);
- *Noise Policy Statement for England* (Ref 166); and
- *Planning Practice Guidance - Noise* (PPG-N) (Ref 89).

#### **National Policy Statement for National Networks**

- 12.2.2. Paragraphs 5.186 to 5.200 of the *NPSNN* (Ref 10) deal with noise and vibration. The *NPSNN* states that excessive noise can have wide ranging impacts on the quality of human life and health, use and enjoyment of areas of value (such as quiet places) and areas with high landscape quality. It also notes that similar considerations apply to vibration.
- 12.2.3. The *NPSNN* states that operational noise and vibration, with respect to human receptors, should be assessed using the principles of the relevant British Standards and other guidance. For the prediction, assessment and management of construction noise and vibration, reference should be made to any relevant British Standards and other guidance, which also give examples of mitigation strategies.
- 12.2.4. The *NPSNN* states that noise from a proposed development can also have adverse impacts on wildlife and biodiversity and that noise effects of a

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Ref 165 Standards for Highways, Highways Agency (2020), Design Manual for Roads and Bridges (DMRB) LA 111 Revision 2 Noise and Vibration

Ref 166 DEFRA (2010) Noise Policy Statement for England (NPSE)

proposed development on ecological receptors should be assessed in accordance with the Biodiversity and Geological Conservation section of the *NPSNN*.

- 12.2.5. With respect to decision making, the *NPSNN* states that developments must be undertaken in accordance with statutory requirements for noise and that due regard must be given to the relevant sections of the *Noise Policy Statement for England (NPSE)*, the *NPPF* and the Government's associated planning guidance on noise.
- 12.2.6. It states that the Secretary of State should not grant development consent unless satisfied that the proposals will meet the following aims, within the context of Government policy on sustainable development:
- avoid significant adverse impacts on health and quality of life from noise as a result of the new development;
  - minimise and mitigate other adverse impacts on health and quality of life from noise from the new development; and
  - contribute to improvements to health and quality of life through the effective management and control of noise, where possible.
- 12.2.7. These three aims are consistent with those which support the long-term vision in the *NPSE* described below.

#### **National Planning Policy Framework**

- 12.2.8. The *NPPF* sets out the Government's planning policies for England and how these are expected to be applied.
- 12.2.9. The framework explains that the purpose of the planning system is to contribute to the achievement of sustainable development (paragraph 7) and enhance the natural and local environment. Consequently, the aim is to prevent both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by, unacceptable levels of noise pollution.
- 12.2.10. The *NPPF* states that planning policies and decisions should aim to:
- “mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise from giving rise to significant adverse impacts on health and the quality of life; and
  - identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.” (paragraph 180)
- 12.2.11. With regards to ‘adverse effects’ and ‘significant adverse effects’ the *NPPF* refers to the *NPSE*, which is described below.

#### **Noise Policy Statement for England**

- 12.2.12. The *NPSE* seeks to clarify the underlying principles and aims in existing policy documents, legislation and guidance that relate to noise. The *NPSE* applies to all forms of noise, including environmental noise, neighbour noise and neighbourhood noise.

12.2.13. The statement sets out the long-term vision of the government's noise policy, which is to:

“promote good health and a good quality of life through the effective management of noise within the context of policy on sustainable development”. (paragraph 2.15)

12.2.14. This long-term vision is supported by three aims:

- “avoid significant adverse impacts on health and quality of life;
- mitigate and minimise adverse impacts on health and quality of life; and
- where possible, contribute to the improvements of health and quality of life.” (paragraph 1.7)

12.2.15. The long-term policy vision and aims are designed to enable decisions to be made regarding what is an acceptable noise burden to place on society.

12.2.16. The ‘Explanatory Note’ within the *NPSE* provides further guidance on defining ‘significant adverse effects’ and ‘adverse effects’ using the concepts:

- “No Observed Effect Level (NOEL) - the level below which no effect can be detected. Below this level no detectable effect on health and quality of life due to noise can be established;
- Lowest Observable Adverse Effect Level (LOAEL) - the level above which adverse effects on health and quality of life can be detected; and
- Significant Observed Adverse Effect Level (SOAEL) - the level above which significant adverse effects on health and quality of life occur.”

12.2.17. The three aims can therefore be interpreted as follows:

- the first aim is to avoid noise levels above the SOAEL;
- the second aim considers situations where noise levels are between the LOAEL and SOAEL. In such circumstances, all reasonable steps should be taken to mitigate and minimise the effects. However, this does not mean that such adverse effects cannot occur; and
- the third aim seeks, where possible, to positively improve the health and quality of life through the pro-active management of noise whilst also taking account of the guiding principles of sustainable development. It is considered that the protection of quiet places and quiet times as well as the enhancement of the acoustic environment will assist with delivering this aim.

12.2.18. The *NPSE* recognises that it is not possible to have single objective noise-based measures that define the SOAEL, LOAEL and NOEL that are applicable to all sources of noise in all situations. The levels are likely to be different for different noise sources, receptors and at different times of the day.

### **Planning Practice Guidance**

12.2.19. The PPG advises that local planning authorities should consider:

- “whether or not a significant adverse effect is occurring or likely to occur;
- whether or not an adverse effect is occurring or likely to occur; and
- whether or not a good standard of amenity can be achieved.”

12.2.20. The guidance provides additional details on the concepts of LOAEL and SOAEL in terms of the perception of noise at each level, example outcomes due to noise at each level, and the action which should be considered at each level. This guidance also introduces the additional concepts of NOAEL (No Observed Adverse Effect Level), and UAEL (Unacceptable Adverse Effect Level).

12.2.21. Factors to be considered in determining if noise is a concern are identified including the absolute noise level of the source, the existing ambient noise climate, time of day, frequency of occurrence, duration, character of the noise and cumulative impacts.

12.2.22. With particular regard to mitigating noise impacts on residential development, the guidance highlights that impacts may be partially offset if residents have access to a relatively quiet façade as part of their dwelling or a relatively quiet amenity space (private, shared or public).

#### **Adopted Arun Local Plan 2011-2031 (Ref 14)**

12.2.23. Section 21.1 , Policy QE SP1 states that:

“The Council requires that all development contributes positively to the quality of the environment and will ensure that development does not have a significantly negative impact upon residential amenity, the natural environment or upon leisure and recreational activities enjoyed by residents and visitors to the District”

12.2.24. Policy QE DM1 states that:

“Developers proposing new noise generating development must seek advice from an early stage to determine the level of noise assessment required. Proposals will need to be supported by:

Evidence to demonstrate that there are no suitable alternative locations for the development.

A noise report which provides accurate information about the existing noise environment, and the likely impact of the proposed development upon the noise environment. The report must also demonstrate that the development meets the appropriate national and local standards for noise, as set out in Annex 1 of the Planning Noise Advice Document: Sussex, and any mitigation measures required to ensure noise is managed to an acceptable level.

Evidence to demonstrate that the development will not impact upon areas identified and valued for their tranquillity, including

gaps between settlements which are important to the enjoyment of Arun's countryside, its habitats and biodiversity.”

### **South Downs Local Plan 2014-2033 (Ref 15)**

12.2.25. Policy SD54 (Pollution and Air Quality) states that:

“Development proposals will be permitted provided that levels of air, noise, vibration, light, water, odour or other pollutants do not have a significant negative affect on people and the natural environment now or in the foreseeable future, taking into account cumulative impacts and any mitigation.”

## **12.3. Study area**

### **Construction phase**

- 12.3.1. As detailed in *DMRB LA 111* (Ref 165) it is standard practice to consider noise impacts from construction activities up to a maximum distance of approximately 300 m and vibration impacts from construction works up to a maximum distance of approximately 100 m. No noise and vibration impacts would be anticipated beyond these distances.
- 12.3.2. The study area for the quantitative assessment of construction phase noise and vibration impacts will focus on quantifying the potential impacts at the closest existing identified potentially sensitive receptors to the construction works, with some additional receptors selected to represent the impacts further away from the works (including within the SDNP). The selected receptors will be collectively representative of all identified potentially sensitive receptors in the study area. By focusing on a selection of the closest identified potentially sensitive receptors the reported impacts at these receptors will, therefore, be typical of the worst affected receptors and all potentially significant effects will be identified. The receptors selected further away from the works will demonstrate how the impact would be reduced further away from the works.
- 12.3.3. For construction traffic, a study area of 50 m from any existing roads identified as being potentially affected will be adopted. Affected roads are defined as roads where the addition of construction traffic would potentially increase the Basic Noise Level (BNL) of existing traffic by 1 dB or more as set out in the *Calculation of Road Traffic Noise (CRTN)* (Ref 167). In addition, a study area of 25 m from any existing roads affected by night-time diversions (23:00-07:00), due to the closure of an existing road, will be adopted.
- 12.3.4. As required by *DMRB LA 111* (Ref 165), any other areas “where there is reasonable stakeholder expectation” that a construction phase assessment is undertaken will also be considered. Any such areas will be identified through consultation responses and discussions with stakeholders.

## Operational phase

- 12.3.5. The study area for the assessment of operational phase road traffic noise impacts will be defined as outlined below, following the guidance set out within the *DMRB LA 111* (Ref 165).
- 12.3.6. The study area will include land within a 600 m boundary around the proposed scheme boundary and existing roads physically changed or bypassed by the proposed scheme (this includes the existing A29 and A248, as well as sections of the A27 between Fontwell and Yapton Lane, and the existing A27 road between Fontwell and Arundel). Additional areas will also be included in the study area which are within 50 m of other road links that are predicted to be subject to a change in traffic noise level as a result of the proposed scheme of:
- 1 dB or more in the short-term (Do-Minimum (DM) opening year to Do-Something (DS) opening year); or
  - 3 dB or more in the long-term (DM opening year to DS 15 years after opening), subject to a minimum change of 1 dB between the DM and DS 15 years after opening.
- 12.3.7. These other road links will be identified by analysis of the traffic data, using the *CRTN* BNL to determine the likely change in traffic noise levels. The identification of these other road links will consider all surrounding existing roads with 18-hour (06:00-00:00) weekday traffic flows above the 1,000 lower cut-off from the *CRTN* prediction methodology in all scenarios.
- 12.3.8. As required by *DMRB LA 111* (Ref 165), any other areas “where there is reasonable stakeholder expectation” that a construction phase assessment is undertaken will also be considered. Any such areas will be identified through consultation responses and discussions with Highways England, ArDC and West Sussex County Council.

## 12.4. Baseline conditions

- 12.4.1. A desktop review of the area at this preliminary stage shows that the majority of the proposed scheme passes through open or agricultural land. However, there are a number of noise sensitive receptors (NSRs) in close proximity to the proposed scheme and the existing A27. Both the A27 and a number of other minor roads will contribute to ambient noise levels at these properties.
- 12.4.2. Potentially sensitive receptors within the 600 m boundary around the proposed scheme and the existing section of A27 to be bypassed include residential properties in Walberton, Binsted, Tortington, and Arundel. There are a number of schools in the study area including Arundel C of E Primary School, Walberton & Binsted C of E Primary School and Walberton Pre-School. A range of community facilities are located in the 600 m boundary, including places of worship, village halls and medical facilities.
- 12.4.3. There are 13 Noise Important Areas (NIAs) within the 600 m boundary, all located near to the existing A27. From east to west these are NIA 6157, NIA 5484, NIA 5486, NIA 5485, NIA 12488, NIA 5488, NIA 5487, NIA 12489, NIA 12490, NIA 5490, NIA 6158, NIA 5491 and NIA 12491. Noise Important

Areas, with respect to noise from roads, are those location where the top 1% of the population are affected by the highest noise levels, according to the results of strategic noise mapping across England, undertaken under the Environmental Noise Directive (END).

- 12.4.4. No END quiet areas or potential END quiet areas have currently been identified within the 600 m boundary.
- 12.4.5. There are four identified Scheduled Monuments within the 600 m boundary. These are Arundel Castle, Goblestubbs Copse Earthworks and Madehurst Woods Earthworks, located north of the existing A27 and proposed scheme, and Tortington Augustinian Priory and Ponds, located south of the existing A27 but north of the proposed scheme (refer to Section 7 for further details). There are a number of PRoW within the 600 m boundary, including bridleways within the SDNP.
- 12.4.6. Sensitive receptors within the study area that are most likely to be impacted by the proposed scheme have been determined from OS mapping and a desktop review using publicly available data. As part of the EIA, OS AddressBase Plus data on land use will be reviewed and discussed with Highways England, ArDC and West Sussex County Council to confirm the relevant noise and/or vibration sensitive receptors have been identified.
- 12.4.7. The Environmental Health Officer at ArDC will be consulted to identify if any quiet areas or potential quiet areas have been designated under the END, or whether any 'tranquil areas' (as referred to in the *NPPF*) have been identified.
- 12.4.8. In addition, the Environmental Health Officer will be consulted to determine the requirements for baseline sound monitoring, to inform the assessment of the proposed scheme. Baseline monitoring will be undertaken to establish the existing sound levels in the vicinity of the proposed scheme and to validate the noise model. The monitoring procedures will conform to *BS 7445: 2003 'Description and Measurement of Environmental Noise'* (Ref 168) and CRTN, as appropriate.

## 12.5. Potential impacts

### Construction impacts

- 12.5.1. The main construction activities associated with the proposed scheme will be site clearance, earthworks, bridgeworks, installation of services and road construction works.
- 12.5.2. The construction of the proposed scheme has the potential to result in temporary adverse noise impacts at the closest receptors to the works. The potential for temporary construction vibration impacts is dependent on the need for construction activities which are a potentially significant source of vibration, such as works using vibratory rollers/compactors and some types of piling.
- 12.5.3. The addition of construction traffic onto existing roads can have a temporary impact on sensitive receptors located along the existing roads used by these

vehicles. The potential for such impacts is dependent on the volume and route of construction traffic. Diversions or night-time road closures, if required, can also cause short-term changes in traffic conditions and therefore traffic noise levels. In addition, re-routing of existing traffic onto alternative roads during the construction works is a potential source of temporary impacts.

### **Operational impacts**

- 12.5.4. The proposed scheme introduces a new route from the junction at Arundel Road in the west, running south of the SDNP, and re-joining the A27 at the Crossbush roundabout in the east. The new source of road traffic noise along the length of the new route is likely to be the main source of adverse noise impacts at NSRs during operation of the proposed scheme. Conversely, the proposed scheme will reduce traffic flows along the existing A27 Arundel Road, thereby providing beneficial impacts at NSRs along the existing route.
- 12.5.5. The magnitude of the operational traffic noise impacts at NSRs is dependent on a range of factors including the traffic flow, composition, speed, road surface, ground topography, the presence of intervening buildings/structures and the distance to the road.
- 12.5.6. *DMRB LA 111* scopes out operational vibration impacts as a maintained road surface will be free of irregularities as part of project design and general maintenance. As such, operational vibration does not have the potential to lead to significant adverse effects as is scoped out of the EIA.

## **12.6. Design, mitigation and enhancement measures**

- 12.6.1. The assessment will take into account the benefits that embedded, standard and additional mitigation measures will have in reducing the magnitude of noise impacts during both construction and operation of the proposed scheme.
- 12.6.2. During the construction phase, application of Best Practicable Means (BPM) will minimise noise and vibration impacts and will be secured within the CEMP. With respect to the operational phase, assessment of different route options has already been considered in the *EAR* (Ref 169) to assist identification of the preferred route to be assessed in the EIA. Further specific measures to be factored into the assessment will be identified during the EIA based upon the latest design information, but are likely to include further consideration of horizontal and vertical route alignment refinements, use and optimal positioning of acoustic barriers and use of low noise surfacing along the proposed scheme.
- 12.6.3. All embedded, standard and additional mitigation measures relied upon as part of the assessment will be agreed with the relevant statutory bodies through the process of consultation and stakeholder engagement.

## 12.7. Description of the likely significant effects

12.7.1. The *EAR, Chapter 11 – Noise and Vibration* (Ref 169) identified the following likely outcomes with regards to the proposed scheme, based on the available information at that stage. These outcomes will form the basis of the future assessment process.

### Likely significant construction effects

- A total of 98 properties have been identified within 100 m of the proposed scheme, providing an initial indication of the number of properties with a potential to experience a significant effect arising from the construction activities.

### Likely significant operation effects

- 531 properties would likely experience a noise level increase classified as moderate and major in the short-term. 209 properties would experience a major adverse effect. The remaining 322 properties would experience a moderate adverse effect;
- 312 properties would experience a noise level decrease classified as moderate and major in the short-term. 137 properties would experience a major beneficial effect and the remaining 175 experience a moderate beneficial effect;
- 462 properties would be subject to noise levels exceeding the SOAEL in the future year without the proposed scheme in operation (Do-minimum 2041). This number would reduce to 263 with the proposed scheme in operation (Do-something 2041);
- The number of properties subject to noise levels exceeding the SOAEL within NIAs would be reduced by seven in the opening year after the implementation of the proposed scheme;
- 265 properties would experience a noise level increase classified as moderate and major in the long-term, 89 of which are classified as major;
- 107 properties would experience a noise level decrease classified as moderate and major in the long-term, 2 of which are classified as major; and
- Two properties have the potential to qualify for a scheme of sound insulation against operational road traffic noise under *Noise Insulation Regulations 1975 (as amended 1988)* (Ref 170).

## 12.8. Assessment methodology

12.8.1. The assessment of noise and vibration for the proposed scheme will be completed in accordance with the relevant guidance in the *DMRB LA 111*. The aim of the assessment is to determine and report likely significant

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Ref 169 Highways England (2019) A27 Arundel Bypass EAR – PCF Stage 2. Chapter 11 – Noise and Vibration. Available at: <https://assets.highwaysengland.co.uk/roads/road-projects/A27+Arundel+Improvement/EAR2019/EAR+Chapter+11+Noise+and+Vibration.pdf>  
Ref 170 UK Government (1988), *Noise Insulation Regulations 1975 (as amended 1988)*

effects on sensitive receptors due to construction noise, construction vibration, construction traffic noise and operational traffic noise.

- 12.8.2. Temporary construction noise, construction traffic and night-time diversion route traffic noise effects will be included in the scope of the assessment. Temporary construction vibration effects will be included in the scope if activities which are a potentially significant source of vibration are proposed as part of the works.

### **Construction assessment methodology**

#### Construction noise

- 12.8.3. A quantitative assessment of construction noise impacts is proposed based on estimates of reasonable worst-case construction noise levels for a selection of potential NSRs within 300 m of the works, including those closest to the works. Reasonable worst-case construction noise levels will be estimated in accordance with the methodology in *BS 5228: 2009+A1: 2014 'Code of Practice for Noise and Vibration Control on Construction and Open Sites'* (Ref 171 and Ref 172).
- 12.8.4. *BS 5228* contains several example methodologies for identifying significant construction noise effects based on fixed thresholds or noise level changes. For this EIA, the 'ABC' method as set out in *DMRB LA 111 (165)* will be used. This approach is based on setting the threshold for the onset of potentially significant adverse effects (SOAEL) depending on the existing ambient noise level. Receptors with low existing ambient noise levels (Category A) have a lower threshold than those with high existing ambient noise levels (Category C). Higher thresholds are set for normal daytime construction working hours, compared to the more sensitive evening/weekend and night-time periods. As a conservative approach, the threshold for the onset of any adverse effect (LOAEL) is set at a construction noise level equal to the existing ambient noise level. Construction noise levels between the LOAEL and the SOAEL have the potential to result in adverse effects but will not normally be classed as significant adverse effects. However, noise mitigation measures will still be considered and applied, if necessary, in such locations with the aim of minimising adverse effects as far as reasonably practicable (within the context of Government policy on sustainable development).
- 12.8.5. Table 37 which is adapted from Table E.1 in *BS 5228*, sets out the construction noise SOAEL and LOAEL proposed for this assessment.

**Table 37: Construction noise SOAEL and LOAEL for all receptors**

Time of Day	SOAEL $L_{Aeq,T}$ dB (Façade)			LOAEL $L_{Aeq,T}$ dB (façade)
	A <sup>1</sup>	B <sup>2</sup>	C <sup>3</sup>	
Daytime (07:00 – 19:00) and Saturdays (07:00 – 13:00)	65	70	75	Existing ambient
Evenings (19:00 – 23:00 weekdays) and Weekends (13:00 – 23:00 Saturdays and	55	60	65	Existing ambient
Night-time (23:00 – 07:00)	45	50	55	Existing ambient
<p><sup>1</sup> Category A: threshold values to use when ambient noise levels (when rounded to nearest 5dB) are less than these values</p> <p><sup>2</sup> Category B: threshold values to use when ambient noise levels (when rounded to nearest 5dB) are the same as Category A values</p> <p><sup>3</sup> Category C: threshold values to use when ambient noise levels (when rounded to nearest 5dB) are higher than Category A values</p> <p>NOTE: If the ambient noise level exceeds the Category C threshold values, then LOAEL and SOAEL are defined as equal to the existing ambient.</p>				

### Construction traffic

- 12.8.6. Construction traffic noise impacts along existing roads will be estimated based upon the *CRTN* BNL calculation methodology at a reference distance of 10 m from the kerb, both ‘with’ and ‘without’ construction traffic, and for each road link in the traffic model with the potential to be significantly affected by construction traffic flows. The same methodology will be adopted for night-time carriageway closures, assuming suitable traffic data are available. If data for night-time road closures are unavailable, the advice in *DMRB LA 111* (Ref 165), which states that the sudden change in traffic noise levels on diversion routes as a result of night-time closures “is highly likely to cause disturbance to receptors next to (within 25 m of) the road”, will be taken into account.

### Construction vibration

- 12.8.7. Construction vibration impacts will be assessed at potentially sensitive receptors within a maximum of 100 m of construction activities that are potentially significant sources of vibration. Vibration levels will be estimated in accordance with the relevant methodologies in *BS 5228-2* (Ref 173).
- 12.8.8. The transmission of ground-borne vibration is highly dependent on the nature of the intervening ground between the source and receptor and the activities being undertaken. *BS 5228-2* (Ref 173) provides data on measured

levels of vibration for various construction works. Impacts are considered for both damage to buildings and annoyance to occupiers.

- 12.8.9. Table 38 details Peak Particle Velocity (PPV) vibration levels and provides a semantic scale for the description of construction vibration effects on human receptors, based on guidance contained in *BS 5228-2* (Ref 173).

**Table 38: Construction vibration criteria for human receptors (annoyance)**

Peak Particle Velocity Level	Description
10 mms <sup>-1</sup>	Vibration is likely to be intolerable for any more than a very brief exposure at this level.
1.0 mms <sup>-1</sup>	It is likely that vibration of this level in residential environments will cause complaint but can be tolerated if prior warning and explanation is given to residents.
0.3 mms <sup>-1</sup>	Vibration might just be perceptible in residential environments.
0.14 mms <sup>-1</sup>	Vibration might just be perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.

- 12.8.10. For human receptors the LOAEL is defined as a PPV of 0.3 mms<sup>-1</sup> (millimetres per second), this being the point at which construction vibration is likely to become perceptible. The SOAEL is defined as a PPV of 1.0 mms<sup>-1</sup>, this being the level at which construction vibration can be tolerated with prior warning. These levels are in accordance with *DMRB LA 111* (Ref 165).
- 12.8.11. In addition to human annoyance, building structures may be damaged by high levels of vibration. The levels of vibration that may cause building damage are far in excess of those that may cause annoyance. Consequently, if vibration levels within buildings are controlled to those relating to annoyance (i.e. 1.0 mms<sup>-1</sup>), then it is highly unlikely that buildings would be damaged by construction vibration. *BS 7385-2: 1993 'Evaluation and measurement for vibration in buildings – Part 2: Guide to damage levels from ground borne vibration'* (Ref 174) provides guidance on vibration levels likely to result in cosmetic damage and is referenced in *BS 5228-2* (Ref 173). Guide values for transient vibration, above which cosmetic damage could occur, are given in Table 39.

**Table 39: Transient vibration guide values for cosmetic damage**

Type of building	Peak Component Particle Velocity in Frequency Range of Predominant Pulse	
	4Hz to 15 Hz	15Hz and above
Reinforced or framed structures Industrial and heavy commercial buildings	50 mms <sup>-1</sup> at 4Hz and above	
Unreinforced or light framed structures Residential or light commercial buildings	15 mms <sup>-1</sup> at 4Hz increase to 20 mms <sup>-1</sup> at 15Hz	20 mms <sup>-1</sup> at 15Hz increasing to 50 mms <sup>-1</sup> at 40Hz and above
NOTE 1: Values referred to are at the base of the buildings NOTE 2: For un-reinforced or light framed structures and residential or light commercial buildings, a maximum displacement of 0.6 mm (zero to peak) is not to be exceeded		

12.8.12. BS 7385-2 (Ref 174) states that for transient vibration, such as from individual impacts, the probability of building damage tends towards zero at levels less than 12.5 mms<sup>-1</sup> PPV. For continuous vibration, such as from vibratory rollers, the threshold is around half this value. It is also noted that these values refer to the likelihood of cosmetic damage. ISO 4866:2010 'Mechanical vibration and shock. Vibration of fixed structures. Guidelines for the measurement of vibrations and evaluation of their effects on structures' (Ref 175) defines three different categories of building damage:

- Cosmetic: formation of hairline cracks in plaster or drywall surfaces and in mortar joints of brick/concrete block constructions;
- Minor: formation of large cracks or loosening and falling of plaster or drywall surfaces or cracks through brick/block; and
- Major: damage to structural elements, cracks in support columns, loosening of joints, splaying of masonry cracks.

12.8.13. BS 7385-2 (Ref 174) states that minor damage occurs at a vibration level twice that of cosmetic damage and major damage occurs at a vibration level twice that of minor damage. Therefore, this guidance can be used to define the potential impact identified in Table 40 for continuous vibration.

**Table 40: Construction vibration criteria for assessing building damage**

Damage risk	Continuous Vibration Level PPV mms <sup>-1</sup>
Major	30
Minor	15
Cosmetic	6
Negligible	<6

## Construction significance of effect

12.8.14. The key factors in identifying construction noise, construction traffic noise and vibration annoyance significant effects are the magnitude of the impact and the duration. The magnitude of the impact is considered on a scale from negligible to major, as detailed in Table 41 adapted from *DMRB LA 111* (Ref 165).

**Table 41: Construction magnitude of impact**

Magnitude of impact	Construction noise level	Construction traffic increase in BNL	Construction vibration level
Major	Above or equal to the SOAEL +5 dB	Greater or equal to 5 dB	Above or equal to 10 mms <sup>-1</sup> PPV
Moderate	Above or equal to the SOAEL and less than +5 dB	Greater than or equal to 3 dB and less than 5dB	Above or equal to the SOAEL and below 10 mms <sup>-1</sup> PPV
Minor	Above or equal to the LOAEL and below the SOAEL	Greater than or equal to 1 dB and less than 3 dB	Above or equal to the LOAEL and below the SOAEL
Negligible	Below LOAEL	Less than 1 dB	Below LOAEL

12.8.15. If suitable traffic data regarding diversion routes used at night (due to road closures) are not available, the magnitude of impact will be classified as major at NSRs identified within a distance of 25 m of the road, as stated in *DMRB LA 111* (Ref 165).

12.8.16. With regard to duration of construction works, *DMRB LA 111* (Ref 165) states that construction noise, construction traffic noise or construction vibration shall constitute a significant effect where a major or moderate magnitude of impact would occur for a duration of:

- 10 or more days (or evenings/weekends or nights) in any 15 consecutive days; or
- more than 40 days (or evenings/weekends or nights) in any six consecutive months.

12.8.17. If detailed information on construction activity durations is not available, a conservative judgement will be made of the likelihood of the duration criteria being exceeded based on the information available at the time of assessment.

## Operational assessment methodology

12.8.18. Noise from a flow of road traffic is generated by both the vehicle engines and the interaction of tyres with the road surface. The traffic noise level at a receptor, such as an observer at the roadside or residents within a property, is influenced by a number of factors including traffic flow, speed, composition (percentage of HDV), road gradient, the type of road surface, the distance

- from the road and the presence of any obstructions between the road and the receptor.
- 12.8.19. Noise from a stream of traffic is not constant, but to assess the traffic noise impact a single figure estimate of the overall noise level is necessary. The index adopted by the UK Government in *CRTN* to assess traffic noise is  $L_{A10,18h}$ . This value is determined by taking the highest 10% of noise readings in each of the 18 one-hour periods between 06:00 and 00:00, and then calculating the arithmetic mean.
- 12.8.20. *CRTN* provides the standard methodology for predicting the  $L_{A10,18h}$  road traffic noise level. Noise levels are predicted at a point measured 1 m horizontally from the external façade of buildings.
- 12.8.21. Although the main focus of the assessment is on daytime impacts, *DMRB LA 111* (Ref 165) also requires an assessment of night-time traffic noise levels using the parameter  $L_{night, outside}$ , which is the traffic noise level over the period 23:00 to 07:00. However, this parameter is not calculated by the standard *CRTN* methodology. Three methods for calculating night-time traffic noise levels have been developed by the Transport Research Authority (TRL) (Ref 176). The most widely used, and the one employed for this assessment, is 'Method 3' which factors the  $L_{night, outside}$  from the  $L_{A10,18h}$ , based on the typical diurnal pattern of traffic flows in the UK.
- 12.8.22. The *CRTN* methodology applies a 'low flow' correction to 18-hour Annual Average Weekday Traffic (AAWT) flows between 1,000 and 4,000. The low flow correction procedure amplifies the impact of changes in traffic flows which are already low, particularly at NSRs very close to the road. The 1,000 AAWT flow cut-off is the lower limit of the reliability of the *CRTN* prediction methodology.
- 12.8.23. Daytime and night-time road traffic noise levels will be at all identified NSRs within a 600 m boundary around the proposed scheme and existing roads physically changed or bypassed by the proposed scheme, using noise modelling software. The model will be based on traffic data generated by a traffic model of the proposed scheme and the surrounding area. Other than roads, the model will include the ground topography, ground type and buildings to form a 3D representation of the area. The noise model created will extend well beyond the 600 m boundary to allow for the contribution of traffic noise from more distant sources.
- 12.8.24. Different façades of the same property can experience different changes in traffic noise level depending on their orientation to the noise source. *DMRB LA 111* (Ref 165) requires that the assessment is based on the façade which experiences the greatest magnitude of noise change. Where this is equal on more than one façade, the façade experiencing the highest do-something traffic noise level will be chosen.
- 12.8.25. For other road links more remote from the proposed scheme that are outside the 600 m boundary, an assessment based on the change in the *CRTN* BNL

will be undertaken, taking into account the flow, % HDV, speed and road surface. The presence of potential NSRs within the 50 m study area of such links will also be determined.

- 12.8.26. A preliminary indication of any properties likely to qualify under the *Noise Insulation Regulations* will be provided in the ES. A full assessment will be completed once the detailed design of the proposed scheme is finalised and in accordance with the timescales set out in the Regulations.
- 12.8.27. The SOAEL and the LOAEL for road traffic noise to be used in the EIA are detailed in Table 42, as defined in *DMRB LA 111* (Ref 165). No special circumstances have been identified for the proposed scheme at this stage that suggest an alternative SOAEL or LOAEL should be adopted.

**Table 42: LOAEL and SOAEL for all receptors**

Time period	SOAEL	LOAEL
Daytime	68 dB LA10,18h (façade) 63 dB LAeq,16h (free-field)	55 dB LA10,18h (façade) 50 dB LAeq,16h (free-field)
Night-time	55 dB L <sub>night</sub> , outside (free-field)	40 dB L <sub>night</sub> , outside (free-field)

- 12.8.28. For the daytime, the SOAEL is set at 68 dB LA10,18h (façade), which is consistent with the daytime trigger level in the *Noise Insulation Regulations*. The *Noise Insulation Regulations* threshold has a history of use in UK noise policy as it has previously been incorporated into planning guidance on the acceptability of sites for new residential developments. It is the external level which corresponds to an internal level, with a closed single glazed window, which would meet the internal daytime criteria of 35 dB LAeq,16h specified in *BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings'* (Ref 177) as desirable for resting in living rooms. It also correlates well with the results of Defra Study *NANR316* (Ref 178) and is supported by the guidance in the *Professional Practice Guidance: Planning and Noise (ProPG)* produced by the Association of Noise Consultants, Institute of Acoustic and Chartered Institute of Environmental Health (2017) (Ref 179).
- 12.8.29. The daytime LOAEL is set at 50 dB LAeq,16h (free-field), based on the guidance provided in the *1999 World Health Organisation (WHO) 'Guidelines for Community Noise'* (Ref 180) regarding the onset of moderate community annoyance. The WHO published the *Environmental Noise Guidelines for the European Region* in 2018 (Ref 181), to provide guidelines for specific noise sources including road traffic. The 2018 WHO guidelines suggest a recommended 53 dB L<sub>den</sub> (free-field) for road traffic noise (note L<sub>den</sub> correlates approximately to LA10,18h) based on a 10% risk of being Highly Annoyed. The 2018 WHO Guidelines state they are “not meant to identify

Ref 177 British Standards Institution (2014), BS 8233:2014 Guidance on sound insulation and noise reduction for buildings

Ref 178 DEFRA (2011) NANR316 – Identification of SOAEL and LOAEL in Support of the NPSE

Ref 179 IOA, ANC and CHIEH (2017) Professional Practice Guidance (ProPG): Planning & Noise – New Residential Development

Ref 180 WHO (1999), Guidelines for Community Noise

Ref 181 WHO (2018), Environmental Noise Guidelines for European Region

effect thresholds”. Instead, they are based on the “smallest relevant risk increase” for various effects, and therefore lie slightly above the LOAEL. On this basis a LOAEL of 50 dB  $L_{Aeq,16h}$  (free-field) is consistent with the latest WHO Guidelines.

- 12.8.30. For the night-time, the SOAEL is set at 55 dB  $L_{night,outside}$  (free-field). This corresponds to an internal level slightly below the night-time criteria of 30 dB  $L_{Aeq,8h}$  specified in *BS 8233* as desirable for sleeping in bedrooms, with a closed single glazed window. It also correlates well with the results of Defra Study *NANR316* and is supported by the *ProPG* guidance. The WHO 2009 *Night Noise Guidelines for Europe* (Ref 182) explicitly identify the night-time LOAEL as 40 dB  $L_{Aeq,8h}$  (free-field). Therefore, this LOAEL will be adopted in the EIA. Levels between 40 and 55 dB  $L_{Aeq,8h}$  are identified in the guidelines as where ‘adverse’, but not significant adverse, health effects are observed among the exposed population. 55 dB  $L_{Aeq,8h}$  is identified in the Guidelines as the level at which the risk of cardiovascular disease increases.
- 12.8.31. The 2018 WHO Guidelines complement the WHO 2009 Night Noise Guidelines and suggest a recommended 45 dB  $L_{night}$  for road traffic noise based on a 3% risk of being Highly Sleep Disturbed. However, as discussed above the 2018 WHO guidelines state they are “not meant to identify effect thresholds”. Instead, they are based on the “smallest relevant risk increase” for various effects, and therefore lie slightly above the LOAEL, as explicitly defined in the WHO 2009 Night Noise Guidelines.
- 12.8.32. The operational road traffic noise SOAELs and LOAELs have been used successfully for numerous road schemes in recent years, including schemes which have been determined through the Planning Act 2008 procedures. The same approach to the setting of SOAELs and LOAELs has been adopted on other major infrastructure schemes such as the HS2 rail project.

### Operational significance of effect

- 12.8.33. *DMRB LA 111* (Ref 165) provides two classifications for the magnitude of the traffic noise impact of a road scheme, as shown in Table 43. These relate to both short-term changes in noise levels (comparing traffic noise levels in the opening year ‘with’ and ‘without’ the proposed scheme) and long-term changes in noise levels (comparing traffic noise levels in the opening year ‘without’ the proposed scheme with levels 15 years after opening ‘with’ the proposed scheme in operation).

**Table 43: Magnitude of road traffic noise impacts**

Short-term change		Long-term change	
Noise level change (rounded to 0.1 dB) LA10, 18h dB	Magnitude of impact	Noise level change (rounded to 0.1 dB) LA10, 18h dB	Magnitude of impact
0	No change	0	No change
0.1-0.9	Negligible	0.1-2.9	Negligible

Short-term change		Long-term change	
1.0-2.9	Minor	3.0-4.9	Minor
3.0-4.9	Moderate	5.0-9.9	Moderate
5.0+	Major	10.0+	Major

12.8.34. As proposed in *DMRB LA 111* (Ref 165), an initial identification of potentially significant effects will be carried out based on the magnitude of change in traffic noise levels due to the proposed scheme in the short-term in the opening year.

12.8.35. Negligible changes in the short-term will not cause changes to behaviour or response to noise, and as such, will not give rise to significant effects. For minor, moderate and major changes *DMRB LA 111* (Ref 165) outlines a range of additional factors which will be considered when identifying significant effects:

- where the magnitude of change in the short-term lies relative to the boundaries between the bands outlined in Table 42. In some circumstances a change within 1 dB of the top of the minor range may be appropriate to be considered a likely significant effect. Conversely a change within 1 dB of the bottom of the moderate range, may in some circumstances be more appropriate to be considered as not a likely significant effect;
- if the magnitude of change in the long-term is different to that in the short-term. If the short-term change is minor (not significant), but the long-term change is moderate (significant) it may be more appropriate to be considered as a likely significant effect. Conversely, a smaller magnitude of change in the long-term compared to the short-term may indicate that it is more appropriate to be considered as not a likely significant effect;
- the absolute noise levels relative to the SOAEL. If the DS traffic noise levels are high (above the SOAEL), a traffic noise change in the short-term opening year of 1.0 dB or more may be more appropriate to be considered as a likely significant effect;
- the location of noise sensitive parts of a receptor. A receptor may contain areas which are more or less sensitive than others such as office spaces or kitchens in a school, which are considered less sensitive than classrooms. Or a residential property may have no windows/doors on the worst affected facade. Alternatively, a receptor may be particularly vulnerable, such as a school for hearing impaired children, or a residential property may have most of the windows/doors on the most affected facade;
- the acoustic context, if the proposed scheme changes the acoustic character of an area. If the proposed scheme introduces road noise into an area where road noise is not currently a major source, it may be appropriate to conclude a minor short-term change is a likely significant effect; and

- the likely perception of a traffic noise change. If the proposed scheme results in obvious changes to the landscape or setting of a receptor it is likely the traffic noise level changes would be more acutely perceived, and it may be more appropriate to conclude a minor short-term change is a likely significant effect. Conversely if the proposed scheme is not visible it can be more appropriate to conclude a moderate change is not a likely significant effect.

12.8.36. With regard to significant effects in terms of Government policy, the traffic noise SOAEL and LOAEL will be used to consider how the proposed scheme complies with the policy aims detailed in the *NPPF* (Ref 11), within the context of government policy on sustainable development, namely to:

- avoid noise giving rise to significant adverse effects on health and quality of life resulting from noise from new development (reduce traffic noise levels at receptors to below the SOAEL); and
- mitigate and reduce to a minimum, other adverse effects on health and quality of life resulting from noise from new development (reduce traffic noise levels at receptors which are between the LOAEL and the SOAEL).

12.8.37. The assessment will set out the mitigation measures that have been incorporated into the proposed scheme with respect to the above aims, and also any measures which were considered but which were not reasonable or practical to include.

## **12.9. Assumptions, limitations and uncertainties**

12.9.1. No other assumptions, limitations or uncertainties are known at this stage in addition to those listed in Section 5.9 of this report.

## 13. Population and Human Health

### 13.1. Introduction

13.1.1. This section sets out the proposed approach to the assessment of the impacts of the proposed scheme on population and human health. The purpose of the assessment will be to identify and characterise any relevant population and health resources, to consider the nature and scale of potential impacts due to the proposed scheme, and to assess the significance of any likely effects. The assessment will be undertaken in accordance with latest *DMRB LA 112 Population and Human Health* guidance published in 2019 (Ref 183). As such, the following aspects will be assessed:

- Land use and accessibility:
  - Private property and housing;
  - Community land and assets;
  - Development land and businesses;
  - Agricultural land holdings; and
  - Walkers, cyclists and horse riders (WCH).
- Human health:
  - Environmental conditions relevant to human health (including changes to noise, air quality and landscape amenity); and
  - Severance/accessibility and the ability of communities to access community land, assets and employment.

13.1.2. This chapter will consider the impacts on population and health from the construction, operation and maintenance of the proposed scheme.

### 13.2. Relevant policy

13.2.1. The key national planning policies to be considered as part of the assessment include, but are not limited to, the following:

- The *NPPF* (Ref 11);
- The Planning Practice Guidance: Healthy and safe communities (Ref 184);
- The Planning Practice Guidance: Open space, sports and recreation facilities, public rights of way and local green space (Ref 185);
- The *NPSNN* (Ref 10); and
- The Countryside and Rights of Way Act (2000) (Ref 186).

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Ref 183 Standards for Highways, (2019); Design Manual for Roads and Bridges, LA 112: Population and human health  
Ref 184 MHCLG, (2019); Planning Practice Guidance: Healthy and safe communities  
Ref 185 MHCLG, (2014); Planning Practice Guidance: Open space, sports and recreation facilities, public rights of way and local green space  
Ref 186 United Kingdom Act of Parliament, (2000); The Countryside and Rights of Way Act

13.2.2. The following local policies are relevant to a consideration of effects on population and health. They describe the relevant planning and development goals put forward by the local authorities and communities to be used to guide local development in the area:

- *Arun Local Plan 2011-2031* (Ref 14);
- Relevant Neighbourhood Plans such as the *Arundel Neighbourhood Plan* (Ref 187); and
- *South Downs Local Plan 2014-2033* (Ref 15).

13.2.3. Whilst not explicitly policy, the *Highways England Delivery Plan (2020)* (Ref 26) also contains key information to be considered in the population and human health assessment.

### 13.3. Study area

13.3.1. The study area varies depending on the effect and the type of resource that is being assessed. As stated in *DMRB LA 112* (Ref 183), when assessing impacts on land use and accessibility, the study area will be based on the proposed scheme boundary including compounds and temporary land take as well as a 500 m study area. Where effects are either identified outside the 500 m area or are unlikely to occur within the 500 m area, the study area will be amended accordingly.

13.3.2. The extent and characteristics of the proposed scheme and the communities/wards that are to be directly and indirectly affected will be taken into account when finalising the study area for the assessment of impacts on human health.

### 13.4. Baseline conditions

13.4.1. Information has been compiled on existing receptors through a desktop study using publicly available sources comprising:

- Ordnance Survey mapping and aerial photography available in the public domain to identify land use relationships and areas of community land and other facilities, for example PRow and cycle routes;
- a review of planning applications (within the last five years) held by Arun District Council;
- a review of development plan documents to identify development land;
- Office for National Statistics (ONS) *Population Estimates 2019 (2020)* (Ref 188) and *Census 2011 (2012)* data (Ref 189);
- Public Health England Local Health Profiles (2019) (Ref 190).

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Ref 187 Arundel Town Council, (2014); Arundel Neighbourhood Plan 2014-2029  
Ref 188 Office for National Statistics (ONS), (2020); Population estimates 2009-2019  
Ref 189 ONS, (2012); Census 2011  
Ref 190 Public Health England, (2019); Local Health Profiles

## Population

- 13.4.2. The proposed scheme is located within the county of West Sussex and the local district of Arun. The population of Arun was 160,758 in 2019, whilst the population of West Sussex was 863,980 (Ref 191). The populations of Arun and West Sussex are considerably more elderly than the regional (south east of England) and national (England) averages. Around 28.9% of residents in Arun are aged over 65; compared to 21.8% in West Sussex, 19.5% in the south east and 18.4% in England.
- 13.4.3. The population of Arun has experienced population growth in line with the regional and national averages over the last decade. Between 2009 and 2019, the number of residents in Arun increased by 8.0%. This percentage increase is broadly similar to the averages recorded for West Sussex (8.5%), the south east (8.1%) and England (7.8%).

## Residential properties

- 13.4.4. The proposed scheme runs through mostly agricultural land to the north of the village of Walberton and to the south of the village of Binsted. It runs south of the SDNP, avoiding the protected woodlands in this area. From west to east, the proposed scheme diverges from the existing road to the north of Walberton and reconnects near Arundel station.
- 13.4.5. There are residential properties located alongside and in close proximity to the proposed scheme as it passes Walberton, Binsted and Tortington. The residential roads of Copse Lane, Tye Lane, Yapton Lane, Binsted Road and Tortington Lane are all passed by the proposed scheme. Several residential properties are located on each of these roads which may be affected by the proposed scheme. In addition, as the route passes the north of Walberton, the proposed scheme crosses the red line boundary for a planning application ('Land East of Tye Lane') for up to 175 dwellings, which as of spring 2021 are currently under construction.
- 13.4.6. The proposed scheme bypasses the town of Arundel. Therefore, the residential properties in the town are further away from the proposed scheme than the existing road network for the A27. There are however residential properties in the south of Arundel and around Arundel Station (located to the east of the town) which are in proximity of the proposed scheme.

## Commercial development

- 13.4.7. The proposed scheme mostly runs through agricultural land. However, there are a small number of businesses located alongside the proposed scheme, or within the study area.
- 13.4.8. Hooe Farm Industrial Estate off Tye Lane is located within the study area for this assessment. Businesses operating within this site include: a stonemason and a car servicing and repair firm. In addition, the proposed scheme crosses the boundary for the Avisford Park Golf Course and Hotel and traverses a campsite to the east of Tortington.

13.4.9. At the Crossbush roundabout, there are several businesses in close proximity to the route. A service station containing food and convenience retailers and a hotel is situated off the A284 to the south of the proposed scheme. Additionally, a hospitality site is located to the north of the Crossbush roundabout, comprising of a hotel, restaurant and caravan park.

#### **Community facilities**

13.4.10. There are no community facilities located directly alongside the new proposed route, although there are facilities alongside the existing A27 such as Arundel District Hospital, Arundel Cricket Club and Arundel Baptist Church. Additionally, there are several community facilities that can be found in the local villages or hamlets of Walberton, Binsted and Tortington. These facilities are in the near vicinity of the proposed scheme and within the 500m study area.

13.4.11. The nearest school to the new proposed route is Walberton & Binsted Church of England (C of E) Primary School. This school is located approximately 200 m from the proposed scheme, immediately to the south of the 'Land East of Tye Lane' planning application site. Binsted Nursery is also approximately 200 m from the proposed scheme, situated on Binsted Lane. The nearest healthcare facilities to the proposed route are Flintcroft Surgery (General Practice (GP)) and Walberton Dental Surgery, both located approximately 400 m south of the proposed scheme in Walberton.

13.4.12. Some formal open and leisure spaces are located near to the proposed scheme. As previously mentioned, the proposed scheme crosses the boundary into Avisford Park Golf Course. In addition to this, there are dedicated open spaces at Walberton Cricket Club and Walberton & Binsted C of E Primary School approximately 200 m from the proposed scheme. An annual event, the Strawberry Fair, is also held in Binsted on land south of Binsted Nursery.

13.4.13. Other accessible community facilities within 2 km of the proposed scheme or the existing A27 include:

- Walberton Baptist Church Hall;
- Walberton Village Hall;
- Saint Mary's on Binsted Lane;
- St Mary's Church on Tortington Lane;
- Arundel C of E Primary School;
- Arundel Town Hall;
- St Nicholas Parish Church; and
- The Arundel Surgery (GP).

13.4.14. There is also a narrow strip of land north of Tortington, known as Broad Green Waste, which is registered as Common Land under the Countryside and Rights of Way Act 2000. The proposed scheme crosses this parcel of land.

### **Agricultural holdings**

13.4.15. Much of the proposed scheme passes through agricultural land, intersecting multiple different land parcels and land holdings. The identified land holdings that are crossed by the proposed scheme include:

- Broomhurst Farm;
- Manor Farm;
- Church Farm;
- Littleton Farm;
- Hooe Farm; and
- Parcels off Binsted Lane.

13.4.16. The baseline information and assessment for these land holdings will be informed by a farm survey.

### **Public rights of way**

13.4.17. The proposed scheme runs through countryside which contains multiple PRoW. The proposed scheme crosses or runs alongside the following:

- Public Footpath 2207;
- Public Footpath 206;
- Public Footpath 3403;
- Public Footpath 354;
- Public Footpath 350; and
- Public Bridleway 392.

13.4.18. The baseline information for these public rights of way will be informed by a Walking Cycling and Horse Rider Assessment and Review (WCHAR). This report will consider the frequency of use for each PRoW in the study area.

### **Human health**

13.4.19. The general health of residents in Arun is slightly worse than the regional average, but broadly in line with the national average. For example, 5.6% of residents in Arun assess their health to be bad or very bad. This proportion is above the rate across the south east (4.3%) but is roundly in line with the rate across England (5.5%) (Ref 192). In addition, 9.4% of residents in Arun are limited a lot in their day-to-day activities due to their health, compared to 6.9% across the south east and 8.3% across England.

13.4.20. Arun is ranked as the 156th most deprived local authority in the country out of 317 local authority districts (Ref 193). As part of this, 19.1% of the Arun's Lower Super Output Areas (LSOAs) are judged to be in the 30% most deprived parts of the country. Within the specific health deprivation and

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Ref 192 Office for National Statistics, (2012); Census 2011

Ref 193 Ministry of Housing, Communities and Local Government, (2019); English Indices of Deprivation 2019

disability domain, 24.5% of LSOAs are ranked in the 30% most health deprived parts of the country, compared to 12.6% across the south east.

- 13.4.21. The life expectancy for both men and women in Arun is lower than the south east average, but higher than the national average. At birth, males in Arun are expected to live to 79.7 years, compared to 80.7 years regionally and 79.6 years nationally (Ref 194). Females in Arun are expected to live to 83.5 years at birth, compared to 84.1 years regionally and 83.2 years nationally.
- 13.4.22. About 13.2% of children under the age of 16 (3,195 children) in Arun come from low income families, which is considerably lower than the national (17.0%) average and similar to the regional average (12.9%). The rate of child obesity in Arun is higher than the regional average, but lower than the national average. Around 17.4% of children in year 6 (252 children) in Arun are classified as obese, compared to 16.8% in the south east and 20.2% across England.
- 13.4.23. The rates for people killed or seriously injured (KSI) on the roads in Arun is better than the regional average but worse than the national averages. Between 2016 and 2018, 46.4 residents per 100,000 of the population were killed or seriously injured on the roads within the Arun District. In comparison, 49.6 residents per 100,000 population in the south east and 42.6 residents per 100,000 population across England were killed or seriously injured on the roads during this time period.
- 13.4.24. The health determinants considered in the assessment have been identified as:
- environmental effects related to human health (noise and air quality effects);
  - access to open space or recreational facilities;
  - opportunities for WCH; and
  - access to healthcare facilities.

#### **Additional survey requirements**

- 13.4.25. In accordance with the *DMRB LA 112* (Ref 183), further information and surveys will be required to inform the baseline and assessments for agricultural land holdings and WCH.

### **13.5. Potential impacts**

#### **Construction – land use and accessibility**

##### Private property and housing

- 13.5.1. Potential impacts to private property and housing include any changes to land use as a result of the construction of the proposed scheme. Potential issues around accessibility to existing private property and housing could also arise during the construction of the proposed scheme.

### Community land and assets

- 13.5.2. The construction of the proposed scheme may require land from the Broad Green Waste parcel which is identified as Common Land. The proposed scheme construction may also require land take from Avisford Golf Course. The construction of the proposed scheme is unlikely to require land from other community assets such as schools, healthcare facilities, libraries or local centres. Potential issues around accessibility to existing community land and assets within Binsted, Tortington and Walberton could arise during the construction of the proposed scheme.

### Development land and businesses

- 13.5.3. Potential impacts to development land and businesses include any changes to land use as a result of the construction of the proposed scheme. Potential issues around accessibility to development land and business could also arise during the construction of the proposed scheme, for example at businesses located at the Hooe Farm Industrial Estate and around the Crossbush roundabout junction.

### Agricultural land holdings

- 13.5.4. The effects on agricultural land holdings during construction relate to the loss of land required for the proposed scheme, both temporarily and permanently if different. This is specifically land within the proposed scheme boundary, construction activity and any offsite compensation. It is considered that the proposed scheme will require land take from agricultural land or result in severance within holdings or access to agricultural infrastructure.

### Walkers, Cyclists and Horse Riders

- 13.5.5. Potential impacts to WCH could arise due to potential disruption to the following routes: Public Footpath 2207; Public Footpath 206; Public Footpath 3403; Public Footpath 354; Public Footpath 350 and Public Bridleway 392. However, a full WCHAR will need to be carried out or made available to ensure that all WCHs are considered.

## **Construction – human health**

### Environmental conditions relating to human health

- 13.5.6. Potential impacts on human health determinants during proposed scheme construction include changes in noise and air pollution, landscape amenity, severance and climate change as a result of construction activities and traffic.

### Severance and accessibility

- 13.5.7. The construction of the proposed scheme could potentially impact accessibility or result in severance for communities accessing open spaces, recreational facilities, healthcare facilities and employment opportunities. Additionally, during construction, opportunities for WCH could potentially be reduced.

## **Operation – land use and accessibility**

### Private property and housing; community land and assets; development land and businesses

- 13.5.8. Operation of the proposed scheme will require no further land from any residential or private properties, community land and assets, development land and businesses located within the study area. Accessibility to these assets could be enhanced during the operation of the proposed scheme. However, permanent road and PRoW diversions or closures could also result in changes in journey length or severance.

### Agricultural land holdings

- 13.5.9. Permanent road and PRoW diversions or closures could result in changes in journey length or severance during operation. This assessment will be informed through consultation with landowners. The proposed scheme will aim to enhance existing access or make provisions for access impacted as a result of the proposed scheme.

### Walkers, cyclists and horse riders

- 13.5.10. The proposed scheme may have an effect of maximising opportunities for walking and cycling through the provision of new and improved pedestrian and cycle infrastructure along its length. However, permanent road and PRoW diversions or closures could also result in changes in journey length or severance.

## **Operation – human health**

### Environmental conditions relating to human health

- 13.5.11. Potential impacts on human health determinants during operation include changes in noise and air quality that occur as a result of the proposed scheme.

### Reduced or increased access to open space/recreation facilities

- 13.5.12. Potential impacts on human health determinants during operation include any changes to the accessibility of open spaces, nature and recreation facilities as a result of the proposed scheme.

### Reduced or increased opportunities for walkers, cyclists and horse riders

- 13.5.13. Potential impacts on human health determinants during operation include any changes to the opportunities for WCH and to the accessibility of existing WCH routes as a result of the proposed scheme.

### Reduced or increased opportunities for accessing healthcare facilities

- 13.5.14. Potential impacts on human health determinants during operation include any changes to the accessibility of healthcare facilities as a result of the proposed scheme.

### Reduced or increased opportunities for accessing employment opportunities

13.5.15. Potential impacts on human health determinants during operation include any changes to the accessibility of employment opportunities as a result of the proposed scheme.

## **13.6. Design, mitigation and enhancement measures**

13.6.1. Mitigation measures will be included in the design where practicable to help avoid, prevent or reduce effects on the environment. The proposed overbridges on Tortington Lane, Binsted Lane and Yapton Lane aim to reduce the land use and accessibility effects on these roads. WCH provision aims to avoid any adverse effects on WCHs and human health.

13.6.2. Additionally, during construction, appropriate measures will be implemented to ensure accessibility to residential, commercial, community land, agricultural land holdings and PRoW in the study area is maintained. This should be achieved through the use of best practice measures, implementation of a Traffic Management Plan and OEMP requirements, regard to phasing of works and if necessary, providing diversions for users. Severance can also be reduced through careful siting of construction compounds and lay down areas, and careful planning of construction activities through consultation with landowners.

13.6.3. Direct impacts to land use should be managed through negotiations with stakeholders including landowners and owners of businesses to mitigate impact.

13.6.4. There are also opportunities for enhancement measures to be implemented into the proposed scheme. Such opportunities include maximising connectivity for WCHs on new structures, for example, by incorporating WCH provision on green bridges and the potential improvement of WCH provision along the existing A27.

## **13.7. Description of the likely significant effects**

13.7.1. The previous EAR Population and Health assessment (Ref 195) was completed in accordance with Interim Advice Note (IAN) 125/15 (Ref 196); the DMRB Volume 11, Section 3, Parts 6 (Land Use) (Ref 197), 8 (Pedestrians, Cyclists, Equestrians and Community Effects) (Ref 198) and 9 (Vehicle Travellers) (Ref 199). This guidance has now been superseded by the latest DMRB LA 112 guidance (Ref 183).

13.7.2. This EIA will be undertaken in accordance with the latest guidance. The latest guidance advises that some assessments reported in the *EAR* are no

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Ref 195 Highways England, (2019); A27 Arundel Bypass Environmental Assessment Report (Chapter 12 – Population and Health). Accessed from: [https://highwaysengland.citizenspace.com/he/a27-arundel-bypass-further-consultation/supporting\\_documents/A27%20Arundel%20Bypass%20%20Environmental%20Assessment%20Report%202019%20%20Final%20002.pdf](https://highwaysengland.citizenspace.com/he/a27-arundel-bypass-further-consultation/supporting_documents/A27%20Arundel%20Bypass%20%20Environmental%20Assessment%20Report%202019%20%20Final%20002.pdf)

Ref 196 Highways England, (2015); Environmental Assessment Update. Interim Advice Note 125/15

Ref 197 Highways Agency, (2001); Design Manual for Roads and Bridges, Volume 11, Section 3, Part 6: Land Use

Ref 198 Highways Agency, (1993); Design Manual for Roads and Bridges, Volume 11, Section 3, Part 8: Pedestrians, Cyclists, Equestrians and Community Effects

Ref 199 Highways Agency, (1993); Design Manual for Roads and Bridges, Volume 11, Section 3, Part 9: Vehicle Travellers

longer required. The significant effects found in the *EAR Population and Health assessment* that are still applicable in the new guidance include:

- adverse land use effects on private property during construction due to requirement for land;
- adverse land use effects on agricultural land holdings during construction due to requirement for land; and
- adverse accessibility effects on private property, community land, development land, agricultural land holdings and WCH during operation due to the permanent road and PRoW diversions or closures.

13.7.3. These potentially significant effects will be assessed during the EIA in accordance with the new *DMRB LA 112* guidance (Ref 183).

13.7.4. The publication of new guidance means that all potential effects relating to land use, accessibility and human health will be assessed in the EIA.

### **13.8. Assessment methodology**

13.8.1. A detailed assessment for population and human health will be undertaken in accordance with the latest *DMRB LA 112* guidance. In line with this guidance the population and human health assessment will report on the following elements:

- Land use and accessibility including:
  - private property and housing;
  - community land and assets;
  - development land and businesses;
  - agricultural land holdings; and
  - WCH.
- Human health including:
  - health profiles of affected communities;
  - health determinants (such as noise or air pollution); and
  - likely health outcomes.

13.8.2. Should the requirement for the acquisition of land and assets result in a significant effect, either through direct land take or through the restriction of accessibility/introduction of severance, further assessment shall be undertaken.

13.8.3. Impacts on population and human health will also be considered in line with wider requirements and advice provided in DMRB guidance.

#### **Value of the environmental resources and receptors**

13.8.4. Receptors are assigned a value for sensitivity based on professional judgement, taking into consideration the importance of receptors to the community and the scale of use (local, regional and national). The sensitivity of land use and accessibility receptors will be reported in accordance with

the criteria outlined below in Table 44, which has been taken from *DMRB LA 112* (Ref 183).

**Table 44: Environmental value and description for land use and accessibility receptors**

Receptor value (sensitivity)	Description
Very high	<p>Private property and housing:</p> <ol style="list-style-type: none"> <li>1) existing private property or land allocated for housing located in a local authority area where the number of households are expected to increase by &gt;25% by 2041 (ONS data); and/or</li> <li>2) existing housing and land allocated for housing (such as strategic housing sites) covering &gt;5ha and/or &gt;150 houses.</li> </ol> <p>Community land and assets where there is a combination of the following:</p> <ol style="list-style-type: none"> <li>1) complete severance between communities and their land/assets, with little/no accessibility provision;</li> <li>2) alternatives are only available outside the local planning authority area;</li> <li>3) the level of use is very frequent (daily); and</li> <li>4) the land and assets are used by the majority (&gt;=50%) of the community.</li> </ol> <p>Development land and businesses:</p> <ol style="list-style-type: none"> <li>1) existing employment sites (excluding agriculture) and land allocated for employment (such as strategic employment sites) covering &gt;5ha.</li> </ol> <p>Agricultural land holdings:</p> <ol style="list-style-type: none"> <li>1) areas of land in which the enterprise is wholly reliant on the spatial relationship of land to key agricultural infrastructure; and</li> <li>2) access between land and key agricultural infrastructure is required on a frequent basis (daily).</li> </ol> <p>WCH:</p> <ol style="list-style-type: none"> <li>1) national trails and routes likely to be used for both commuting and recreation that record frequent (daily) use. Such routes connect communities with employment land uses and other services with a direct and convenient WCH route. Little/no potential for substitution.</li> <li>2) routes regularly used by vulnerable travellers such as the elderly, school children and people with disabilities, who could be disproportionately affected by small changes in the baseline due to potentially different needs.</li> <li>3) rights of way for WCH crossing roads at grade with &gt;16,000 vehicles per day.</li> </ol>
High	<p>Private property and housing:</p> <ol style="list-style-type: none"> <li>1) private property or land allocated for housing located in a local planning authority area where the number of households are expected to increase by 16-25% by 2041 (ONS data); and/or</li> </ol>

Receptor value (sensitivity)	Description
	<p>2) existing housing and land allocated for housing (such as strategic housing sites) covering &gt;1-5ha and/or &gt;30-150 houses.</p> <p>Community land and assets where there is a combination of the following:</p> <ol style="list-style-type: none"> <li>1) there is substantial severance between community and assets, with limited accessibility provision;</li> <li>2) alternative facilities are only available in the wider local planning authority area;</li> <li>3) the level of use is frequent (weekly); and</li> <li>4) the land and assets are used by the majority (&gt;=50%) of the community.</li> </ol> <p>Development land and businesses:</p> <ol style="list-style-type: none"> <li>1) existing employment sites (excluding agriculture) and land allocated for employment (such as strategic employment sites) covering &gt;1-5ha.</li> </ol> <p>Agricultural land holdings:</p> <ol style="list-style-type: none"> <li>1) areas of land in which the enterprise is dependent on the spatial relationship of land to key agricultural infrastructure; and</li> <li>2) access between land and key agricultural infrastructure is required on a frequent basis (weekly).</li> </ol> <p>WCH:</p> <ol style="list-style-type: none"> <li>1) regional trails and routes (such as promoted circular walks) likely to be used for recreation and to a lesser extent commuting, that record frequent (daily) use. Limited potential for substitution; and/or</li> <li>2) rights of way for WCH crossing roads at grade with &gt;8,000 - 16,000 vehicles per day.</li> </ol>
Medium	<p>Private property and housing:</p> <ol style="list-style-type: none"> <li>1) houses or land allocated for housing located in a local authority area where the number of households are expected to increase by &gt;6-15% by 2041 (ONS data); and/or</li> <li>2) existing housing and land allocated for housing (such as strategic housing sites) covering &lt;1ha and/or &lt;30 houses.</li> </ol> <p>Community land and assets where there is a combination of the following:</p> <ol style="list-style-type: none"> <li>1) there is severance between communities and their land/assets but with existing accessibility provision;</li> <li>3) limited alternative facilities are available at a local level within adjacent communities;</li> <li>4) the level of use is reasonably frequent (monthly); and</li> <li>5) the land and assets are used by the majority (&gt;=50%) of the community.</li> </ol> <p>Development land and businesses:</p> <ol style="list-style-type: none"> <li>1) existing employment sites (excluding agriculture) and land allocated for employment (such as strategic employment sites) covering &lt;1ha.</li> </ol>

Receptor value (sensitivity)	Description
	<p>Agricultural land holdings:</p> <ol style="list-style-type: none"> <li>1) areas of land in which the enterprise is partially dependent on the spatial relationship of land to key agricultural infrastructure; and</li> <li>2) access between land and key agricultural infrastructure is required on a reasonably frequent basis (monthly).</li> </ol> <p>WCH:</p> <ol style="list-style-type: none"> <li>1) public rights of way and other routes close to communities which are used for recreational purposes (such as dog walking), but for which alternative routes can be taken. These routes are likely to link to a wider network of routes to provide options for longer, recreational journeys, and/or</li> <li>2) rights of way for WCH crossing roads at grade with &gt;4000 - 8000 vehicles per day.</li> </ol>
Low	<p>Private property and housing:</p> <ol style="list-style-type: none"> <li>1) proposed development on unallocated sites providing housing with planning permission/in the planning process.</li> </ol> <p>Community land and assets where there is a combination of the following:</p> <ol style="list-style-type: none"> <li>1) limited existing severance between community and assets, with existing full Disability Discrimination Act (DDA) compliant accessibility provision;</li> <li>2) alternative facilities are available at a local level within the wider community;</li> <li>3) the level of use is infrequent (monthly or less frequent); and</li> <li>4) the land and assets are used by the minority (&gt;=50%) of the community.</li> </ol> <p>Development land and businesses:</p> <ol style="list-style-type: none"> <li>1) proposed development on unallocated sites providing employment with planning permission/in the planning process.</li> </ol> <p>Agricultural land holdings:</p> <ol style="list-style-type: none"> <li>1) areas of land which the enterprise is not dependent on the spatial relationship of land to key agricultural infrastructure; and</li> <li>2) access between land and key agricultural infrastructure is required on an infrequent basis (monthly or less frequent).</li> </ol> <p>WCH:</p> <ol style="list-style-type: none"> <li>1) routes which have fallen into disuse through past severance or which are scarcely used because they do not currently offer a meaningful route for either utility or recreational purposes, and/or</li> <li>2) rights of way for WCH crossing roads at grade with &lt;4000 vehicles per day</li> </ol>
Negligible	<p>Private property and housing: not applicable</p> <p>Community land and assets where there is a combination of the following:</p> <ol style="list-style-type: none"> <li>1) no or limited severance or accessibility issues;</li> </ol>

Receptor value (sensitivity)	Description
	<p>2) alternative facilities are available within the same community; and</p> <p>3) the level of use is very infrequent (a few occasions yearly); and 4) the land and assets are used by the minority (<math>\geq 50\%</math>) of the community.</p> <p>Development land and businesses: not applicable</p> <p>Agricultural land holdings:</p> <p>1) areas of land which are infrequently used on a non-commercial basis.</p> <p>2) WCH: not applicable</p>

13.8.5. For the land use and accessibility assessment, it should be noted that a higher sensitivity value can be allocated where property or housing provision is integral to the character and function of the community with little/no provision for substitution (for example, a private property in a small rural village). Likewise, a higher sensitivity score can be allocated where a business is the main source of employment for community with little/no provision for substitution.

13.8.6. For the human health assessment, the sensitivity of a community/population will be identified once a comprehensive health profile for the appropriate study area has been identified. The receptor sensitivity of a community/population will be reported as either negligible, low, medium or high:

- negligible – where a receptor is not affected by a change;
- low – where a receptor is responsive to change;
- medium – where a receptor has some ability to respond to change; or
- high – where a receptor has limited ability to respond to change.

#### **Magnitude of impact and significance of effects**

13.8.7. The significance of effect shall be derived by combining the assigned value (sensitivity) of receptors with the magnitude of change arising from the proposed scheme. Criteria used to report the magnitude of change is outlined in Table 45.

13.8.8. A significance of effect will be determined for each element of the land use and accessibility sub-topic affected by the proposed scheme including; private property and housing, community land and assets, development land and businesses, agricultural land holdings and WCH.

**Table 45: Magnitude of the impact and typical descriptions**

Magnitude of impact (change)	Description
Major	Private property and housing, community land and assets, development land and businesses and agricultural land holdings:

Magnitude of impact (change)	Description
	<p>1) loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements such as direct acquisition and demolition of buildings and direct development of land to accommodate highway users; and/or</p> <p>2) introduction (adverse) or removal (beneficial) of complete severance with no/full accessibility provision.</p> <p>WCH: &gt;500 m increase (adverse) or decrease (beneficial) in WCH journey length.</p>
Moderate	<p>Private property and housing, community land and assets, development land and businesses and agricultural land holdings:</p> <p>1) partial loss of/damage to key characteristics, features or elements, such as partial removal or substantial amendment to access or acquisition of land compromising viability of property, businesses, community assets or agricultural holdings; and/or</p> <p>2) introduction (adverse) or removal (beneficial) of severe severance with limited/moderate accessibility provision.</p> <p>WCH: &gt;250 m – 500 m increase (adverse) or decrease (beneficial) in WCH journey length.</p>
Minor	<p>Private property and housing, community land and assets, development land and businesses and agricultural land holdings:</p> <p>1) a discernible change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements, such as amendment to access or acquisition of land resulting in changes to operating conditions that do not compromise overall viability of property, businesses, community assets or agricultural holdings; and/or</p> <p>2) introduction (adverse) or removal (beneficial) of severance with ample accessibility provision.</p> <p>WCH: &gt;50 m – 250 m increase (adverse) or decrease (beneficial) in WCH journey length.</p>
Negligible	<p>Private property and housing, community land and assets, development land and businesses and agricultural land holdings:</p> <p>1) very minor loss or detrimental alteration to one or more characteristics, features or elements. such as acquisition of non-operational land or buildings not directly affecting the viability of property, businesses, community assets or agricultural holdings; and/or</p> <p>2) very minor introduction (adverse) or removal (beneficial) of severance with adequate accessibility provision.</p> <p>WCH: &lt;50 m increase (adverse) or decrease (beneficial) in WCH journey length.</p>

Magnitude of impact (change)	Description
No change	No loss or alteration of characteristics, features, elements or accessibility; no observable impact in either direction.

- 13.8.9. In accordance with *DMRB LA 112* (Ref 183) guidance for the land use and accessibility assessment, significant effects typically comprise residual effects that are within the moderate, large or very large categories once assigned values for sensitivity of receptors and magnitude of change are combined. Table 4 in Section 5 demonstrates how combining the environmental value of the resource or receptor with the magnitude of impact (change) produces a significance of effect category.
- 13.8.10. A qualitative assessment of human health will be undertaken, with evidence provided to support the conclusions. The assessment of human health effects describes the likely qualitative health outcomes; however, it is not possible to quantify the severity of extent of the effects which give rise to the outcomes.
- 13.8.11. The potential health outcomes during construction and operation are based on broad categories for the qualitative impacts identified. Changes to health determinants as a result of the proposed scheme will be identified and will be based on information gathered around other environmental factors such as air quality and noise.
- 13.8.12. Once a health profile of communities has been developed, the sensitivity of a community/population will be identified, using relevant evidence. The sensitivity of a community/population will be reported as:
- low – where a receptor is responsive to change;
  - medium – where a receptor has some ability to respond to change; or
  - high – where a receptor has limited ability to respond to change.
- 13.8.13. Once community/population sensitivity and changes to health determinants likely to occur as a result of the proposed scheme have been established, the likely health outcome(s) shall be identified in line with the categories in Table 46.

**Table 46: Human health outcome categories**

Health outcome categories	Description
Positive	A beneficial health impact is identified
Neutral	No discernible health impact is identified
Negative	An adverse health impact is identified
Uncertain	Where uncertainty exists as to the overall health outcome

### 13.9. Assumptions, limitations and uncertainties

- 13.9.1. The assessment of the impacts on WCHs will depend on the availability of the relevant findings from WCHAR. This report informs the frequency of use

of the WCH provision in the study area and ensures all WCHs are considered.

- 13.9.2. The assessment of the impacts on agricultural land holdings relies on the findings from the relevant agricultural surveys. The farm survey informs the type of agricultural holdings within the study area and the characteristics of their use.
- 13.9.3. The human health aspect of this assessment relies upon findings from other topics including noise and air quality.

## 14. Road Drainage and the Water Environment

### 14.1. Introduction

14.1.1. This section sets out the proposed approach to the assessment of the proposed scheme's impacts on the water environment and flood risk. The purpose of the assessment will be to identify and characterise any relevant surface water and groundwater resources, identify and characterise the baseline flood risk from all sources of flooding, to consider the nature and scale of potential impacts due to the proposed scheme, and to assess the significance of any likely effects.

### 14.2. Relevant policy

14.2.1. The following planning policies have been considered as part of identifying the water environment assessment methodology, receptors and their sensitivity, impact pathways, potential significant effects and mitigation:

- *NPSNN*: paragraphs 4.36 to 4.47 in relation to climate change adaptation; paragraphs 4.48 to 4.56 in relation to pollution control, paragraphs 5.90 to 5.115 in relation to flood risk; and paragraphs 5.219 to 5.213 in relation to water quality and resources (Ref 10);
- *NPPF*: section 14 in relation to flood risk and section 16 in relation to protection of the water environment (Ref 11);
- *Arun Local Plan 2011-2031*: policy W SP1 (water), policy W DM1 (part 2, water quality), policy W DM2 (flood risk) and policy W DM3 (sustainable drainage) (Ref 14); and
- *South Downs Local Plan 2014-2033*: policy SD17 (Protection of the Water Environment), SD49 (Flood Risk Management) and policy SD50 (Sustainable Drainage Systems) (Ref 15).

14.2.2. The policies require consideration of the impacts of pollution from development on the water environment by assessing waterbodies, protected areas under the Water Framework Directive (WFD) (Ref 200) safeguard zones, water protection zones, SPZ around potable groundwater abstractions and ecological sites. The policies also encourage mitigation of pollution on the water environment through careful design to facilitate good pollution control practice.

14.2.3. The policies identify the need for a site-specific flood risk assessment (FRA), which considers all sources of flood risk, both to the proposed scheme and to third party property and land. They require the assessment to consider the vulnerability of the proposed scheme and its users, consider the impacts of climate change and confirm whether flood risk elsewhere can be managed. In addition, the local flood risk management strategy, strategic flood risk assessment, and strategic surface water management plan should also be considered when assessing local sources of flood risk.

### 14.3. Study area

14.3.1. The spatial scope of the assessment will include as a minimum, features of the water environment within 1 km of the proposed scheme. The study area will be extended to 5 km upstream and downstream of the location where the proposed scheme would cross the lower River Arun to identify receptors vulnerable to changes in flood risk associated with the river; this ensures that flood tidal nature of the lower river Arun watercourse is fully considered.

### 14.4. Baseline conditions

- 14.4.1. To inform the scoping stage, an initial assessment of available resources has been undertaken. These resources include:
- the previous work undertaken for the appraisal of alternative options to the proposed scheme;
  - site visits of key surface water features;
  - preliminary hydraulic modelling of the various scheme options across the River Arun floodplain; and
  - publicly available data, including web-based sources such as the Environment Agency Catchment Data Explorer, MAGIC maps, British Geological Survey (BGS) maps, and published reports.

#### Surface Water

- 14.4.2. The study area lies within the South East River Basin District, Arun and Western Streams management catchment, as set out within the *South East River Basin Management Plan (RBMP)* (Ref 201).
- 14.4.3. The majority of the study area covers the Arun transitional WFD waterbody which extends from the Sussex coastal WFD water body at Littlehampton to the tidal limit at Pulborough. The proposed scheme crosses the waterbody and its extensive floodplain to the west of Crossbush junction.
- 14.4.4. The western section of the proposed scheme also intersects the Lidsey Rife WFD waterbody catchment north of Walberton and would cross the upper reaches of the waterbody. In addition, the extension of the study area 5 km downstream of the Arun transitional waterbody includes the confluence of the Black Ditch (W Sussex) WFD waterbody.
- 14.4.5. The classification information for the WFD surface waterbodies in the study area is set out in Table 47. Although the Arun waterbody is associated with 'protected area' status, the qualifying feature (Arun Valley SPA and SAC) is located several kilometres upstream of the proposed scheme and outside of the study area.

**Table 47: WFD waterbody classification summary**

Name	ID	Type	Current Status (2019)	Objective Status	Protected Area (SAC or SPA)
Arun	GB54070 4105000	Transitional (heavily modified)	Moderate	Good (2027)	Yes – Habitats Directive, Birds Directive,
Lidsey Rife	GB10704 1012010	River	Moderate	Good (2027)	No
Black Ditch (W Sussex)	GB10704 1012890	River	Poor	Good (2027)	No

- 14.4.6. The study area contains a number of other surface water features that are not directly assessed under the WFD, but form part of the waterbody catchments for the WFD waterbodies identified.
- 14.4.7. The Binsted Rife and Tortington Rife are watercourses (partly designated main rivers) which would be crossed by the proposed scheme to the west of the River Arun. The proposed scheme would also cross some minor tributaries of Tortington Rife. These watercourses all form part of the Arun transitional waterbody catchment area.
- 14.4.8. The River Arun floodplain has numerous named and unnamed ordinary watercourses historically managed by the River Arun Internal Drainage Board (IDB) but now managed by the Environment Agency. These include Warning Camp Ditch, Station Ditch, Brookfield Stream and Tortington Upper Ditch. Some of these features would be directly crossed by the proposed scheme and all form part of the Arun transitional waterbody catchment area.
- 14.4.9. Several pond features are located in the study area which are likely to have hydraulic connectivity to the underlying aquifer or are connected to the River Arun floodplain drains and watercourses. This includes Knucker Hole Pond north of Lyminster and Tortington Augustinian Priory and Ponds to the west of the River Arun.
- 14.4.10. The receptor importance and the potential impact on these waterbodies, along with any other identified water features with surface or groundwater hydraulic connectivity, as a result of the construction and operation of the proposed scheme, will be considered as part of the EIA.

### **Groundwater**

- 14.4.11. The proposed scheme would be situated over London Clay Formation and Lambeth Group (clay, silt and sand) bedrock geology. Whilst not directly encountered, piling for the structure across the River Arun floodplain may reach the Chalk bedrock geology, including the Culver Chalk Formation. The Chalk Formations are classified by the Environment Agency as a Principal Aquifer, and the Lambeth Group as a Secondary A aquifer. The London Clay is considered unproductive strata and constitutes the bedrock geology below a large proportion of the proposed scheme.

14.4.12. The Lambeth Group aquifer is classified as part of the Sussex Lambeth Group WFD Groundwater Body and the Chalk Formations as part of the Chichester Chalk Groundwater Body. The classification summary for the groundwater bodies in the study areas is provided in Table 48.

**Table 48: WFD groundwater body classification summary**

Waterbody name	Waterbody ID	Current Chemical Status (2019)	Objective Chemical Status	Current Quantitative Status (2019)	Objective Quantitative Status
Sussex Lambeth Group	GB40701 G505100	Good	Good	Good	Good
Chichester Chalk	GB40701 G505200	Poor	Good (2027)	Poor	Poor

14.4.13. The bedrock geology is overlain in places by a mixture of superficial deposits which include Head Deposits, River Terrace Deposits, Raised Beach Deposits, Raised Storm Beach Deposits, Raised Marine Deposits and Alluvium. The Alluvium is associated with the Binsted and Tortington Rife valleys and the Raised Marine Deposits form much of the River Arun floodplain. These superficial deposits are classified as Secondary A aquifers with the Head Deposits also classified as a Secondary Undifferentiated aquifer in places.

14.4.14. With respect to groundwater vulnerability from pollution discharged at ground level, much of the proposed scheme would cross areas with low vulnerability associated with the London Clay Formation outcrop; however, in some areas there is medium to high vulnerability largely associated with the Lambeth Group outcrop.

14.4.15. There are SPZs for public drinking water supply abstractions to the western extent of the study area near Fontwell where the proposed scheme would connect to the current A27 alignment. The study area includes parts of SPZ1 (inner protection zone), SPZ2 (outer protection zone) and SPZ3 (total catchment); however, the proposed scheme does not pass through any of the SPZs.

14.4.16. The presence of the SPZs and a number of other licenced abstractions in the study area highlights the importance of groundwater within the vicinity of the proposed scheme.

### **Flood Risk**

14.4.17. The proposed scheme would cross Flood Zone 2 (land having between 1 in 100 and 1 in 1000 annual probability of fluvial flooding, or between 1 in 200 and 1 in 1000 year annual probability of tidal flooding) and Flood Zone 3 (land having 1 in 100 or greater probability of fluvial flooding, or 1 in 200 or greater probability of tidal flooding) associated with the River Arun. Peak flood levels associated with these flood zones are dominated by tide levels;

however, preliminary hydraulic modelling has demonstrated that fluvial flooding in the floodplain is extensive due to the lower lying nature of the land at the crossing point.

- 14.4.18. The River Arun has raised earth embankment defences which provide a variable standard of protection (designed to 1 in 50 year flood event) with a mixture of defence structures providing protection to Arundel to the north of the proposed scheme.
- 14.4.19. The proposed scheme would also cross small extents of Flood Zone 2 and Flood Zone 3 associated with the Binsted and Tortington Rifes. Flooding is both fluvial and tidal influenced in these extents and groundwater is likely to contribute to peak flows in the upper reaches of the Rifes and their tributaries. There are no formal defences for these watercourses.
- 14.4.20. Areas of known pluvial (surface water) and groundwater flooding are present in the study area. These include surface water accumulation on the Arun floodplain (particularly the western floodplain) and flooding associated with restricted capacity in the network of ordinary watercourses and agricultural drainage ditches when tide locking prevents discharge to the River Arun. Flow paths are also associated with small dry valleys connected to the Rifes particularly in the upper reaches, and with small watercourses to the west of Ford Road. The *Arun District Strategic Flood Risk Assessment* (Ref 202) indicates that large parts of the study area are at high risk of groundwater flooding. Additionally, groundwater-surface water interactions are likely to be an important feature of the Binsted Rife where the headwaters are fed by springs from the chalk outcrop.
- 14.4.21. There is no reservoir flood risk in the study area outside of the River Arun channel as indicated by the Environment Agency flood maps. This will therefore be scoped out from further assessment in the EIA.
- 14.4.22. The sensitivity/importance criteria for all water environment features and receptors potentially affected by changes in flood risk will be based on those identified in the *DMRB LA 113 Road drainage and the water environment guidance* (Ref 126) and will be outlined further within the ES.

#### **Additional survey requirements**

- 14.4.23. Baseline surveys will be undertaken for the watercourses identified, including hydromorphological walkovers, and water quality and flow monitoring of Binsted and Torrington Rifes to inform the impact assessment.
- 14.4.24. Groundwater level and quality monitoring will be undertaken as part of the wider ground investigations for the proposed scheme and will be used to inform the impact assessment.

### **14.5. Potential impacts**

- 14.5.1. Potential impacts on the water environment and flood risk receptors during the proposed scheme construction phase include:
- risks to the water environment due to:

- excavation, and the subsequent deposition of soils, sediment, or other construction materials causing pollution;
- spillage of fuels or other contaminating liquids causing pollution;
- temporary physical modifications interrupting the natural passage of surface and sub-surface flow; and
- mobilisation of contaminants following disturbance of contaminated ground or groundwater, or through uncontrolled site runoff.
- risks to groundwater associated with the construction of a cutting including:
  - contamination risk to the underlying aquifers from creation of preferential pathways for piled structures; and
  - temporary dewatering, if required, diverting water away from groundwater-dependent receptors, or bypassing part of the system, leading to reduced groundwater flow.
- impacts on existing abstractions or discharges from dewatering activities, if required, which could cause drawdown of the local water table.
- increase in flood risk to receptors due to:
  - construction work taking place within the floodplain;
  - phased construction works temporarily impacting on the function of the floodplain, existing processes and proposed mitigation measures;
  - temporary deposition of excavated material impacting on existing flood flow paths or reduced floodplain storage; and
  - construction operations within the floodplain resulting in an increase in flood risk elsewhere.
- impacts on water dependent designated sites from, for example discharge of abstracted water during construction resulting in increased additional silt loading that could impact the ecological features of the system.

14.5.2. Potential impacts on the water environment and flood risk receptors during the operation phase include:

- the structure crossing the Arun floodplain, and/or structures crossing other watercourses could impede flood flows, reduce floodplain storage and increase flood levels to third party property and land;
- structures across surface water flow paths could impede flood flows and increase flood risk to third party property and land;
- impacts on surface water arising from pollutants such as oils from fuel combustion/accidental spillages and salts or herbicides from road maintenance;

- direct physical and hydromorphological impacts from watercourse crossings and other hydraulically linked surface water features with potential for direct impacts on the biological, chemical and physical WFD parameters for both surface waters and groundwater bodies;
- permanent drainage of groundwater from cuttings, which has the potential to depress groundwater levels;
- piling for the structure across the River Arun floodplain and Rife crossing could create a localised barrier to groundwater flow. This could lead to a rise in groundwater levels or mounding around piles resulting in increased flood risk and a reduction of groundwater levels on the downstream side affecting abstractions or hydraulically linked ecological sites;
- any discharges to ground that may have implications for groundwater quality;
- construction of proposed bridge piers on the River Arun, other structures, cuttings and other landscaping features or material deposited, within the floodplain or intersecting key overland flow paths (within the River Arun and Tortington Rife catchment) that have the potential to alter flood flows and increase flood risk; and
- discharges from new sections of highway that have the potential to increase flood risk for receptors downstream.

#### **14.6. Design, mitigation and enhancement measures**

14.6.1. Construction mitigation relevant to the water environment and flood risk is likely to include:

- works undertaken with regard to Government planning practice, water-land management guidance matters and the *DMRB LA 113* (Ref 126) guidance to ensure the avoidance and reduction of impacts on the water environment;
- works undertaken in line with an OEMP for the proposed scheme;
- close communications with the Environment Agency and West Sussex County Council in relation to groundwater and flood risk;
- bunding for areas that may generate contaminated water;
- water discharged to self-contained units with treatment facilities;
- no direct discharges to groundwater or surface waters without appropriate treatment;
- where possible, ordinary watercourse realignments undertaken to provide channel improvement and habitat creation potential;
- piling risk assessments and piling methods to minimise ground disturbance and creation of preferential pathways;

- tests would be undertaken to ensure contaminated material is identified, isolated and reworked or removed to appropriate landfill to avoid any water quality impacts;
- flood risk management plans for all construction sites required within areas of flood risk;
- floodplain working would be minimised as far as possible; and
- temporary land-take would include adequate areas of land set aside for robust control measures, for example sustainable drainage control and water treatment.

14.6.2. Operational mitigation relevant to the water environment and flood risk is likely to include:

- drainage design to include treatment stages via sustainable drainage systems (SuDS) to provide water quality mitigation, attenuate peak flows to manage flood risk and promote groundwater recharge where feasible;
- floodplain compensation storage for structures located within the River Arun floodplain and which would reduce natural flood storage;
- flood conveyance mitigation measures for the structure crossing the River Arun to ensure tidal and fluvial flood flows are not impeded;
- design of the Binsted and Tortington Rife crossings to minimise the risk of flooding to and from the road structures over these water features;
- design of the proposed scheme to minimise/avoid the need for long-term groundwater drainage from cuttings. Where elimination through design is not possible there may be a potential need to relocate existing abstractions and discharges;
- design of the proposed scheme to minimise/avoid the need for culverting and diversion of watercourses and drains;
- where elimination through design is not possible, culverts would be designed to minimise any effects on the flora and fauna and channel morphology through provision of suitable bed substrate, mammal ledges and geomorphologically sensitive realignments upstream and downstream of culvert structures. Existing wildlife corridors would be maintained where possible; and
- ensure any discharge of dewatered water is balanced to greenfield runoff rates before discharge to surface water or recirculated to the groundwater environment.

## **14.7. Description of the likely significant effects**

14.7.1. Likely significant effects for the water environment and flood risk are focused on adverse effects related to increases in fluvial and tidal flood risk for receptors within and close to the River Arun floodplain as a result of structures within the floodplain.

14.7.2. Mitigation will be assessed and identified to reduce the significance of effect on water receptors. In relation to flood risk, hydraulic modelling will be used to identify mitigation measures to reduce changes in flood risk to the proposed scheme and third-party receptors and to ensure that flood risk is not increased as a result of the proposed scheme.

#### 14.8. Assessment methodology

14.8.1. In order to assess the potential impacts of the proposed scheme on fluvial and tidal flood risk and associated receptors, a hydraulic model of the River Arun, including the Binsted and Tortington Rife has been developed. The model will be used to assess the magnitude of impact for fluvial and tidal flood risk as set out in *DMRB LA113* (Ref 126), and to support development of required mitigation.

14.8.2. To assess the potential impacts of the proposed scheme on identified surface water, groundwater and hydraulically connected receptors, a conceptual hydrological and hydrogeological model of the area will be prepared. The conceptual model will form the basis of a risk-based impact assessment on receptors from the construction and operation of the proposed scheme.

14.8.3. The impact assessment will be undertaken using the source-pathway-receptor approach promoted by DEFRA, the Environmental Agency and *DMRB LA 113* (Ref 126). For there to be an identifiable risk, there must be a source (contaminant/activity), a receptor and a pathway, which allows the source to impact on the receptor. All three elements must be present before a linkage can be realised.

14.8.4. The method for assessing the receptor importance, magnitude of impact and significance of effects will be undertaken in line with the requirements of *DMRB LA 113* (Ref 126).

14.8.5. Receptor importance will be assigned based on the key attributes of the water feature (flood risk receptor) as set out in Table 49. Flood risk examples are defined in the published PPG to the NPPF.

**Table 49: Water environment receptor importance and typical examples**

Importance	Typical Criteria	Typical Examples	
Very High	Nationally significant attribute of high importance	Surface water	Watercourse having a WFD classification shown in a RBMP and Q <sub>95</sub> greater than or equal to 1 m <sup>3</sup> /s. Site or species protected/designated under EC or UK legislation.
		Groundwater	Principal aquifer providing a regionally important resource and/or supporting a site protected under EC and UK legislation.

Importance	Typical Criteria	Typical Examples	
			Groundwater locally supports a Groundwater Dependent Terrestrial Ecosystem (GWDTE). SPZ1
		Flood risk	Essential infrastructure or highly vulnerable development
High	Locally significant attribute of high importance	Surface water	Watercourse having a WFD classification shown in a RBMP and Q <sub>95</sub> less than 1 m <sup>3</sup> /s. Species protected under EC or UK legislation.
		Groundwater	Principal aquifer providing locally important resource or supporting a river ecosystem. Groundwater supports a GWTDE. SPZ2
		Flood risk	More vulnerable development
Medium	Of moderate quality and rarity	Surface water	Watercourses not having a WFD classification shown in a RBMP and Q <sub>95</sub> greater than 0.001 m <sup>3</sup> /s.
		Groundwater	Aquifer providing water for agricultural or industrial use with limited connection to surface water SPZ3
		Flood risk	Less vulnerable development
Low	Lower quality	Surface water	Watercourses not having a WFD classification shown in a RBMP and Q <sub>95</sub> less than 0.001 m <sup>3</sup> /s.
		Groundwater	Unproductive strata
		Flood risk	Water compatible development

14.8.6. The magnitude of identified impacts will be assigned based on the criteria as set out in Table 50 using the typical examples provided as a guide for adverse.

**Table 50: Estimating the magnitude of an impact on water feature attribute**

Magnitude	Criteria	Typical Examples	
Major adverse	Results in loss of attribute and/or quality and integrity of the attribute	Surface water	<p>Failures of both acute-soluble and chronic sediment related pollutants in the Highways England Water Risk Assessment Tool (HEWRAT) and compliance failure with EQS values.</p> <p>Calculated risk of pollution from a spillage greater than or equal to 2% annually (using spillage risk assessment).</p> <p>Loss or extensive change to a fishery</p> <p>Loss of regionally important public water supply.</p> <p>Loss or extensive change to a designated nature conservation site.</p> <p>Reduction in water body WFD classification.</p>
		Ground water	<p>Loss of, or extensive change to, an aquifer.</p> <p>Loss of regionally important water supply.</p> <p>Potential high risk of pollution to groundwater from routine runoff.</p> <p>Calculated risk of pollution from a spillage greater than or equal to 2% annually (using spillage risk assessment).</p> <p>Loss of, or extensive change to a GWDTE or baseflow contribution to protected surface water bodies.</p> <p>Reduction in groundwater body WFD classification.</p> <p>Loss or significant damage to major structures through subsidence or similar effects.</p>
		Flood risk	<p>Increase in peak flood level (greater than 100mm).</p>
Moderate adverse	Results in effect on integrity of attribute, or loss of part of attribute	Surface water	<p>Failure of both acute-soluble and chronic-sediment related pollutants in HEWRAT but compliance with EQS values.</p> <p>Calculated risk of pollution from spillages greater than or equal to 1% annually and less than 2% annually.</p> <p>Partial Loss in productivity of a fishery.</p> <p>Degradation of regionally important public water supply or loss of major commercial/industrial/agricultural supplies.</p>

Magnitude	Criteria	Typical Examples	
			Contribution to reduction in water body WFD classification.
		Ground water	<p>Partial loss or change to an aquifer. Degradation of regionally important public water supply or loss of major commercial/industrial/agricultural supplies.</p> <p>Potential medium risk of pollution to groundwater from routine runoff.</p> <p>Calculated risk of pollution from spillages greater than or equal to 1% annually and less than 2% annually.</p> <p>Partial loss of integrity of a GWDTE.</p> <p>Contribution to reduction in water body WFD classification.</p> <p>Damage to major structures through subsidence or similar effects or loss of minor structures.</p>
		Flood risk	Increase in peak flood level (greater than 50mm).
Minor Adverse	Results in some measurable change in attributes, quality or vulnerability	Surface water	<p>Failure of either acute soluble or chronic sediment related pollutants in HEWRAT assessment.</p> <p>Calculated risk of pollution from spillages greater than or equal to 0.5% annually and less than 1% annually.</p> <p>Minor effects on water supplies.</p>
		Ground water	<p>Potential low risk of pollution to groundwater from routine runoff.</p> <p>Calculated risk of pollution from spillages greater than or equal to 0.5% annually and less than 1% annually.</p> <p>Minor effects on an aquifer, GWTDEs, abstractions and structures</p>
		Flood risk	Increase in peak flood level (greater than 10mm).
Negligible	Results in effect on attribute, but of insufficient magnitude to affect the use or integrity	Surface water	<p>No risk identified by HEWRAT assessment.</p> <p>Risk of pollution from spillages less than 0.5% annually.</p>
		Ground water	No measurable impact upon an aquifer and/or groundwater receptors and risk of pollution from spillages less than 0.5%.
		Flood risk	Negligible change to peak flood level (less than 10mm difference)

14.8.7. The impact magnitude will then be combined with the receptor attribute importance to define the significance of effect as set out in Table 51.

**Table 51: Water environment significance of effect matrix**

		Magnitude of impact				
		No change	Negligible	Minor	Moderate	Major
Receptor attribute importance	Very High	Neutral	Slight	Moderate or large	Large or very large	Very large
	High	Neutral	Slight	Slight or moderate	Moderate or large	Large or Very large
	Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
	Low	Neutral	Neutral or slight	Neutral or slight	Slight	Slight or moderate

14.8.8. In addition to hydraulic modelling, the following will be undertaken to identify receptor attributes, their importance and the magnitude of impacts:

- submit data requests to the Environment Agency, ArDC, West Sussex County Council and Southern Water to gather further details on the baseline groundwater and surface water conditions;
- an assessment of potential effects of routine road runoff on groundwater and surface water quality using HEWRAT;
- an assessment of spillage risk on receiving water bodies using HEWRAT;
- in addition to hydraulic modelling, an assessment of existing and potential flood risk associated with the proposed scheme from all sources apart from reservoir flooding (surface water, groundwater, artificial sources and sewer flooding); and
- an assessment of potential water quality and water level effects on water-dependent ecological sites. This will be considered as part of the assessments for both surface water and groundwater to inform the separate Biodiversity assessment related to aquatic ecology.

14.8.9. All sources of flood risk to and from the proposed scheme will be assessed through a FRA which will be appended to the ES and used to support the EIA. The FRA will take account of the requirements for managing flood risk from development as set out in the *NPSNN*, and will ensure an appropriate allowance for climate change is used when assessing future changes in

flood risk, as set out in Environment Agency guidance on climate change allowances (Ref 203).

14.8.10. A separate WFD compliance assessment will be undertaken which will consider the potential effects of the proposed scheme on WFD objectives of the identified WFD waterbodies. For the surface waterbodies this will assess biological, hydromorphological and/or physio-chemical quality elements. For the groundwater body this will assess quantitative and chemical quality elements. Where potential adverse effects are identified, an assessment of these will inform the mitigation measures required to be incorporated into the design and construction methods of the proposed scheme to remove or minimise the effect on the aquatic environment.

#### **14.9. Assumptions, limitations and uncertainties**

14.9.1. The following assumptions and limitations will apply to the assessment:

- it is assumed that data on all existing licenced, and unlicensed abstraction information and permitted discharges will be made available;
- the hydraulic model used to assess tidal and fluvial flood risk will be accepted as appropriate by the Environment Agency; and
- information on WFD mitigation measures for waterbodies not achieving good status will be made available.

## 15. Climate

### 15.1. Introduction

15.1.1. This section addresses the potential impacts on climate as a result of the proposed scheme and the impacts of future climate change on the resilience of the proposed scheme. To align with the requirements of the *EIA Regulations* and guidance from *DMRB LA 114 Climate* (Ref 204), consideration of climate effects is divided into two aspects:

- Greenhouse gas (GHG) impact assessment, which considers the impact on the climate of GHG emissions arising from the proposed scheme during its lifetime, including how it would affect the ability of Government to meet its carbon reduction targets; and
- Vulnerability to climate change, which considers the resilience of the proposed scheme to climate change impacts, including how the proposed scheme design will take account of the projected impacts of climate change.

15.1.2. As stated in the Intergovernmental Panel on Climate Change (IPCC) *Fifth Assessment Report (AR5) Synthesis Report* (Ref 205), mitigation (reducing GHG emissions) and adaptation (responding to climate change impacts) are complementary approaches to reducing risks of climate change impacts over different timescales. Mitigation, in the short-term and medium-term, can substantially reduce climate change impacts in the latter decades of the 21st century. Benefits from adaptation can be realised now to address current risks and can be realised in the future to address emerging risks. Innovation and investments in environmentally sound infrastructure and technologies can both reduce lifecycle GHG emissions and enhance resilience to climate change.

### 15.2. Relevant policy

15.2.1. The following international, national and local planning policies are of relevance and will be considered during the GHG impact assessment and the climate change resilience assessment:

- Climate Change Act 2008 (Ref 206);
- The Climate Change Act 2008 (2050 Target Amendment) Order 2019 (Ref 207);
- *NPSNN* (Ref 10);
- *EIA Directive 2014/52/EU* (Ref 8);

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Ref 204 Standards for Highways, DMRB LA 114 <https://www.standardsforhighways.co.uk/dmrbr/search/87f12e4f-70f8-4eed-8aed-9e9a42e24183>

Ref 205 Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5) Synthesis Report <https://www.ipcc.ch/report/ar5/syr/>

Ref 206 UK Climate Change Act (2008), Chapter 27 Targeting and Budgeting <https://www.legislation.gov.uk/ukpga/2008/27/contents>

Ref 207 H.M. Government, (2008); Climate Change Act 2008 (2050 Target Amendment) Order 2019

- Carbon Budget Orders (2009) (Ref 208);
- England Biodiversity Strategy (2011) (Ref 209);
- *NPPF* (Ref 11) and associated *PPG* (Ref 89);
- *West Sussex Transport Plan 2011-2026* (Ref 13);
- *Arun District Local Plan 2011-2031* (Ref 14);
- *South Downs Local Plan 2014-2022* adopted 2 July 2019 (Ref 15);
- SDNP Authority *Position Statement on A27 route corridor* (Ref 41); and
- *West Sussex Plan 2017- 2022* (Ref 12).

### 15.3. Study area

#### Lifecycle GHG impact assessment

- 15.3.1. The study area for the lifecycle GHG impact assessment includes GHG emissions from within the proposed scheme boundary arising during the construction, operation and maintenance phases of the proposed scheme. It will include embodied carbon in materials used for construction and maintenance as a result of raw material extraction, processing and manufacture or the recycling and use of existing construction materials. The study area for operational GHG emissions (specifically from road users), will align with the ARN as described in the traffic model and the air quality assessment (see Section 6 of this report).

#### Vulnerability to climate change

- 15.3.2. The study area for the climate change vulnerability review will be the proposed scheme boundary, which captures all assets, infrastructure and users associated with the proposed scheme, including all temporary works.

### 15.4. Baseline conditions

#### Lifecycle GHG impact assessment

- 15.4.1. The current and future baseline for the lifecycle GHG impact assessment is a 'business as usual' scenario where the proposed scheme is not constructed, and the existing road remains (DM scenario).

## Vulnerability to climate change

- 15.4.2. The current baseline for the vulnerability assessment is based on historic climate data obtained from the *Met Office (2020)* (Ref 210) recorded by the closest meteorological station to the proposed scheme (Shoreham, approximately 20 km to the east) for the period 1981-2010. This data is listed in Table 52.

**Table 52: Historic Climate Data**

Climatic Variable	Month	Value
Average annual maximum daily temperature (°C)	-	14
Warmest month on average (°C)	August	20.8
Coldest month on average (°C)	February	1.9
Mean annual rainfall levels (mm)	-	722.7
Wettest month on average (mm)	October	87.8
Driest month on average (mm)	May	44.3

- 15.4.3. The Met Office historic 10-year averages for the 'England South East and Central South' region identify gradual warming between 1969 and 2018, with increased rainfall also. Information on mean maximum annual temperatures (°C) and mean annual rainfall (mm) is summarised Table 53.

**Table 53: Historic 10-year averages for temperature and rainfall for the 'England South East and Central South' region**

Climate Period	Mean maximum annual temperatures (°C)	Mean annual rainfall (mm)
1969-1978	13.7	731.9
1979-1988	13.5	777.3
1989-1998	14.4	746.0
1999-2008	14.8	830.1
2009-2018	14.8	799.3

- 15.4.4. The future baseline for the vulnerability assessment is based on *UKCP18* (Ref 211) data detailed in Table 54 and Table 55.
- 15.4.5. The review of vulnerability to climate change has considered the UKCP high emissions scenario that reflects a high level of GHG emissions at the 50% probability level to assess the impact of climate change over the lifecycle of

Ref 210 <https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-climate-averages/gcpc1q7m5>

Ref 211 UKCP18 <https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/index>

the proposed scheme. A 50% probability result indicates that 50% of model results were above and below this figure.

- 15.4.6. For the purposes of the assessment, *UKCP18* probabilistic projections for pre-defined 20-year periods for the following average climate variables have been obtained and will be further analysed in the EIA:
- Mean annual temperature;
  - Mean summer temperature;
  - Mean winter temperature;
  - Maximum summer temperature;
  - Minimum winter temperature;
  - Mean annual precipitation;
  - Mean summer precipitation; and
  - Mean winter precipitation.
- 15.4.7. Projected temperature and precipitation variables are presented in Table 54 and Table 55 respectively. *UKCP18* probabilistic projections have been analysed for the 25 km grid square in which the proposed scheme is located. These figures are expressed as temperature/precipitation anomalies in relation to the 1981-2000 baseline.
- 15.4.8. Whilst *UKCP18* includes limited data on the wind environment, it states that "There are no compelling trends in storminess, as determined by maximum gust speeds, from the UK wind network over the last four decades." Furthermore, it also states that wind speeds are not available for the probabilistic projections as they did not pass credibility checks. Wind data will therefore not form part of the EIA assessment methodology.
- 15.4.9. *UKCP18* uses a range of possible scenarios, classified as Representative Concentration Pathways (RCPs), to inform differing future emission trends. These RCPs "specify the concentrations of greenhouse gases that will result in total radiative forcing increasing by a target amount by 2100, relative to preindustrial levels". RCP8.5 has been used for the purposes of this assessment as a worst-case scenario.
- 15.4.10. The proposed scheme has varying design life elements, with the pavement surface at 15 years, the pavement at 40 years and the structures at 120 years. The projected climate variables presented in Table 54 and Table 55 show time periods that intersect these stages. The 2020-2039 time period intersects the proposed scheme construction stage, earliest operations and the end of the design life for pavement surfacing. The 2060-2079 time period intersects the end of design life of the pavement surface and approximately halfway design life of the proposed scheme. The 2080-2099 time period is the furthest available projection and intersects the latter part of the design life of the proposed scheme. Section 3.3 of LA114 states that "assessments shall use the H++ climate scenarios to test the sensitivity of vulnerable safety critical features, to ensure that such features will not be affected by more

radical changes to the climate beyond that projected in the latest set of UK climate projections”. However the H++ climate scenarios have not been updated in UKCP18, as “the H++ scenario of UKCP09 can still be considered a useful plausible but unlikely high-end sea level pathway for decision making.” Accordingly this will be reviewed and considered in the EIA.

**Table 54: Projected changes in temperature variables (°C), 50% probability**

Climate Variable	2020-2039	2050-2069	2080-2099
Mean annual air temperature anomaly at 1.5 m (°C)	+1.0	+2.4	+4.3
Mean summer air temperature anomaly at 1.5 m (°C)	+1.4	+3.2	+5.8
Mean winter air temperature anomaly at 1.5 m (°C)	+1.0	+2.1	+3.6
Maximum summer air temperature anomaly at 1.5 m (°C)	+1.5	+3.6	+6.5
Minimum winter air temperature anomaly at 1.5 m (°C)	+0.9	+2.2	+3.6

**Table 55: Projected changes in precipitation (%), 50% probability**

Climate Variable	2020-2039	2050-2069	2080-2099
Annual precipitation rate anomaly (%)	+1.0	+1.4	+3.4
Summer precipitation rate anomaly (%)	-9.6	-26.2	-42.3
Winter precipitation rate anomaly (%)	+9.2	+17.5	+30.7

## 15.5. Potential impacts

### Lifecycle GHG impact assessment

- 15.5.1. The key anticipated GHG emission sources during the proposed scheme construction and operation phase are set out in Table 56. This approach is consistent with the principles set out in the *DMRB LA 114* (Ref 212)

Ref 212 DMRB LA 114 <https://www.standardsforhighways.co.uk/dmrb/search/87f12e4f-70f8-4eed-8aed-9e9a42e24183>

guidance, *BS EN 15804* (Ref 213), *PAS 2080* (Ref 214) and IEMA guidance (Ref 215).

- 15.5.2. *DMRB LA 114* guidance states that during the scoping exercise, consideration should be given to the following questions to understand the need to undertake further GHG assessment:
- construction: are construction GHG emissions (or GHG-emitting activity), compared to the baseline scenario (when compared to GHG emissions and energy use associated with existing maintenance activities), increasing by >1%?
  - operation: Will roads meet or exceed any of the following criteria?
    - a change of more than 10% in AADT;
    - a change of more than 10% to the number of HDV; and
    - a change in daily average speed of more than 20 km/hour.
- 15.5.3. It is considered possible that during construction, GHG emissions will increase by more than 1% compared to the baseline of maintaining the existing road network in the area.
- 15.5.4. It is considered likely that during operation AADT will increase by more than 10%, but that the change in the number of HDVs will be less than 10%. The average daily speed is expected to increase by more than 20 km/hr.
- 15.5.5. Information presented in Table 56 is 'scoped in' to the lifecycle GHG impact assessment, however, the following activities/lifecycle stages have been scoped out of the assessment:
- decommissioning: it is anticipated the proposed scheme will be in use beyond the design life of the road infrastructure. Any future decommissioning would require a separate planning submission. Decommissioning has therefore been scoped out.

**Table 56: Potential impacts for the lifecycle GHG impact assessment of the proposed scheme**

Lifecycle stage	Activity	Primary emission sources
Pre-construction stage	Enabling works Land clearance Disposal of any waste generated during the enabling works	GHG emissions from fuel use for works equipment and vehicles GHG emissions from fuel use for worker commuting Variation of carbon sink GHG emissions from disposal of waste

Ref 213 BS EN 15804 Sustainability of construction works (British Standards Institution, 2012)  
[https://global.ihs.com/doc\\_detail.cfm?document\\_name=BS%20EN%2015804&item\\_s\\_key=00582281](https://global.ihs.com/doc_detail.cfm?document_name=BS%20EN%2015804&item_s_key=00582281)

Ref 214 PAS 2080 Carbon management in infrastructure (British Standards Institution, 2016)  
[https://shop.bsigroup.com/ProductDetail?pid=000000000030323493&creative=443668107352&keyword=&matchtype=b&network=g&device=c&gclid=EA1aIQobChMIImqfn7--G7QIVh-R3Ch018wTAEAAAYASAAEgIH0\\_D\\_BwE](https://shop.bsigroup.com/ProductDetail?pid=000000000030323493&creative=443668107352&keyword=&matchtype=b&network=g&device=c&gclid=EA1aIQobChMIImqfn7--G7QIVh-R3Ch018wTAEAAAYASAAEgIH0_D_BwE)

Ref 215 IEMA EIA Guidance (IEMA, 2017); Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance

Lifecycle stage	Activity	Primary emission sources
		GHG emissions from fuel consumption for transportation of waste
Product stage	Raw material extraction and manufacturing of products required to build the proposed scheme	Embodied GHG emissions
Construction process stage	On-site construction activity Transport of construction materials (where these are not included in embodied GHG emissions) Transport of construction workers Disposal of any waste generated during the construction processes	GHG emissions from energy (electricity and fuel) consumption for plant and vehicles, and generators on site. Fuel consumption from transport of materials to site (where these are not included in embodied GHG emissions) GHG emissions from fuel use for worker commuting GHG emissions from disposal of waste GHG emissions from fuel consumption for transportation of waste
Operation stage	Operation of associated road and signalling Maintenance including resurfacing	GHG emissions from grid electricity use Embodied emissions associated with resurfacing materials Fuel use for maintenance activities
Use stage	Vehicle journeys	GHG emissions from fuel use by road users

### Vulnerability to climate change

- 15.5.6. The potential impacts for the vulnerability assessment are determined based on the *UKCP18* projections. Climatic parameters to be 'scoped in' and taken into account in the climate change vulnerability assessment include those identified in Table 57.

**Table 57: Climatic parameters scoped for the vulnerability assessment**

Climate Variable	Scoped In/Out	Rationale for Scoping Conclusion
Extreme weather events	In	The proposed scheme may be vulnerable to extreme weather events such as storm damage to structures and assets.
Temperature	In	Increased temperatures may increase cooling requirements of the proposed scheme and could impact on structural integrity of roads and materials.
Sea level rise	In	The proposed scheme site would cross the floodplain of the tidal part of the river Arun.

Climate Variable	Scoped In/Out	Rationale for Scoping Conclusion
Precipitation	In	The proposed scheme may be vulnerable to changes in precipitation, for example, damage to structures and drainage systems during periods of heavy precipitation.
Wind	Out	The impacts of wind on receptors in the surrounding environment are likely to be no worse relative to baseline conditions. <i>UKCP18</i> states that "There are no compelling trends in storminess, as determined by maximum gust speeds, from the UK wind network over the last four decades." Furthermore, it also states that wind speeds are not available for the probabilistic projections as they did not pass credibility checks.

## 15.6. Design, mitigation and enhancement measures

### GHG impact assessment

15.6.1. Mitigation measures will be identified to reduce GHG emissions across the lifecycle of the proposed scheme. Mitigating measures to be considered will include:

- a CEMP (based upon the OEMP) will be prepared and implemented to include a range of best practice construction measures;
- specification of alternative materials with lower embodied GHG emissions;
- low carbon design specifications such as energy-efficient lighting and durable construction materials to reduce maintenance and replacement cycles.

15.6.2. The final selection of the most appropriate mitigation measures will be detailed as part of the lifecycle GHG impact assessment in the ES. This will include GHG emission mitigation measures concerning construction and operation of the proposed scheme.

### Vulnerability to climate change

15.6.3. A number of mitigation and adaptation measures will be considered to address potential risks, many of which will have been identified by other technical assessments and the proposed scheme design. The assessment will identify and take into account the existing resilience measures for each climate risk either already in place or in development for infrastructure and assets.

## 15.7. Description of the likely significant effects

15.7.1. Construction and operational activities and materials associated with the proposed scheme will result in GHG emissions contributing to an adverse impact on the climate. Residual impacts will arise as it is not currently feasible to fully eliminate emissions resulting from the production of road building materials, construction activities and energy use during the proposed scheme operation.

15.7.2. Furthermore, limitations exist in terms of feasible design alternatives for the proposed scheme and materials specification(s) due to legal requirements for quality and safety considerations in UK road schemes.

15.7.3. The following measures will be applied to reduce GHG emissions:

- avoid or prevent: the design will seek to maximise potential for re-using and/or refurbishing existing assets to reduce the extent of new construction required, or explore alternative lower carbon options to deliver the proposed scheme objectives;
- reduce: apply low carbon solutions (including technologies, materials and products) to minimise resource consumption during the construction, operation, use of the proposed scheme, and at end-of-life; and construct efficiently: use techniques that reduce resource consumption over the life cycle of the proposed scheme; and
- remediate: after addressing the above steps, explore options to identify, assess and integrate measures to further reduce carbon through on or off-site offsetting or sequestration.

## 15.8. Assessment methodology

### Lifecycle GHG impact assessment

15.8.1. In line with the *World Business Council for Sustainable Development (WBCSD)/World Resources Institute (WRI) Greenhouse Gas Protocol* (Ref 216) guidelines, the GHG emissions study will be reported as tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) and consider the seven *Kyoto Protocol* gases:

- Carbon dioxide (CO<sub>2</sub>);
- Methane (CH<sub>4</sub>);
- Nitrous oxide (N<sub>2</sub>O);
- Sulphur hexafluoride (SF<sub>6</sub>);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Nitrogen trifluoride (NF<sub>3</sub>).

15.8.2. GHG emissions will be assessed using a calculation-based methodology as per the below equation:

$$\text{Activity data} \times \text{GHG emissions factor} = \text{GHG emissions value}$$

15.8.3. Whilst the scope of the assessment will cover the lifecycle stages identified above (see Table 57), it is proposed that the GHG assessment will comprise two parts reflecting both the level of certainty of future activity and GHG

- emissions and the extent that the predicted GHG emissions will be additional to the existing GHG inventory.
- 15.8.4. The first part of the GHG assessment will include the construction, operation (road lighting) and maintenance of the proposed scheme itself. The majority of these emissions will be additional to the existing National GHG inventory.
- 15.8.5. The second part of the GHG assessment will address the 'use' of the proposed scheme, specifically those emissions resulting from vehicles travelling on the road. As at least part of the GHG emissions associated with the use of the proposed scheme will be displacement from elsewhere in the UK, they will not be additional to the UK GHG inventory. The assessment will consider the impact of GHG emissions on the wider ARN to account for any variation in GHG impacts as a result of the proposed scheme.
- 15.8.6. Two types of data will be collected for the GHG assessment: activity data and GHG emissions factors. A set of standard data quality principles will be applied so that the results from the GHG assessment are as accurate and representative as possible:
- age – the GHG assessment will be based on activity data and GHG emissions factors applicable to the study period;
  - geography – activity data will reflect the design of the proposed scheme. GHG emissions factors will be representative of the UK construction industry and UK transport sector;
  - technology – the default solution will be to apply data which is representative of the UK construction industry and transport sector. However, technology specific data may be used for the purpose of developing scenarios of the future;
  - methodology – activity data will be gathered directly from the proposed scheme's engineering and design teams to enable consistency and completeness of data collection; and
  - competency – activity data will be generated by the engineering and design teams in-line with applicable industry standards. The Highways England carbon tool will be used to calculate construction emissions. Data gaps will be replaced with either peer reviewed publications (paper published in recognised journals) or industry specific literature (UK construction trade associations). GHG emissions factors will be sourced from a range of sources which adhere to the *BS EN 15804* standard and are aligned with best practice and industry specific and Government sources which are widely accepted and used.
- 15.8.7. In line with the *NPSNN* (Ref 10), significance of effects will be assessed by comparing estimated GHG emissions arising from the proposed scheme with UK carbon budgets, and the associated reduction targets. Consideration will also be given as to how the proposed scheme is contributing to the UK's net zero 2050 target.

15.8.8. Table 58 shows the current and future UK carbon budgets, which at present have only been calculated up to 2032 (Ref 217). The Committee on Climate Change are due to publish their recommendations for the UK's sixth carbon budget in December 2020, which will be in line with the net zero 2050 target.

**Table 58: UK carbon budget**

Carbon budget	Total budget (MtCO <sub>2</sub> e)
3rd (2018-2022)	2,544
4th (2023-2027)	1,950
5th (2028-2032)	1,725

15.8.9. DMRB LA 114 does not include a defined methodology for the assessment of significant effects in relation to carbon emissions. Therefore, the assessment of the proposed scheme related emissions will be compared to relevant UK carbon budgets. The assessment will only report significant effects where increases in GHG emissions will have a material impact on the ability of Government to meet its carbon reduction targets. This would therefore suggest that a development with emissions of <1% of the UK inventory and relevant National carbon budget would be minimal in its contribution to the wider national GHG emissions. This has been used to assess the magnitude of the GHG impact and the associated criteria are outlined in Table 59 and Table 60.

15.8.10. IEMA guidance (Ref 218) states that there are currently no agreed methods to evaluate levels of GHG significance and that professional judgement is required to contextualise the emission impacts from a project. In GHG accounting, it is considered good practice to contextualise emissions against pre-determined carbon budgets. In the absence of sector-based or local emissions budgets, the UK Carbon Budgets can be used to contextualise the level of significance.

15.8.11. Both the Department of Energy and Climate Change (Ref 219) and the PAS 2050 Specification (Ref 220) allow emissions sources of <1% contribution to be excluded from emission inventories, and these inventories to still be considered complete for verification purposes. This exclusion of emission sources that are <1% of a given emissions inventory is on the basis of a 'de minimis' (relatively minimal) contribution.

Ref 217 Committee on Climate Change, 2017

Ref 218 Institute of Environmental Management and Assessment (IEMA), "Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance," 2017. [Online]. Available: [https://www.iaia.org/pdf/wab/EIA%20Guide\\_GHG%20Assessment%20and%20Significance\\_IEMA\\_16May17.pdf](https://www.iaia.org/pdf/wab/EIA%20Guide_GHG%20Assessment%20and%20Significance_IEMA_16May17.pdf).

Ref 219 Department of Energy and Climate Change (DECC), Guidance on Annual Verification for Emissions from Stationary Installations, 2013.

Ref 220 British Standards Institution (BSI), PAS 2050: 2011 Specification for the Assessment of the Life Cycle Greenhouse Gas Emissions of Goods and Services, 2011.

**Table 59: Magnitude of impact criteria for GHG impact assessment**

Magnitude of impact	Magnitude criteria
High	Estimated GHG emissions equate to equal to or more than 1% of total emissions across the relevant 5-year National Carbon Budget period in which they arise
Low	Estimated GHG emissions equate to less than 1% of total emissions across the relevant 5-year National Carbon Budget period in which they arise

**Table 60: Significance of effects criteria for lifecycle GHG impact assessment**

Magnitude	Sensitivity
Low (less than 1% of carbon budget)	Minor adverse (not significant)
High (more than or equal to 1% of carbon budget)	Major adverse (significant)

### Vulnerability to climate change

- 15.8.13. This assessment will address the resilience of the proposed scheme to climate change impacts. The assessment will include all infrastructure and assets associated with the proposed scheme. It will assess resilience against both gradual climate change, and the risks associated with an increased frequency of extreme weather events.
- 15.8.14. The assessment will assume that the proposed scheme will be designed to be resilient to impacts arising from current weather events and climatic conditions, and designed in accordance with current planning, design and engineering practice and codes. The assessment will also identify and take into account the existing resilience and adaptation measures for each risk either already in place or in development for infrastructure and assets.
- 15.8.15. The degree to which the frequency of these potential hazards may change as a result of climate change is explained in the *UKCP18* climate change projections.
- 15.8.16. The vulnerability assessment will follow the method detailed in the *DMRB LA 114*. This will be completed in liaison with the project design team and the other EIA technical disciplines by considering the *UKCP18* projections for the geographical location and timeframe of the proposed scheme (from construction through to operation).
- 15.8.17. The *DMRB LA 114* guidance details: how to assess the relevance of potential impacts during operation; evaluation of significance; and when further design and mitigation measures are required. During the construction phase, impacts will be assessed qualitatively. Once climate hazards have been identified the likelihood and consequences will be assessed according to Table 61 and Table 62.

**Table 61: Likelihood categories**

Likelihood	Description (probability and frequency of occurrence)
Very high	The event occurs multiple times during the lifetime of the proposed scheme (120 years). For example, approximately annually, typically 120 events.
High	The event occurs several times during the lifetime of the proposed scheme (120 years). For example, approximately once every five years, typically 24 events.
Medium	The event occurs limited times during the lifetime of the proposed scheme (120 years). For example, approximately once every 15 years, typically 8 events.
Low	The event occurs during the lifetime of the proposed scheme (120 years). For example, once in 120 years.
Very low	The event can occur once during the lifetime of the proposed scheme (120 years).

**Table 62: Description of consequences**

Consequence of impact	Description
Very large adverse	Operation - national level (or greater) disruption to strategic route(s) lasting more than 1 week.
Large adverse	Operation - national level disruption to strategic route(s) lasting more than 1 day but less than 1 week or regional level disruption to strategic route(s) lasting more than 1 week.
Moderate adverse	Operation - regional level disruption to strategic route(s) lasting more than 1 day but less than 1 week.
Minor adverse	Operation - regional level disruption to strategic route(s) lasting less than 1 day.
Negligible	Operation - disruption to an isolated section of a strategic route lasting less than 1 day.

15.8.18. The significance of each effect will then be evaluated through a matrix as detailed in Table 63. This will be based on and incorporate confirmed design and mitigation measures, as described by *DMRB LA 114*. Any further design and mitigation measures will then be incorporated, and the residual effects will be reassessed until a non-significant acceptable level is achieved for each risk.

**Table 63: Significance of effect matrix ('S' significant, 'NS' not significant)**

		Very Low	Low	Medium	High	Very High
Measure of consequence	Very large	NS	S	S	S	S
	Large	NS	NS	S	S	S
	Moderate	NS	NS	S	S	S
	Minor	NS	NS	NS	NS	NS
	Negligible	NS	NS	NS	NS	NS

15.8.19. A statement will be provided within the Climate chapter of the ES to describe how the proposed scheme will be designed and monitored to improve its resilience to future climatic conditions.

### 15.9. Assumptions, limitations and uncertainties

15.9.1. The methodology as detailed above assumes that the following information will be available during the design process:

- Construction stage:
  - Waste generation;
  - Potable water consumption and quantity of wastewater requiring treatment;
  - Energy consumption (kWh);
  - Plant/machinery use;
  - Construction worker travel;
  - Materials used – types, quantities and transportation distances; and
  - Land use change.
- Operation stage:
  - Waste generation (volume kg by type, method of disposal, destination for disposal);
  - Potable water consumption and quantity of wastewater requiring treatment, method of provision/treatment;
  - Energy consumption (kWh); and
  - Transportation/vehicle use by visitors and residents.
- Maintenance:
  - Emissions from maintenance activities.

15.9.2. Where information is not available, assumptions based on industry approximations and professional best practice will be made.

- 15.9.3. GHG emissions from the end of life stage of the proposed scheme have been scoped out of the assessment due to the anticipated operational length of the proposed scheme extending beyond its design life.

## 16. Cumulative Effects

### 16.1. Introduction

16.1.1. This section sets out the proposed approach for the assessment of the cumulative effects associated with the proposed scheme. The purpose of the assessment will be to identify and characterise any relevant in combination and cumulative effects and to assess the significance of any likely effects.

16.1.2. These types of effects are the result of multiple impacts on environmental receptors or resources. There are principally two types of cumulative effect:

- the combined action of a number of different environmental topic specific impacts upon a single resource/receptor (in combination or intra-project effects); and
- the combined action of a number of different projects, cumulatively with the project being assessed, on a single resource/receptor (cumulative or inter-project effects).

### 16.2. Relevant policy

16.2.1. The need to consider cumulative effects in planning and decision making is set out in planning policy including the *NPPF* (Ref 11) and the *NPSNN* (Ref 10). Paragraph 4.16 of the *NPSNN* (Ref 10) specifies that “when considering significant cumulative effects, any environmental statement should provide information on how the effects of the applicant’s proposal would combine and interact with the effects of other development (including projects for which consent has been granted, as well as those already in existence)”.

16.2.2. In addition, paragraph 4.3 states that “in considering any proposed development, and in particular, when weighing its adverse impacts against its benefits, the Examining Authority and the Secretary of State should take into account:

- its potential benefits, including the facilitation of economic development, including job creation, housing and environmental improvement, and any long-term or wider benefits; and
- its potential adverse impacts, including any longer-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts.”

16.2.3. The Inspectorate’s *Advice Note 17 Cumulative Effects Assessment* (Ref 221) on the assessment of cumulative effects identifies a four stage approach:

- Stage 1 - establish the project’s zone of influence and identify a long list of ‘other development’;
- Stage 2 - identify a shortlist of ‘other development’ for the cumulative impact assessment;

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Ref 221 The Planning Inspectorate, *Advice Note 17: Cumulative Effects Assessment*. Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2015/12/Advice-note-17V4.pdf> (Accessed: November 2020)

- Stage 3 - information gathering; and
- Stage 4 - assessment.

16.2.4. The *DMRB LA 104* (Ref 40) requires that possible cumulative effects are included as part of the assessment process. The *DMRB LA 104* (Ref 40) guidance states that environmental assessments should assess cumulative effects which include those from:

- a single project (from numerous different effects impacting a single receptor); and
- different projects (together with the project being assessed).

### 16.3. Study area

16.3.1. The study area for the cumulative effects assessment will be based on the likely zone of influence identified in each technical topic assessment, which will vary depending on the topic and will be detailed within the ES. The list of 'other development' for consideration within this study area will be obtained from the planning portals for the following planning authorities:

- Adur District Council;
- Arun District Council;
- Chichester District Council;
- Horsham District Council;
- SDNP Authority\* – the planning authority for any land within the National Park;
- West Sussex County Council\* - the County Authority which deals only with minerals, waste and their own developments which would include education; and
- Worthing Borough Council.

### 16.4. Assessment methodology

16.4.1. The assessment of cumulative effects will consider the following:

- the combined effects from the proposed scheme on a single receptor of a number of individual environmental impacts, for example noise, dust and traffic (in combination or intra-project effects); and
- the effects of other developments in the vicinity of the proposed scheme which are under construction or have been consented, which when combined with the effects of the proposed scheme may have an incremental significant effect (cumulative or inter-project effects).

#### **Intra-project effects (in combination effects)**

16.4.2. The main source of data for the intra-project cumulative effects assessment will be the outcomes and information obtained from the individual environmental topic assessments.

### **Inter-project effects (cumulative effects)**

16.4.3. The assessment of cumulative effects arising from the proposed scheme in combination with other proposed schemes (inter-project effects) will primarily constitute a desk-top study of planning documents considered relevant to the assessment. The focus of the desk-top study will be the collection of information relating to the background of relevant other developments, their expected timelines and likely environmental impacts. The assessment will adopt the following four stage approach:

#### **Stage 1 – long list of other development**

16.4.4. An initial review of other developments has already been undertaken, initially encompassing a ‘zone of influence’ defined by the environmental topic specialists and the traffic model area. This initial long list of other development is presented in Appendix C of this report.

16.4.5. As the proposed scheme design progresses, this initial list of ‘other development’ to be included in the assessment of cumulative effects will be reviewed and developed in consultation with the local planning authorities, statutory consultees and other relevant organisations.

16.4.6. Development will be included in the long list based on the following criteria outlined in *Advice Note 17, Table 2* (Ref 221):

- development currently under construction;
- approved applications which have not yet been implemented (covering the past five years and taking account of those that received planning consent over three years ago and are still valid but have not yet been completed);
- submitted applications not yet determined;
- refused applications, subject to appeal procedures not yet determined;
- projects on the National Infrastructure Planning Programme of Projects;
- development identified in the relevant Development Plan (and emerging Development Plans); and
- development identified in other plans and programmes which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.

16.4.7. Criteria will be developed and applied to filter development which may be excluded from the initial long list, having regard to the size and spatial influence of each development. These criteria will be documented and set out within the ES.

16.4.8. Where it is identified that other developments are expected to be complete before construction of the proposed scheme, their effects will instead be considered through the extrapolation of the future baseline. These particular schemes will be assessed in the topic specific ES chapters as opposed to the cumulative effects assessment.

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### **Stage 2 – short list of other development**

16.4.9. At Stage 2, any other developments of a nature or scale without the potential to result in a cumulative effect with the proposed scheme will be excluded, following discussion with the local planning authorities and consideration of each environmental topic's likely zone of influence. The justification for including or excluding developments on the short list will be provided in a matrix, modelled on the example given within Appendix 1 of *Advice Note 17* (Ref 221).

### **Stage 3 – information gathering**

16.4.10. Information relating to other developments will be collected from the appropriate source (which may include the local planning authority, the Inspectorate or directly from the applicant/developer) and will include, but not be limited to:

- proposed design and location information;
- proposed programme of construction, operation and demolition; and
- environmental assessments that set out baseline data and effects arising from 'other development'.

### **Stage 4 – assessment**

16.4.11. The assessment will include a list of those developments considered to have the potential to generate a cumulative effect together with the proposed scheme, and this will be documented in a matrix, similar in nature to that detailed in *Advice Note 17* Appendix 2 (Ref 221), which includes the following:

- a brief description of the development;
- an assessment of the cumulative effect with the proposed scheme;
- proposed mitigation applicable to the proposed scheme including any apportionment; and
- the likely residual cumulative effect.

16.4.12. The criteria for determining the significance of any cumulative effect will be based upon:

- the duration of effect (specifically, if it will be temporary or permanent);
- the extent of effect (the geographical area of an effect);
- the type of effect (whether additive or synergistic);
- the frequency of the effect;
- the 'value' and resilience of the receptor affected; and
- the likely success of mitigation.

## 17. Summary

17.1.1. Table 64 summarises the environmental topics as listed within the *DMRB guidance* (Ref 222) that are due to be scoped into the EIA and which topics are due to be scoped out. Further detail of the individual topic assessments can be found in the environmental topic sections 6-16.

**Table 64: Summary table**

Topic	Scoped In	Scoped out
Air quality		
Construction – dust assessment	X	PM <sub>2.5</sub>
Construction – traffic assessment	Neither scoped in or out at this stage. This will be confirmed in the later stages of assessment as further information is made available on the construction phase.	
Operation – NO <sub>2</sub> and PM <sub>10</sub>	X	PM <sub>2.5</sub>
Cultural heritage		
Construction	X	
Operation	X	
Landscape and visual		
Construction	X	
Operation	X	
Biodiversity		
Construction	X	
Operation	X	
Habitat regulations assessment	Not included within the ES but will be carried out as part of the wider DCO application	
Geology and soils		
Construction	X	
Operation – Land contamination	X	Geology Soil resources
Material assets and waste		
Construction	X	Land contamination from construction materials  Waste arising from extraction, processing and manufacture of construction components and products
Operational		X

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Topic	Scoped In	Scoped out
Waste management at established third party waste management facilities		X
Noise and vibration		
Construction	X	
Operation	X	Vibration assessment
Population and human health		
Construction	X	
Operation	X	
Road drainage and the water environment		
Construction	X	
Operation	X	
Flood risk	X	
Climate		
Greenhouse gas (GHG) impact assessment	X	
Vulnerability to climate change assessment	X	
Major events	It is considered highly likely that all of the major event types will be able to be removed from the scope of the assessment prior to publication of the ES, as the design will ensure there is no real risk or serious possibility of the event interacting with the proposed scheme. All such scoping out will be reported in the ES.	
Cumulative effects	X	
Decommissioning assessment		X

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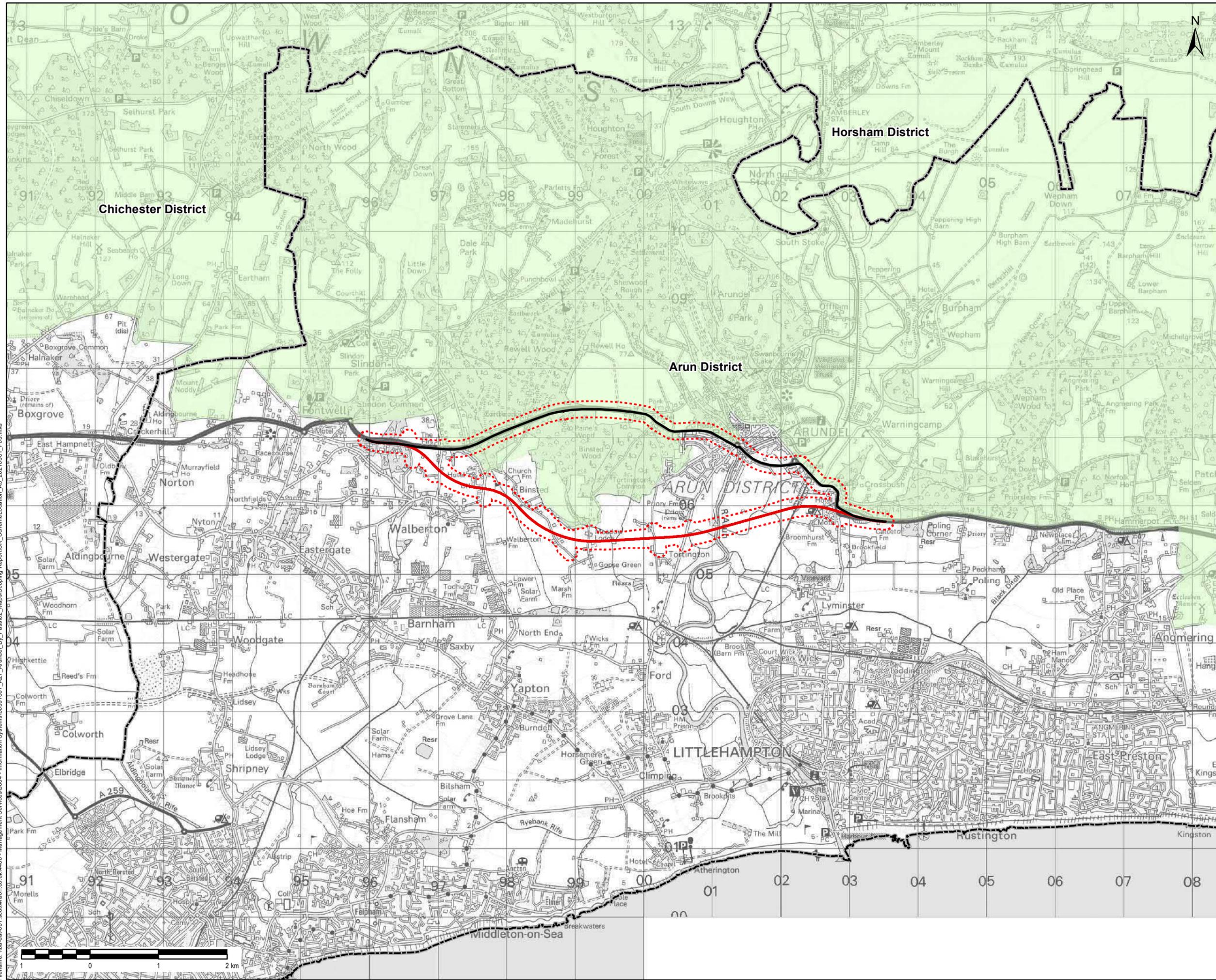
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## 19. Figures



- KEY**
- EXISTING A27
  - PROPOSED SCHEME
  - INDICATIVE SCHEME CORRIDOR (100M BUFFER)
  - DISTRICT BOUNDARY
  - SOUTH DOWNS NATIONAL PARK

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 38 Colmore Circus  
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Project Title  
**A27 ARUNDEL BYPASS**

Drawing Title  
**FIGURE 1  
 SCHEME LOCATION**

Designed VC	Drawn VC	Checked SH	Approved DBRH	Date 01/03/2021
Internal Project No. 60642441	Suitability S2	Scale @ A3 1:50,000	Volume EGN	

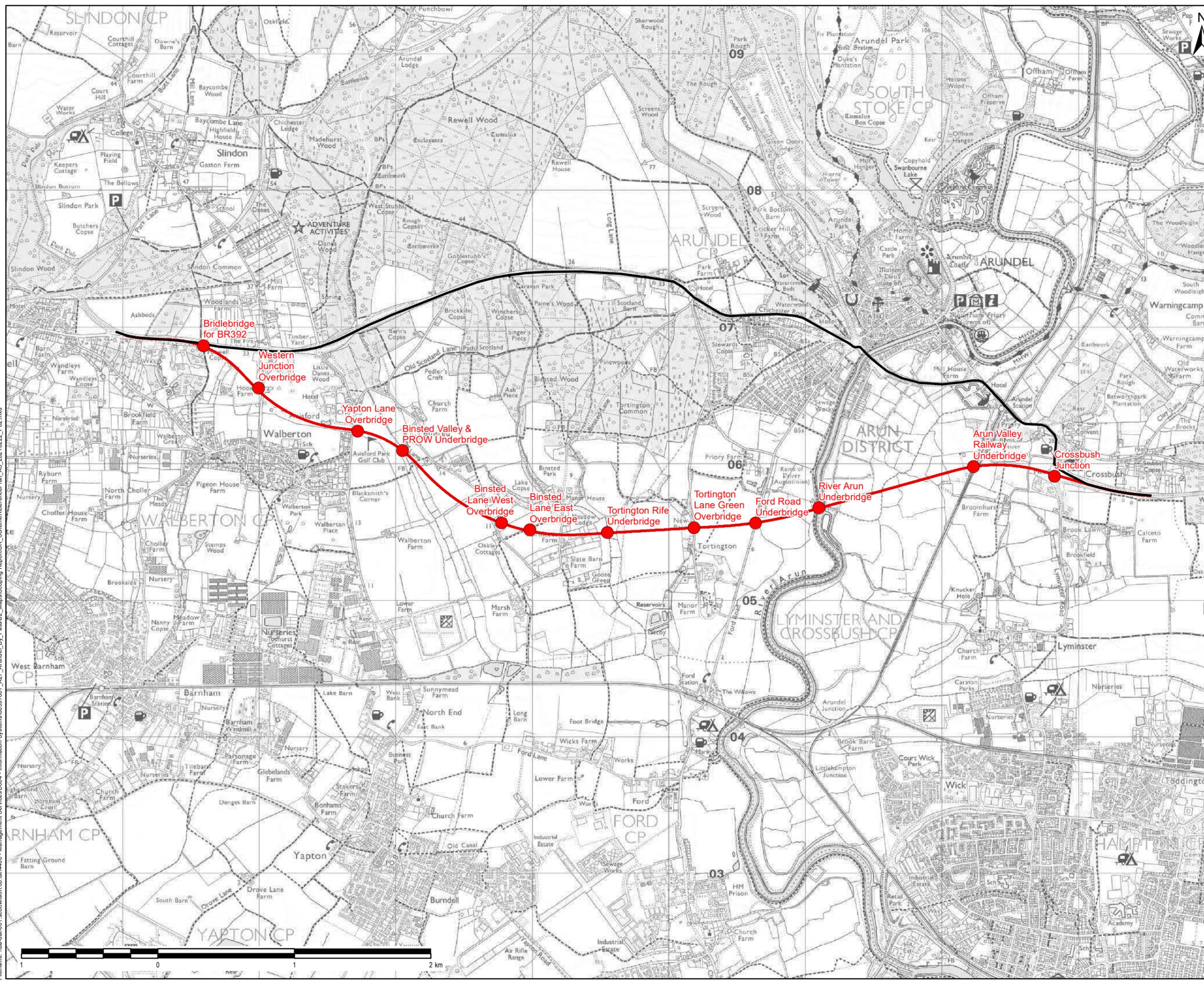
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**KEY**

- EXISTING A27
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**FIGURE 2  
SCHEME REFERENCE PLAN**

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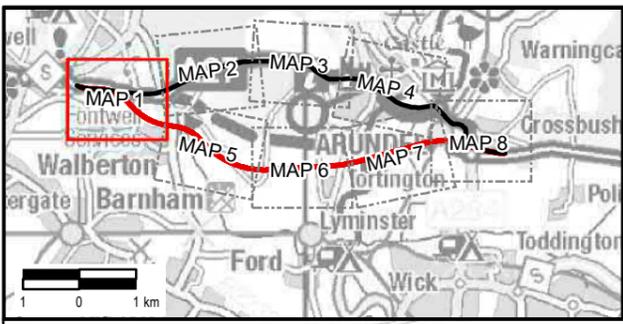
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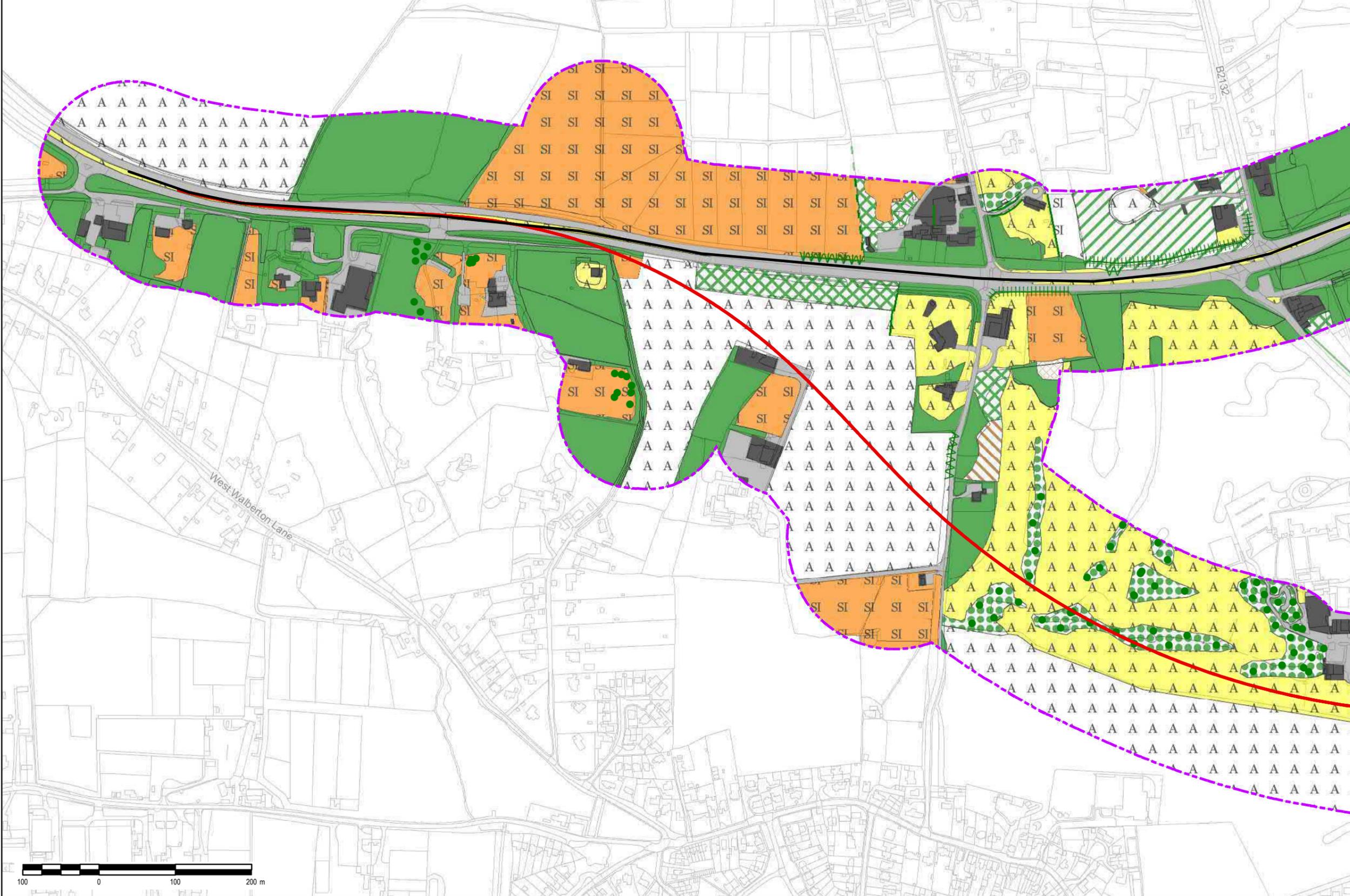
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- PHASE 1 HABITAT**
- INDIVIDUAL BROADLEAVED TREE
  - ➔ RUNNING WATER
  - E RUNNING WATER - EUTROPHIC
  - W W W W INTACT HEDGE - NATIVE SPECIES-RICH
  - W W W W INTACT HEDGE - SPECIES-POOR
  - W W W W DEFUNCT HEDGE - NATIVE SPECIES-RICH
  - W W W W DEFUNCT HEDGE - SPECIES-POOR
  - W W W W HEDGE WITH TREES - NATIVE SPECIES-RICH
  - W W W W HEDGE WITH TREES - SPECIES-POOR
  - ||||| FENCE
  - - - DRY DITCH
  - BROADLEAVED WOODLAND - SEMI-NATURAL
- BROADLEAVED WOODLAND - PLANTED
  - SCRUB - DENSE/CONTINUOUS
  - BROADLEAVED PARKLAND/ SCATTERED TREES
  - NEUTRAL GRASSLAND - UNIMPROVED
  - NEUTRAL GRASSLAND - SEMI-IMPROVED
  - IMPROVED GRASSLAND
  - MARSH/ MARSHY GRASSLAND
  - POOR SEMI-IMPROVED GRASSLAND
  - BRACKEN - CONTINUOUS
  - OTHER TALL HERB AND FERN - RUDERAL
  - SWAMP
  - MARGINAL AND INUNDATION - INUNDATION VEGETATION
  - STANDING WATER
  - STANDING WATER - EUTROPHIC
- RUNNING WATER
  - SALT MARSH - SCATTERED PLANTS
  - COASTAL GRASSLAND
  - CULTIVATED/ DISTURBED LAND - ARABLE
  - CULTIVATED/ DISTURBED LAND - AMENITY GRASSLAND
  - CULTIVATED/ DISTURBED LAND - EPHEMERAL/ SHORT PERENNIAL
  - INTRODUCED SHRUB
  - BUILDINGS
  - BARE GROUND
  - OTHER
  - HARDSTANDING

- KEY**
- EXISTING A27
  - PROPOSED SCHEME
  - 100M STUDY AREA



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**FIGURE 3  
PHASE 1 HABITAT DATA  
WITHIN 100M BUFFER  
MAP 1 OF 8**

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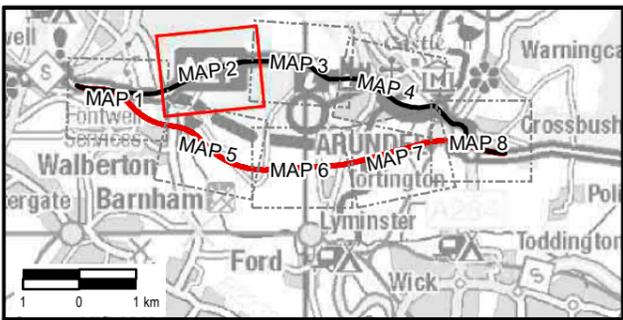
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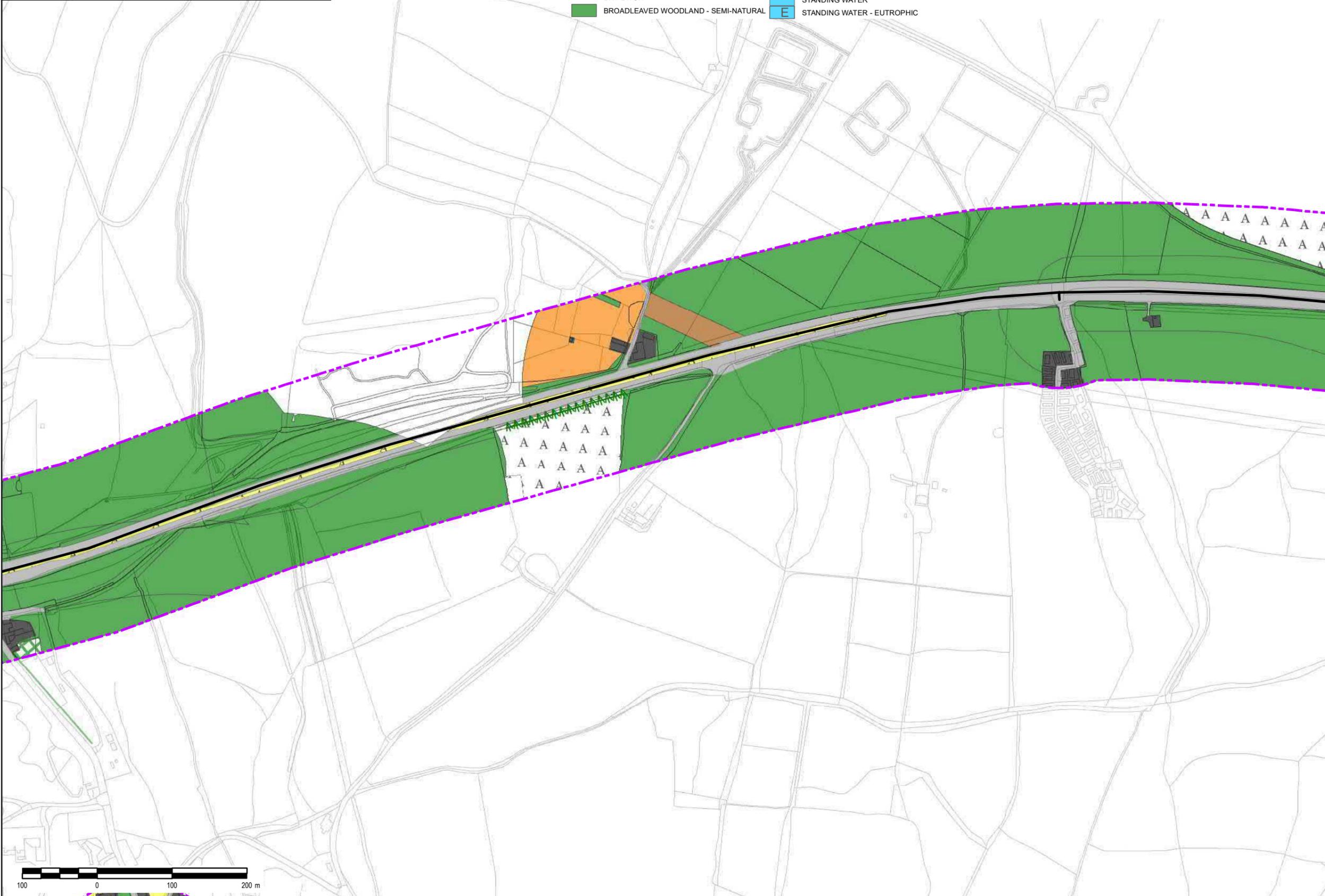
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- PHASE 1 HABITAT**
- INDIVIDUAL BROADLEAVED TREE
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**FIGURE 3  
PHASE 1 HABITAT DATA  
WITHIN 100M BUFFER  
MAP 2 OF 8**

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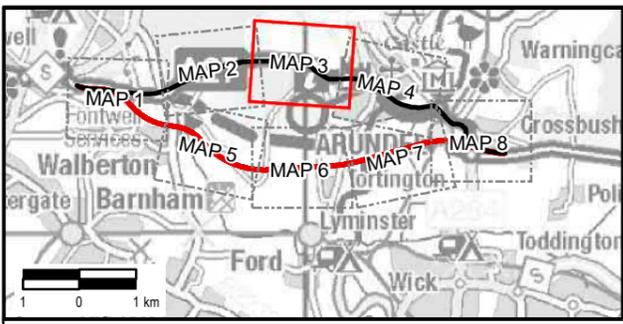
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- PHASE 1 HABITAT**
- INDIVIDUAL BROADLEAVED TREE
  - ▶ RUNNING WATER
  - E RUNNING WATER - EUTROPHIC
  - ∩∩∩ INTACT HEDGE - NATIVE SPECIES-RICH
  - ∩∩∩ INTACT HEDGE - SPECIES-POOR
  - ∩∩∩ DEFUNCT HEDGE - NATIVE SPECIES-RICH
  - ∩∩∩ DEFUNCT HEDGE - SPECIES-POOR
  - ∩∩∩ HEDGE WITH TREES - NATIVE SPECIES-RICH
  - ∩∩∩ HEDGE WITH TREES - SPECIES-POOR
  - ||||| FENCE
  - - - DRY DITCH
  - BROADLEAVED WOODLAND - SEMI-NATURAL
  - BROADLEAVED WOODLAND - PLANTED
  - SCRUB - DENSE/CONTINUOUS
  - BROADLEAVED PARKLAND/ SCATTERED TREES
  - NEUTRAL GRASSLAND - UNIMPROVED
  - NEUTRAL GRASSLAND - SEMI-IMPROVED
  - IMPROVED GRASSLAND
  - MARSH/ MARSHY GRASSLAND
  - POOR SEMI-IMPROVED GRASSLAND
  - BRACKEN - CONTINUOUS
  - OTHER TALL HERB AND FERN - RUDERAL
  - SWAMP
  - MARGINAL AND INUNDATION - INUNDATION VEGETATION
  - STANDING WATER
  - STANDING WATER - EUTROPHIC
  - RUNNING WATER
  - SALTMARSH - SCATTERED PLANTS
  - COASTAL GRASSLAND
  - CULTIVATED/ DISTURBED LAND - ARABLE
  - CULTIVATED/ DISTURBED LAND - AMENITY GRASSLAND
  - CULTIVATED/ DISTURBED LAND - EPHEMERAL/ SHORT PERENNIAL
  - INTRODUCED SHRUB
  - BUILDINGS
  - BARE GROUND
  - OTHER
  - HARDSTANDING

**KEY**

- EXISTING A27
- PROPOSED SCHEME
- 100M STUDY AREA

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**FINAL**

Client: HIGHWAYS ENGLAND  
 Working on behalf of:

Project Title: **A27 ARUNDEL BYPASS**

Drawing Title: **FIGURE 3  
 PHASE 1 HABITAT DATA  
 WITHIN 100M BUFFER  
 MAP 3 OF 8**

Designed VC	Drawn VC	Checked SH	Approved DB/RH	Date
				22/02/2021

Internal Project No. 60642441 | Suitability S2  
 Scale @ A3 1:5,000 | Volume EGN

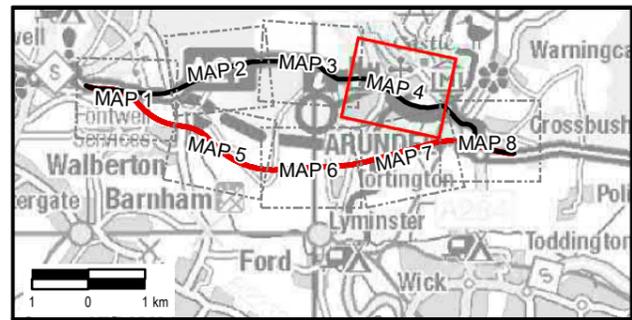
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**PHASE 1 HABITAT**

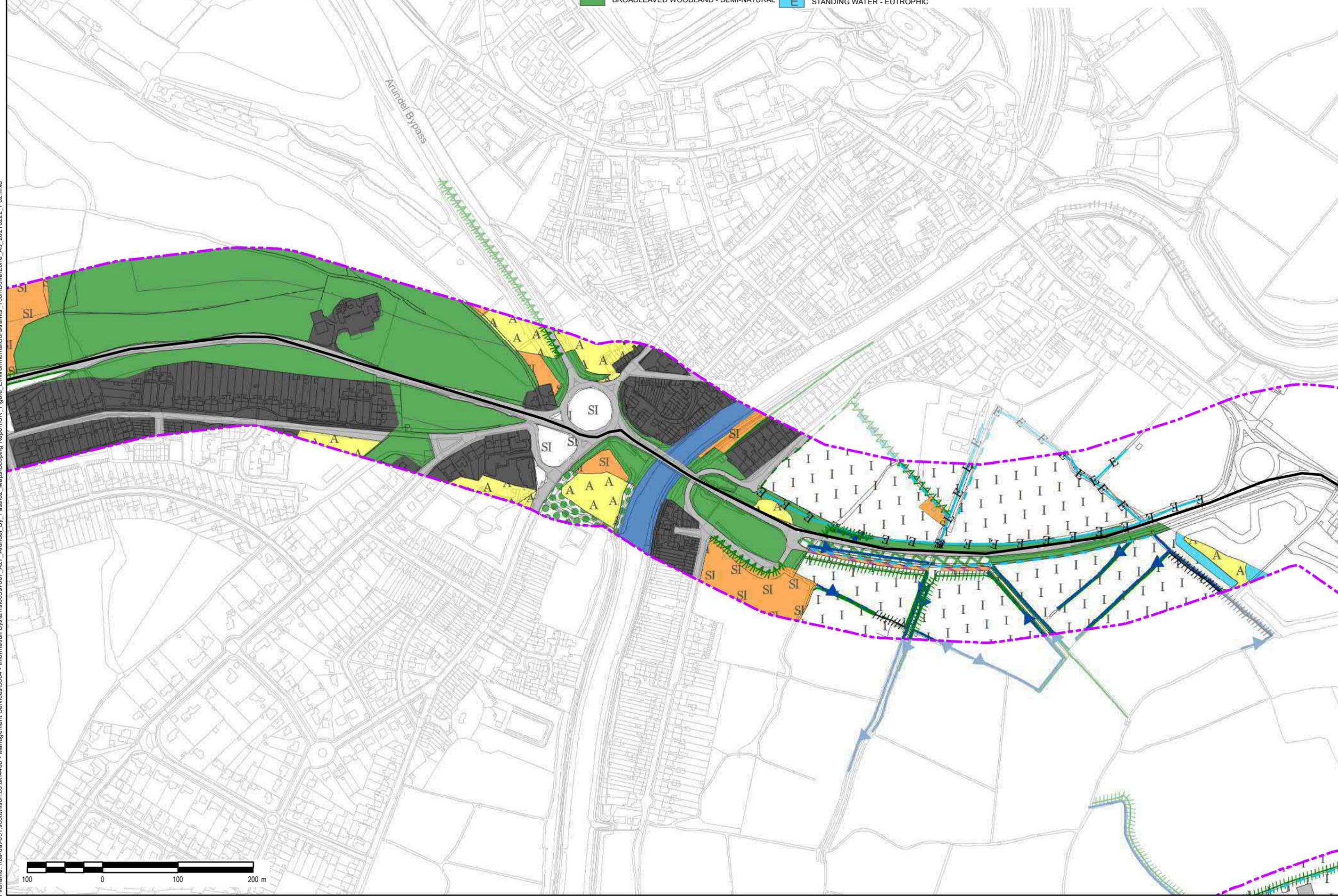
- INDIVIDUAL BROADLEAVED TREE
- ▶ RUNNING WATER
- E RUNNING WATER - EUTROPHIC
- ∩ INTACT HEDGE - NATIVE SPECIES-RICH
- ∩ INTACT HEDGE - SPECIES-POOR
- ∩ DEFUNCT HEDGE - NATIVE SPECIES-RICH
- ∩ DEFUNCT HEDGE - SPECIES-POOR
- ∩ HEDGE WITH TREES - NATIVE SPECIES-RICH
- ∩ HEDGE WITH TREES - SPECIES-POOR
- |||| FENCE
- DRY DITCH
- BROADLEAVED WOODLAND - SEMI-NATURAL

- BROADLEAVED WOODLAND - PLANTED
- SCRUB - DENSE/CONTINUOUS
- BROADLEAVED PARKLAND/ SCATTERED TREES
- NEUTRAL GRASSLAND - UNIMPROVED
- NEUTRAL GRASSLAND - SEMI-IMPROVED
- IMPROVED GRASSLAND
- MARSH/ MARSHY GRASSLAND
- POOR SEMI-IMPROVED GRASSLAND
- BRACKEN - CONTINUOUS
- OTHER TALL HERB AND FERN - RUDERAL
- SWAMP
- MARGINAL AND INUNDATION - INUNDATION VEGETATION
- STANDING WATER
- E STANDING WATER - EUTROPHIC

- RUNNING WATER
- SALTMARSH - SCATTERED PLANTS
- C COASTAL GRASSLAND
- A CULTIVATED/ DISTURBED LAND - ARABLE
- A CULTIVATED/ DISTURBED LAND - AMENITY GRASSLAND
- X CULTIVATED/ DISTURBED LAND - EPHEMERAL/ SHORT PERENNIAL
- INTRODUCED SHRUB
- BUILDINGS
- BARE GROUND
- OTHER
- HARDSTANDING



- KEY**
- EXISTING A27
  - PROPOSED SCHEME
  - 100M STUDY AREA



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Two Colmore Square  
38 Colmore Circus  
Birmingham

Working on behalf of  
**highways england**

Project Title  
**A27 ARUNDEL BYPASS**

Drawing Title  
**FIGURE 3  
PHASE 1 HABITAT DATA  
WITHIN 100M BUFFER  
MAP 4 OF 8**

Designed VC	Drawn VC	Checked SH	Approved DB/RH	Date 22/02/2021
Internal Project No. 60642441	Suitability S2	Scale @ A3 1:5,000		
Volume EGN				

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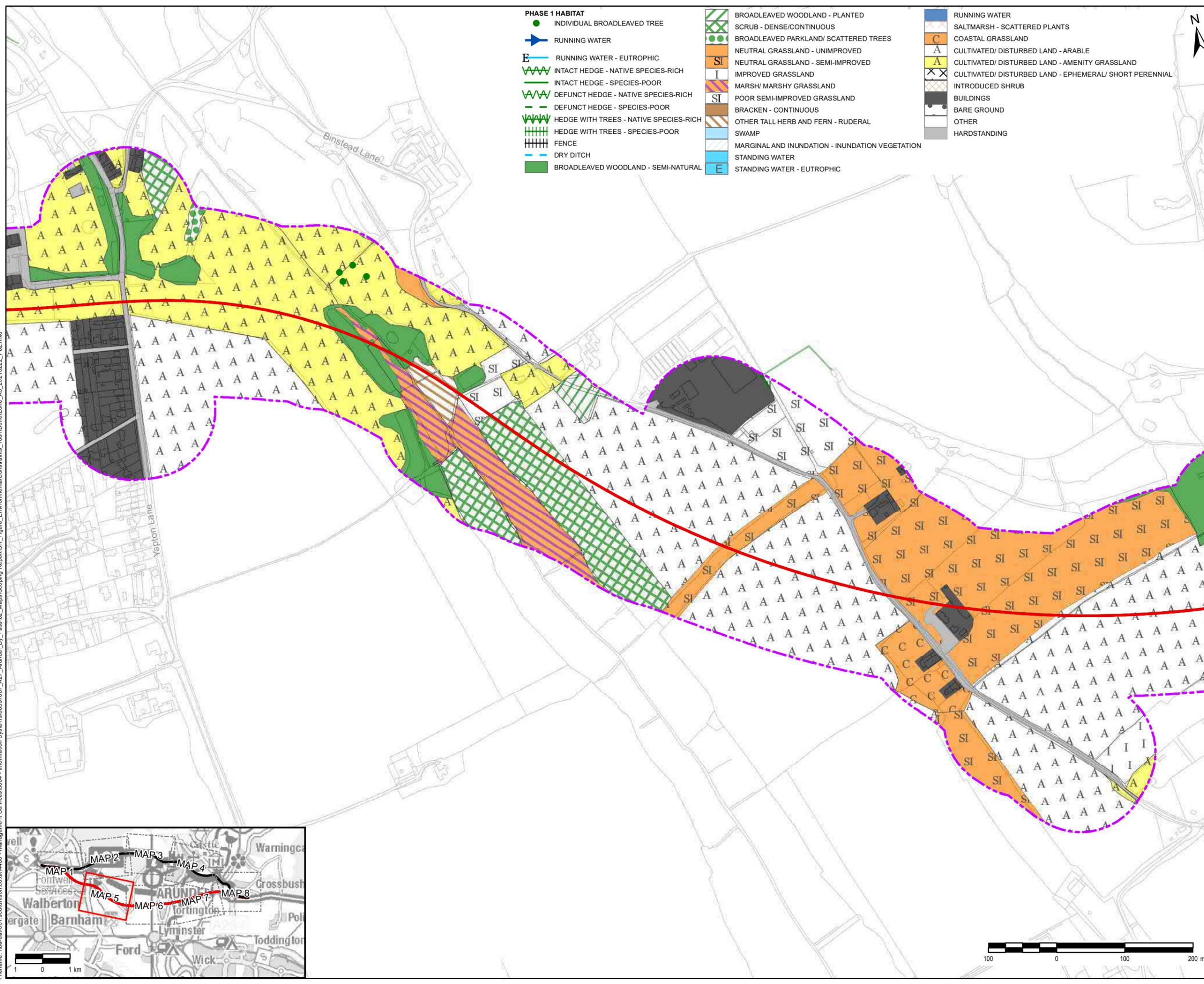
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- PHASE 1 HABITAT**
- INDIVIDUAL BROADLEAVED TREE
  - ▶ RUNNING WATER
  - E RUNNING WATER - EUTROPHIC
  - Ww INTACT HEDGE - NATIVE SPECIES-RICH
  - Ww INTACT HEDGE - SPECIES-POOR
  - Ww DEFUNCT HEDGE - NATIVE SPECIES-RICH
  - Ww DEFUNCT HEDGE - SPECIES-POOR
  - Ww HEDGE WITH TREES - NATIVE SPECIES-RICH
  - Ww HEDGE WITH TREES - SPECIES-POOR
  - |||| FENCE
  - DRY DITCH
  - BROADLEAVED WOODLAND - SEMI-NATURAL
  - BROADLEAVED WOODLAND - PLANTED
  - SCRUB - DENSE/CONTINUOUS
  - BROADLEAVED PARKLAND/ SCATTERED TREES
  - NEUTRAL GRASSLAND - UNIMPROVED
  - SI NEUTRAL GRASSLAND - SEMI-IMPROVED
  - I IMPROVED GRASSLAND
  - MARSH/ MARSHY GRASSLAND
  - SI POOR SEMI-IMPROVED GRASSLAND
  - BRACKEN - CONTINUOUS
  - OTHER TALL HERB AND FERN - RUDERAL
  - SWAMP
  - MARGINAL AND INUNDATION - INUNDATION VEGETATION
  - STANDING WATER
  - E STANDING WATER - EUTROPHIC
  - RUNNING WATER
  - SALT MARSH - SCATTERED PLANTS
  - C COASTAL GRASSLAND
  - A CULTIVATED/ DISTURBED LAND - ARABLE
  - A CULTIVATED/ DISTURBED LAND - AMENITY GRASSLAND
  - X CULTIVATED/ DISTURBED LAND - EPHEMERAL/ SHORT PERENNIAL
  - INTRODUCED SHRUB
  - BUILDINGS
  - BARE GROUND
  - OTHER
  - HARDSTANDING

**KEY**

- EXISTING A27
- PROPOSED SCHEME
- 100M STUDY AREA

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Birmingham

Working on behalf of  
**highways england**

Project Title  
**A27 ARUNDEL BYPASS**

Drawing Title  
**FIGURE 3  
PHASE 1 HABITAT DATA  
WITHIN 100M BUFFER  
MAP 5 OF 8**

Designed VC	Drawn VC	Checked SH	Approved DBRH	Date
				22/02/2021
Internal Project No. 60642441		Suitability S2		
Scale @ A3 1:5,000		Volume EGN		

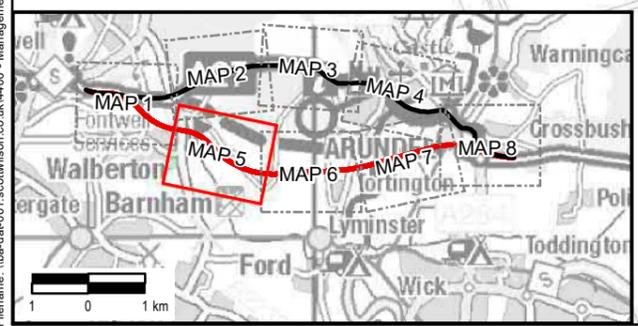
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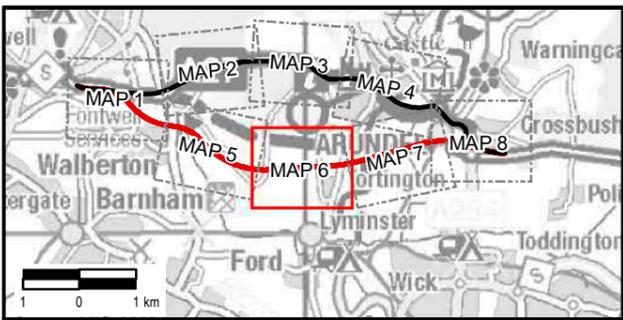
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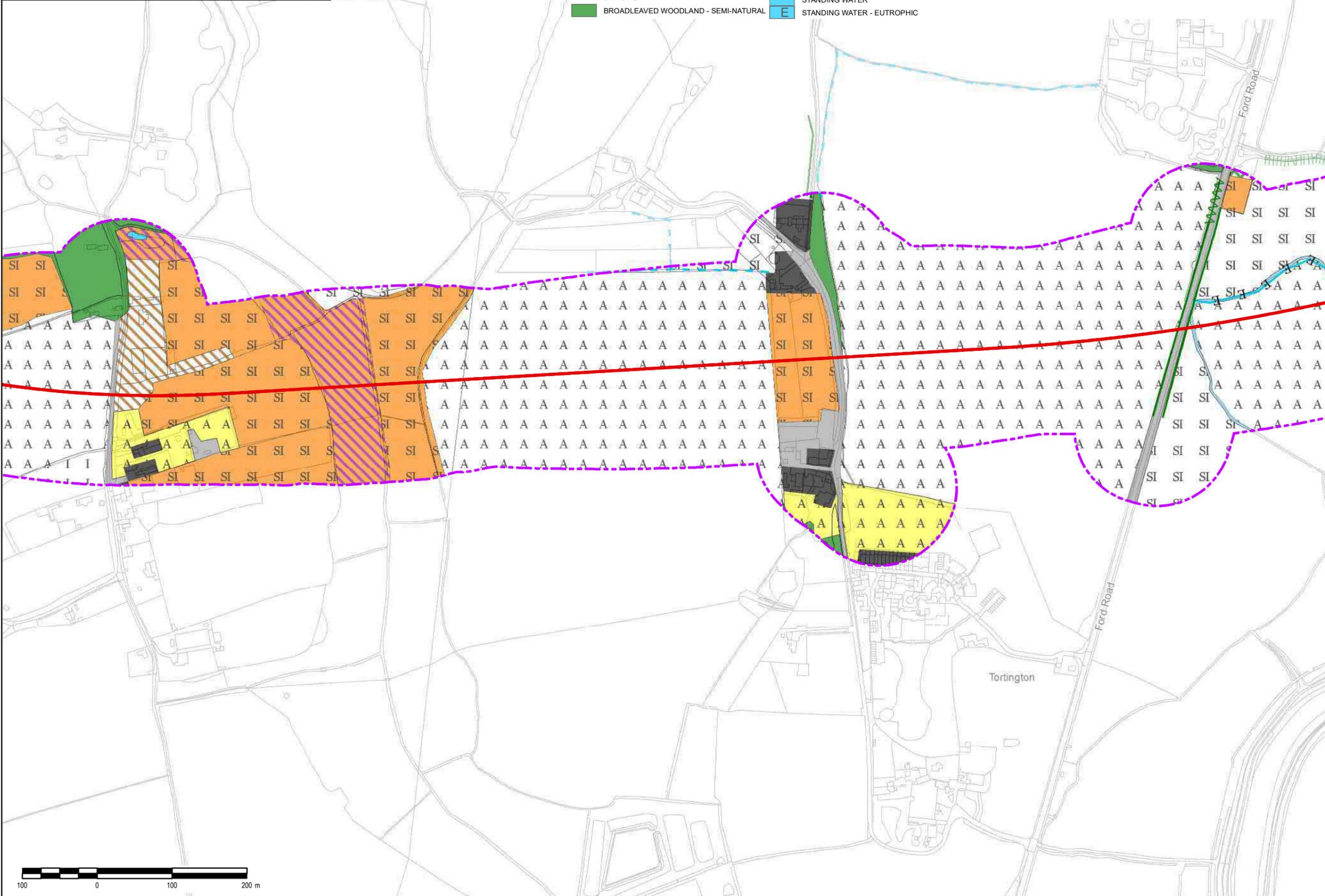




- PHASE 1 HABITAT**
- INDIVIDUAL BROADLEAVED TREE
  - ▶ RUNNING WATER
  - E RUNNING WATER - EUTROPHIC
  - ∩ INTACT HEDGE - NATIVE SPECIES-RICH
  - ∩ INTACT HEDGE - SPECIES-POOR
  - ∩ DEFUNCT HEDGE - NATIVE SPECIES-RICH
  - ∩ DEFUNCT HEDGE - SPECIES-POOR
  - ∩ HEDGE WITH TREES - NATIVE SPECIES-RICH
  - ∩ HEDGE WITH TREES - SPECIES-POOR
  - ▬ FENCE
  - ▬ DRY DITCH
  - BROADLEAVED WOODLAND - SEMI-NATURAL
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  - MARGINAL AND INUNDATION - INUNDATION VEGETATION
  - STANDING WATER
  - STANDING WATER - EUTROPHIC
  - RUNNING WATER
  - SALT MARSH - SCATTERED PLANTS
  - COASTAL GRASSLAND
  - CULTIVATED/ DISTURBED LAND - ARABLE
  - CULTIVATED/ DISTURBED LAND - AMENITY GRASSLAND
  - CULTIVATED/ DISTURBED LAND - EPHEMERAL/ SHORT PERENNIAL
  - INTRODUCED SHRUB
  - BUILDINGS
  - BARE GROUND
  - OTHER
  - HARDSTANDING

**KEY**

- EXISTING A27
- PROPOSED SCHEME
- 100M STUDY AREA



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Working on behalf of  
**highways england**

Project Title  
**A27 ARUNDEL BYPASS**

Drawing Title  
**FIGURE 3  
PHASE 1 HABITAT DATA  
WITHIN 100M BUFFER  
MAP 6 OF 8**

Designed VC	Drawn VC	Checked SH	Approved DBRH	Date
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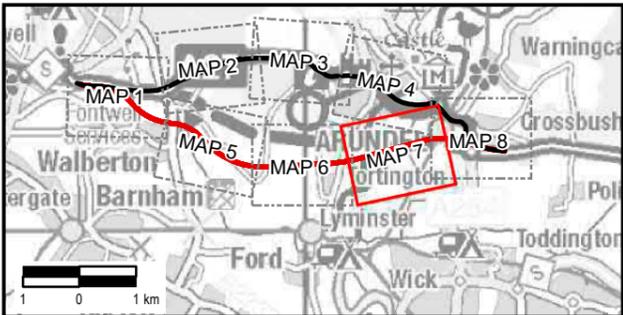
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Location	Type	Role	Number

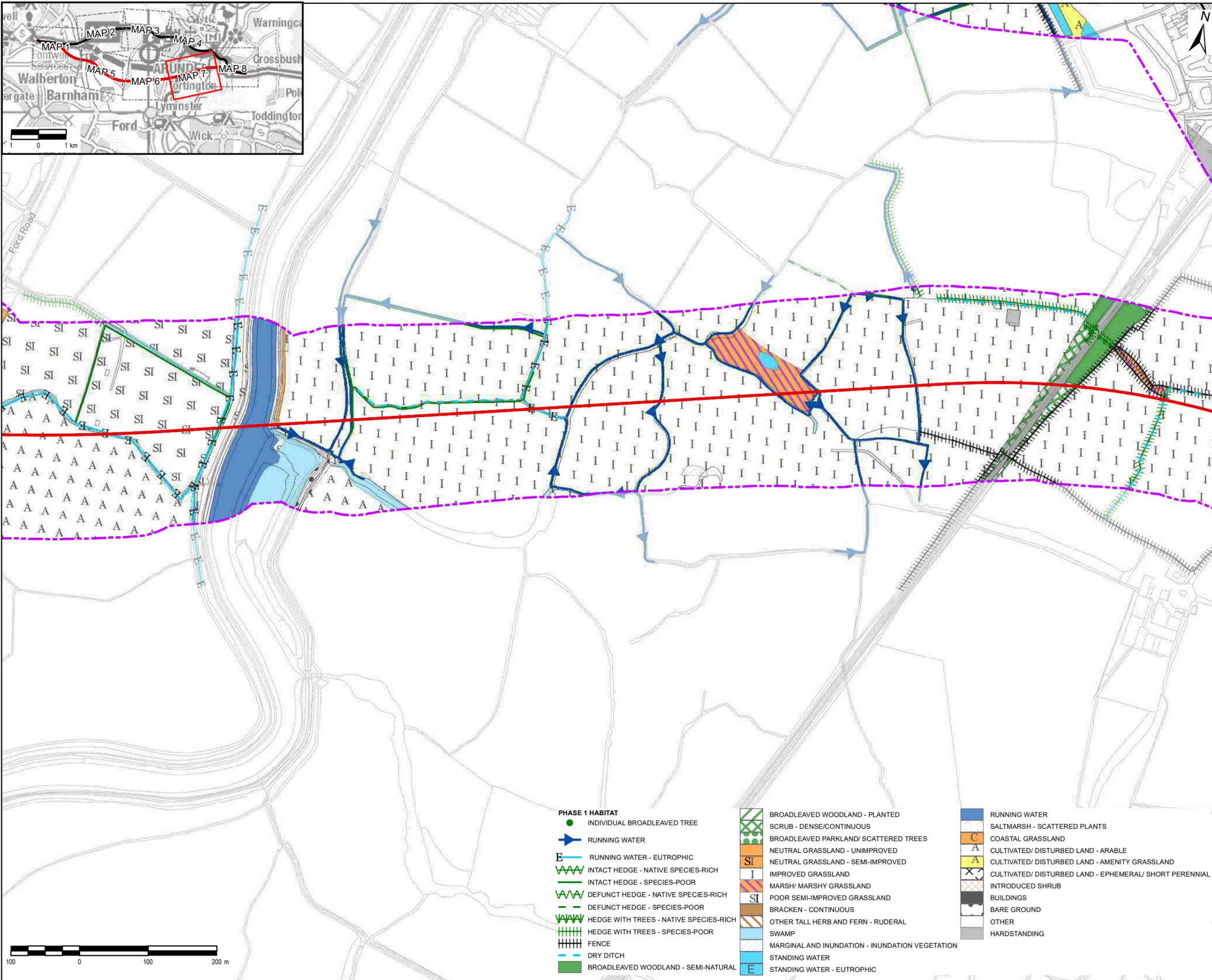
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Birmingham

Working on behalf of  
**highways england**

Project Title  
**A27 ARUNDEL BYPASS**

Drawing Title  
**FIGURE 3  
PHASE 1 HABITAT DATA  
WITHIN 100M BUFFER  
MAP 7 OF 8**

Designed VC	Drawn VC	Checked SH	Approved DB/RH	Date
				22/02/2021
Internal Project No. 60642441		Suitability S2		
Scale @ A3 1:5,000		Volume EGN		

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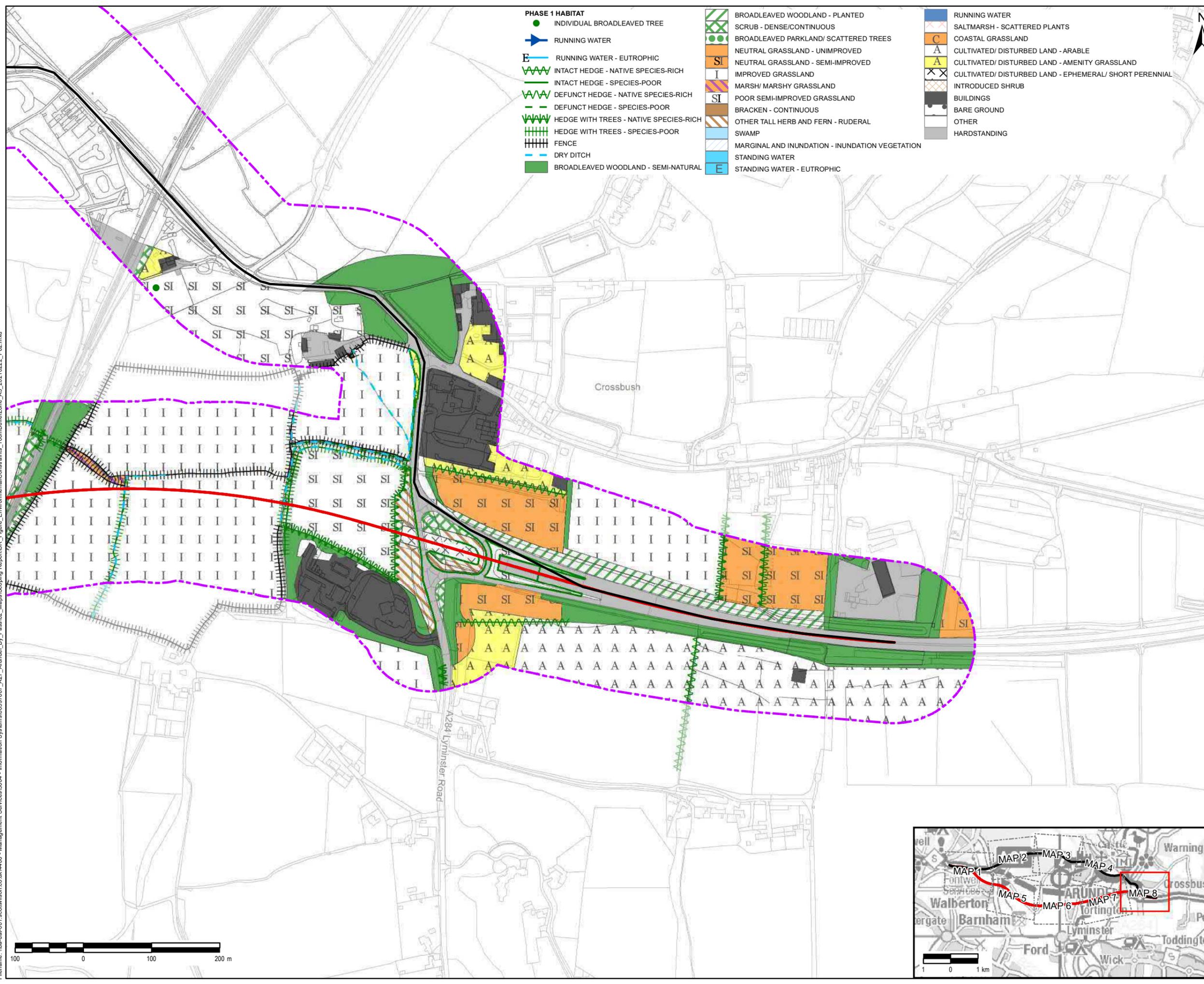
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Drawing Number HE551523 ZZ	Highways England PIN -BAM -DR	Originator -EGN- -LE	Volume -0003	Rev P02
Location	Type	Role	Number	

- PHASE 1 HABITAT**
- INDIVIDUAL BROADLEAVED TREE
  - RUNNING WATER
  - RUNNING WATER - EUTROPHIC
  - INTACT HEDGE - NATIVE SPECIES-RICH
  - INTACT HEDGE - SPECIES-POOR
  - DEFUNCT HEDGE - NATIVE SPECIES-RICH
  - DEFUNCT HEDGE - SPECIES-POOR
  - HEDGE WITH TREES - NATIVE SPECIES-RICH
  - HEDGE WITH TREES - SPECIES-POOR
  - FENCE
  - DRY DITCH
  - BROADLEAVED WOODLAND - SEMI-NATURAL
  - BROADLEAVED WOODLAND - PLANTED
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  - NEUTRAL GRASSLAND - UNIMPROVED
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  - MARSH/ MARSHY GRASSLAND
  - POOR SEMI-IMPROVED GRASSLAND
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  - OTHER TALL HERB AND FERN - RUDERAL
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  - MARGINAL AND INUNDATION - INUNDATION VEGETATION
  - STANDING WATER
  - STANDING WATER - EUTROPHIC
  - RUNNING WATER
  - SALTMARSH - SCATTERED PLANTS
  - COASTAL GRASSLAND
  - CULTIVATED/ DISTURBED LAND - ARABLE
  - CULTIVATED/ DISTURBED LAND - AMENITY GRASSLAND
  - CULTIVATED/ DISTURBED LAND - EPHEMERAL/ SHORT PERENNIAL
  - INTRODUCED SHRUB
  - BUILDINGS
  - BARE GROUND
  - OTHER
  - HARDSTANDING

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- PHASE 1 HABITAT**
- INDIVIDUAL BROADLEAVED TREE
  - ▶ RUNNING WATER
  - E RUNNING WATER - EUTROPHIC
  - ∩ INTACT HEDGE - NATIVE SPECIES-RICH
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  - CULTIVATED/ DISTURBED LAND - ARABLE
  - CULTIVATED/ DISTURBED LAND - AMENITY GRASSLAND
  - CULTIVATED/ DISTURBED LAND - EPHEMERAL/ SHORT PERENNIAL
  - INTRODUCED SHRUB
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Two Colmore Square  
38 Colmore Circus  
Birmingham

Working on behalf of  
**highways england**

Project Title  
**A27 ARUNDEL BYPASS**

Drawing Title  
**FIGURE 3  
PHASE 1 HABITAT DATA  
WITHIN 100M BUFFER  
MAP 8 OF 8**

Designed VC	Drawn VC	Checked SH	Approved DB/RH	Date 22/02/2021
Internal Project No. 60642441	Suitability S2		Volume EGN	

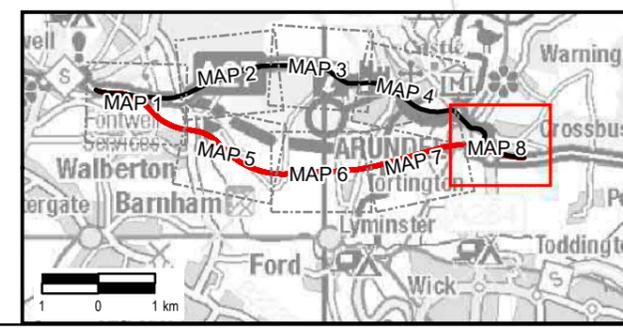
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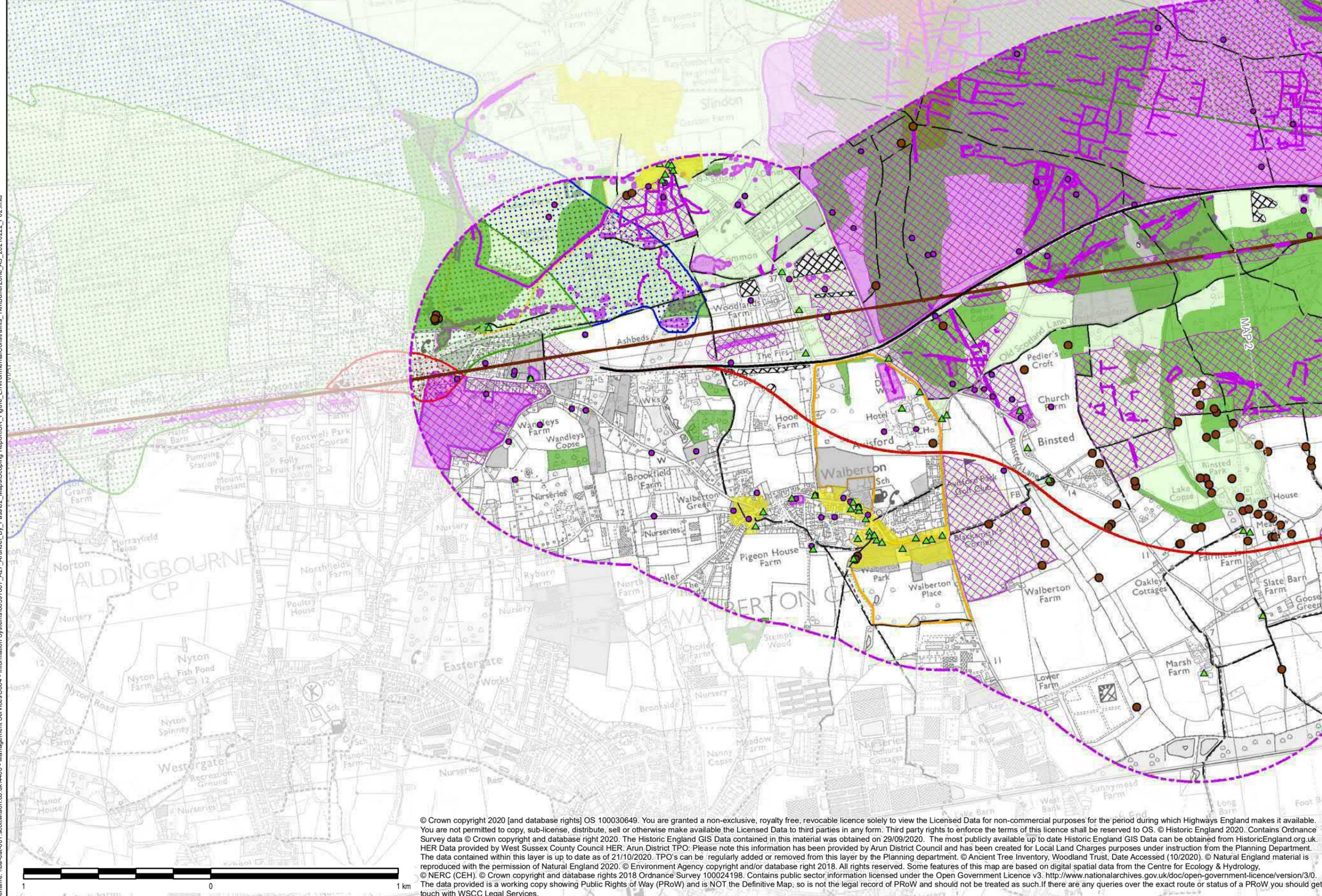
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Drawing Number HE551523 ZZ	Highways England PIN -BAM -DR	Originator -LE	Volume -EGN- -0003	Rev P02
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- KEY**
- EXISTING A27
  - PROPOSED SCHEME
  - 1KM STUDY AREA
  - ANCIENT, VETERAN AND NOTABLE TREE INVENTORY
  - PUBLIC RIGHTS OF WAY
  - ROMAN ROAD
  - ANCIENT WOODLAND
  - ARCHAEOLOGICAL NOTIFICATION AREAS
  - CONSERVATION AREA\*
  - HISTORIC PARKSCAPES
  - HISTORIC LANDFILL SITES
  - NON-DESIGNATED CULTURAL HERITAGE ASSETS
  - PROPERTIES AFFECTED BY TREE PRESERVATION ORDERS
  - SCHEDULED MONUMENTS
  - SOUTH DOWNS NATIONAL PARK & DARK SKY RESERVE
- LISTED BUILDINGS**
- GRADE II
- SOURCE PROTECTION ZONE**
- ZONE I - INNER PROTECTION ZONE
  - ZONE II - OUTER PROTECTION ZONE
  - ZONE III - TOTAL CATCHMENT
  - ZONE OF SPECIAL INTEREST

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Two Colmore Square  
38 Colmore Circus  
Birmingham

Working on behalf of  
**highways england**

Project Title  
**A27 ARUNDEL BYPASS**

Drawing Title  
**FIGURE 4  
RELEVANT ENVIRONMENTAL  
CONSTRAINTS  
WITHIN 1KM BUFFER  
MAP 1 OF 2**

Designed VC	Drawn VC	Checked SH	Approved DBRH	Date 22/02/2021
Internal Project No. 60642441	Suitability S2	Scale @ A3 1:20,000	Volume EGN	

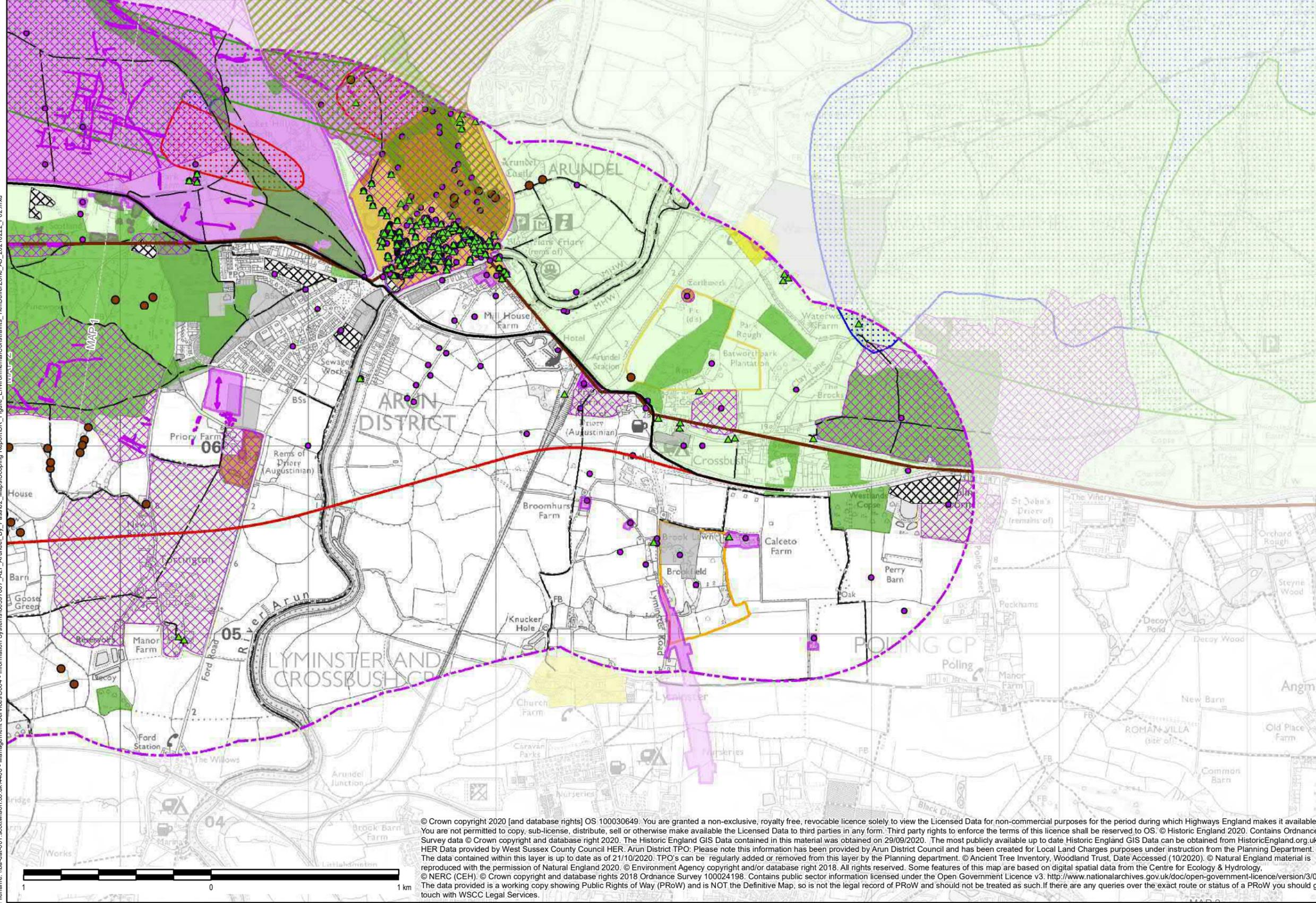
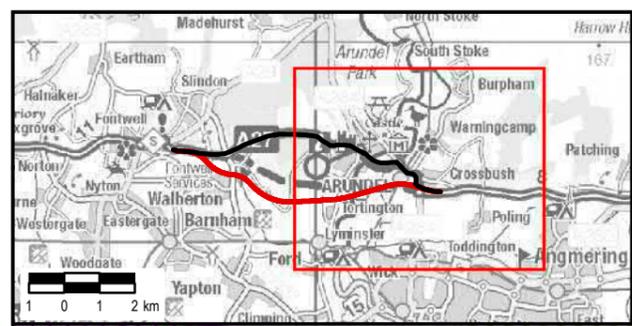
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- KEY**
- EXISTING A27
  - PROPOSED SCHEME
  - 1KM STUDY AREA
  - ANCIENT, VETERAN AND NOTABLE TREE INVENTORY
  - PUBLIC RIGHTS OF WAY
  - ROMAN ROAD
  - ANCIENT WOODLAND
  - ARCHAEOLOGICAL NOTIFICATION AREAS
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- GRADE II
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Working on behalf of  
**highways england**

Project Title  
**A27 ARUNDEL BYPASS**

Drawing Title  
**FIGURE 4  
RELEVANT ENVIRONMENTAL  
CONSTRAINTS  
WITHIN 1KM BUFFER  
MAP 2 OF 2**

Designed VC 60642441	Drawn VC	Checked SH	Approved DBRH	Date 22/02/2021
Internal Project No. 60642441	Suitability S2	Volume EGN		

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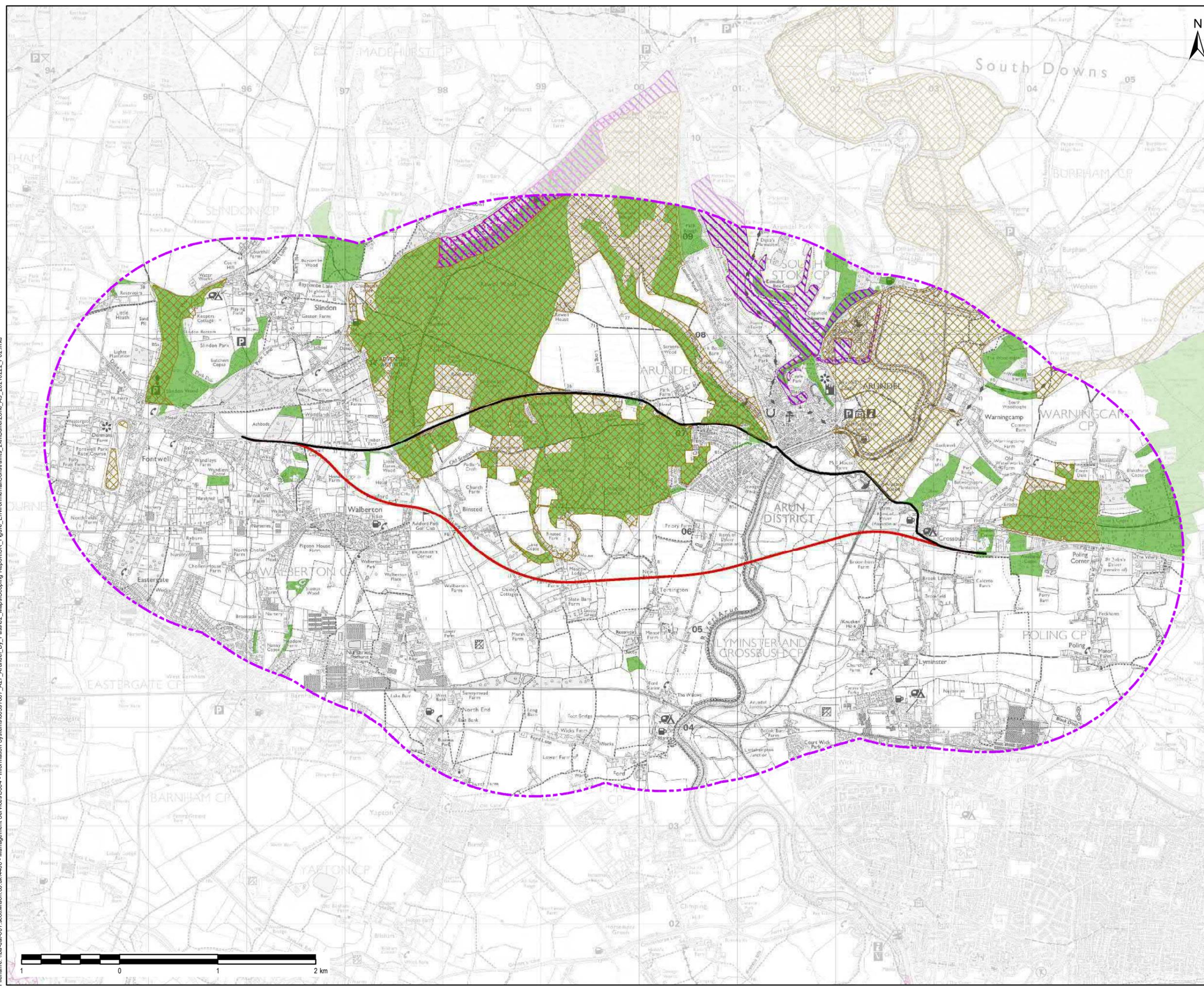
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Rev  
P02



- KEY**
- EXISTING A27
  - PROPOSED SCHEME
  - 2KM STUDY AREA
  - ANCIENT WOODLAND
  - LOCAL NATURE RESERVE
  - LOCAL WILDLIFE SITE
  - SITE OF SPECIAL SCIENTIFIC INTEREST

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Birmingham

Working on behalf of

Project Title  
**A27 ARUNDEL BYPASS**

Drawing Title  
**FIGURE 5  
RELEVANT ENVIRONMENTAL  
CONSTRAINTS  
WITHIN 2KM BUFFER**

Designed VC	Drawn VC	Checked SH	Approved DBRH	Date 22/02/2021
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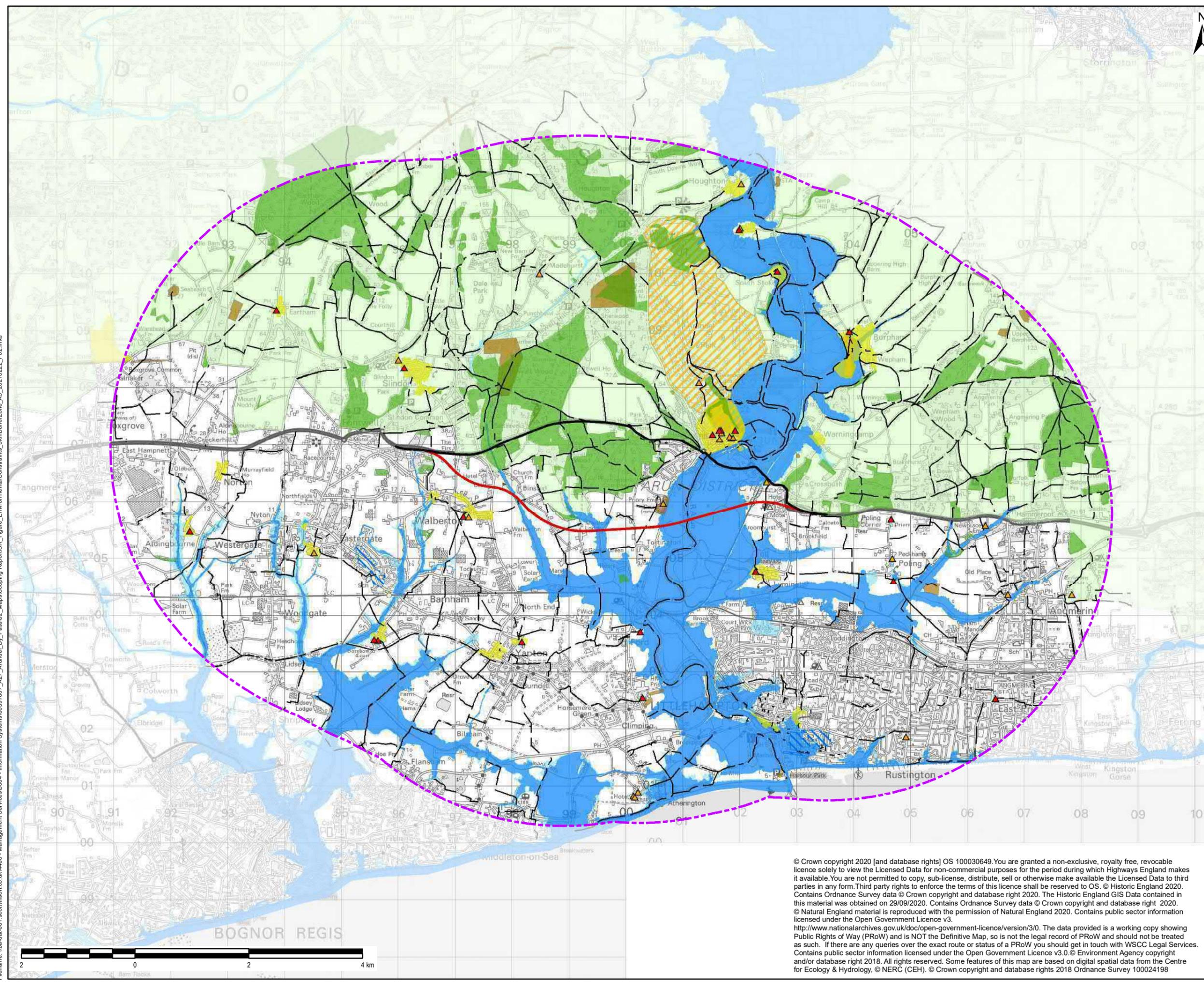
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- KEY**
- EXISTING A27
  - PROPOSED SCHEME
  - 5KM STUDY AREA
  - PUBLIC RIGHTS OF WAY
  - ANCIENT WOODLAND
  - AREA OF SPECIAL CHARACTER\*\*
  - CONSERVATION AREA\*
  - FLOOD ZONE 2
  - FLOOD ZONE 3
  - SCHEDULED MONUMENTS
  - SOUTH DOWNS NATIONAL PARK & DARK SKY RESERVE
- LISTED BUILDINGS**
- GRADE I
  - GRADE II\*
- REGISTERED PARK AND GARDEN**
- GRADE II\*

\* Indicative boundaries only based upon information available at Arun District Council and South Downs National Park.  
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Project Title  
**A27 ARUNDEL BYPASS**

Drawing Title  
**FIGURE 6  
 RELEVANT ENVIRONMENTAL  
 CONSTRAINTS  
 WITHIN 5KM BUFFER**

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				22/02/2021
Internal Project No.	Suitability			
60642441	S2			
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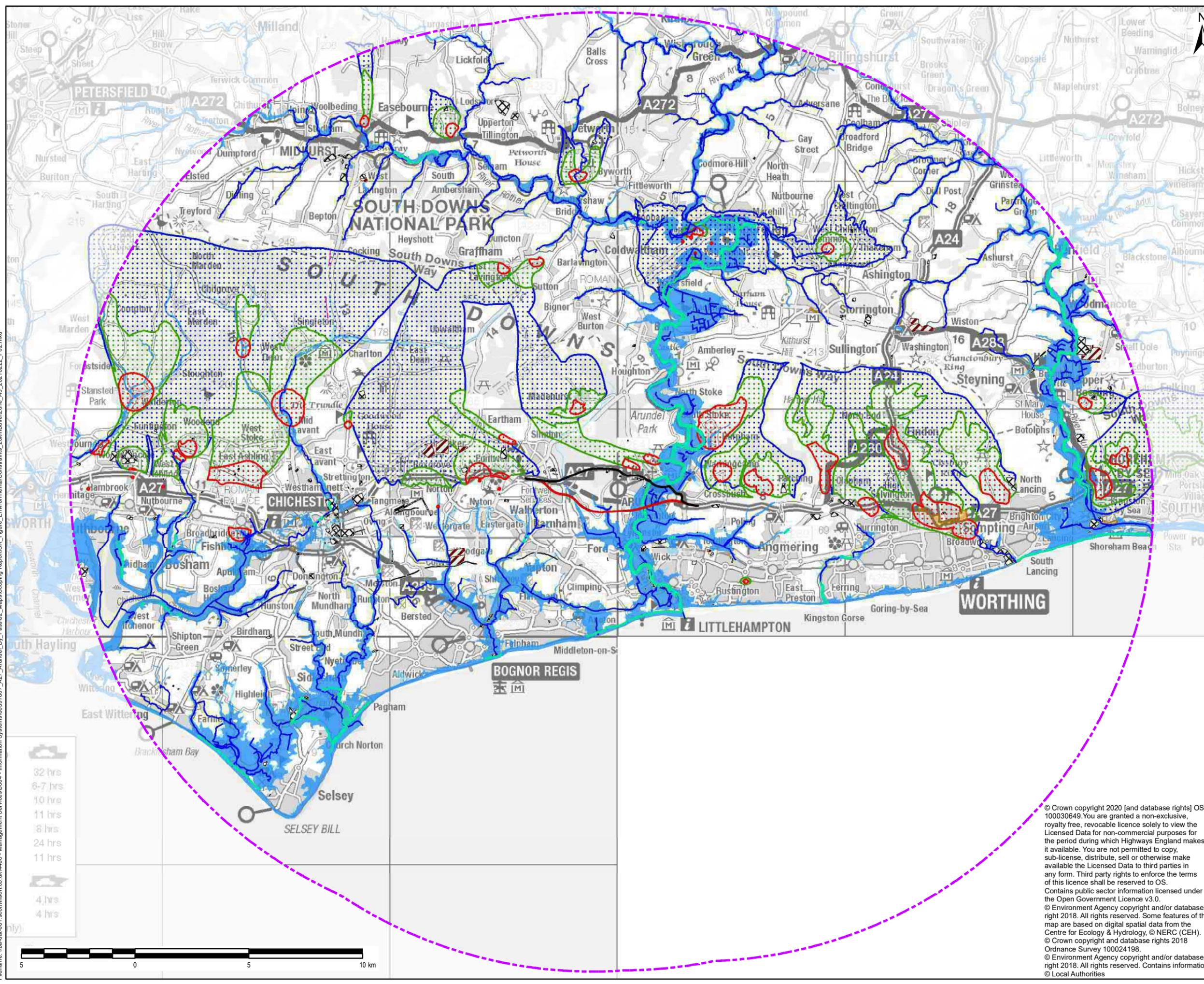
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- KEY**
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  - PROPOSED SCHEME
  - 20KM STUDY AREA
  - FLOOD DEFENCE
  - MAIN RIVERS
  - AIR QUALITY MANAGEMENT AREA
  - AUTHORISED LANDFILL SITES
  - FLOOD ZONE 2
  - FLOOD ZONE 3
  - HISTORIC LANDFILL SITES
  - SPECIAL AREA OF CONSERVATION
- SOURCE PROTECTION ZONE**
- ZONE I - INNER PROTECTION ZONE
  - ZONE II - OUTER PROTECTION ZONE
  - ZONE III - TOTAL CATCHMENT

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Project Title: **A27 ARUNDEL BYPASS**

Drawing Title: **FIGURE 7  
 RELEVANT ENVIRONMENTAL  
 CONSTRAINTS  
 WITHIN 20KM BUFFER**

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ZZ	-DR	-LE	-0007	
Location	Type	Role	Number	

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## Appendix A. Transboundary Effects Screening Matrix

- A.1.1. Regulation 32 of the *EIA Regulations* requires the consideration of any likely significant effects on the environment of another European Economic Association (EEA) State.
- A.1.2. Guidance upon the consideration of transboundary effects is provided in PINS Advice Note 12: Development with significant transboundary impacts consultation (Ref 42).
- A.1.3. The following screening matrix presented in Table A1 provides the consideration of transboundary effects for the proposed scheme, taking guidance from *Advice Note 12*.

**Table A1: Screening matrix for possible significant effects on the environment of another EEA state**

Criteria and relevant considerations	Commentary with regard to the proposed scheme
<p>Characteristics of the development</p> <p>Size of the development</p> <p>Use of natural resources</p> <p>Production of waste</p> <p>Pollution and nuisances</p> <p>Risk of accidents</p> <p>Use of technologies</p>	<p>The proposed scheme primarily comprises the construction of a dual two lane carriageway (four lanes in total), approximately 8 km in length.</p> <p>The resources required for the construction of the proposed scheme are likely to be obtained from the global market but it is envisaged that materials would be obtained locally wherever possible. No waste, nuisances or accidents are likely to extend beyond the border of the United Kingdom (UK). No novel technologies are proposed that have potential for transboundary effects.</p>
<p>Location of development (including existing use) and geographical area</p> <p>What is the existing use?</p> <p>What is the distance to another EEA state? (Name EEA state)</p> <p>What is the extent of the area of a likely impact under the jurisdiction of another EEA state?</p>	<p>The land required for the proposed scheme is currently predominantly used for agricultural land, although there are some recreational areas which would be impacted such as the Avisford Park golf course. The proposed scheme also passes close to some residential properties including a new housing estate currently in construction north of Walberton.</p> <p>The proposed scheme is located approximately 135 km north of France and 218 km west of Belgium.</p> <p>No impacts are likely to extend beyond the jurisdiction of the UK, with the exception of potential greenhouse gas emissions.</p>
<p>Environmental importance</p> <p>Are particular environmental values (such as protected areas) likely to be affected?</p> <p>Capacity of the natural environment.</p>	<p>The proposed scheme is located adjacent to the SDNP (although works to the existing A27 would also be located within the national park). The nearest internationally important designated ecological site is the Solent and Dorset Coast SPA which is located 5.3 km south of the site boundary. The nearest nationally important designated ecological site is Binsted Wood Complex LWS which is located 100 m north of the site boundary. In addition, the proposed scheme is located in an area surrounded by many other different ecological</p>

Criteria and relevant considerations	Commentary with regard to the proposed scheme
<p>Wetlands, coastal zones, mountain and forest areas, nature reserves and parks, Natura 2000 sites, areas where environmental quality standards already exceeded, densely populated areas, landscapes of historical, cultural or archaeological significance</p>	<p>designated sites, which are presented in Section 9 of this scoping report in Table 19.</p> <p>There are a number of other international, national and local designated sites surrounding the proposed scheme. These are illustrated in Figures 4, 5, 6 and 7 and also within the environmental topic Sections 6-16.</p> <p>The potential for significant environmental effects on these designated sites will be accounted for in the EIA which will be undertaken for the proposed scheme.</p>
<p>Potential impacts and carrier</p> <p>By what means could impacts be spread (specifically, what pathways)?</p>	<p>The impact of greenhouse gas emissions would be spread by atmospheric processes.</p> <p>The potential impact of pollution could be spread via the River Arun upstream towards Arundel or downstream as it drains into the English Channel.</p>
<p>Extent</p> <p>What is the likely extent of the impact (geographical area and size of the affected population)?</p>	<p>The only potential transboundary environmental impact which is considered likely is from greenhouse gas emissions, which are known to contribute to changes on climate on a global scale.</p>
<p>Magnitude</p> <p>What will the likely magnitude of the change in relevant variables relative to the status quo, taking into account the sensitivity of the variable?</p>	<p>Total UK greenhouse gas emissions were provisionally estimated to be 435.2 million tonnes carbon dioxide equivalent (MtCO<sub>2</sub>e) in 2019, whilst greenhouse gas emissions from UK transport were estimated to be approximately 119.6 MtCO<sub>2</sub>e (Department for Business, Energy &amp; Industrial Strategy (26 March 2020).</p> <p>The proposed scheme is likely to make a contribution to UK greenhouse gas emissions. It is proposed to calculate the likely greenhouse gas emissions as part of the climate assessment within the EIA (see Section 15 of this scoping report).</p>
<p>Probability</p> <p>What is the degree of probability of the impact?</p> <p>Is the impact likely to occur as a consequence of normal conditions or exceptional situations, such as accidents?</p>	<p>The probability of the proposed scheme to contribute to greenhouse gas emissions is likely and would occur as a consequence of the construction and normal operating conditions.</p>
<p>Duration</p> <p>Is the impact likely to be temporary, short-term or long-term?</p>	<p>The impact is likely to be long-term, relating to both construction and operation.</p>

Criteria and relevant considerations	Commentary with regard to the proposed scheme
Is the impact likely to relate to the construction, operation or decommissioning phase of the activity?	
Frequency What is likely to be the temporal pattern of the impact?	The temporal pattern is likely to be relatively constant.
Reversibility Is the impact likely to be reversible or irreversible?	The impact is considered irreversible within human lifetimes.
Cumulative impacts Are other major developments close by?	<p>There are a number of proposed developments close by to the proposed scheme along the Affected Road Network (ARN) which will be taken in account by the traffic model.</p> <p>The potential cumulative effect upon transport emissions from the proposed scheme and proposed developments will be accounted for in the proposed scheme EIA. However, it is not anticipated that there is potential for significant cumulative transboundary greenhouse gas emissions effects from these developments.</p>

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## **Appendix B. Long List of Major Events**

ID	Type of major event	Relevant for long list?	Why? (note if risk to the project, or project exacerbates risk)	Potential receptors	Covered already in ES? If so, where?	Covered outside of ES - reference document
1	<b>Geological events</b>					
1.1	Avalanches and landslides	No	The geotechnical team will consider this risk as a fundamental part of their design. This will ensure that the risk is designed out, both in terms of the vulnerability of the proposed scheme to these types of event, and also in terms of the potential for the proposed scheme to increase the risk of such an event happening. There is considered to be no receptor that could therefore be of greater risk.	N/A	N/A	
1.2	Earthquakes	No	The site is not in a geologically active area and as such earthquakes are not considered to be a real risk or serious possibility.	N/A	N/A	
1.3	Sinkholes	Yes	Although this is likely to be covered in the geotechnical design, there are sufficient examples of roads that have been affected by sinkholes to warrant taking this event forward.	Road users	No	
1.4	Volcanic eruptions	No	Although volcanic eruptions can impact on air travel, for example, it is considered highly unlikely that an ash cloud could significantly impact on any aspect of the A27 project.	N/A	N/A	
2	<b>Hydrological events</b>					
2.1	Floods	Yes	Both the vulnerability of the proposed scheme to flooding, and its potential to exacerbate flooding, are to be covered in the Flood Risk Assessment and will also be reported in EIA. Extreme climate change flood events will also be assessed.	Road users, property and people in areas of increased flood risk.	Yes. Road Drainage and the Water Environment chapter	Yes. Flood Risk Assessment
2.2	Limnic eruptions	No	Not applicable as there are no lakes nearby.	N/A	N/A	
2.3	Tsunami/Storm surge	Yes	The site is not in a geologically active area. As such, a tsunami is not deemed to be a real risk or possibility. As the proposed scheme is located on the flood plain of a tidal part of the River Arun approximately 4.8km from the coast the risk of tidal flooding including the potential risk of storm surge will be covered in the Flood Risk Assessment and also reported within the ES.	Road users, property and people in areas of increased flood risk.	Yes. Road Drainage and the Water Environment chapter	Yes. Flood Risk Assessment
3	<b>Meteorological events</b>					
3.1	Blizzards	No	Blizzard conditions could cause road users to be trapped on the road, however the risk is no different from other roads/road users in the UK, and as such is not considered further.	N/A	N/A	
3.2	Cyclonic storms	No	Not applicable.	N/A	N/A	
3.3	Droughts	No	Droughts are only considered as a disaster due to water shortages for essential services and where there are indirect impacts on food production, loss of soils, etc. The proposed scheme is not considered to be vulnerable to drought.	N/A	N/A	
3.4	Thunderstorms	Yes	There are a number of bridges associated with the proposed scheme. Therefore, consideration will be given to the potential risk of lightning strikes, although the risk is not considered to be any greater than any other road bridge, and the consequences are unlikely to be significant.	Road users	No	Possibly. To be reviewed by design team dependent on structure type.
3.5	Hailstorms	No	Hailstorm events are uncommon in the UK but do occur. The severity of hailstorms in the UK is not deemed to pose extra risk than that experienced by either roads or road users in the UK.	N/A	N/A	
3.6	Heat waves	Yes	The road surface is directly exposed to the sun and so some sensitivity is attributed to the risk of heat waves.	Road users	No	
3.7	Tornadoes	No	Although there are tornadoes in the UK, their destructive force tends to be much less than in other parts of the world and the proposed scheme is not particularly vulnerable to any potential effects.	N/A	N/A	
3.8	Wildfires	Yes	There may be some potential for scrub or grassland fires, although the risk is no greater than the existing A27 which runs through Arundel. The reduced accident rate means the risk of an RTA causing a fire is actually reduced although the location of the potential fire would change.	Road users, habitats and species.	No	

ID	Type of major event	Relevant for long list?	Why? (note if risk to the project, or project exacerbates risk)	Potential receptors	Covered already in ES? If so, where?	Covered outside of ES - reference document
3.9	Air Quality Events	Yes	Although relevant, as vehicles emissions can contribute to poor air quality, it is not considered necessary to undertake any more assessment than is already proposed for the Air Quality assessment.	Road users and local residents	Yes. Air Quality chapter.	
4	<b>Space events</b>					
4.1	Impact events and airburst	No	The proposed scheme is considered to be no more vulnerable than any other development.	N/A	N/A	
4.2	Solar flare	Yes	Solar flares can interrupt radio and other electronic communications. The increased reliance on roadside technology could mean the proposed scheme is more vulnerable than the existing route.	Road users	No	Possibly. To be reviewed by design team
5	<b>Transport</b>					
5.1	Road Accidents	Yes	The risk posed by spillage from hazardous loads as a result of a road traffic accident such as fuel tankers will be considered in the Road Drainage and Water Environment assessment.	Road users and aquatic environment	Yes. Covered in the Road Drainage and the Water Environment chapter.	Possibly. To be reviewed with design team.
5.2	Rail Accidents	No	No railways located close to the scheme.	N/A	N/A	
5.3	Aircraft Disasters	Yes	By constructing a new road there is an increased risk of potential aircraft collision but this is not considered to be higher than other roads within the UK.	Road users, pilots, aircraft.	No	Likely to be covered in the design.
5.4	Maritime Disasters	Yes	Where the proposed scheme crosses the River Arun there is a risk associated with vessels commuting up and down the river, although the risk should not be greater than for other bridges along the River Arun.	Road users, boat passengers, boats.	No	Possibly. To be reviewed with design team.
6	<b>Engineering accidents/failures</b>					
6.1	Bridge Failure	Yes	Multiple bridge crossing form part of the design.	Road users	No	Yes. To be reviewed by design team
6.2	Tunnel Failure or Fire	No	There is no tunnel as part of the design	N/A	N/A	
6.3	Dam Failure	No	Dams not present within the proposed scheme design. The embankments within the River Arun floodplain and along the River Arun itself are covered in flood defence failure.	Road users	N/A	
6.4	Flood Defence Failure	Yes	Embankments and location of site within River Arun flood plain and over the River Arun itself. The FRA will assess the impact from potential breaches of the flood defences and this will also be reported in the Road Drainage and the Water Environment chapter of the ES.	Road users	Likely to be covered in the FRA and the Road Drainage and the Water Environment ES chapter.	
6.5	Mast and Tower Collapse	No	Masts and towers are not aspects of the proposed scheme.	N/A	N/A	
6.6	Building failure or fire	Yes	Any buildings that exist close to road may have small increase risk through traffic accident fire.	Road users, nearby buildings and occupants	No	Likely to be covered in the design
6.7	Utilities failure (gas, electricity, water, sewage, oil, communications)	Yes	It is assumed that there will be no impact on utilities, any utilities will be identified as part of C2 and C3 and any diversions will take place before construction.	Road users and those relying on the utilities	No	Likely to be covered in the design
7	<b>Industrial accidents</b>					
7.1	Defence industry	No	No defence manufacturing nearby	N/A		

ID	Type of major event	Relevant for long list?	Why? (note if risk to the project, or project exacerbates risk)	Potential receptors	Covered already in ES? If so, where?	Covered outside of ES - reference document
7.2	Energy Industry (fossil fuel)	No	None nearby	N/A		
7.3	Nuclear Power	No	None nearby	N/A		
7.4	Oil and gas refinery/storage	No	None nearby	N/A		
7.5	Food Industry	No	None nearby	N/A		
7.6	Chemical Industry	No	None nearby	N/A		
7.7	Manufacturing Industry	No	None nearby	N/A		
7.8	Mining Industry	No	No mining within the area that poses a risk to the proposed scheme. Open cast mining for sand and gravel within the wider area, unlikely to be any impact on ground conditions.	N/A		
8	<b>Terrorism/Crime/Civil unrest</b>					
8.1	Bomb/vehicle attack on people	No	The road is not deemed to increase the likelihood of a bomb attack than the normal risk associated with the road network in the rest of the UK.	N/A	N/A	
8.2	Bomb/vehicle attack on Infrastructure	No	The road is not deemed to increase the likelihood of a bomb attack than the normal risk associated with the road network in the rest of the UK.	N/A	N/A	
8.3	Mass shooting	No	Unlikely to be more of a target for this type of incident due to low number of exposed targets.	N/A	N/A	
8.4	Chemical/gas attack	No	Unlikely to be more of a target for this type of incident due to low number of exposed targets.	N/A	N/A	
8.5	Rioting	Yes	Although highly unlikely the contentious nature of the proposed scheme could see some protests during the construction phase.	Construction workers	No	
8.6	Cyber attacks	Yes	The increasing reliance on roadside technology could render the proposed scheme more vulnerable to a cyber-attack.	Road users	No	
9	<b>War</b>					
9.1	Conventional	No	No more vulnerable than any other infrastructure.	N/A	N/A	
9.2	Chemical	No	No more vulnerable than any other infrastructure.	N/A	N/A	
9.3	Nuclear	No	No more vulnerable than any other infrastructure.	N/A	N/A	
10	<b>Disease</b>					
10.1	Human disease	No	No more vulnerable than any other infrastructure.	N/A	N/A	
10.2	Animal disease	No	No more vulnerable than any other infrastructure.	N/A	N/A	
10.3	Plant disease	No	No more vulnerable than any other infrastructure.	N/A	N/A	

## **Appendix C. Long List of Cumulative Schemes**

ID No.	Local Authority	Application number	Application Type	Date Decided	Site address	Description of development	Status
1	Arun District Council	AL/5/15/PL	Full	30/04/2015	The Prince of Wales Lidsey Road Aldingbourne PO20 3ST	Provision of touring camp site (using Public House toilet facilities)	Approve Conditionally
2	Arun District Council	AL/58/15/OUT	Outline	20/04/2016	Oldlands Farm Steyning Way Bersted PO22 9NW	Hybrid Application 1: Full planning application for earth works to facilitate flood compensation area & 2-Outline application (all matters reserved) for up to 20,453 sq m of B2 General Industrial Floorspace together with B8 warehousing & distribution floorspace	App Cond with S106
3	Arun District Council	AL/44/18/RES	Reserved Matters	13/12/2018	Oldlands Farm Steyning Way Bersted PO22 9NW	Application for all reserved matters following outline consent AL/58/15/OUT (Hybrid Application) for up to 20,453 sqm of B2 general industrial floorspace together with B8 warehousing & distribution floorspace (as amended by subsequent Variation of Conditions 11, 12 & 37).	Approve Conditionally
4	Arun District Council	AL/8/16/OUT	Outline	16/05/2016	Land south & west of Barnside & east of pond Hook Lane Aldingbourne	Outline application with all matters reserved for a residential development of up to 14 No. dwellings & associated works including access, landscaping & open space. This application is a Departure from the Development Plan.	Refused (Appealed)
5	Arun District Council	AL/83/16/OUT	Outline	15/03/2018	Land south & west of Barnside & east of pond Hook Lane Aldingbourne	Outline application with all matters reserved for residential development of up to 8No. dwellings & associated works including access, landscaping & open space. This application is a Departure from the development plan. Resubmission of AL/8/16/OUT	App Cond with S106
6	Arun District Council	AL/33/19/RES	Reserved Matters	15/07/2019	Barnside Hook Lane Aldingbourne PO20 3TE	Approval of reserved matters following the consent of AL/8/16/OUT (APP/C3810/W/16/3155330) for the erection of 14 No. dwellings with associated access, parking, landscape & open space	Approve Conditionally
7	Arun District Council	AL/107/16/RES	Reserved Matters	24/05/2017	Land West of Westergate Street & East of Hook Lane Westergate PO20 3TE	Application for Reserved Matters application following Outline Planning Permission AL/39/13 for the demolition of Oakdene and all other structures within the site and the erection of 79 dwellings, public open space, children's play areas, landscaping, drainage measures, sub-station, pumping station and all other associated works.	Approve Conditionally

8	Arun District Council	AL/115/17/OUT	Outline	08/08/2018	Wings Nursery Lidsey Road Aldingbourne PO20 3SU	Outline application with some matters reserved for the erection of 55 No. dwellings, sustainable drainage measures, public open space, children's play area, landscaping & all other associated works. This application is a Departure from the Development Plan	Refused (Appealed )
9	Arun District Council	AL/32/19/OUT	Outline	03/10/2019	Wings Nursery Lidsey Road Woodgate PO20 3SU	Outline application with some matters reserved for the erection of 55 No. dwellings, access arrangements, sustainable drainage measures, public open space, landscaping & all other associated works (resubmission following AL/115/17/OUT). This application is a Departure from the Development Plan	App Cond with S106
10	Arun District Council	AL/46/20/PL	Full	02/09/2020	Wings Nursery Lidsey Road Woodgate PO20 3SU	Demolition of Wings House & the erection of 81 No. replacement dwellings (80 net new dwellings), access arrangements, sustainable drainage measures, public open space, landscaping & all other associated works. This application is a Departure from the Development Plan.	Withdrawn
11	Arun District Council	AL/102/17/RES	Reserved Matters	24/01/2018	Nyton Nursery Nyton Road Westergate PO20 3UQ	Application for approval of Reserved Matters following outline application AL/61/13/ for the demolition of existing glasshouses, bungalow, stables & outbuildings & residential development of 268 dwellings incl 30% affordable housing (incorporating 60 senior living units) with associated access, public open space & landscaping	Approve Conditionally
12	Arun District Council	AL/3/19/PL	Full	28/11/2019	Nyton Nursery Nyton Road Westergate PO20 3UQ	Residential development of 68 No. dwellings (net increase of 23 over current consent AL/102/17/RES) including 30% affordable housing (7 units) with associated access, public open space & landscaping.	App Cond with S106
13	Arun District Council	AL/15/17/PL	Full and Outline - Hybrid	26/03/2020	Land to the East of Westergate Westergate Street Westergate PO20 3QR	Hybrid Application 1) Full Planning Application for 101 No. dwellings with new access & associated works on 3.34 ha land; 2) Outline Planning Application with all matters reserved for 249 No. dwellings with access & associated works on 15.06 ha of land. This application affects the character & appearance of the Eastergate (Church Lane) Conservation Area, the setting of Listed Buildings, Public Rights of Way & is a Departure from the Development Plan.	Refused Hybrid
14	Arun District Council	AL/82/18/LDO	Local Develoment Order	23/11/2018	Aldingbourne Nurseries Church Road Aldingbourne West Sussex PO20 3TU	Horticultural Development: Local Development Order 2016 Pre-Development notification for the proposed demolition of existing glasshouses & packing shed & provide new poly tunnels, packing & distribution barns complete with sunken loading dock, concrete yard, new office unit & additional water storage tanks.	Approve Conditionally

15	Arun District Council	AL/118/18/OUT	Outline	23/07/2019	Ryefields Farmhouse Oak Tree Lane Woodgate PO20 3GU	Outline application with some matters reserved for the demolition of existing buildings & the erection of 10 No. dwellings comprising 1 No. three bedroom detached, 2 No. three bedroom semi detached, 4 No. four bedroom semi detached & 3 No. four bedroom detached houses with associated access & parking.	Refused
16	Arun District Council	AL/72/19/PL	Full	24/12/2019	Ryefields Farmhouse Oak Tree Lane Woodgate PO20 3GU	Demolition of existing buildings & erection of 10 No. houses, comprising 1x three bedroom detached, 6x three bedroom semi detached & 3x four bedroom detached houses with associated access & parking (resubmission following AL/118/18/OUT).	Appealed
17	Arun District Council	AL/111/16/OUT	Outline	29/11/2017	Land East of Orchard Gardens Woodgate Aldingbourne	Outline application with some matters reserved for 57 No. units with public open space & affordable housing. This application is a Departure from the Development Plan	Refused
18	Arun District Council	AL/129/18/OUT	Outline	15/05/2019	Land East of Orchard Gardens Woodgate Chichester	Outline application with some matters reserved for the development of 55 No. units with public open space & affordable housing (resubmission following AL/111/16/OUT).	Refused
19	Arun District Council	AL/20/18/OUT	Outline	13/12/2018	Land at Bridge Cottage & The Old Cottage Lidsey Road Lidsey PO22 9PH	Outline application for the demolition of 2 No. dwellings & associated outbuildings & the erection of up to 27 No. dwellings, of which 30% will be affordable, with associated open space & access. This application is a Departure from the Development Plan.	Refused (Appealed)
20	Arun District Council	AL/57/18/OUT	Outline	13/03/2019	Land East of Lidsey Road Lidsey Road Woodgate PO20 3SU	Outline application with some matters reserved (appearance only) for the erection of 30 No. dwellings consisting of 4 No. 4-bed houses, 10 No. 3-bed houses, 4 No. 3-bed apartments, 8 No. 2-bed apartments & 4 No. 1-bed apartments, communal work hub with associated car parking & landscaping. This application is a Departure from the Development Plan.	Refused
21	Arun District Council	AL/21/20/OUT	Outline	30/10/2020	Land North of Lee's Yard Lidsey Road Woodgate PO20 3SU	Outline application with some matters reserved for the erection of 38 No. dwellings consisting of 5 No. 4-bed house, 14 No. 3-bed houses & 19 No. 2-bed houses, with communal work hub & associated car parking & landscaping (resubmission following AL/57/18/OUT). This application is a Departure from the Development Plan.	Undecided

22	Arun District Council	AL/61/20/PL	Continuation of use	30/10/2020	Nyton Rest Nyton Farm Shop Nyton Road Aldingbourne PO20 3TU	Continued use of land for agricultural workers accommodation for a temporary period of 2 years comprising 14 No chalets, low level lighting, retention of existing hardstanding, utilisation of existing individual foul treatment plants and existing permitted access, and associated works. This application falls in CIL Zone 3 (Zero Rated) as 'other development'.	Undecided
23	Arun District Council	AL/62/20/PL	Full	30/09/2020	Ormistons Six Villages Academy Lime Avenue Westergate PO20 3UE	Timber lodge for educational purposes. This application is in CIL Zone 2 (Zero Rated) as 'other development'.	Approve Conditionally
24	Arun District Council	AL/43/19/L	Listed Building Consent	05/09/2019	Nyton House Nyton Road Westergate PO20 3UL	Listed building consent for the construction of a 10 No. bedroom dementia unit with attached covered walkway in the grounds of Nyton House Care Home and including the conversion of an existing garage into a staff day room, the erection of a new garage with laundry room, garden store & external bin store, demolition of various outbuildings	Refused (appealed)
25	Arun District Council	AL/42/19/PL	Full	05/09/2019	Nyton House Nyton Road Westergate PO20 3UL	Construction of a 10 No. bedroom dementia unit with attached covered walkway in the grounds of Nyton House Care Home and including the conversion of an existing garage into a staff day room, the erection of a new garage with laundry room, garden store & external bin store, demolition of various outbuildings and sections of wall and the re-	Refused (Appealed)
26	Arun District Council	AL/107/19/IN	Initial Notice	10/01/2020	Nyton Road Westergate West Sussex PO20 3UL	Initial Notice for Conversion of 2 residential properties (Nyton Farm Cottage & Nyton Gable) into one 9 bed residential care home, including a new single storey rear extension.	Accepted
27	Arun District Council	AL/51/19/PL	Full	30/03/2020	Springfield and land to rear Hook Lane Aldingbourne PO20 3TE	Demolition of the existing dwelling & erection of 3 No 2-bed, 3 No 3-bed & 4 No 4-bed dwellings, access, landscaping & associated works.	Refused (Appealed)
28	Arun District Council	AL/27/20/PL	Full	26/06/2020	Springfield Hook Lane Aldingbourne PO20 3TE	Demolition of the existing dwelling & construction of 2 No. 2-bed, 3 No. 3-bed & 4 No. 4 bed houses including access, landscaping & associated works (resubmission following AL/51/19/PL).	Refused (Appealed)
29	Arun District Council	AL/64/20/PL	Full	23/10/2020	Springfield Hook Lane Aldingbourne PO20 3TE	Demolition of the existing dwelling & construction of 2 no. 2-bed. 3 no. 3 bed, 4 no. 4-bed houses including access, landscaping & associated works (resubmission following AL/27/20/PL).	Undecided

30	Arun District Council	AL/79/20/OUT	Outline	21/01/2021	Land to West of Hook Lane Hook Lane Westergate PO20 3TE	Outline planning application with some matters reserved (Layout, Scale, Appearance and Landscaping are to be determined as reserved matters) for the construction of 10 No. dwellings & the creation of a new vehicular & pedestrian access on to Hook Lane. This application is a Departure from the Development Plan.	Undecided
31	Arun District Council	A/23/15/OUT	Hybrid Application	17/10/2018	Land south of New Road (A259) and East of Brook Lane Angmering N/A	Hybrid application - Full Planning Permission for a retail unit (Class A1) comprising 1,487sqm (1022sqm ground floor and 465sqm mezzanine) with associated access, car parking, servicing, landscaping & associated works. Outline Planning Permission for a public house (Class A4) comprising 581sqm at ground floor level - This is a Departure from the Development Plan	App Cond with S106
32	Arun District Council	A/11/17/OUT	Hybrid Application	13/12/2018	Land south of New Road (A259) & East of Brook Lane Angmering	Hybrid Application to include Full planning permission for a retail unit (Class A1) comprising 1,487sqm with associated access, car parking, servicing, landscaping & associated works & Outline planning permission with some matters reserved (scale & appearance) for public house (Class A4) comprising 581sqm (resubmission following A/23/15/OUT). This application is a Departure from the Development Plan.	Refused
33	Arun District Council	A/131/15/RES	Reserved Matters	22/12/2015	Land south of A259 and west of Mill Lane, Rustington Parish of Angmering	Application for approval of Reserved Matters following Outline Approval of Hybrid Application A/125/13 for the development of the site to provide up to 3365 sqm A1 retail use (including parking). Reserved matters consent is being sought for Appearance, Landscaping, Layout and Scale	ApproveConditionally
34	Arun District Council	A/144/15/PL	Full	02/06/2016	Land at West End Nursery Roundstone Lane Angmering BN16 4AX	246 No. residential dwellings including garages & associated parking, affordable housing, associated landscape & infrastructure & addition of pumping station. Utilisation of 2 No. existing vehicular access points from Roundstone Lane & formation of access road to serve the development. Departure from the Development plan	App Cond with S106
35	Arun District Council	A/27/16/PL	Full	09/02/2017	Broadlees Dappers Lane Angmering BN16 4EN	Erection of 53 care apartments within Class C2, parking, access, footpath, landscaping & other associated works. Departure from the Development Plan.	App Cond with S106
36	Arun District Council	A/114/18/PL	Full	28/05/2019	Broadlees Dappers Lane Angmering BN16 4EN	Demolition & erection of 70 bed care home within Use Class C2 (replacing building 4 approved by A/27/16/PL), access, parking, landscaping and other associated works	App Cond with S106

37	Arun District Council	A/77/16/PL	Full	25/01/2017	Rustington Golf Centre Golfers Lane Angmering	Leisure development consisting of 9 No. 5 a side pitches, trampoline/laser tag centre, hotel, pub/restaurant, forest adventure kiosk, nursery, sub-station & associated infrastructure & car parking. This application is a Departure from the Development Plan.	App Cond with S106
38	Arun District Council	A/142/16/OUT	Outline	30/06/2017	Merry England Nursery Dappers Lane Angmering BN16 4EN	Outline application with some matters reserved for the demolition of existing buildings & erection of 18 No. dwellings and the provision of pedestrian footpath adjacent to Dappers Lane. This application is a Departure from the Development Plan.	App Cond with S106
39	Arun District Council	A/168/18/RES	Reserved Matters	18/04/2019	Merry England Nursery Dappers Lane Angmering BN16 4EN	Application for approval of reserved matters following outline planning permission A/142/16/OUT for the demolition of existing buildings & erection of 17 no. dwellings, refurbishment of 1no 3bed dwelling & the provision of pedestrian footpath adjacent to Dappers Lane	ApproveConditionally
40	Arun District Council	A/154/17/PL	Full	20/12/2017	The Vinery Arundel Road Angmering BN18 9PY	Erection of industrial building (Unit 35b) for B1 (Business)/B8 (Storage or Distribution) purposes, relocation of existing site managers office & workshop. This application is a Departure from the Development Plan.	ApproveConditionally
41	Arun District Council	A/170/18/IN	Initial Notice	20/12/2018	The Vinery Arundel Road Angmering West Sussex BN18 9PY	Initial Notice for construction of a new 12,000 sq ft portal frame building. Plan attached. Planning reference of A/154/17/PL?	Accepted
42	Arun District Council	A/44/17/OUT	Outline	29/08/2017	Land west of Brook Lane and South of A259 Angmering BN16 3JL	Outline application (with all matters reserved) for demolition of existing buildings on site and the erection of a mixed use development comprising up to 90No. residential units and a care home (Use Class C2 and C3) & ancillary facilities, including railway crossing, together with associated access, car parking & landscaping. Departure from the Development Plan. This application also falls within the parishes of Littlehampton & Rustington.	Refused (Appealed)
43	Arun District Council	A/169/17/OUT	Outline	15/01/2018	Land west of Brook Lane & South of A259 Angmering	Outline application with all matters reserved for demolition of existing buildings on site & erection of a mixed use development comprising up to 90 No. residential units, a care home (Use Class C2 & C3) & ancillary facilities including railway crossing, together with associated access, car parking & landscaping (resubmission following A/44/17/OUT). This application is a Departure from the Development Plan & lies within the parishes of Littlehampton & Rustington.	App Cond with S106

44	Arun District Council	A/46/18/RES	Approval of Reserved Matters	07/02/2019	Land west of Brook Lane and South of A259 Angmering	Approval of reserved matters following outline consent A/169/17/OUT for access. This application also lies within the parishes of Littlehampton & Rustington.	Refused (Appealed)
45	Arun District Council	A/83/18/RES	Approval of Reserved Matters	04/10/2018	Land west of Brook Lane and south of A259 Rustington BN16 3JL	Approval of reserved matters following outline approval A/44/17/OUT for access only for the demolition of existing buildings on site & the erection of a mixed use development comprising up to 90 No. residential units & a care home (Use Class C2 & C3) & ancillary facilities, including railway crossing, together with associated access, car parking & landscaping. This application also lies within the parishes of Littlehampton & Rustington.	Approve conditionally
46	Arun District Council	A/219/17/PL	Full	18/10/2018	Land East of Windy Ridge Mayflower Way Angmering BN16 4AY	12No. Social dwellings for Angmering Community Land Trust, including two communal bike stores, a pedestrian mews and orchard. Departure from the Development Plan.	App Cond with S106
47	Arun District Council	A/74/18/OUT	Outline	05/09/2018	The Laurels Dappers Lane Angmering BN16 4EN	Outline Planning Permission with all matters reserved, except access, for the demolition of existing outbuildings and the erection of 9No. two storey dwellings consisting of 2No. two bedroom dwellings, 3No. three bedroom dwellings and 4No. four bedroom dwellings. Departure from the Development Plan.	Approve Conditionally
48	Arun District Council	A/39/17/OUT	Outline	20/04/2017	Quiet Waters Roundstone Lane ANGMERING BN16 4AX	Outline planning application with all matters reserved except access for 32No. residential units to be built with associated gardens, parking spaces & access road	Withdrawn
49	Arun District Council	A/132/17/OUT	Outline	19/01/2018	Quiet Waters Roundstone Lane Angmering BN16 4AX	Outline application with some matters reserved for the demolition of the existing single dwelling & construction of 30 No. dwellings (resubmission following A/39/17/OUT). This application is a Departure from the Development Plan.	App cond with S106
50	Arun District Council	A/81/18/RES	Reserved Matters	13/11/2018	Quiet Waters Roundstone Lane Angmering BN16 4AX	Approval of reserved matters following outline consent A/132/17/OUT for appearance, landscaping, layout & scale for demolition of existing dwelling & the erection of 30 No. dwellings. This application is a Departure from the Development Plan.	Approve Conditionally
51	Arun District Council	A/96/18/IN	Initial Notice	05/07/2018	n/a	Initial Notice for residential development of 22 houses and 8 apartments. (ref: 267961/WK/18)	Accepted

52	Arun District Council	A/36/18/OUT	Outline	07/09/2018	Land off Arundel Road Angmering BN16 4ET	Outline planning application with some matters reserved for the erection of up to 200 dwellings with access, public open space, landscaping and sustainable drainage system (SuDS) with vehicular access point from Arundel Road, one full-sized adult football pitch and the demolition of industrial units and one residential dwelling. Departure from the Development Plan.	Refused
53	Arun District Council	A/122/19/OUT	Outline	17/03/2020	Land off Arundel Road Angmering BN16 4ET	Outline application with some matters reserved for the erection of up to 160 dwellings with public open space, landscaping and sustainable drainage systems (SuDs), vehicular access point from Arundel Road; together with up to 1,393 square metres (15,000 square feet) of B1/B2 units with associated parking provision and vehicular access point from Arundel Road and land made available for expansion of current sports pitch provision (following the demolition of existing commercial units and one bungalow) (re-submission following A/36/18/OUT). This application is a Departure from the Development Plan.	App Cond with S106
54	Arun District Council	A/40/18/OUT	Outline	27/08/2019	Land North of Water Lane Angmering	Outline application with some matters reserved for the development of up to 525 residential dwellings (Class C3), 3 ha (gross) of employment land (Class B1), public open space, play areas, access, associated infrastructure and landscaping.	App Cond with S106
55	Arun District Council	A/51/18/PL	Full	15/11/2018	Pound Place Roundstone Lane Angmering BN16 4AL	Demolition of existing dwelling & erection of a 64 bedroom care home (C2 Residential Institution) with car park, landscaped gardens & access from Roundstone Lane. This application is a Departure from the Development Plan.	Refused (Appealed)
56	Arun District Council	A/9/19/PL	Full	16/09/2019	Pound Place Roundstone Lane Angmering BN16 4AL	Demolition of existing dwelling & erection of a 62 bedroom care home (C2 Residential Institution) with car park, landscaped gardens & access from Roundstone Lane (resubmission following A/51/18/PL).	Approved Conditionally
57	Arun District Council	A/46/19/PL	Full	23/01/2020	Land North of Mayflower Way Angmering BN16 4AY	Erection of 24 No. dwellings with garaging & open resident & visitor parking with new access from Mayflower Way. Provision of hard & soft landscaping & open space, foul & surface water drainage systems & other associated works.	App Cond with S106

58	Arun District Council	A/136/20/PL	Full	n/a	Land North of Mayflower Way Mayflower Way Angmering BN16 4AY	Erection of 24 No. dwellings with garaging & open residential & visitor parking, new access from Mayflower Way, provision of hard & soft landscaping & open space, foul & surface water drainage systems & other works (resubmission following A/46/19/PL). This application is Liable as 24 new dwellings in CIL Zone 2.	Undecided
59	Arun District Council	A/45/19/PL	Full	28/05/2020	Bmw House, Chandlers Garage Ltd Water Lane Angmering BN16 4EH	Demolition of existing buildings (car show room, workshops and Phares Courtledge) and erection of 19 dwellings, a convenience store, a community building, public toilets and associated car parking and landscaping - This application affects the character and appearance of the Angmering Conservation Area.	Refused
60	Arun District Council	A/36/18/OUT	Outline	07/09/2018	Land off Arundel Road Angmering BN16 4ET	Outline planning application with some matters reserved for the erection of up to 200 dwellings with access, public open space, landscaping and sustainable drainage system (SuDS) with vehicular access point from Arundel Road, one full-sized adult football pitch and the demolition of industrial units and one residential dwelling. Departure from the Development Plan.	Refused
61	Arun District Council	A/122/19/OUT	Outline	17/03/2020	Land off Arundel Road Angmering BN16 4ET	Outline application with some matters reserved for the erection of up to 160 dwellings with public open space, landscaping and sustainable drainage systems (SuDS), vehicular access point from Arundel Road; together with up to 1,393 square metres (15,000 square feet) of B1/B2 units with associated parking provision and vehicular access point from Arundel Road and land made available for expansion of current sports pitch provision (following the demolition of existing commercial units and one bungalow) (re-submission following A/36/18/OUT). This application is a Departure from the Development Plan.	App Cond with S106
62	Arun District Council	A/177/19/PL	Full	16/04/2020	The Vinery Arundel Road Poling BN18 9PY	New building for storage or distribution, light industrial & office (Class B1/B8) & associated parking. This application is a Departure from the Development Plan & may affect a Public Right of Way.	Approve Conditionally
63	Arun District Council	A/99/17/OUT	Outline	12/03/2019	Land South of Water Lane Angmering	Outline application with some matters reserved (Access only) for development up to 175 No. residential dwellings, public open space, play areas with associated infrastructure including roads, drainage & landscaping. This application affects the character & appearance of Angmering Conservation Area & the setting of Listed Buildings.	App Cond with S106

64	Arun District Council	A/109/20/RES	Reserved Matters	27/11/2020	Land South of Water Lane Angmering	Approval of reserved matters following outline consent A/99/17/OUT for 175 No dwellings & associated infrastructure. This application may affect the setting of a listed building, may affect the character & appearance of the Angmering Conservation Area & falls within Strategic Site SD9, CIL Zone 1 (Zero Rated).	Undecided
65	Arun District Council	A/84/17/PL	Full	09/05/2018	Rustington Golf Centre Golfers Lane Angmering	New retail unit with mezzanine together with associated car parking & service road - This is a Departure from the Development Plan	Approve Conditionally
66	Arun District Council	A/131/20/PL	Full	01/10/2020	Rustington Golf Centre Golfers Lane Angmering BN16 4NB	New outdoor climbing area, kiosk, briefing room & net gain of 31 No. car parking spaces. This site is in CIL Zone 3 (Zero Rated) as 'other development'.	Approve Conditionally
67	Arun District Council	A/76/20/PL	Full	04/12/2020	Land at Dappers Lane Angmering	84 No. dwellings, public open space, play areas, associated infrastructure & landscaping. This application affects a Right of Way.	Undecided
68	Arun District Council	AB/77/17/PL	Full	04/01/2018	Blastreat Limited and Adjoining Greenhurst Fitzalan Road Arundel BN18 9JS	Demolition of existing dwelling & buildings. Erection of a block of 45 sheltered apartments for the elderly (comprising 21 x one bedroom apartments and 24 x two bedroom apartments age restricted to 60 years and over); with associated access, electric buggy/cycle store, refuse bin store & 34 parking spaces. This application affects the setting of a Listed Building & the character & appearance of the Arundel Conservation Area.	Withdrawn
69	Arun District Council	AB/36/18/PL	Full	30/11/2018	Blastreat Limited & adj Greenhurst Fitzalan Road Arundel BN18 9JS	Demolition of existing buildings & erection of a block of 46 No. sheltered apartments for the elderly (comprising 22 x one bedroom apartments & 24 x two bedroom apartments age restricted to 60 years and over), with associated access electric buggy/cycle stores & refuse bin store & 32 No. parking spaces. Resubmission of AB/77/17/PL. This application affects the character and appearance of Arundel Conservation Area	Refused (Appealed)
70	Arun District Council	AB/88/19/PL	Full	04/06/2020	Land at Electricity Sub Station Ford Road Arundel BN18 9DX	38 No residential apartments (9 No 1-bed units & 29 No. 2-bed units) along with access, off-street parking, amenity space & enhancements to the local footpath network.	Approve Conditionally

71	Arun District Council	BN/12/15/PL	Full	10/02/2016	Land adjacent to Highfield House High Field, Yapton Road Barnham PO22 0AZ	Development comprising 30 No. dwellings, public open space, roads & landscaping. Departure from the Development Plan.	Refused
72	Arun District Council	BN/21/15/RES	Reserved Matters	02/12/2015	Former Eric Wall Holdings Ltd & Epitair Ltd Lake Lane Barnham PO22 0AF	Approval of reserved matters following outline consent BN/16/12/ for the construction of 107 No. residential dwellings with associated internal access roads, footpaths, boundary treatments, attenuation ponds, pumping station, landscape & open space (including allotments).	Approve Conditionally
73	Arun District Council	BN/52/16/RES	Reserved Matters	02/03/2018	Land of former Pollards Nursery Lake Lane Barnham	Approval of reserved matters following outline consent BN/16/12 & BN/21/14 for appearance, landscaping & scale for erection of 107 dwellings, car parking including garages, internal access roads, footpaths, parking & circulation areas, hard & soft landscaping, formal & informal play areas & public open spaces, attenuation basins, sewage treatment plant & other associated infrastructure & engineering - Duplicate application of BN/51/16/RES	Approve Conditionally
74	Arun District Council	BN/128/19/OUT	Outline	29/04/2020	Land Adjacent to Highfield House Yapton Road Barnham PO22 0AZ	Application for outline planning permission for development of 70 bed Care Home and 14 Assisted Living bungalows with associated car parking, landscaping and access. Departure from the Development Plan - development in the Countryside. This application affects the setting of a Listed Building.	Refused
75	Arun District Council	BN/26/15/RES	Reserved Matters	23/10/2015	Land North of Yapton Road and East of Garden Crescent Barnham PO22 0AR	Approval of reserved matters following outline consent BN/7/12/ for 44 No. dwellings including 30% affordable, comprising of a mix of 2 & 4 bed houses with associated landscaping & works.	App Cond with A106
76	Arun District Council	BN/29/15/PL	Full	24/02/2016	Land at Barnham Court Barnham	Solar park including the erection of solar arrays, inverters, transformers, equipment housing, security fencing, internal tracks, ancillary equipment & ecological mitigation. This application is a Departure from the Development Plan.	Approve Conditionally
77	Arun District Council	BN/32/15/OUT	Outline	05/04/2016	Rear of The Lillies Yapton Road Barnham PO22 0AY	Outline application with all matters reserved for the erection of 38 No. dwellings including open space, landscaping & new access. This application is a Departure from the Development Plan.	App Cond with A106
78	Arun District Council	BN/28/17/RES	Reserved Matters	19/01/2018	Land R/O Lillies Yapton Road Barnham PO22 0AY	Approval of reserved matters following outline consent BN/32/15/OUT relating to appearance, landscaping, layout & scale for erection of 38 No. dwellings including open space, landscaping & new access	Refused (Appealed)

79	Arun District Council	BN/6/18/RES	Reserved Matters	23/07/2018	Lillies Yapton Road PO22 0AY	Approval of reserved matters following outline consent BN/32/15/OUT relating to appearance, landscaping, layout & scale for erection of 38 No. dwellings including open space, landscaping & new access (resubmission following BN/28/17/RES).	Refused (Appealed)
80	Arun District Council	BN/43/16/PL	Full	03/05/2017	Angels Nursery Yapton Road Barnham PO22 0AY	95 No. dwellings together with access, landscaping open space & associated works.	App Cond with A106
81	Arun District Council	BN/50/20/PL	Full	27/11/2020	Land west of Fontwell Avenue Fontwell Avenue Eastergate PO20 3RX	Demolition of existing structures on-site & erection of 42 No. dwellings with access, parking, landscaping & associated works. This application is a Departure from the Development Plan.	Undecided
82	Arun District Council	BN/112/20/EIS	Environmental Scoping Opinion	04/11/2020	Land at Barnham, Eastergate and Westergate	Environmental scoping opinion for up 1500 dwellings, community facilities, local centre (shops and services), a primary school and associated playing fields and early years provision (nursery).	Undecided
83	Arun District Council	EG/49/18/OUT	Outline	25/10/2018	Bexstone House Barnham Road Eastergate PO20 3RT	Outline application with some matters reserved for the demolition of 1 No. dwelling & erection of 10 No. new dwellings, widening of existing access to provide improved visibility splays, maintaining front boundary buffer of approximately 5m in depth, car parking for 30 cars (including garages and visitor parking) & landscaping.	Withdrawn
84	Arun District Council	BN/65/19/OUT	Full	06/12/2019	Bexstone House Barnham Road Eastergate PO20 3RT	Outline application with some matters reserved for the demolition of existing dwelling & erection of 10 No. new dwellings, widening & reprofiling of site access, provision of a right turn lane with improved visibility splays, retention of significant landscaped highway buffer, parking for 30 No. cars including garages & visitor parking & potential future highway access to adjacent housing land (resubmission following EG/49/18/OUT).	Refused
85	Arun District Council	BN/57/19/RES	Reserved Matters	14/10/2020	Land East of Fontwell Avenue Fontwell Avenue Fontwell BN18 0SB	Approval of reserved matters for 3785sqm of light industrial floorspace (Class B1 (b)/(c)) following the grant of WA/22/15/OUT.	Approve Conditionally

86	Arun District Council	BE/94/15/PL	Full	05/10/2015	Former LEC Refrigeration Site Shripney Road Bersted PO22 9NG	Erection of 1no. retail warehouse (Class A1) including mezzanine, outdoor project centre & secure compound, access & servicing arrangements, car parking, landscaping & associated works	Approve Conditionally
87	Arun District Council	BE/100/15/PL	Full	23/09/2015	Richmond Lodge Shripney Road Bognor Regis PO22 9NP	Erection of 10 No. 2 bed dwellings, incidental sheds for cycle storage, alterations to existing access, new access road & provision of 14 No. parking spaces.	App Cond with S106
88	Arun District Council	BE/142/15/OUT	Outline	24/02/2016	Land West of New Barn Lane North Bersted PO21 5DL	Outline application with some matters reserved for a mix of up to 90 No. residential units, associated open space, landscaping, access & car parking. This application is a Departure from the Development Plan.	App Cond with S106
89	Arun District Council	BE/78/18/RES	Reserved Matters	n/a	Land west of New Barn Lane Bersted Bognor Regis	Approval of reserved matters following BE/142/15/OUT & BE/113/17/RES for up to 90 No. dwellings regarding layout, landscaping, appearance & scale.	Undecided (On Hold)
90	Arun District Council	BE/77/16/OUT	Outline	09/01/2017	Land West of New Barn Lane Bersted	Outline application with all matters reserved for up to 50 residential units, landscaping, amenity space, car & cycle parking, roads, service & drainage infrastructure & other associated works. Departure from the Development plan.	Called In by DCLG/SD (Appealed)
91	Arun District Council	BE/103/19/RES	Reserved Matters	28/04/2020	Land west of New Barn Lane Bersted PO21 5DN	Approval of reserved matters following the grant of BE/77/16/OUT and BE/40/18/PL for 50 No. residential units with associated roads, drainage & other related infrastructure.	Approve Conditionally
92	Arun District Council	BE/77/18/PL	Full	26/02/2019	Land West of New Barn Lane Bersted	Erection of 10 No. dwellings & associated works.	Withdrawn
93	Arun District Council	BE/29/19/PL	Full	23/08/2019	Land west of New Barn Lane Bersted	Erection of 99 No. dwellings together with landscaping, open space & associated works. Access to be taken from New Barn Lane.	App Cond with S106

94	Arun District Council	BE/37/19/PL	Full	23/08/2019	Land west of New Barn Lane Bersted Bognor Regis	Erection of 99 No. dwellings together with landscaping, open space & associated works. Access to be taken from New Barn Lane (alternative scheme to BE/29/19/PL).	App Cond with S106
95	Arun District Council	BE/31/16/PL	Full	17/06/2016	Sonning House Bersted Park (Suite 6) Chichester Road North Bersted	Erection of 19 No. apartments (amendments to Sonning House previously permitted under BE/122/10).	Approve Conditionally
96	Arun District Council	BE/111/16/PL	Full	28/10/2016	Phase 4 Sonning House Bersted Park (Site 6) Chichester Road North Bersted	Erection of 20 No. apartments & 3 No. houses(amendments to BE/122/10/ & BE/31/16/PL).	Approve Conditionally
97	Arun District Council	BE/38/16/PL	Full	22/06/2016	Former Healthcare Land Bersted Park (Site 6) Chichester Road North Bersted	Erection of 15 No. dwellings with associated access, parking & landscape works	Approve Conditionally
98	Arun District Council	BE/45/16/PL	Full	04/08/2016	27 North Bersted Street Bersted PO22 9AA	Demolish existing bungalow & create a new access road off North Bersted Street & to erect 10 dwellings.	App Cond with S106
99	Arun District Council	BE/74/17/PL	Full	27/11/2017	27 North Bersted Street Bersted PO22 9AA	Demolish existing bungalow, create a new access road & erect 10 No. two storey houses (amendment to application BE/45/16/PL).	App Cond with S106
100	Arun District Council	BE/102/17/OUT	Hybrid Application	22/12/2017	Salt Box Field Land Off Rowan Way Bersted PO22 9NW	Hybrid application comprising Outline application for development of employment units, warehouse, hotel, 2No. drive-thru units, public house, gym plus engineering works, landscaping & associated works. Full application for a Warehouse (class B8), fuel island, car parking, access roads with new entrance from Shripney Road plus engineering works, open space, landscaping & associated works. Departure from the Development Plan.	App Cond with S106

101	Arun District Council	BE/135/18/PL	Hybrid Application	08/11/2019	Salt Box Field Land off Rowan Way Bognor Regis PO22 9NW	Hybrid application comprising of outline application for the principle of employment uses B1-B8. Full application for Class B8 warehouse with fuel island & car parking (Unit 2), 2 No. Class B1/B8 employment units with associated parking & servicing (Units 6 & 7), Class A1 retail food store with car parking & servicing (Unit 8), 2 No. drive thru units with car parking & servicing (Units 4 & 5), car showroom, workshops (Including MOT testing), vehicle storage, external display areas, service areas & parking (Unit 9) together with access roads, associated ground & engineering works, landscaping & ancillary works. This application affects the character & appearance of the Shripney Conservation Area & a Public Right of Way.	App Cond with S106
102	Arun District Council	BE/81/20/OUT	Outline	05/11/2020	Chalcroft Nursery Chalcroft Lane Bersted PO21 5TS	Outline application with all matters, except for access, reserved for the development of up to 20 residential dwellings, 2,240 sqm of commercial space (Use Class A1, B1(b) B1(c) and B8), landscaping, access, parking and associated infrastructure.	Undecided
103	Arun District Council	BE/99/20/EIS	Scoping opinion	15/10/2020	Land West of Bersted	Scoping opinion request relating to 2500 new homes, up to 3.52ha of employment land, a 3 Form Entry primary school, 2 local centres and associated infrastructure across approximately 141 ha of land.	Scoping Issued
104	Arun District Council	BE/27/19/PL	Full	21/06/2019	Site 6 Chichester Road North Bersted	Erection of 15 dwellings (6 x 2 bed, 9 x 3 bed) with associated parking and landscaping.	App Cond with S106
105	Arun District Council	BE/69/19/OUT	Outline	10/10/2019	The Cottage Shripney Road Bognor Regis PO22 9PA	Outline planning application with all matters reserved except access for up to 31 No. houses and flats with car parking, landscaping and associated infrastructure & access off Shripney Road (A29), all following the demolition of the existing dwelling & outbuildings - This application is a Departure from the Development Plan	Refused (Appealed)
106	Arun District Council	BE/109/19/OUT	Outline	25/06/2020	Land east of Shripney Road & south of Haddan House Shripney Road Bersted PO22 9NW	Outline application with some matters reserved for up to 46 No dwellings together with access. This application is a Departure from the Development Plan & may affect the character & appearance of the Shripney Conservation Area.	Refused

107	Arun District Council	BE/126/19/PL	Full	18/03/2020	Land at Phase 1A Oldlands Farm Shripney Road Bognor Regis PO22 9NN	Erection of a 1410 square metres discount convenience retail food store (Use Class A1) & parking, landscaping & other associated works.	Approve Conditionally
108	Arun District Council	BE/65/17/EIS	Scoping opinion	26/06/2017	Land West of Bersted Bersted	Scoping Opinion for mixed use development to include up to 2300 new homes, up to 10 ha of employment land, a 3 Form Entry primary school, a local centre & associated infrastructure	Scoping Issues
109	Arun District Council	BE/63/17/OUT	Outline	18/01/2018	The Cottage Shripney Road Bognor Regis PO22 9PA	Outline planning application with some matters reserved (Access only) for 20No. houses & flats, 1No. replacement dwelling (21No. units in total) with car parking, landscaping & associated infrastructure & access off Shripney Road (A29) and new footway both along the site frontage and across the A29 traffic island, all following the demolition of the existing dwelling & outbuildings. This application is a Departure from the Development Plan	App Cond with S106
110	Arun District Council	BE/137/19/RES	Reserved Matters	25/06/2020	The Cottage Shripney Road Bognor Regis PO22 9PA	Application for approval of phase 2 reserved matters following outline permission BE/63/17/OUT (as amended by BE/131/18/PL) for 20 No. dwellings.	Approve Conditionally
111	Arun District Council	BR/140/15/PL	Full	15/02/2016	The Manor House 12 Chichester Road Bognor Regis PO21 2XE	Demolition of existing building & construction of 2 No. buildings providing 9 No. 2 bedroom apartments with hardstanding parking for 9 cars.	App Cond with S106
112	Arun District Council	BR/155/15/PL	Change of Use	25/11/2015	The Royal Hotel The Esplanade Bognor Regis PO21 1SZ	Change of use of redundant hotel & function room/licensed bar (C1 Hotel) to 10 No. flats (C3 Dwelling houses). This application affects the character & appearance of The Steyne Conservation Area.	App Cond with S106

113	Arun District Council	BR/26/15/PL	Full	31/03/2016	Regis Centre, Car park & Place St Maur des fosse, Belmont Rd Car park at Queensway, 3 Kiosks, The Esplanade Area of land West of Pier, Land East of Rocks Gardens, Bognor Regis PO21 1BL	Redevelopment of the Bognor Regis Centre to provide 3753sqm of commercial space, (Use Class A1,A3/A4,B1a D2) a 59 room hotel, (Use Class C1) 191 apartments (Use Class C3)25% of which are 1bed & 75% 2bed, & providing 15% Affordable Housing units on site. Car parking for 307 spaces & a revised access arrangement. Soft & hard landscaping on the Place St Maur des Fosse, including a new childrens play area. A new boardwalk facing the Esplanade. Redevelopment of the Hothampton car park to provide a 1100 seat theatre (Sui Generis), with 48bed hotel above (Use Class C1), car parking, relocation of existing children's play area & landscaping and associated works. Provision of a Destination restaurant on the Esplanade Theatre Site for 200 covers (Use Class A3) & the relocation of the existing skate park adjacent to the pier & upgrade the facility. Replacement of 3 existing kiosks along the promenade (Use Class A1,A3 and A4). Rearrangement of car parking provision along the Esplanade & associated landscaping of the Public Realm. The site adj to the Pier may affect the character & appearance of The Steyne, Bognor Regis Conservation Area. This application affects the setting of Listed Buildings.	Refused
114	Arun District Council	BR/156/16/PL	Full	01/02/2017	Regis Centre, Car park & Place St Maur des Fosse, Belmont Road Car Park at Queensway, 3 Kiosks, Area of land West of Pier, Land East of Rock Gardens Bognor Regis PO21 1BL	Redevelopment of the Bognor Regis Centre to provide 6358 sqm of commercial space (including leisure facilities) for mixed development, 64 room hotel, 192 apartments with the provision of 30% Affordable housing units compliant with policy Car parking, creation of a new board walk & conversion of Place St Maur des Fosse into a Plaza, soft & hard landscaping. Redevelopment of the Hothampton car park to provide a 1100 seat theatre, with a 48 bed hotel & conference facilities, the provision of 2 retail units facing onto the Queensway, relocation of childrens play area & upgrading of the facility, plus hard & soft landscaping. Redevelopment of the Esplanade Theatre site to provide a 200 cover Destination Restaurant and relocation & upgrade of the existing skate park to adjacent to the Pier. Provision of 3 new kiosks along the Promenade to provide retail, toilets & showers. This application is a resubmission of BR/26/15/PL. This application affects the setting of a Listed Building & may affect the character & appearance of The Steyne Conservaton Area	Refused (Appealed )
115	Arun District Council	BR/113/17/PL	Full	12/07/2017	Putting Green Hotham Park Upper Bognor Road Bognor Regis PO21 1HN	Construction of an adventure golf course, kiosk, car park extension & conversion of existing kiosk into 2 No. WCs. This application affects the Upper Bognor Road & Mead Lane Conservation Area.	Approve Conditionally

116	Arun District Council	BR/81/15/PL	Full	07/07/2015	Ashley House 120 Aldwick Road Bognor Regis PO21 2PB	Partial demolition of the existing care home and erection of 28 flats together with associated works.	Withdrawn
117	Arun District Council	BR/155/15/PL	Change of Use	25/11/2015	The Royal Hotel The Esplanade Bognor Regis PO21 1SZ	Change of use of redundant hotel & function room/licensed bar (C1 Hotel) to 10 No. flats (C3 Dwelling houses). This application affects the character & appearance of The Steyne Conservation Area.	App Cond with S106
118	Arun District Council	BR/130/17/PL	Change of Use	26/09/2017	The Royal Hotel The Esplanade Bognor Regis PO21 1SZ	Change of Use of hotel & function room/licensed bar (C1 Hotel) to 18No. flats (C3 Dwellinghouses). This application affects the character and appearance of The Steyne Conservation Area. Resubmission of BR/155/15/PL	App Cond with S106
119	Arun District Council	BR/188/19/IN	Full	20/06/2019	Royal Hotel The Esplanade Bognor Regis West Sussex PO21 1SZ	Proposed extensions and conversion of existing hotel into 27 apartments over basement to fourth floor and alterations to form ground to basement restaurant. Works include altered and extended light wells, new GF-3rd floor extension to form stairwell, conversion of existing loft to form 4th floor, first floor bedroom extension, new second	Accepted
120	Arun District Council	BR/326/18/PL	Full	29/04/2019	Royal Hotel The Esplanade Bognor Regis West Sussex PO21 1SZ	Refurbishment, external alterations, extensions & reconfiguration of previously permitted conversion to rebuild ground floor A3 restaurant & provide a total of 27 flats. This application affects the character & appearance of The Steyne, Bognor Regis, Conservation Area	App Cond with S106
121	Arun District Council	BR/257/19/PL	Full	03/01/2020	Royal Hotel The Esplanade Bognor Regis West Sussex PO21 1SZ	Refurbishment, external alterations, extensions & reconfiguration of previously permitted conversion to rebuild ground floor A3 restaurant & provide a total of 27 flats. This application affects the character & appearance of The Steyne, Bognor Regis, Conservation Area (resubmission of BR/326/18/PL)	App Cond with S106
122	Arun District Council	BR/270/16/PL	Change of Use	25/01/2017	Villa Maria Campbell Road Bognor Regis PO21 1NW	Change of use of an existing residential convent (C2 Residential Institutions) to provide 25No. units of student accommodation (Sui Generis) with proposed side extension & rear detached single storey outbuilding with car parking spaces & cycle storage	Approve Conditionally

123	Arun District Council	BR/348/16/PL	Change of Use	02/03/2017	St. Josephs, Blackbird Cottage, Essex House & Conservatory Albert Road, Walton Avenue, Walton Road Bognor Regis PO21 1NJ	Change of use of St Joseph's, Essex House (1 & 2 Walton Road) & Blackbird Cottage including on-site stand alone conservatory building, from a care home (Class C2 use) to a House in Multiple Occupation (HMO) to provide team member accommodation for up to 90 team members on behalf of Butlin's Bognor Regis, together with an on-site manager accommodation, two car parking spaces (one disabled space), a minibus parking space, a designated cycle store for 20 spaces, a designated bin store, smoking shelter & associated landscaping.	Approve Conditionally
124	Arun District Council	BR/54/16/PL	Full	14/07/2016	University of Chichester Upper Bognor Road Bognor Regis PO21 1HR	Development of land to east of The University of Chichester, Bognor Regis Campus to construct an Engineering & Digital Technology Park, new access from Felpham Way, erection of first phase of student accommodation (171 spaces), car parking & associated landscaping. This application affects the setting of listed buildings & affects the character & appearance of the Upper Bognor Road & Mead Lane Conservation Area. This is a Departure from the Development Plan.	Approve Conditionally
125	Arun District Council	BR/87/16/PL	Full	30/05/2017	18 Durban Road Bognor Regis PO22 9QT	Demolition of two storey building & erection of three storey block of 8 No. one bedroom flats & 6 No. two bedroom flats with access from Durban Road.	Refused
126	Arun District Council	BR/90/18/PL	Full	09/04/2019	Formerly Westside Supplies Unit West of 17 & 18 Durban Road Bognor Regis PO22 9QT	Demolition of two storey building & erection of three storey block of 8 No. one bedroom flats & 6 No. two bedroom flats with access from Durban Road (resubmission following BR/87/16/PL).	App Cond with S106
127	Arun District Council	BR/240/16/PL	Full	05/01/2017	Butlins South Coast World Upper Bognor Road Bognor Regis PO21 1JJ	Demolition of existing swimming pool building & re-instatement of vacated site as landscaped area; demolition of existing staff & guest accommodation (1,005 bedspaces); erection of new swimming pool building with external slides & river ride; associated landscaping; new pedestrian links; alterations to existing car parks areas; proposed decked car park; new gatehouse for guest reception, alterations to site internal road layout & formation of temporary construction access.	Approve Conditionally
128	Arun District Council	BR/10/17/PL	Change of Use	28/03/2017	Site B Durban Road Bognor Regis PO22 9QT	Change of use to create additional A1 and B8 floorspace and removal of B2 floorspace, single storey side extension, alterations to windows, installation of palisade gates, installation of roller shutter, alterations to parking layout and installation of external security lighting	Approve Conditionally

129	Arun District Council	BR/113/17/PL	Full	12/07/2017	Putting Green Hotham Park Upper Bognor Road Bognor Regis PO21 1HN	Construction of an adventure golf course, kiosk, car park extension & conversion of existing kiosk into 2 No. WCs. This application affects the Upper Bognor Road & Mead Lane Conservation Area.	Approve Conditionally
130	Arun District Council	BR/161/17/PD	Prior Approval	31/07/2017	6 York Road Chambers York Road Bognor Regis PO21 1LT	Notification for prior approval under Part O for change of use from office (ClassB1(a)) to 14 No. residential apartments (Class C3)	No Object'n + Conds
131	Arun District Council	BR/311/17/PL	Full	18/05/2018	Aldwick Rest Home 92-94 Aldwick Road Bognor Regis PO21 2PD	Internal & external alterations for creation of 16 No. flats for use as emergency housing.	App Cond with S106
132	Arun District Council	BR/270/18/PL	Full	24/06/2019	18-20 London Road Bognor Regis PO21 1PY	Part conversion & extension of existing building to provide 6 No. additional storeys over existing rooftop to provide up to 104 No. student residential units with access from Bedford Street, associated servicing & ancillary accommodation, entrance & new internal stairs to existing building to provide access from Bedford Street. This application may affect the setting of listed buildings & the character & appearance of nearby conservation areas.	App Cond with S106
133	Arun District Council	BR/311/18/PL	Full	26/02/2020	Land to the east of University of Chichester Upper Bognor Road Bognor Regis PO21 1HR	Erection of 176 bedroom student accommodation building with associated hard & soft landscaping. This application may affect the setting of listed buildings, may affect the character & appearance of the Upper Bognor Road, Mead Lane Conservation Area & is a Departure from the Development Plan.	App Cond with S106
134	Arun District Council	BR/266/17/PL	Alterations to previously implemented scheme	22/01/2018	First Floor & Second Floor Offices 2-10 Queensway Bognor Regis PO21 1QT	Alteration to previously implemented scheme for 24 flats to include a further 2 bedrooms & a further 2 bathrooms on a fifth floor. This application affects the character & appearance of The Steyne, Bognor Regis Conservation Area & may affect the setting of a Listed Building.	Approve Conditionally
135	Arun District Council	BR/50/19/PL	Full Planning Application	31/03/2020	The Hatters Inn 2-10 Queensway Bognor Regis PO21 1QT	Amendment to previously approved scheme (BR/266/17/PL) for 24 flats. This application may affect the setting of a listed building & may affect the character & appearance of The Steyne, Bognor Conservation Area.	App Cond with S106

136	Arun District Council	BR/39/18/PL	Alterations to previously implemented scheme	25/05/2018	First & Second Floor Offices 2-8 Queensway Bognor Regis PO21 1QT	Alterations to previously permitted & implemented scheme for 24 units to form balconies to flats 1-10; external lift & staircase shaft; external walkway; winter gardens to flats 11-18; a further bedroom & shower room to flat 19 & an extension to living room to flat 22. This application may affect the character & appearance of The Steyne Conservation Area & may affect the setting of a listed building.	Approve Conditionally
137	Arun District Council	BR/45/19/PD	Prior Approval	09/04/2019	2-10 Queensway Bognor Regis PO21 1QT	Notification for Prior Approval for the proposed change of use of a building from office use (Class B (a)) to 24 No. flats (C3) over two floors.	Objection
138	Arun District Council	BR/142/18/OUT	Outline	16/01/2019	Richmond Arms 224 London Road Bognor Regis PO21 1AU	Outline application with all matters reserved for the demolition & conversion of existing public house (with residential accommodation to 1st floor) to form up to 10 No. residential flats over a maximum of 3.5 storeys.	App Cond with S106
139	Arun District Council	BR/282/19/PL	Full	25/06/2020	The Beach Hotel, former Mud Club & 2-4 Waterloo Square Bognor Regis PO21 1SU	Redevelopment into 35 No. 1 & 2 bed apartments and 3 No. commercial units (A1 Retail or A3 Restaurant/Cafe). This application affects the character & appearance of The Steyne, Bognor Regis Conservation Area & may affect the setting of a listed building.	Refused
140	Arun District Council	BR/244/20/PL	Full	20/11/2020	The Beach Hotel, former Mud Club Waterloo Square Bognor Regis PO21 1SU	Redevelopment into 11 No. 2 bed apartments & 2 No. commercial units (A1 Retail or A3 Restaurant/Cafe) (resubmission following BR/282/19/PL). This application affects the character & appearance of The Steyne, Bognor Regis Conservation Area & may affect the setting of listed buildings. This site is in CIL Zone 4 (Zero Rated) as flats & other development.	Undecided
141	Arun District Council	BR/18/19/PL	Full	13/03/2019	South Bersted Church Of England Primary School Church Lane Bognor Regis PO22 9PZ	Construction of Multi Use Games Area. This application may affect the setting of listed buildings.	Approve Conditionally
142	Arun District Council	BR/49/19/OUT	Outline	14/10/2019	26 Burnham Avenue Bognor Regis PO21 2JU	Outline application with all matters reserved for 22 No. new dwellings consisting of 2 No. 1 bed dwellings, 18 No. 2 bed dwellings & 2 No. 3 bed dwellings.	Withdrawn

143	Arun District Council	BR/190/20/OUT	Outline	08/10/2020	26 Burnham Avenue Bognor Regis PO21 2JU	Outline application with all matters reserved for up to 10 No. new dwellings with associated services, landscaping, car parking & amenity (resubmission following BR/49/19/OUT).	Undecided
144	Arun District Council	BR/86/20/PL	Change of use	15/06/2020	Aldwick House Care Home 41-45 Nyewood Lane Bognor Regis PO21 2SJ	Part change of use from a 32-bed nursing home (C2 Residential Institutions) to a 38-bed sit House in Multiple Occupation (sui generis) comprising 24 No single person & 14 No two-person bedsits along with separate shower rooms & wcs, demolition of rear conservatory & store & erection of single storey rear extension & with minor external alterations to side elevations & insertion of 4 No roof lights on rear elevation & insertion of dormer window serving Room 38 (as detailed in amended plans dated 30 April 2020).	Refused
145	Arun District Council	BR/114/20/PL	Full	18/06/2020	13-17 Abbeyfield Richmond Avenue Bognor Regis PO21 2YE	Conversion of existing vacant residential care home into 10 No. flats. This application is not CIL Liable as flats in Zone (Zero Rated).	Undecided
146	Arun District Council	BR/122/20/OUT	Outline	21/10/2020	Garth House High Street Bognor Regis PO21 1HQ	Outline application with some matters reserved for demolition of Garth House and West View to be replaced with 20No. self contained apartments consisting of 10 No. 1 bed and 10 No. 2 bed apartments.	Withdrawn
147	Arun District Council	BR/83/20/PL	Full	15/07/2020	25 Sudley Road Bognor Regis PO21 1EW	New 2 storey extension on first floor with loft floor and 8 No (4 No front & 4 No rear) dormer windows, first floor rear extension (mansard floor) with 8 No roof windows, alterations to ground floor shopfront & new access to upper floor for 12 No residential units (10 No. 1 bed & 2 No. 2 bed). This application may affect the setting of a Listed Building.	Refused
148	Arun District Council	BR/196/20/PL	Full	24/09/2020	25 Sudley Road Bognor Regis PO21 1EW	New 2 storey extension on first floor with loft floor & 8 No. new dormer windows (4 No. at front, 4 No. at rear), first floor rear extension (mansard floor) with 8 No. roof windows, alterations to ground floor shopfront & new access to upper floors for use for 10 No. residential units (5 No. 1 bed units & 5 No. 2 bed units) (resubmission following BR/83/20/PL). This application may affect the setting of a Listed Building and is in CIL zone 4 (Zero Rated) as flats.	Undecided

149	Arun District Council	BR/222/20/PD	Prior Approval	13/11/2020	Gordon House Queensway Bognor Regis PO21 1QX	Prior Approval under Schedule 2, Part 20, Class AA of the town and Country Planning (General Permitted Development) (England) Order 2015 (as amended) for an additional 5th storey providing a total of 17 No. flats.	Undecided
150	Arun District Council	BR/231/20/PD	Prior Approval	05/11/2020	Knighton Chambers 39 Aldwick Road Bognor Regis PO21 2LN	Notification for Prior Approval under Class O for change of use from office use (Class B1a) to residential (Class C3) - Conversion of existing office building into 15 No. self-contained residential units. [Please refer to the attached Planning Statement for full details.]	Undecided
151	Arun District Council	BR/270/17/PL	Change of Use	28/02/2018	56 High Street Bognor Regis PO21 1SP	Change of use from existing retail (A1 Shops) at ground floor to offices (A2 Financial & Professional Services), conversion of 1st floor to 3 No. 2 bed flats, additional 2 storeys to make 2nd & 3rd floors for 6 No. 2 bed flats & external staircase to rear.	App Cond with S106
152	Arun District Council	CM/21/15/WS	Full	27/11/2015	Hobbs New Barn Grevatts Lane Climping BN17 5RE	Construction & Operation of a Waste Transfer Station & Materials Recycling Facility at Baird's Business Park. This is a County Matter & will be determined by West Sussex County Council.	No Objection
153	Arun District Council	CM/1/16/PL	Change of Use	22/03/2016	Bairds Farmshop Field Crookthorne Lane Climping BN17 5SN	Change of use of land from agricultural to dog training & off lead facility. Departure from the Development Plan.	Approve Conditionally
154	Arun District Council	CM/20/17/PL	Change of Use	01/11/2017	Unit H21 Rudford Industrial Estate Ford Road Ford BN17 5QX	Change of use from storage (B8 Storage & Distribution) to industrial use (B2 General Industry) for manufacturing, storage & distribution of concrete products. This application is a Departure from the Development Plan.	Approve Conditionally
155	Arun District Council	CM/10/17/PL	Full	07/07/2017	Hobbs New Barn Gravetts Lane Climping BN17 5RE	Demolition of 7 No. existing B2 commercial buildings & change of use of land to accommodate their relocation to include the erection of 2 No. new B2 commercial buildings & an open storage compound. This application is a Departure from the Development Plan.	Withdrawn

156	Arun District Council	CM/1/17/OUT	Outline	05/09/2017	Land West of Church Lane & South of Horsemere Green Lane Climping	Outline application for the erection of up to 300 dwellings & ancillary development comprising open space, a building within use class D1 (Non Residential Institutions) of up to 875 square metres net, a building for A1 (Shops) use having a floor area of up to 530 sq. metres net, together with open space & ancillary works, including car parking & drainage arrangements, with appearance, landscaping, layout & scale wholly reserved for subsequent approval. The access detail, showing the points of access to the development, & indicated on Bellamy Roberts drawings numbered 4724/004 & 4724/005 are access proposals to be determined at this stage of the application. For the avoidance of doubt all other access detail within the site is to be determined as a reserved matter at a later stage. This application is a Departure from the Development Plan & affects the setting of Listed Buildings.	Refused (Appealed )
157	Arun District Council	CM/13/18/OUT	Outline	05/12/2018	Land to West of Church Lane South of Horsemere Green Lane Clymping	Outline application with some matters reserved for the erection of up to 300 dwellings and ancillary development comprising open space, a building within use class D1 of up to 875 square metres net, a building for A1 use having a floor area of up to 530 sq. metres net, together with open space and ancillary works, including access points, car parking and drainage arrangements, with appearance, landscaping, layout; and scale wholly reserved for subsequent approval. The access detail, showing the points of access to the development, and indicated on Bellamy Roberts drawings numbered 4724/013 and 4724/005 Rev A are access proposals to be determined at this stage of the application. For the avoidance of doubt all other access detail within the site is to be determined as a reserved matter at a later stage. Resubmission following CM/1/17/OUT. Departure from the Development Plan.	Withdrawn
158	Arun District Council	CM/39/18/PL	Change of Use	08/03/2019	Land Adj Unit H21 Rudford Industrial Estate Ford Road BN18 0BD	Change of use of land to open storage (B8 Storage or Distribution).	Approve Conditionally
159	Arun District Council	CM/16/18/PL	Full	15/11/2018	Land to the rear of Bairds Farm Shop Crookthorne Lane Climping BN17 5SN	Development of a 64-bed Specialist Dementia Care Centre together with access, parking & landscaping (Use Class C2). This application is a Departure from the Development Plan & affects the setting of a Listed Building.	Refused (Appealed )

160	Arun District Council	CM/56/19/PL	Full	29/05/2020	Unit H6 Rudford Industrial Estate Ford Road Ford BN18 0BD	Erection & operation of concrete batching plant to include distribution of concrete from the facility.	Approve Conditionally
161	Arun District Council	CM/26/19/WS	Full	11/06/2019	Envirowaste (Southern) Limited Burndell Road Yapton BN18 OHR	Application under Regulation 3 of the Town & Country Planning General Regulations 1992 for proposed Inert Waste Recycling Facility, with new building, hardstanding, car parking, boundary treatment and re-aligned access to the agricultural unit. includes variation to approved site landscaping and use of internal spaces within the existing MRF. This	No Object'n + Conds
162	Arun District Council	CM/25/20/PL	Full	17/09/2020	Climping College, The Mill Climping Street Climping BN17 5RN	Excavation of pond & construction of flood defence gates & earth bunds. This application affects the setting of listed buildings and is also in CIL Zone 5 (Zero Rated) as 'other development'.	Refused
163	Arun District Council	EP/45/15/PL	Full	26/06/2015	Bradbury Hotel Station Road East Preston BN16 3AL	Redevelopment of the site & erection of 24No. retirement apartments for older persons with communal facilities & associated parking & landscaping.	Refused
164	Arun District Council	EG/42/18/OUT	Outline	25/10/2018	Land at Boweries Barnham Road Eastergate PO20 3RT	Outline application with all matters reserved for the erection of 28 No. dwellings, access, landscaping & associated works.	Withdrawn
165	Arun District Council	EG/22/19/OUT	Outline	29/11/2019	Boweries Barnham Road Eastergate PO20 3RT	Outline application with some matters reserved for the erection of 28 No. dwellings, access, landscaping & associated works (re-submission following EG/42/18/OUT).	Refused (Appealed)
166	Arun District Council	EG/49/18/OUT	Outline	25/10/2018	Bexstone House Barnham Road Eastergate PO20 3RT	Outline application with some matters reserved for the demolition of 1 No. dwelling & erection of 10 No.new dwellings, widening of existing access to provide improved visibility splays, maintaining front boundary buffer of approximately 5m in depth, car parking for 30 cars (including garages and visitor parking) & landscaping.	Withdrawn

167	Arun District Council	BN/65/19/OUT	Outline	06/12/2019	Bexstone House Barnham Road Eastergate PO20 3RT	Outline application with some matters reserved for the demolition of existing dwelling & erection of 10 No. new dwellings, widening & reprofiling of site access, provision of a right turn lane with improved visibility splays, retention of significant landscaped highway buffer, parking for 30 No. cars including garages & visitor parking & potential future highway access to adjacent housing land (resubmission following EG/49/18/OUT).	Refused
168	Arun District Council	EG/46/17/OUT	Outline	15/12/2017	Land north of Spode Cottage & West of Greenings & South of Fontwell Cottages Eastergate Lane Fontwell	Outline application with all matters reserved for up to 30 No. dwellings. This is a departure from the Development Plan.	Refused (Appealed)
169	Arun District Council	EG/6/18/RES	Reserved Matters	25/05/2018	Eastergate Fruit Farm Barnham Road Eastergate PO20 3RP	Approval of reserved matters following outline consent EG/71/14/OUT for the erection of 60 No. dwellings with new vehicular access, open space & ancillary works.	Approve Conditionally
170	Arun District Council	FP/55/15/PL	Full	19/11/2015	Site 6 Phases 4 & 5 Land North of Felpham Felpham PO22 8FX	Erection of 38 No. residential dwellings with associated access, parking, landscaping & works (amended proposals for site already approved for residential development).	App Cond with S106
171	Arun District Council	FP/102/16/PL	Full	16/03/2017	Site 6, Phase 4 & 5 Land North of Felpham Felpham PO22 8FX	94 No. dwellings with associated access, parking & landscaping (amended proposal for site already approved for residential development).	App Cond with S106
172	Arun District Council	FP/171/18/PL	Full	12/02/2019	Land at Stanhorn Grove Felpham	Erection of 18 No. dwellings, creation of new access, landscaping & associated works.	App Cond with S106
173	Arun District Council	FP/103/19/PL	Amendment to planning application	30/04/2020	Land North of Felpham Felpham	Amendment to Planning Reference Y/68/09 to replace sports pitch with a public amenity area.	Refused

174	Arun District Council	FG/116/15/PL	Full	22/09/2015	1 Beehive Lane Ferring BN12 5NL	Demolition of existing dwelling and erection of 10 No. 2 bed apartments, new access & cycle & bin stores	Refused (Appealed)
175	Arun District Council	FG/12/16/PL	Full	10/08/2016	50 Ferring Street Ferring BN12 5JP	Rationalisation of existing buildings to provide amended B1 (office & light industrial uses), B8 (Storage & Distribution) A1 retail & Cafe. Insertion of mezzanine level of office accommodation within rear building for Kingsley Roofing, together with revised opening hours and installation of parking barrier.	Approve Conditionally
176	Arun District Council	FG/13/16/PL	Full	12/05/2016	Land North of Littlehampton Road Ferring BN12 6PG	Camping facilities comprising of 23 No. 'eco' yurts with ancillary building to contain reception & wash amenities with access & parking. This application is a Departure from the Development Plan.	Refused
177	Arun District Council	FG/8/17/PL	Full	27/03/2017	Land North of Littlehampton Road Ferring BN12 6PG	Camping facilities comprising 23 'eco' yurts with ancillary building to contain reception & wash amenities with access & parking (resubmission of FG/13/16/PL). This application is a Departure from the Development Plan.	Refused (Appealed)
178	Arun District Council	FG/206/17/PL	Full	09/05/2018	Land at Asda Superstore Littlehampton Road Ferring BN12 6PN	Installation of a Six Pump (12 Filling Position) Petrol Filling station, Drive-to-Pay Kiosk & associated works including Jet Wash, Air/ Water Services & Vacuum Equipment	Refused
179	Arun District Council	FG/105/18/PL	Full	08/08/2018	Land at Asda Superstore Littlehampton Road Ferring BN12 6PN	Installation of a six-pump (12 filling position) automated petrol filling station ('PFS') & associated works. Resubmission of FG/206/17/PL	Approve Conditionally
180	Arun District Council	FG/39/18/PL	Full	09/08/2018	Worthing Peugeot Littlehampton Road Ferring BN12 6PB	Demolition of existing property & outbuildings; erection of new Motor Dealership with Showroom, Offices & Motor Vehicle Workshop (including MOT) & new Head Office Facility adjoining the existing Peugeot building on site including associated hard & soft landscaping & associated supporting facilities. This application is a Departure from the Development Plan.	Approve Conditionally

181	Arun District Council	FG/123/20/PL	Full	12/11/2020	Land at former McIntyre Nursery Littlehampton Road Ferring BN12 6PG	Demolition of a polytunnel, storage building & scaffolders' shelters & racking, use of land for Class B8 container self-storage & the siting of 79 No. single-stacked storage containers, part regrading of the ground, new fencing, CCTV & lighting. This site is in CIL Zone 3 (Zero Rated) as other development & is a Departure from the Development Plan.	Undecided
182	Arun District Council	FG/6/20/PL	Full	02/09/2020	Hangleton Farm Livery Stables Wadars Animal Rescue Centre Hangleton Lane Ferring BN12 6PP	Development of Animal Rescue Centre, to include new buildings for reception, training & education, cattery, kennels & associated ancillary accommodation, conversion of existing barn into staff accommodation along with driveways, car parking & landscaping. This application is a Departure from the Development Plan.	Approve Conditionally
183	Arun District Council	F/7/15/OUT	Outline	10/03/2016	Land south of Burndell Road Yapton BN18 0HR	Outline application for residential development comprising 45 dwellings. Formation of access onto Burndell Road (Resubmission following F/9/14/PL) - This application also lies within the parish of Yapton. This application is a Departure from the Development Plan.	App Cond with S106
184	Arun District Council	F/5/18/RES	Reserved Matters	08/06/2018	Land South of Burndell Road Yapton BN18 0HR	Approval of reserved matters following outline consent F/7/15/OUT relating to appearance, landscaping, layout & scale for residential development comprising of 45No. dwellings. This application also lies within the parish of Yapton. Resubmission of F/23/16/RES	Approve Conditionally
185	Arun District Council	F/7/16/WS	Full	16/06/2016	Land at Wicks Farm Ford BN18 ODG	Proposed extension to existing glasshouses, development of an on-farm anaerobic digestion plant & associated infrastructure for the generation of biomethane, CO2, electricity & heat, grid connection, digestate lagoon, access & landscaping. This is a County Matter application which will be determined by WSCC.	Objection
186	Arun District Council	F/5/16/PL	Full	19/05/2016	Land at Wicks Farm Ford Lane Ford BN18 ODG	Extension to existing glasshouses, development of anaerobic digestion plant & associated infrastructure for the generation of biomethane, CO2, electricity & heat, grid connection, digestate lagoon pipeline connection (previous approval F/32/08/AG), access & landscaping.	Undecided (On Hold)
187	Arun District Council	F/18/17/WS	Full	15/06/2017	Land at Wicks Farm Ford Lane Ford BN18 ODG	Proposed installation of a digestate lagoon approved under planning permission WSCC/061/16/F (WSCC/026/16/F as amended). This is a County Matter application which will be determined by West Sussex County Council.	No Objection
188	Arun District Council	F/19/18/EIS	EIA Scoping opinion	31/01/2019	Ford Airfield Ford	Scoping opinion for development of up to 1,500 dwellings, up to 37,000 sqm of employment floor space, a local centre including retail, commercial and community facilities, primary school, nursery, a care/retirement home, healthcare facilities, public open space, new sports pitches and facilities, & associated access, infrastructure, landscape & ancillary works	Scoping Issued

189	Arun District Council	F/15/20/WS	Full	10/09/2020	Ford Circular Technology Park Ford Road Ford BN18 0XL	Demolition of existing buildings and structures and construction and operation of an energy recovery facility and a waste sorting and transfer facility for treatment of municipal, commercial and industrial wastes, including ancillary buildings, structures, parking, hardstanding and landscape works. This application is a County Waste Matter will be determined by West Sussex County Council.	Objection
190	Arun District Council	F/4/20/OUT	Outline	04/11/2020	Land at Ford Airfield Ford	Outline planning application (with all matters reserved except for access) for the development of up to 1,500 dwellings (Use Class C3), 60-bed care home (Use Class C2), up to 9,000 sqm of employment floorspace (Use Classes B1), local centre of up to 2,350 sqm including up to 900 sqm retail / commercial (Use Classes A1-A5) and 1,450 sqm community / leisure floorspace (Use Classes D1-D2), land for a two-form entry primary school (Use Class D1), public open space, allotments, new sports pitches and associated facilities, drainage, parking and associated access, infrastructure, landscape, ancillary and site preparation works, including demolition of existing buildings and part removal of existing runway hardstanding. This application affects a Public Right of Way. This application is the subject of an Environmental Statement. This application may affect the setting of a Listed Building. This application falls within CIL Zone 1 - Zero Rated.	Undecided
191	Arun District Council	F/4/18/PL	Full	26/06/2018	Land to the South of Ford Lane Ford BN18 0DF	Salt storage building, office building, parking & turning area & open storage areas for highways maintenance depot - This is a Departure from the Development Plan	Approve Conditionally
192	Arun District Council	LU/386/17/PL	Change of use	14/11/2018	Land to East of Torri House Old Mead Road Littlehampton BN17 7PU	Change of use of land for the stationing of 14 No. mobile homes for permanent residential occupation. This application is a Departure from the Development Plan.	Refused
193	Arun District Council	LU/375/17/PL	Change of use	28/03/2018	The Bungalow Southdown Nursery Old Mead Road Littlehampton BN17 7PU	Change of use of land for the stationing of 25 No. mobile homes for permanent residential occupation. Departure from the Development Plan.	Refused
194	Arun District Council	LU/376/17/OUT	Outline	02/07/2018	The Bungalow Southdown Nursery Old Mead Road Littlehampton BN17 7PU	Outline application with all matters reserved for demolition of a bungalow & outbuildings & erection of up to 25 No. dwellings of which 30% will be affordable, with associated open space. Departure from the Development Plan.	Refused

195	Arun District Council	LU/331/17/PL	Full	24/07/2018	Land at Lineside Industrial Estate Northwest of Unit 26 Eldon Way Littlehampton BN17 7HE	Erection of 4 No. employment units for flexible use within use classes B1c/B2/B8 with associated areas for car parking, service yards & landscaping. This application is a Departure from the Development Plan.	Approve Conditionally
196	Arun District Council	LU/323/17/PL	Change of Use	15/03/2018	United Services Maltravers Road Littlehampton BN17 5NA	Change of use of former United Services Club (Sui Generis) to 10 No. flats (C3 Dwelling House) with associated landscaping, parking, bins & recycling storage.	App Cond with S106
197	Arun District Council	LU/291/17/PL	Full	13/11/2017	Flood defence wall outside 47 River Road Littlehampton BN17 5BZ	Addition of a new segment to the Littlehampton East Bank Tidal Walls Reach 4 Flood Defences. This application affects the character & appearance of the Littlehampton River Road Conservation Area.	Approve Conditionally
198	Arun District Council	LU/278/17/RES	Reserved Matters	04/10/2018	North Littlehampton Strategic Development Site Land West of Toddington Park, Toddington Lane Littlehampton BN17 7PP	Approval of Reserved Matters following Outline Permission LU/47/11 for Construction of the southern section of the Lyminster Bypass, including northern and southern roundabouts, surface water drainage and landscaping. Departure from the Development Plan & affects a Public Right of Way.	Approve Conditionally
199	Arun District Council	LU/121/17/RES	Reserved Matters	20/12/2017	Land North of Toddington Lane Parcel C1 & part Parcels B2, B4 & C2 Littlehampton BN17 7PP	Approval of reserved matters following outline consent LU/47/11/ for construction of 126 No. dwellings together with internal road network, car parking & landscaping.	Approve Conditionally
200	Arun District Council	LU/178/20/RES	Reserved Matters	10/11/2020	Phase 4 Hampton Park Toddington Lane Littlehampton BN17 7PL	Approval of reserved matters following outline consent LU/47/11 for 46 No. dwellings.	Undecided
201	Arun District Council	LU/117/15/RES	Reserved Matters	21/04/2016	Land to the North of Toddington Lane Littlehampton	Approval of reserved matters following outline consent LU/47/11 for construction of 117 dwellings together with associated internal road network, car parking & landscaping on parcels B3 & B5 following demolition of existing glasshouses & buildings.	Approve Conditionally
202	Arun District Council	LU/162/17/PL	Full	21/11/2017	Land North & West of Toddington Farm Cottages Toddington Lane Wick Littlehampton BN17 7PP	Demolition of existing building, erection of 10 residential dwellings (Use Class C3) with associated open space, landscaping, parking, and access. Departure from the Development Plan.	Refused (Appealed )

203	Arun District Council	LY/21/18/WS	Full	07/03/2019	East of Lyminster Village & Between, Toddingto Nurs.... Nurseries & A284 Lyminster Road Lyminster Littlehampton	Creation of a 1.1km Highway, with shared cycleway and footway, Pegasus crossing, viaduct, culvert, wetland areas, balancing pond and swales, street lighting and associated works. This is a County Matter & will be determined by WSCC.	No Objection
204	Arun District Council	LU/117/17/PL	Full	21/06/2017	Formerly 'The Tap and Barrel' 2 - 13 Duke Street Littlehampton BN17 6EU	Demolition of existing building & erection of a new building to provide 10 No. new flats, comprising 9 No. two bed flats & 1 No. one bed flat.	Withdrawn
205	Arun District Council	LU/364/17/PL	Full	25/01/2018	Formerly 'The Tap and Barrel' 2-13 Duke Street Littlehampton BN17 6EU	Retention & conversion of former Public House building & the erection of two storey block to provide a total of 9 No. residential units with associated parking. Re-submission of planning application LU/117/17/PL	Approve Conditionally
206	Arun District Council	LU/327/16/OUT	Outline	22/12/2016	Westholme Nursery Toddington Lane Littlehampton BN17 7PP	Outline application for residential re-development comprising of 10No. dwellings & associated works. This application is a Departure from the Development Plan	Withdrawn
207	Arun District Council	LU/94/17/OUT	Outline	20/07/2017	Westholme Nursery Toddington Lane Littlehampton BN17 7PP	Outline application with all matters reserved for residential re-development comprising of 10 No. dwellings & associated works (resubmission following LU/327/16/OUT).	App Cond with S106
208	Arun District Council	LU/314/16/PL	Full	04/01/2017	Littlehampton Swimming and Sports Centre Sea Road Littlehampton BN16 2NA	Proposed development of new Leisure Centre Facility (Use Class D2) and demolition of existing Leisure Centre Facility and Sports Dome, including modifications to the existing car parking arrangement, landscaping and associated works.	Approve Conditionally
209	Arun District Council	LU/205/16/PL	Full	29/11/2016	C M Wood Body Repair Centre Linden Park Littlehampton BN17 7BJ	Demolition of existing workshop buildings & erection of 10 No. flats consisting 4 No. 2 bed flats & 6 No. 1 bed flats.	Approve Conditionally
210	Arun District Council	LU/201/16/RES	Reserved Matters	05/05/2017	Windroos Nursery Worthing Road Littlehampton BN17 6LY	Approval of reserved matters following outline consent LU/229/10/ for appearance, landscaping, layout & scale for 84 No. dwellings	Approve Conditionally

211	Arun District Council	LU/173/16/PL	Full	23/12/2016	38 & 40 East Street & 35 Fitzalan Road Littlehampton BN17 6AN	Redevelopment to form 38 sheltered apartments for the elderly including communal facilities, access, car parking & landscaping. This application affects the setting of a Listed Building	App Cond with S106
212	Arun District Council	LU/55/15/OUT	Outline	28/09/2016	Land South of The Littlehampton Academy Littlehampton BN17 6DQ	Application for outline planning permission with some matters reserved for 68 No. dwellings (resubmission following LU/51/14/).	ApproveConditionally (Appealed)
213	Arun District Council	LU/315/15/PL	Full	13/05/2016	131 - 135 Arundel Road Littlehampton BN17 7DH	Redevelopment of site to accommodate 10 No. dwellings & 2No. flats with associated parking & landscaping.	App Cond with S106
214	Arun District Council	LU/330/18/PL	Full	14/08/2019	Land South Of Cornfield Close Littlehampton BN17 6LD	Demolition of existing buildings & the erection of 77 residential homes with associated access, car parking, cycle parking, refuse/recycling storage, landscaping, earthworks & infrastructure	App Cond with S106
215	Arun District Council	LU/286/18/PD	Prior Approval	04/12/2018	4 Hawthorn Road Littlehampton	Notification for Prior Approval for a Proposed Change of Use of a building from Office Use (Class B1(a)) to a Dwellinghouse (Class C3) to provide 30 self-contained flats (14 studios & 16 one-bed flats)	Objection
216	Arun District Council	LU/7/19/PD	Prior Approval	18/03/2019	Unit 4 Hawthorn Road Littlehampton BN17 7LA	Notification for Prior Approval for a Proposed Change of Use of a building from Office Use (Class B1(a)) to a Dwellinghouse (Class C3) to provide 30 self-contained flats (14 studios & 16 one-bed flats)	Objection (Appealed)
217	Arun District Council	LU/3/19/PL	full	14/08/2019	Empty Supermarket Premises Avon Road Littlehampton BN17 6AT	Demolition of existing buildings & redevelopment of site comprising 83 No. residential units (C3 Dwelling Houses) & 158.5 sqm flexible retail floorspace GIA (A1 (Shops) and/or A2 (Financial & Professional Services) and/or A3 (Food & Drink) and/or D1 (Non-residential Institutions)) together with the provision of car & cycle parking, landscaping & associated works. This application affects the setting of listed buildings & affects the character & appearance of the East Street, Littlehampton Conservation Area.	Refused (Appealed)

218	Arun District Council	LU/214/20/PL	Full	04/12/2020	Empty Supermarket Premises Avon Road Littlehampton BN17 6AT	Demolition of existing buildings & redevelopment comprising 37 No. residential units (Class C3) & flexible commercial floorspace (Class A1, A2, A3 and/or D1) together with the provision of car & cycle parking, landscaping & associated works (resubmission following LU/3/19/PL). This application affects the setting of listed buildings & may affect the character & appearance of the East Street, Littlehampton Conservation Area. This application is in CIL Zone 4 (Zero Rated) as 'flats & other development'.	Undecided
219	Arun District Council	LU/379/18/RES	Reserved Matters	11/02/2019	Parcel A2/B6 Hampton Park Toddington Lane Littlehampton BN17 7PL	Approval of reserved matters following outline consent LU/47/11/ for 50 No. dwellings. This application may affect the setting of a listed building.	Withdrawn
220	Arun District Council	LU/300/19/PL	Full	22/01/2020	Minster Court Courtwick Lane Littlehampton BN17 7RN	Erection of four new commercial units (Use Class B1, B2 or B8), amended access & associated car parking.	Approve Conditionally
221	Arun District Council	LU/210/19/PL	Full	30/08/2019	Inglecroft Toddington Lane Littlehampton BN17 6JU	Demolition of the existing vacant dwelling and workshop and the erection of 10 detached dwellings (9 dwellings net) - Resubmission of LU/133/19/PL	Refused (Appealed )
222	Arun District Council	LU/238/20/OUT	outline	03/12/2020	Land west of Bridge Road Roundabout Littlehampton BN17 5DF	Outline planning permission with some matters reserved for demolition of existing treatment works and redevelopment of a former camp site on the edge of the River Arun to provide up to 105 homes, 100sqm of A1 Shops use, 220sqm of A3 Restaurant use and 420m of pontoons to provide approximately 32 leisure moorings along with associated landscaping, sluice gate, flood defence works, car parking and highways works, including access. This application also lies within the parish of Clymping, may affect a Public Footpath and is a Departure from the Development Plan.	Undecided
223	Arun District Council	LU/214/20/PL	Full	04/12/2020	Empty Supermarket Premises Avon Road Littlehampton BN17 6AT	Demolition of existing buildings & redevelopment comprising 37 No. residential units (Class C3) & flexible commercial floorspace (Class A1, A2, A3 and/or D1) together with the provision of car & cycle parking, landscaping & associated works (resubmission following LU/3/19/PL). This application affects the setting of listed buildings & may affect the character & appearance of the East Street, Littlehampton Conservation Area. This application is in CIL Zone 4 (Zero Rated) as 'flats & other development'.	Undecided

224	Arun District Council	LU/48/20/PL	Full	07/05/2020	Southdown Nursery Old Mead Road Littlehampton BN17 7PU	Demolition of 1 No. bungalow & outbuildings & erection of 22 No. dwellings with associated parking & open space. This application is a Departure from the Development Plan.	Withdrawn
225	Arun District Council	LU/320/17/PL	Full	15/03/2018	Littlehampton Golf Club Rope Walk Littlehampton BN17 5DL	Alterations to golf practice ground & surrounding land, including tees (incorporating importation of material).	Approve Conditionally
226	Arun District Council	LU/204/17/OHL	Full	13/07/2017	Brook Barn Courtwick Lane Littlehampton	Notification under the Overhead Lines (Exemption ) Regulations 2009 to remove several spans of High Voltage line crossing the existing shed. This will allow for a terminal pole to be created as shown on plan PDC/WAY/16058.	No objection
227	Arun District Council	LY/10/15/WS	Full	28/09/2015	East of Lyminster village between A284 Lyminster Road & Toddington Nurseries Lyminster	Application under Regulation 3 the Town and Country Planning General Regulations 1992 for Outline application for the construction of a bypass to link the A284 Lyminster Road (in Lyminster village) to Toddington Nurseries just north of Littlehampton. This application will be determined by WSCC	No Object'n + Conds
228	Arun District Council	LY/19/17/PL	Change of use	21/11/2017	Arundel Vineyard Church Lane Lyminster BN17 7QJ	Change of use from Vinery at Arundel Vineyard to garden amenity area serving Macushia House. This application is a Departure from the Development Plan.	Refused
229	Arun District Council	LY/8/18/PL	Change of use	02/08/2018	Arundel Vineyard Church Lane Lyminster BN17 7QJ	Change of use from Vineyard to garden amenity area serving Arundel Vineyard (resubmission following LY/19/17/PL).	Refused (Appealed)
230	Arun District Council	LY/10/17/PL	Full	25/09/2017	Comfort Inn Lyminster Road Lyminster BN17 7QQ	Extension of existing hotel to form 8 No. new rooms on two floors. Erection of three new blocks of accommodation to form 34 No. self contained rooms on two & 3 floors respectively. This application is a Departure from the Development Plan.	Approve Conditionally
231	Arun District Council	LY/21/18/WS	Full	07/03/2019	East of Lyminster Village & Between, Toddington Nurseries & A284 Lyminster Road Lyminster Littlehampton	Creation of a 1.1km Highway, with shared cycleway and footway, Pegasus crossing, viaduct, culvert, wetland areas, balancing pond and swales, street lighting and associated works. This is a County Matter & will be determined by WSCC.	No Objection

232	Arun District Council	M/45/16/PL	Full	07/02/2017	Land West of Yapton Road (Poultry Farm) Middleton-on Sea PO22 6DY	Demolition of redundant poultry farm buildings & dwelling & erection of 13 No. dwellings with associated access, car parking & landscaping. This application is a departure from the development plan	Approve Conditionally
233	Arun District Council	M/80/19/PL	Full	06/02/2020	Former Poultry Farm Land West of Yapton Road Middleton on Sea PO22 6DY	Demolition of the existing structures & redevelopment to provide a new 66-bedroom care home (Use Class C2) arranged over two storeys together with associated access, car and cycle parking, structural landscaping and amenity space provision	Refused (Appealed)
234	Arun District Council	M/68/20/PL	Full	11/12/2020	Poultry Farm 87 Yapton Road Middleton-On-Sea PO22 6DY	Demolition of the existing structures & redevelopment to provide a new 66-bedroom care home arranged over two storeys together with associated access, car & cycle parking, structural landscaping & amenity space provision (resubmission following M/80/19/PL). This application is in CIL Zone 4 (Zero Rated) as 'other development'.	Undecided
235	Arun District Council	M/74/19/PL	Full	16/12/2019	Middleton Sports Club 3 Sea Lane Middleton on Sea PO22 7RH	Demolition of existing bowls pavillion & replacement with new bowls pavillion, ground floor alterations & first floor extension to existing gym facilities to include DDA provisions. This application may affect the setting of a listed building.	Approve Conditionally
236	Arun District Council	P/140/16/OUT	outline	22/11/2018	Land South of Summer Lane & West of Pagham Road Pagham	Outline application for access only - mixed use development comprising of up to 400 dwellings, a care home with up to 70 beds, a Local Centre comprising up to 2000sqm of A1/A2/A3/D1/sui generis floorspace, provision of land for a 1FE primary school (with sufficient space to ensure that it is expandable to 2FE), provision of land for a scout hut, safeguarding of land to help link the site to the Pagham Harbour Cycle Route & other community uses including public open space & allotments with some matters reserved.	App Cond with S106
237	Arun District Council	P/74/16/EIS	Scoping opinion	04/08/2016	Land south of Summer Lane and west of Pagham Road Pagham	Scoping opinion for re-development comprising of 400 dwellings, community hub, foodstore & sports pitch	Scoping Issued
238	Arun District Council	P/25/17/OUT	Outline	05/09/2019	Church Barton House Horns Lane Pagham PO21 4NZ	Outline application with all matters reserved - Erection of up to 65 No. dwellings, access roads, landscaping, open space & associated works.	App Cond with S106

239	Arun District Council	P/134/16/OUT	Outline	10/10/2019	Land North of Sefter Road & 80 Rose Green Road Pagham	Outline application for the development of up to 280 dwellings (including affordable homes), land for a replacement scout hut, land for an Ambulance Community Response Post Facility and land for either a 1FE primary school or care home. Provision of a primary vehicular access from Sefter Road and demolition of No. 80 Rose Green Road and	App Cond with S106
240	Arun District Council	P/84/16/PL	Full	14/12/2016	Church Farm Holiday Village Church Lane Pagham PO21 4NR	Installation of 22 no. caravan bases for 22 no. static caravans with associated car parking, pedestrian footpaths, internal access road, landscaping & infrastructure above & below ground.	App Cond with S106
241	Arun District Council	P/76/16/PL	full	09/06/2017	Sefter Farm Pagham Road Pagham PO21 3PX	Construction of a building for the packaging, preparation & distribution of fresh foods with ancillary accommodation associated with the existing horticultural business, revisions to internal access road, car parking & hardstanding areas & landscaping & provision of a wetland. This application affects the setting of Listed Buildings.	App Cond with S106
242	Arun District Council	P/6/17/OUT	outline	24/01/2019	Land North of Hook Lane Pagham	Outline application with some matters reserved for construction of up to 300No. new homes, Care home of up to 80No. beds, D1uses of up to 4000sqm including a 2 form entry Primary School, formation of new means of access onto Hook Lane & Pagham Road, new pedestrian & cycle links, the laying out of open space, new strategic landscaping, habitat creation, drainage features & associated ground works & infrastructure.	Refused (Appealed )
243	Arun District Council	P/30/19/OUT	outline	02/09/2019	Land north of Hook Lane Pagham	Outline application with some matters reserved for the construction of up to 300 No. new homes, a care home of up to 80 beds, D1 uses of up to 4,000 sqm including a 2 form entry primary school, the formation of new means of access onto Hook Lane & Pagham Road, new pedestrian & cycle links, laying out of open space, new strategic landscaping, habitat creation, drainage features & associated ground works & infrastructure. This application may affect the setting of a listed building (resubmission following P/6/17/OUT).	App Cond with S106
244	Arun District Council	P/58/15/OUT	Outline	30/09/2016	Land at Summer Lane Pagham PO21 4NG	Outline application with some matters reserved for the erection of 90 No. dwellings with associated access & open space. This is a Departure from the Development Plan.	App Cond with S106
245	Arun District Council	P/70/19/RES	Reserved Matters	28/02/2020	Land North of Summer Lane Pagham PO21 4NG	Approval of reserved matters following outline consent P/58/15/OUT for 90 No. dwellings. Also seeking to address the terms of planning conditions 6 (Phasing), 8 (ecology), 9 (Surface Water), 12 (Vehicular Access), 15 (Parking), 18 (Travel Plan), 20 (Landscape Management), 24 (Parking Control), 25 (Dwelling Parking) and 26 (Materials).	Approve Conditionally

246	Arun District Council	P/97/20/PL	Full	06/01/2021	Land To North Of Summer Lane Pagham PO21 4NG	Residential development of 36 No. dwellings (net increase of 15 over current consent P/70/19/RES) including affordable housing (additional 5 units) with associated access, parking & landscaping. This site is in CIL Zone 1 & 4 & is CIL Liable as new dwellings.	Undecided
247	Arun District Council	P/97/15/PL	Full	27/06/2017	Church Norton Spit Pagham Beach Pagham PO21 4NJ	Managed breach of shingle spit & blocking of adjacent tidal inlet channel with shingle barrier. Formation of shingle island within Harbour following excavation of adjacent area of spit. This application is accompanied by an environmental statement	ApproveConditionally
248	Arun District Council	P/81/15/PL	Full	29/10/2015	Land north west of Park Farm Pagham	Solar park including the erection of solar arrays, inverters, transformers, equipment housing, security fencing, internal tracks, ancillary equipment & ecological mitigation. This application is a Departure from the Development Plan.	ApproveConditionally
249	Arun District Council	P/43/15/PL	Full	30/07/2015	Land between Rose Green Road and Pagham Road Aldwick PO21 3EG	Laying of an underground cable run linking a solar park to the National grid connection point at Rose Green Road, Bognor Regis. This application is a departure from the development plan.	ApproveConditionally
250	Arun District Council	R/269/15/PL	Change of Use	01/04/2016	Hares Rustington Limited Station Road Rustington BN16 3BH	Change of use from car sales & repair works (Sui Generis) to a block of 10 No. sheltered apartments with modified access & associated parking following the demolition of existing buildings.	App Cond with S106
251	Arun District Council	R/83/15/PL	Full	21/10/2015	Rustington Convalescent Home Sea Road Littlehampton BN16 2LZ	Redevelopment of land to the rear of Convalescent Home to provide 26 new dwellings, reuse of laundry building to provide five apartments, reuse of both the cooks house & carpenters house to provide two dwellings with refurbishment works and first floor rear roof extension to the main house to create 4 additional patient bedrooms.	App Cond with S106
252	Arun District Council	R/171/16/PD	full	23/08/2016	Nairn House Artex Avenue Rustington	Prior Notification under Class O for change of use from Use Class B1 (Offices) to 6 No. 1 bedroom flats & 6 No. studio flats	No Object'n + Conds
253	Arun District Council	R/13/16/PL	Full	28/06/2016	Lund Bros and Co Ltd Brookside Avenue Rustington BN16 3LF	Demolition of small outbuilding, extension of existing factory at rear & side, demolition of second storey offices to be replaced with two storey office extension and replacement paint store.	ApproveConditionally

254	Arun District Council	WA/44/17/OUT	Outline	23/02/2018	Land East of Tye Lane Walberton	Outline application with some matters reserved for up to 175 dwellings, new vehicular access, together with associated car parking, landscaping & community facilities to include allotments, play space & community orchard. This application is a Departure from the Development Plan & may affect the character & appearance of the Walberton Village Conservation Area.	App Cond with S106
255	Arun District Council	WA/95/18/RES	Reserved Matters	16/04/2019	Land east of Tye Lane Walberton	Approval of reserved matters following outline consent WA/44/17/OUT for the erection of 175 No. dwellings, car parking including garages, internal access roads, footpaths, parking & circulation areas, hard & soft landscaping, allotments, play areas/equipment & community orchard & other associated infrastructure & engineering works. This application may affect the character & appearance of the Walberton Village Conservation Area.	Approve Conditionally
256	Arun District Council	WA/59/20/PL	Full	21/12/2020	Land East of Tye Lane Walberton BN18 0DN	A re-plan of part of the approved (outline planning permission WA/44/17/OUT and reserved matters approval WA/95/18/RES) and partially implemented development on the site, which currently has approval for 175 dwellings; to develop an additional 30 dwellings including 9 affordable units on part of the site. The proposal includes an increase in the number of dwellings on part of the site from 81 units to 111 units.	Undecided
257	Arun District Council	WA/23/17/OUT	Outline	22/02/2018	Barnfield House Arundel Road Fontwell Walberton BN18 0SD	Outline application with all matters reserved for residential development comprising of 22 No. dwellings involving demolition of Barnfield House & existing outbuildings. This application is a Departure from the Development Plan	App Cond with S106
258	Arun District Council	WA/22/15/OUT	outline	20/01/2016	Land to the East of Fontwell Avenue Fontwell	Outline application with some matters reserved to provide up to 400 No. new dwellings, up to 500 sqm of non-residential floorspace (A1, A2, A3, D1 and/or D2), 5000 sqm of light industrial floorspace (B1 (b)/(c)) & associated works including access, internal road network, highway works, landscaping, selected tree removal, informal & formal open space & play areas, pedestrian & cyclist infrastructure utilities, drainage infrastructure, car & cycle parking & waste storage. This application is a departure from the Development Plan & also lies within the parish of Eastergate.	Called In by DCLG/SD (Appealed)

259	Arun District Council	WA/48/19/RES	Reserved Matters	04/11/2020	Land to the East of Fontwell Avenue Fontwell Avenue Fontwell	Approval for Reserved Matters following outline permission WA/22/15/OUT comprising 400 new homes (incl. affordable), 360sqm of retail space (A1 to A3), 152sqm of community space (D1 to D2 & including retention & refurbishment of 12sqm 'old smithy'), demolition of remaining buildings to Arundel Road along with public open space, LEAP, MUGA, allotments, car & cycle parking, drainage & associated works - This site also lies within the parish of Barnham & Eastergate.	Undecided
260	Arun District Council	WA/68/20/OUT	outline	12/11/2020	Land west of Tye Lane Walberton	Outline application with all matters reserved, other than means of access, for the construction of up to 155 No. dwellings (30% affordable homes) & amendment to boundary of garden land to serve adjoining property. This application affects the character & appearance of the Walberton Village Conservation Area, may affect the setting of listed buildings & is a Departure from the Development Plan.	Undecided
261	Arun District Council	WA/90/17/OUT	outline	01/03/2018	Sussex Business Village Lake Lane Barnham PO22 0AL	Outline application with all matters reserved for the development of 15 No. dwellings. This application is a Departure from the Development Plan.	Withdrawn
262	Arun District Council	WA/73/17/OUT	Outline	23/03/2018	Land East of Wandleys Lane and West of West Walberton Lane Fontwell	Outline Planning Application with some matters reserved for up to 157 No. residential dwellings including 30% affordable. This application is a Departure from the Development Plan.	Refused (Appealed)
263	Arun District Council	WA/34/15/PL	Full	28/09/2015	Land East of Lower Farm Yapton Lane Walberton	Installation & operation of a solar farm & associated infrastructure, including photovoltaic panels, mounting frames, inverters, transformers, substations, communications building, fence & pole mounted security cameras, for the life of the solar farm. Departure from the Development plan.	Approve conditionally
264	Arun District Council	Y/74/17/RES	Reserved Matters	06/04/2018	Land At Kings Close Yapton BN18 0EX	Approval of reserved matters following outline consent Y/22/14/ for 1 No. 4 bed house, 13 No. 3 bed houses, 3 No. 2 bed houses & 1 No. 2 bed flat over garages incorporating parking & access to main road via redefined alignment of Kings Close & highway improvement works at existing crossover.	ApproveConditionally

265	Arun District Council	Y/49/17/OUT	outline	15/02/2018	Land at Street Buildings North End Road Yapton BN18 0DT	Outline application with some matters reserved for the demolition of all existing structures & redevelopment of the site with up to 45 dwellings (30% affordable (up to 14)) & 0.3 hectares of landscaped open space with vehicular access from Maypole Lane & pedestrian/cycle access only from North End Road. This application is a Departure from the Development Plan & may affect the setting of a listed building.	App Cond with S106
266	Arun District Council	Y/39/20/RES	Reserved Matters	07/09/2020	Land at Street Building North End Road Yapton BN18 0DT	Approval of reserved matters following outline consent Y/49/17/OUT & Section 73 permission Y/13/18/PL for 45 No. dwellings & associated works. This application may affect the setting of a Listed Building.	ApproveConditionally
267	Arun District Council	Y/44/17/OUT	Outline	14/12/2018	Land at Stakers Farm North End Road Yapton	Outline Planning Application for 70 No. residential dwellings including 30% affordable, public open space & associated landscaping. All matters to be reserved apart from Access . This application is a Departure from the Development plan. This application affects the character & appearance of Main Road/Church Road Yapton Conservation Area & the setting of Listed Buildings	App Cond with S106
268	Arun District Council	Y/72/20/RES	Reserved Matters	16/12/2020	Land at Stakers Farm North End Road Yapton	Approval of reserved matters following outline approval Y/44/17/OUT for the erection of 70 No. dwellings, public open space, play area, drainage & landscaping. This application affects the character & appearance of the Main Road/Church Road Yapton Conservation Area & affects the setting of Listed Buildings.	Undecided
269	Arun District Council	Y/88/18/OUT	Outline	26/11/2019	Land North of Yapton C of E Primary School North End Road Yapton	Outline application with some matters reserved for the erection of 38 No. dwellings. This application affects a Public Right of Way.	App Cond with S106
270	Arun District Council	Y/71/20/RES	Reserved Matters	16/12/2020	Land North of Yapton Church of England Primary School North End Road Yapton	Approval of reserved matters following outline consent Y/88/18/OUT for the erection of 38 No. dwellings, Public Open Space, a play area & drainage features. This application affects Public Rights of Way.	Undecided
271	Arun District Council	Y/40/17/OUT	Outline	09/02/2018	Bonhams Hoe Lane Flansham Bognor Regis PO22 8NP	Outline application with some matters reserved (access only) for the erection of 23 No. dwellings with access from Hoe Lane, Flansham. This application is a Departure from the Development Plan.	Refused

272	Arun District Council	Y/20/18/OUT	Outline	11/03/2019	Land adjacent to Bonhams & Flints Hoe Lane Flansham PO22 8NP	Outline application with some matters reserved for the erection of 10 dwellings with access from Hoe Lane, Flansham (resubmission following Y/40/17/OUT). This application is a Departure from the Development Plan.	Refused (appealed)
273	Arun District Council	Y/77/19/OUT	Outline	03/04/2020	Land south of Hoe Lane Flansham PO22 8NP	Application for Outline Planning Permission for erection of ten dwellings with access from Hoe Lane. Resubmission of Y/20/18/OUT - This is a Departure from the Development Plan	Refused
274	Arun District Council	Y/32/17/OUT	Outline	18/04/2018	Land at Southern end of Cinders Lane Yapton BN18 0JJ	Application for outline planning permission for development of up to 19 dwellings with all matters reserved. This is a Departure from the Development Plan.	App Cond with S106
275	Arun District Council	Y/26/20/RES	Reserved Matters	18/05/2020	Land at the Southern End of Cinders Lane Cinders Lane Yapton BN18 0JJ	Approval of reserved matters following the grant of Y/32/17OUT for the erection of 19 No. dwellings This application also lies within the parish of Climping & affects a Public Right of Way.	ApproveConditionally
276	Arun District Council	Y/5/17/OUT	Outline	31/08/2018	Cinders Nursery & Land R/O Cinders Lane Yapton BN18 0JJ	Outline application for 51no. dwellings with all matters reserved except for access. This application is a Departure from the Development Plan.	App Cond with S106
277	Arun District Council	Y/4/19/RES	Reserved Matters	21/08/2019	Cinders Lane Nursery & works to R/O Cinders Lane Yapton BN18 0JJ	Approval of reserved matters following outline consent Y/5/17/OUT for 51 No. dwellings. This application affects a Public Right of Way.	ApproveConditionally
278	Arun District Council	Y/1/17/OUT	Outline	07/12/2017	Bonhams Field Main Road Yapton BN18 0DX	Outline Application with some matters reserved for the erection of 56 No. dwellings with associated open space and creation of new access. This application is a Departure from the Development plan & affects the character & appearance of the Yapton (Main Road) Conservation Area.	App Cond with S106
279	Arun District Council	Y/63/19/RES	Reserved Matters	21/02/2020	Bonhams Field Main Road Yapton BN18 0DX	Approval of reserved matters following the grant of Y/1/17/OUT for 56 No. dwellings with associated open space & creation of new access. This application affects the character & apperance of the Yapton (Main Road) Conservation Area & affects the setting of listed buildings.	ApproveConditionally

280	Arun District Council	Y/98/20/PL	Full	29/12/2020	Bonhams Field Main Road Yapton BN18 0DX	Erection of 75 No. dwellings with associated parking, public open space & the creation of a new vehicular access. This application affects the character & appearance of the Main Road/Church Road Conservation Area & affects the setting of listed buildings.	Undecided
281	Arun District Council	Y/98/18/RES	Reserved Matters	17/09/2019	Land off Burndell Road Yapton	Approval of reserved matters (access, appearance, landscaping, layout and scale) following outline permission Y/19/16/OUT for 108 residential dwellings, with associated parking, road/footway/cycleway provision, open space, landscaping, surface water attenuation and ancillary works.	ApproveConditionally
282	Arun District Council	Y/62/18/OUT	Outline	27/06/2019	Clays Farm North End Road Yapton BN18 0DT	Outline application with some matters reserved (appearance, landscaping, layout & scale) for 33 No. residential dwellings, access, landscaping & associated works. This application is a Departure from the Development Plan.	Refused (appealed)
283	Arun District Council	Y/83/19/OUT	Outline	31/03/2020	Clays Farm North End Road Yapton BN18 0DT	Outline application with some matters reserved for the erection of 33 No. dwellings, access roads, landscaping & associated works (resubmission following Y/62/18/OUT). This application is a Departure from the Development Plan.	App Cond with S106
284	Arun District Council	Y/49/18/PL	Full	07/03/2019	Land East of North End Road Yapton	Development of 10No. residential properties & associated infrastructure. This application is a Departure from the Development plan	ApproveConditionally
285	Arun District Council	Y/121/19/PL	Full	30/07/2020	The Steddles North End Road Yapton BN18 0DT	Demolition of existing dwelling & outbuildings & erection of 11 No. dwellings (net increase 10 units), access, landscaping & associated works.	ApproveConditionally
286	Arun District Council	Y/80/16/OUT	Outline	16/02/2017	Land to the South of Ford Lane East of North End Road Yapton	Outline application with some matters reserved for 4.5 hectares of residential development comprising 3.4 hectares of land for up to 100 dwellings (up to 30 (30%) affordable housing) together with 1.1 hectares of land set aside for public open space & strategic landscaping & 2.2 hectares of public open space and green corridors with vehicular access from Ford Lane & pedestrian/cycle access only from North End Road. Resubmission of Y/60/14/OUT. This application is a departure from the development plan, affects the character & appearance of the Church Lane Yapton Conservation Area & affects the setting of a listed building.	Refused (appealed)

287	Arun District Council	Y/82/20/RES	Reserved Matters	10/11/2020	Land to the south of Ford Lane and East of North End Road Yapton BN18 0DS	Approval of reserved matters following outline consent Y/80/16/OUT for 4.5ha of residential development comprising of 3.4ha of land for the erection of 100 No. dwellings (up to 30 (30%) affordable housing) together with 1.1ha of land set aside for public open space, strategic landscaping, 2.2ha of public open space, green corridors with vehicular access from Ford Lane & pedestrian/cycle access only from North End Road (resubmission following Y/19/20/RES). This application may affect the setting of listed buildings, affects the character & appearance of the Church Lane, Yapton Conservation Area & affects a Public Right of Way. This site falls within Strategic Site SP2 (Zero Rated).	ApproveCondition ally
288	Arun District Council	Y/92/17/OUT	Outline	31/05/2019	Land east of Drove Lane Yapton BN18 0EB	Outline application with all matters reserved save access, for up to 300 dwellings, link road, surface drainage, open space and landscaping. Departure from the Development Plan and Access route is within the Yapton (Main Road) Conservation Area.	App Cond with S106
289	Arun District Council	Y/78/20/RES	Reserved Matters	23/11/2020	Land East of Drove Lane Yapton BN18 0EB	Approval of reserved matters following outline consent Y/92/17/OUT for 300 No.dwellings covering landscape, layout, public open space, drainage, scale & external appearance. This application affects the setting of listed buildings, affects the character & appearance of the Main Road/Church Road, Yapton Conservation Area & affects a Right of Way. This site falls within Strategic Site SD7 (Zero Rated).	Undecided
290	Arun District Council	Y/70/20/OUT	Outline	11/11/2020	Land East of Bilsham Road & land adjacent to Little Meadow Bilsham Road Yapton	Outline application with access for 81 No. new dwellings including 18 self-build plots (but retaining Oak Trees & Little Meadow dwellings), 3 No. new light industrial buildings as part of an enlarged employment site, Public Open Space & a new Village Hall. The existing junction of Grevatts Lane West & Bilsham Road will be closed & Grevatts Lane West diverted to a new access point to the South. This application may affect the setting of Grade II Listed Buildings & is a Departure from the Development Plan.	Refused
291	Arun District Council	Y/19/16/OUT	Outline	08/09/2016	Land off Burndell Road Yapton	Outline application for the development of a maximum of 108 No. residential dwellings, vehicular access from Burndell Road, public open space, ancillary works & associated infrastructure. This application is a Departure from the Development plan	Called In by DCLG/SD (Appealed)
292	Arun District Council	Y/91/17/OUT	Outline	04/04/2019	Land at Bilsham Road Yapton	Outline application for the development of up to 250 residential dwellings (Class C3), vehicular access, public open space, ancillary works and associated infrastructure. Departure from the Development Plan	App Cond with S106

293	Arun District Council	Y/56/15/OUT	Outline	05/11/2015	Land at & West of Kings Close Yapton	Outline application for proposed mixed use development comprising 5 No.3 bedroom houses, 4 No. 2 bedroom houses & 1 No. 1 bedroom flat over car ports together with 4 No. B1 workshop/business units all with parking & access to main road via a redefined alignment of Kings Close & Highway improvement works at existing crossover.	App cond with S106
294	Arun District Council	Y/36/15/PL	Full	05/02/2016	Land at Long Acre Field Maypole Lane Yapton	Erection of new glasshouse, reservoir and associated buildings. This application affects a Public Right of Way.	Withdrawn (Appealed)
295	Arun District Council	Y/4/17/T	Full	13/02/2017	A259 Highway Verge Worms Lane, Grevatt's Lane & Croockthorn Lane Between jct Felpham Relief Road & Climping	Removal of various species of multiple trees along the highway verge as part of a cycle path scheme. This Application also falls within the parishes of Felpham & Climping.	Withdrawn
296	Arun District Council	Y/48/18/PL	Full	12/12/2018	Maggie's Meadow Hoe Lane Bognor Regis PO22 8NS	Installation of water treatment plant. This application is a Departure from the Development Plan.	ApproveCondition ally
297	Adur and Worthing District Council	AWDM/1701/15	Regulation 3	18/05/2016	Unit 1-2 37 Chartwell Road, Lancing Business Park, Lancing, West Sussex, BN15 8TU	West Sussex County Council Reg 3 Application (ref: WSCC/724/15/L) for consultation only for variation of conditions 2, 3, 14 and 17 of planning permission L/127/98 to regularise external operational practices (including the external storage of recycled materials) and siting of external plant and equipment.	Application Permitted
298	Adur and Worthing District Council	AWDM/0267/17	Full Planning Application	27/04/2017	Glaxo Smithkline, Southdownview Way, Worthing, West Sussex, BN14 8QH	Provision of replacement temporary Biotechnology Development Labs using a single storey modular building in land north of Building 19D	Application Withdrawn
299	Adur and Worthing District Council	AWDM/1199/15	Full Planning Application	22/02/2016	22 Sompting Road, Worthing, West Sussex, BN14 9EP	Demolition of existing buildings and erection of industrial/distribution units comprising Unit 1 (sui generis builders' merchant for display, sale, storage of building, timber and plumbing supplies, plant and tool hire including outside display and storage); Unit 2 and 3 (Class B8 with trade counter and ancillary showroom); and Unit 4 (Class A1 cafe/sandwich	Application Permitted

300	Adur and Worthing District Council	AWDM/0844/15	Full Planning Application	25/09/2015	Land South of 1-8 Field Place Parade, The Causeway, Worthing, East Sussex	Mixed Use redevelopment of the Former Lloyds PLC Banking Hall Site, comprising 81 apartments (Use Class C3) and a 611sqm flexible commercial space (Use classes A1, A2, A3, D1 and B1) arranged as part 5, part 6 and part single storey block around courtyard, together with associated works to access roads, including Field Place Parade, provision	Application Permitted
301	Adur and Worthing District Council	AWDM/1264/20	Outline application with all matters reserved	n/a	Land North West of Goring Railway Station, Goring Street, Worthing, West Sussex	Mixed use development comprising up to 475 dwellings along with associated access, internal roads and footpaths, car parking, public open space, landscaping and local centre (uses including A1, 2, 3, 4, 5, D1, 2, as proposed to be amended to use classes E, F and sui generis) with associated car parking, car parking for the adjacent railway station,	Awaiting decision - validated 10/08/2020
302	Adur and Worthing District Council	AWDM/1633/16	Full Planning Application	10/03/2017	The Aquarena, Brighton Road, Worthing, West Sussex, BN11 2EN	Demolition of the former Worthing Aquarena and car park. Erection of 141 residential apartments within blocks ranging from 4-15 storeys in height, including affordable housing, a 641sqm (unspecified use class) commercial unit, a 138sqm Pavilion/Café, public and private open space, 172 resident's parking spaces and 51 public car parking spaces, with	Application Permitted
303	Adur and Worthing District Council	AWDM/1529/18	Full Planning Application	17/01/2019	19-23 South Street, Worthing, West Sussex, BN11 3AN	The creation of 45 new residential apartments through the extension and change of use of the existing buildings including three additional storeys to Liverpool Buildings, elevation balconies at second and third floor levels and roof terrace at fourth floor. New shopfronts and external alterations to the elevation of Liverpool Buildings. New	Application Permitted
304	Adur and Worthing District Council	AWDM/1763/18	Full Planning Application	01/05/2016	105-109 Montague Street, Worthing, West Sussex, BN11 3BP	Demolition of existing building and redevelopment set over 4no. Floors, comprising A1 retail floor space and ground floor, 26no 1,2 and 3 bedroom units with communal courtyard and balconies at 1st floor to West elevation, cycle store, underground surface-water tanks and associated landscaping	Application Permitted
305	Adur and Worthing District Council	AWDM/0461/20	Outline Application	n/a	Union Place Car Park, Union Place, Worthing, West Sussex	Application under Regulation 3 for Outline planning permission (with all matters reserved except for access) for the construction of mixed-use development comprising residential units, commercial floorspace, hotel, cinema and associated car parking, cycle parking, public realm and landscaping. (Revised Plans)	Awaiting decision - application validated 17/03/2020
306	Adur and Worthing District Council	AWDM/1018/20	Full Planning Application	n/a	Development Site at 31-35 Montague Street, Worthing, West Sussex	External alterations to the existing building together with change of use of 2nd and 3rd floor from retail (Use Class A1), roof extension at 3rd floor and four storey rear extension to provide 14 residential units (Use Class C3) comprising 1 x studio, 7 x 2 beds and 1 x 3 bed with associated external amenity areas and cycle and refuse stores (31-35 Montague	Awaiting decision - application validated 08/07/2020
307	Adur and Worthing District Council	AWDM/1542/16	Full Planning Application	27/04/2017	112-114 Chapel Road, Worthing, West Sussex, BN11 1NX	Proposed demolition of existing buildings (Bunces Home Hardware Store) and construction of a mixed-use development comprising 32no. Residential dwellings and 235 sqm (GIA) commercial floorspace with the potential for A1, 2, B1a/b and D1 in the form of a part 3, 4 and 5 storey building together with associated parking, landscaping and re-location of	Application Permitted

308	Adur and Worthing District Council	AWDM/0325/19	Full Planning Application	n/a	Development Site at former Teville Gate Car Park and Land to the West of Teville Road, Worthing, Sussex	Redevelopment with a mixed use scheme comprising three blocks of 378 residential units, 83-bedroom hotel (3,684 sqm), a foodstore (A1) (1,852sqm), gym (D2) (1,426sqm), in addition to retail, restaurant and café uses (A1,2,3,4&5) (999sqm)and associated infrastructure including 307 parking spaces, 352 cycle parking spaces, service areas, public realm	Awaiting decision - application validated 04/03/19
309	Adur and Worthing District Council	AWDM/1794/19	Change of use	04/03/2020	Development Site at part of first floor Guildbourne Centre, Worthing, West Sussex	Change of use of 1st floor premises from Class A1 to mixed B1a/D1/D2 use to accommodate a flexible working space, conference centre, church and general community space, run by the Jubilee Community Church Charity	Application Permitted
310	Adur and Worthing District Council	AWDM/0805/20	Full Planning Application	01/10/2020	Site of Clinic and Lane Plus at Car Park West of Assembly Hall, Stoke Abbott Road, Worthing, West Sussex	Demolition of Central Clinic (D1) and erection of an integrated Care Centre (D1) up to 4 storeys in height plus rooftop plant and a multi-storey car park (6 levels of parking)	Application Permitted
311	Adur and Worthing District Council	AWDM/0620/15	Full Planning Application	29/02/2016	32 Chartwell Road, Lancing Business Park, Lancing, West Sussex	Redevelopment of west part of site with 8 industrial units for use classes B1, 2 and 8 with associated parking, turning and access	Application withdrawn
312	Adur and Worthing District Council	AWDM/0621/15	Full Planning Application	22/07/2015	32 Chartwell Road, Lancing Business Park, Lancing, West Sussex	Replace existing unit with new storage and distribution warehouse with ancillary offices (B8) in addition to vehicle wash and fuel island and associated lorry and vehicle parking and new access road	Application permitted
313	Adur and Worthing District Council	AWDM/1782/15	Full Planning Application	01/03/2016	32 Chartwell Road, Lancing Business Park, Lancing, West Sussex	Replace existing unit with new storage and distribution warehouse with ancillary offices (B8) in addition to vehicle wash and fuel island and associated lorry and vehicle parking and new access road	Application permitted
314	Adur and Worthing District Council	AWDM/0130/17	Variation of condition	22/03/2017	32 Chartwell Road, Lancing Business Park, Lancing, West Sussex	Variation of approved AWDM/1782/15 condition 6 (approved plans) to modify curved roof to hybrid straight and curved roof; projecting office element to be absorbed into the main warehouse configured as 3 storeys within the warehouse	Application permitted
315	Adur and Worthing District Council	AWDM/1217/20	Full Planning Application	n/a	Development site at 85 to 89 Brighton Road, Lancing, West Sussex	Demolition of existing care home and associated buildings at 85-87 Brighton Road along with the dwelling at 89 Brighton Road and the erection of a new three storey plus basement (C2) care home, associated parking and residents gardens.	Awaiting decision - application validated 11/09/2020

316	Adur and Worthing District Council	AWDM/1883/15	Discharge of conditions	04/10/2016	Sir Robert Woodard Academy, 44 Upper Boundstone Lane, Sompting, West Sussex, BN15 9QZ	Construction of floodlit artificial multi-games pitch with sprint track and long jump pit and associated landscaping. (Discharge of condition 14)	Application Permitted
317	Adur and Worthing District Council	AWDM/0098/18	Full Planning Application	24/04/2018	Land south of units 1-7 Lady Bee Industrial Park, Albion Street, Southwick, West Sussex	Erection of 14 commercial units in three blocks for use classes B1 and B8 with associated car parking, cycle storage and landscaping	Application Permitted
318	Adur and Worthing District Council	AWDM/1979/19	Outline Application	n/a	HM Revenues and Customs, Barrington Road, Worthing, East Sussex, BN12 4XL	Outline planning permission for the demolition and phased, comprehensive, residential-led development for a maximum of 287 dwellings (C3), of which up to 140 would be houses and up to 158 would be apartments/retirement apartments. Provision of a 68 bedroom care home (C2). Provision of car parking, landscaping and associated works.	Awaiting decision - application validated 20/01/2020
319	Adur and Worthing District Council	AWDM/0124/15	Discharge of conditions	13/10/2016	MGM House, Heene Road, Worthing, West Sussex, BN11 4NN	Demolition of main MGM office building together with new offices in Heene Place and replacement by redesigned and repositioned new part four and part five storey buildings on main part of site, arranged around a central courtyard and including new block on Heene Road frontage to provide 33 retirement flats (C3) and 59 unit Assisted Living Extra Care	Application Permitted
320	Adur and Worthing District Council	AWDM/0146/17	Full Planning Application	07/11/2017	Sussex Clinic 44-48 Shelley Road, Worthing, West Sussex, BN11 4BX	Demolition of existing 40-bedroom care home and redevelopment of site with new 62-bedroom residential care home (C2) on three levels including basement with inner courtyard area, landscaping to rear and associated parking area on frontage with Shelley Road	Application Permitted
321	Adur and Worthing District Council	AWDM/1743/19	Full Planning Application	17/03/2020	Sussex Clinic 44-48 Shelley Road, Worthing, West Sussex, BN11 4BX	Demolition of existing building and construction of 50 bedroom care home with associated facilities, hard and soft landscaping including new access arrangements from Shelley Road	Application Permitted
322	Adur and Worthing District Council	AWDM/1614/15	Full Planning Application	01/06/2016	Foreshore North of Adur Outdoor Activities Centre and east and west of River Adur, Brighton Road, Shoreham-by-Sea, West	Improvements to 1.8km of tidal defences on the east bank between Coronation Green and the A27 road bridge and 5.4km of defences on the west bank between Shoreham Old Fort and Shoreham Toll Bridge. Proposed development (referred to as the Shoreham Adur Tidal Walls scheme) consists of seven reaches on the west bank (designated E1-E3	Application Permitted
323	Adur and Worthing District Council	AWDM/0614/16	Change of Use	13/06/2016	Land South East Corner of Amberley Drive, Marine Drive, Worthing, West Sussex	Change of use of land to caravan and camping site with 46 pitches. Erection of amenity block building comprising toilets and showers, laundry room, store, office and reception. Construction of vehicular crossover and provision of parking and bin storage area.	Application Refused

324	Adur and Worthing District Council	AWDM/1093/17	Outline application	27/12/2019	Shoreham Airport, Cecil Pashley Way, Shoreham (Brighton City) Airport, Lancing, West Sussex. BN43 5FF	Outline planning permission for the erection of new commercial buildings to provide up to 25000m2 of floorspace for light industrial (B1c), general industrial (B2) and storage and distribution (B8) with access, landscaping and associated infrastructure (including a new pumping facility on the River Adur). This application is accompanied by	Application Permitted
325	Adur and Worthing District Council	AWDM/0759/16	Full Planning Application	04/08/2016	Land north and east of Brighton and Hove Albion Training Ground, Marsh Barn Lane, Lancing, West Sussex	Formation of a landscaped bund (north of training ground) and provision of an access (for maintenance vehicles only) to the Ground Maintenance Building and Community Pitch from Marsh Barn Lane (with access for construction traffic to be from A27).	Application Permitted
326	Adur and Worthing District Council	AWDM/0961/17	Hybrid Application	04/02/2020	Land east of Shadwells Road at Marsh Barn Estate, Marsh Barn Lane, Lancing, West Sussex	Hybrid planning application seeking (1) full planning permission for the demolition of existing buildings and erection of 249 dwellings with temporary access via Grinstead Lane, a Country Park, relocation and extension of the Withy Patch Gypsy and Traveller site, permanent access via a new roundabout on the A27, landscaping, two additional football	Application Permitted
327	Adur and Worthing District Council	AWDM/1751/20	Variation of Conditions	n/a	Land east of Shadwells Road at Marsh Barn Estate, Marsh Barn Lane, Lancing, West Sussex	Application to vary condition 1 of previously approved AWDM/0961/17: Minor material amendment to the approved Pumping Station to incorporate a sub-station	Awaiting decision - application validated 22/10/2020
328	Adur and Worthing District Council	AWDM/0636/16	Reserved Matters	n/a	Land north of Fulbeck Avenue, Worthing, West Sussex	Application for approval for reserved matters pursuant to outline planning permission WB/11/275/OUT relating to strategic roads, drainage, landscape, recreation areas and community uses for Parcel Area 1B of development of land north of Fulbeck Avenue, West Durrington	Awaiting decision - application validated 21/04/2016
329	Adur and Worthing District Council	AWDM/1882/16	Outline Application	18/12/2019	Land to the South and East of the Coach and Horses, Arundel Road, Worthing, West Sussex	Outline application for up to 240 dwellings with associated vehicular, pedestrian and cycle routes; parking; service infrastructure and sustainable drainage features; and strategic landscaping including noise bund/attenuation to the A27; all vehicular access to be via the strategic development to the south	Application Permitted
330	Adur and Worthing District Council	AWDM/0166/20	Regulation 4	n/a	Land site west of Fulbeck Avenue, Northbrook, Worthing, West Sussex	Application under Regulation 14 for full planning permission for the erection of 152 apartments including 30% affordable provision, consisting of 51 no 1 bed apartments and 101 no. 2 bed apartments, with associated car and cycle parking, open space, landscaping and new access at land to the West of Fulbeck Avenue	Awaiting decision - application validated 30/01/2020
331	Adur and Worthing District Council	AWDM/1375/17	Full Planning Application	17/10/2017	Land south of Loose Lane, Sompting, West Sussex	Restoration of upper section of the Broadwater Brook tributary of the Teville Stream involving the excavation of a new channel, construction of three slit traps, part infill of existing channel and restoration of surrounding land.	Application permitted

332	Adur and Worthing District Council	AWDM/0444/19	Removal of Conditions	14/05/2019	Land south of Loose Lane, Sompting, West Sussex	Removal of conditions 4 (surface water and pollution prevention) and 5 (archaeology) approved AWDM/1375/17 (Restoration of upper section of the Broadwater Brook tributary of the Teville Stream involving the excavation of a new channel, construction of three silt traps, part infill of existing channel and restoration of surrounding land)	Application permitted
333	Adur and Worthing District Council	AWDM/1200/15	Reserved Matters	06/11/2015	Southlands Hospital, Upper Shoreham Road, Shoreham-by-Sea, West Sussex, BN43 6TQ	Application for reserved matters for approval of appearance, landscaping, layout and scale pursuant to outline planning permission AWDM/1340/14 which provides for the demolition of all existing redundant buildings and structure (including harness block) and the erection of up to 106 dwellings with associated landscaping and amenity	Application Permitted
334	Adur and Worthing District Council	AWDM/1880/15	Full Planning Application	14/11/2019	Ontime Rescue and Recovery, 50 Dolphin Road, Shoreham-by-Sea, West Sussex, BN43 6PB	Demolition of existing buildings and construction of new commercial building providing circa 2,450sqm of B2 floorspace and circa 1,000sqm of B1a floorspace within a three storey building, with associated parking, plant room and landscaping	Application Withdrawn
335	Adur and Worthing District Council	AWDM/1282/17	Full Planning Application	20/11/2017	Civic Centre, Staff Car Park, Ham Road, Shoreham-by-Sea, West Sussex	Erection of four storey office development with associated car parking and landscaping	Application Permitted
336	Adur and Worthing District Council	AWDM/0709/18	Full Planning Application	05/03/2019	85-89 Brighton Road, Shoreham-by-Sea, West Sussex, BN43 6RF	Demolition of existing clubhouse for Sussex Yacht Club and reconfiguration of site including the erection of new clubhouse on south-east part of site with car park to north-east part of site and boatyard and workshops/stores on west part of the site. Realignment of vehicular access, new pedestrian entrance from west and associated landscaping	Application Permitted
337	Adur and Worthing District Council	AWDM/1006/16	Reserved Matters	24/03/2017	Riverbank Business Centre, 39 Old Shoreham Road, Shoreham-by-Sea, West Sussex	Reserved matters pursuant to outline planning permission AWDM/0935/13 dated 16.06.2015 for the comprehensive, mixed use development of general industrial land at the Riverbank Business Centre and nos. 12-18 Old Shoreham Road - including reserved matters relating to details of appearance, layout, scale and landscaping for the delivery	Application Permitted
338	Adur and Worthing District Council	AWDM/0220/18	Full Planning Application	01/06/2018	Land north of Tesco Store, Fulbeck Way, Worthing, West Sussex	Relocation of New Life Church from Salvington Road to corner of Fulbeck Avenue and Fulbeck Way to provide newplace of worship comprising 250 seat auditorium, chapel and ancillary accommodation, 42 car parking spaces, motorcycle and cycle parking.	Application Permitted
339	Horsham	DC/18/2122	Hybrid	10/06/2019	Land North of Hilland Farm Stane Street Billingshurst West Sussex RH14 9HN	A Hybrid Planning application comprising: Detailed planning permission for up to 4,998sqm of B1c,B2 and B8 use floorspace, roundabout access junction from the A29, access, parking, servicing areas and associated landscaping (phase 1). Outline planning permission for up to 14,075sqm of B1c, B2 B8 use floorspace, petrol filling station with ancillary retail	Approved with conditions

340	Horsham	DC/17/2481	Outline	04/10/2018	Land To The West of Phase 1 Kilnwood Vale Crawley Road Faygate West Sussex	Outline planning application for the development of approximately 227 dwellings (between 204 and 250 dwellings) with the construction of a new access from Calvert Link, a pumping station and associated amenity space (all matters reserved except for access).	Approved with conditions
341	Horsham	DC/18/2745	Outline	03/04/2019	Land West of Long Barn House Bolney Road Cowfold West Sussex	Outline planning application for the erection of up to 110 residential dwellings (including 35% affordable housing) introduction of structural planting and landscaping, informal public open space, surface water flood mitigation and attenuation, vehicular access point from the A272 Bolney Road and associated ancillary works. All matters to be reserved	Refused
342	Horsham	DC/16/2952	Outline	29/03/2017	Land West of Long Barn House Bolney Road Cowfold West Sussex	Outline planning application for the erection of up to 110 dwellings with public open space, landscaping and sustainable drainage system (SuDS) and vehicular access point from Bolney Road. All matters reserved except for means of access.	Refused
343	Horsham	DC/20/0470	Outline	29/07/2020	Land South of Newhouse Farm Old Crawley Road Horsham West Sussex RH12 4RU	Outline application for the erection of 473 dwellings, with new access provided off the Crawley Road, with associated areas of open space and landscaping. All matters reserved apart from access	Refused
344	Horsham	DC/18/2687	Outline	11/02/2020	Former Novartis Site Parsonage Road Horsham West Sussex	Outline planning application for the erection of up to 300 dwellings (C3) including the conversion of existing offices buildings 3 and 36) up to 25,000sqm of employment (B1) floorspaces and provision of 618sqm of flexible commercial/community space (A1 A2 A3 D1 Creche) use classes) within the ground floor of converted building 36. Improvements to	Approved with conditions
345	Horsham	DC/16/1677	Outline	01/03/2018	Land North of Horsham Horsham West Sussex	Outline planning application with all matters reserved except access for a mixed use strategic development to include housing (up to 2,750 dwellings), business park (up to 46,450 m2), retail, community centre, leisure facilities, education facilities, public open space, landscaping and related infrastructure	Approved with conditions
346	Horsham	DC/16/0731	Outline	25/10/2016	Land North East of Glebelands Pulborough West Sussex RH20 2GN	Outline planning application with all matters reserved except for means of access from Glebelands, for residential development of up to 100 dwellings, new internal access road (to include the re-alignment of Drovers Lane) and associated infrastructure	Refused
347	Horsham	DC/20/0695	Outline	07/07/2020	Rascals Farm Shipley Road Southwater Horsham West Sussex RH13 9BG	Outline application for the erection of up to 100 residential units with all matters reserved except access (excluding internal estates roads)	Refused (Appeal Lodged)

348	Horsham	DC/19/1723	Outline	09/07/2020	Land at Lyons Farm Lyons Road Slinfold West Sussex RH12 3LN	Outline application for the erection of a continuing care retirement community with new means of site access onto A264 Five Oaks Road (indicative proposals for 17 extra care bungalows; 82 extra care cottages; 88 extra care apartments; 60 bed care home (nursing and high dependency residential care); 32 bed specialist dementia care home;	Refused
349	Horsham	DC/18/0630	Outline	01/05/2018	Brackensfield Farm Guildford Road Broadbridge Heath RH12 3PN	Outline application for the development of up to 11241.27 square metres for B1C, B2 and B8 employment uses with ancillary offices, car parking, drainage works and landscaping. All matters reserved except access.	Withdrawn
350	Horsham	DC/17/2131	Outline	27/02/2019	Nowhurst Business Park Guildford Road Broadbridge Heath West Sussex	Outline application for the development of up to 26,942 sq m (gross internal area) for B1c (industrial processes), B2 (general industrial) and B8 (storage and distribution) employment uses with ancillary offices, car parking, associated drainage works, landscaping and service yard areas. All matters reserved except for access.	Approved with conditions
351	Horsham	DC/16/2941	Outline	02/06/2017	Nowhurst Business Park Guildford Road Broadbridge Heath West Sussex	Development of up to 27,882 sqm (gross internal area) for B1c (industrial processes), B2 (general industrial) and B8 (storage and distribution) uses with ancillary offices, car parking and service yard areas with associated drainage works, site re-profiling, and landscaping (outline application with all matters reserved except access)	Refused
352	Horsham	DC/16/2941	Outline	16/05/2017	Rapkyns Care Centre B Guildford Road Broadbridge Heath West Sussex	Outline application for a care village comprising: a 42-bed special care unit with 32 staff bed spaces in the roofspace, three 10-bed special care units, each with 8 staff bedspaces, a 74-bed care home with 7 staff bed spaces, GP surgery with one consulting and 3 treatment rooms., nursery with 52 full time equivalent place day nursery for children from the 6	Withdrawn
353	Horsham	DC/17/1430	Outline	28/09/2017	Land at Fryern Road Storrington West Sussex RH20 4BQ	Outline planning application for the erection of up to 160 dwellings with public open space, associated landscaping and sustainable drainage system (SuDS). Vehicular access point from Fryern Road. All matters reserved except for access.	Refused
354	Horsham	DC/16/0572	Outline	30/06/2016	Land at Fryern Road Storrington West Sussex RH20 4BQ	Outline planning permission for up to 160 dwellings (35% affordable), planting and landscaping, informal open space, children's play area, surface water attenuation, vehicular access point from Fryern Road and associated ancillary works. All matters to be reserved with the exception of the main site access	Refused (Appeal Withdrawn)
355	Horsham	DC/15/2374	Outline	20/01/2016	Land at Storrington Road Thakeham West Sussex	Outline planning permission for up to 107 dwellings (including up to 40% affordable housing), informal public open space and children's play area, surface water attenuation, landscaping, vehicular access point from Storrington Road and associated ancillary works. All matters to be reserved with the exception of the main site access.	Refused (Appeal Withdrawn)

356	Horsham	DC/18/1814	Outline	19/12/2018	Dunstans Farm Shermanbury Road Partridge Green Horsham West Sussex RH13 8EU	Outline planning application for the erection of up to 120 dwellings with public open space, landscaping and sustainable drainage system with vehicular access point from Shermanbury Road. All matters to be reserved, except for means of access.	Refused
357	Horsham	DC/16/2945	Outline	23/03/2017	Land North of Shermanbury Road Partridge Green West Sussex RH13 8EU	Outline planning application for the erection of up to 120 dwellings with public open space, landscaping and sustainable drainage system (SuDS) with vehicular access point from Shermanbury Road, RH13 8EU. All matters to be reserved, except for means of access.	Refused
358	Horsham	DC/16/2064	Outline	15/11/2016	and North of The Rosary Partridge Green West Sussex	Development of 101 dwellings, with associated access, parking and landscaping (outline application with all matters reserved except access)	Withdrawn
359	Chichester	16/03791/OUT	Outline	08/11/2018	Phase 2 Of The Westhampnett/North East Chichester SDL Land North East Of Graylingwell Park Chichester West Sussex	Residential development comprising up to 200 no. dwellings, including an element of affordable housing, associated landscaping and open space, Lavant Valley Linear Greenspace, surface water attenuation and ancillary works and vehicular access from the area known as 'Phase 4 of the Graylingwell Park development.'	Approved with conditions
360	Chichester	15/00743/OUT	Outline	29/01/2016	Land South Of Graylingwell Drive Chichester West Sussex	Demolition of existing hospital buildings and development of up to 160 new homes including retention and improvement of sports pitch/open space, new pavilion and children's play area; restoration of Martin's Farm house for residential use (included in 160 unit total); access arrangements and ancillary works and demolition of pavilion.	Approved with conditions
361	Chichester	20/01826/FUL	Full	n/a	Land Adjoining A27 Scant Road West Hambrook Chidham West Sussex PO18 8UA	Erection of 118 dwellings (including 35 affordable dwellings) accessed via Broad Road, and the provision of public open space, landscaping and associated works at Rose Briar Copse, Land East of Broad road, Hambrook.	Awaiting decision
362	Chichester	19/02840/FULEIA	Hybrid	n/a	Medmerry Park Stoney Lane Earnley Chichester West Sussex PO20 7JP	Hybrid planning application - Full application for the redevelopment of Medmerry Park to provide 518 static holiday caravans and lodges in lieu of 308 holiday bungalows and associated works including drainage, landscaping, habitat enhancement areas, access roads, footpaths and a comprehensive flood defence scheme including bund. Outline planning	Awaiting decision
363	Chichester	20/02675/OUT	Outline	n/a	Field South Of Raughmere Drive Lavant West Sussex	Outline Application with all matters reserved (except for access) for the development of 140 dwellings, public open space, landscaping, parking and associated works.	Awaiting decision

364	Chichester	20/02471/FUL	Full	n/a	Land At The Corner Of Oving Road And A27 Chichester PO20 2AG	Erection of 143 dwellings, with associated access, parking, public open space, landscaping, extension to residential curtilages of existing properties along Oving Road and other associated works.	Awaiting decision
365	Chichester	19/01951/FUL	Full	12/06/2020	Land At The Corner Of Oving Road And A27 Chichester PO20 2AG	Erection of 143 dwellings, with associated access, parking, public open space, landscaping, extension to residential curtilages of existing properties along Oving Road and other associated works.	Refused
366	Chichester	19/00619/FUL	Full	n/a	Former Fuel Depot Bognor Road Chichester West Sussex PO20 1EJ	Outline planning application with all matters reserved except Access for the mixed-use redevelopment of the site, comprising of Class B1(c)/B2/B8 (with ancillary Trade Counter) employment, a Hotel, Class D2 Leisure, Class A3, A3/A4 and A3/A5 Food and Drink Establishments, together with associated car parking, landscaping and infrastructure	Awaiting decision
367	Chichester	16/02254/OUT	Outline	02/02/2017	Land To The South Of Oving Road/B2144 Shopwhyke West Sussex	Outline application for the development of the site to provide 100 no. dwellings (use class C3), with an associated access, parking, outdoor space, landscaping and infrastructure.	No decision within statutory timeframe (Permitted on Appeal)
368	Chichester	19/00321/FUL	Hybrid	09/12/2019	Land East Of Manor Road Manor Road Selsey West Sussex	Hybrid planning application - Phase 1 (Full application) comprising 119 residential dwellings, new access from Manor Road, public open space, landscaping and associated works. Outline planning application for Phase 2 for up to 74 dwellings and associated infrastructure (with all matters reserved).	Approved with conditions
369	Chichester	15/03524/OUTEIA	Outline	07/06/2016	Land North Of Stane Street Madgwick Lane Westhampnett West Sussex	Residential development comprising up to 300 residential dwellings, including an element of affordable housing, with vehicular access from Stane Street and Madgwick Lane, associated landscaping, a community facility, open space and children's play space, surface water attenuation and ancillary works.	Approved with conditions
370	South Downs District Council - Horsham	SDNP/19/04886/FUL	Full	24/04/2020	Land adjacent to Strawberry Villas Amberley BN18 9LX	Resubmission of planning application SDNP/18/05657/FUL for the development of 14 new residential dwellings consisting 2No. one bedroom and 3No. two bedroom apartments, 1No. two bedroom, 5 No. three bedroom, and 3 No. four bedroom dwellings; ecological corridors and landscape buffer, open space and landscaping.	Approved with conditions
371	South Downs District Council - Horsham	SDNP/18/05657/FUL	Full	12/04/2019	Land adjacent to Strawberry Villas Newland Gardens Amberley West Sussex	Development of 15 new residential dwellings consisting 2 no. one bedroom and 2 no. two bedroom apartments, 2 no. two bedroom, 6 no. three bedroom, 2 no. four bedroom and 1 no. five bedroom dwellings an ecological corridor and landscape buffer.	Refused

372	South Downs District Council - Chichester	SDNP/20/01693/ FUL	Full	17/07/2020	Cowdray Park A272 Easebourne St to Heath End Lane Easebourne West Sussex	Construction of 12 treehouses to provide tourism accommodation across 2 woodland sites within the estate (5 x 1 bedroom units at Lodge Wood and 7 x 1 bedroom units at High Field Copse), access and parking, cycle storage, drainage and biodiversity enhancements and woodland management.	Approved with conditions
373	South Downs District Council - Chichester	SDNP/19/03903/ FUL	Full	17/01/2020	Land at Superintendents Drive King Edward VII Estate Easebourne GU29 0FB	Erection of two terraces of 8 and 10 Class C3 dwellings respectively (18 units in total) with associated landscaping, parking, refuse storage and vehicular access from Superintendents Drive.	Refused
374	South Downs District Council - Chichester	SDNP/19/03904/ FUL	Full	17/01/2020	Land at Kings Green East King Edward VII Estate Easebourne GU29 0FB	Erection of 11 buildings comprising 93 dwellings (Use Class C3) and residents' ancillary facilities, landscaping, parking, internal roads, refuse storage and vehicular access from Scotland Lane.	Refused
375	South Downs District Council - Chichester	SDNP/19/03904/ FUL	Full	11/01/2016	King Edward VII Hospital Kings Drive Easebourne West Sussex GU29 0BJ	Change of use of land previously consented for 79 assisted care living units (C2) and a redesign of 1 private residential dwelling (C3) under 11/03635/FUL to 54 residential units (C3) including underground and surface parking, access roads and drives, landscaping and associated infrastructure.	Approved with conditions
376	South Downs District Council - Chichester	SDNP/19/00913/ FUL	Full	21/10/2020	Former Syngenta Site Henley Old Road Fernhurst West Sussex GU27 3JE	Construction of up to 210 dwellings (Use Class C3) and 233sqm of café (Use Class A3), retail (Use Class A1) and community use (Use Class D1 / D2) buildings, retention of existing Pagoda building and associated commercial use (Use Class B1) and landscaping and associated access and parking works, following demolition of the Highfield building and	Approved with conditions
377	South Downs District Council - Arun	SDNP/19/01876/ FUL	Full	17/01/2020	Soldiers Field House Soldiers Field Lane Findon Worthing West Sussex BN14 0SH	Demolition of existing dwelling and construction of 12 dwellings, public open space, access, parking and landscaping and other associated works.	Refused (Appeal in progress)
378	South Downs District Council - Chichester	SDNP/20/03676/ FUL	Full	n/a	Land at Limbourne Lane and The Fleet Fittleworth West Sussex	Erection of 14 no. dwellings with associated access, parking and landscaping.	Awaiting decision
379	South Downs District Council - Chichester	SDNP/20/01855/ FUL	Full	n/a	Land South of Heather Close West Ashling West Sussex	Former paddock site to be developed with 17 new build houses (mix of 1, 2 and 3 beds) with associated parking and amenity space.	Awaiting decision

380	South Downs District Council - Chichester	SDNP/18/04918/ FUL	Full	06/10/2020	Land at Pook Lane Lavant West Sussex	The erection of 18 dwellings (including nine affordable units) accessed via Lavant Road (A286), the provision of open space, pedestrian link and community parking	Approved with conditions
381	South Downs District Council - Chichester	SDNP/18/03162/ FUL	Full	17/02/2020	EastMead Industrial Estate Midhurst Road Lavant West Sussex	Demolition of existing buildings and erection of 58 dwellings and 420sqm of Class B1 floorspace, with associated access and parking arrangements, landscaping and open space.	Refused (Appeal in progress)
382	South Downs District Council - Chichester	SDNP/18/03233/ FUL	Full	26/04/2019	Dundee House Bepton Road Midhurst West Sussex GU29 9LZ	Demolition of existing B1(c) industrial building with ancillary offices and erection of 16 No. retirement (over 55s) units with associated works	Approved with conditions
383	South Downs District Council - Chichester	SDNP/17/04155/ FUL	Full	18/06/2018	Land at Lamberts Lane Midhurst West Sussex GU29 9EA	Construction of 20 dwellings, access, landscaping and associated works.	Approved with conditions
384	South Downs District Council - Chichester	SDNP/17/01088/ OUT	Outline	16/06/2017	Land South of Barlavington Way Midhurst West Sussex GU29 9TG	An outline planning application for the erection of up to 20 open market and 12 affordable dwellings with associated residential curtilages, parking and turning areas, the provision of a new vehicular access road, the provision of a new combined pedestrian/cycleway, the provision of a new footpath along part of the former Chichester/Midhurst railway line	Refused
385	South Downs District Council - Chichester	SDNP/16/03850/ OUT	Outline	30/03/2017	Land at Stedham Saw Mills School Lane Stedham Midhurst West Sussex GU29 0NY	Outline planning application, with all matters reserved, for up to 2,746m2 of B1 (light industrial) employment development and associated car parking and access.	Approved with conditions
386	South Downs District Council - Horsham	SDNP/20/02161/ FUL	Full	n/a	Land to The East Valerie Manor Henfield Road Upper Beeding BN44 3TF	Demolition of redundant outbuildings and construction of proposed 30 bed Nursing Home (12 with en-suite showers and 18 with en-suite WC facilities) with associated facilities, additional parking and remodelled entrance to the site.	Awaiting decision
387	South Downs District Council - Horsham	SDNP/18/04995/ FUL	Full	14/03/2019	North Farm London Road (A24) Washington West Sussex RH20 4BB	Hybrid application (Part Full/Part Outline) for demolition of existing equestrian and agricultural buildings. Change of use of existing buildings and extension of existing Winery to provide enhanced storage, visitor facilities, retail and Cafe. New commercial floorspace (Use Classes B1 and B8), five self-contained holiday let units, closure of existing direct	Approved with conditions

388	Adur & Worthing	Policy 8: Shoreham Harbour Regeneration Area - (Adur	Housing	n/a	Shoreham Harbour Regeneration Area	Adur Local Plan 2017 - adopted on 14th Dec 2017.	n/a
389	Adur & Worthing	Policy 8: Shoreham Harbour Regeneration Area - (Adur	Employment	n/a	Shoreham Harbour Regeneration Area	Adur Local Plan 2017 - adopted on 14th Dec 2017.	n/a
390	Adur & Worthing	Policy 7: Shoreham Airport - (Adur Local Plan Part 2)	Employment	n/a	Shoreham Airport	Adur Local Plan 2017 - adopted on 14th Dec 2017.	n/a
391	Adur & Worthing	Policy 5: New Monks Farm - Adur Local Plan Part 2)	Employment	n/a	New Monks Farm	Adur Local Plan 2017 - adopted on 14th Dec 2017.	n/a
392	Adur & Worthing	Policy 5: New Monks Farm - Adur Local Plan Part 2)	Housing	n/a	New Monks Farm	Adur Local Plan 2017 - adopted on 14th Dec 2017.	n/a
393	Adur & Worthing	Policy 6: Land at West Sompting - (Adur Local Plan Part 2)	Housing	n/a	West Sompting	Adur Local Plan 2017 - adopted on 14th Dec 2017.	n/a
394	Adur & Worthing	Policy 1: West Durrington	Housing	n/a	West Durrington	Worthing Core Strategy 2011 - adopted 12th April 2011.	n/a
395	Adur & Worthing	SP3 - Development Sites	Housing	n/a	Caravan Club	Reg 18 Draft Worthing Local Plan 2016-2033 - Emerging	n/a

396	Adur & Worthing	SP3 - Development Sites	Housing	n/a	Land West of Fulbeck Avenue	Reg 18 Draft Worthing Local Plan 2016-2033 - Emerging	n/a
397	Adur & Worthing	SP3 - Development Sites	Housing	n/a	Land at Upper Brighton Road	Reg 18 Draft Worthing Local Plan 2016-2033 - Emerging	n/a
398	Adur & Worthing	SP3 - Development Sites	Employment	n/a	Broadwater	Reg 18 Draft Worthing Local Plan 2016-2033 - Emerging	n/a
399	Adur & Worthing	SP3 - Development Sites	Housing	n/a	Teville Gate	Reg 18 Draft Worthing Local Plan 2016-2033 - Emerging	n/a
400	Adur & Worthing	SP3 - Development Sites	Housing	n/a	Union Place	Reg 18 Draft Worthing Local Plan 2016-2033 - Emerging	n/a
401	Adur & Worthing	SP3 - Development Sites	Employment	n/a	Union Place	Reg 18 Draft Worthing Local Plan 2016-2033 - Emerging	n/a
402	Adur & Worthing	SP3 - Development Sites	Housing	n/a	Grafton Site, Marine Parade	Reg 18 Draft Worthing Local Plan 2016-2033 - Emerging	n/a
403	Adur & Worthing	SP3 - Development Sites	Employment	n/a	Grafton Site, Marine Parade	Reg 18 Draft Worthing Local Plan 2016-2033 - Emerging	n/a

404	Adur & Worthing	SP3 - Development Sites	Housing	n/a	Civic Centre Car Park	Reg 18 Draft Worthing Local Plan 2016-2033 - Emerging	n/a
405	Chichester	Policy 15: West of Chichester Strategic Development Location	Housing	n/a	West of Chichester	Chichester Local Plan 2014/2029 - adopted 14th July 2015	n/a
406	Chichester	Policy 15: West of Chichester Strategic Development Location	Employment	n/a	West of Chichester	Chichester Local Plan 2014/2029 - adopted 14th July 2015	n/a
407	Chichester	Policy 16: Shopwyke Strategic Development Location	Housing	n/a	Shopwyke	Chichester Local Plan 2014/2029 - adopted 14th July 2015	n/a
408	Chichester	Policy 16: Shopwyke Strategic Development Location	Employment	n/a	Shopwyke	Chichester Local Plan 2014/2029 - adopted 14th July 2015	n/a
409	Chichester	Policy 17: Westhampnett/North East Chichester Strategic	Housing	n/a	Westhampnett/North East Chichester	Chichester Local Plan 2014/2029 - adopted 14th July 2015	n/a
410	Chichester	Policy 18: Tangmere Strategic Development Location	Housing	n/a	Tangmere	Chichester Local Plan 2014/2029 - adopted 14th July 2015	n/a
411	Chichester	Policy 19: Tangmere Strategic Employment Land	Employment	n/a	Tangmere	Chichester Local Plan 2014/2029 - adopted 14th July 2015	n/a

412	Chichester	Policy 20: Southbourne Strategic Development	Housing	n/a	Southbourne	Chichester Local Plan 2014/2029 - adopted 14th July 2015	n/a
413	Chichester	Policy 23: Selsey Strategic Development	Housing	n/a	Selsey	Chichester Local Plan 2014/2029 - adopted 14th July 2015	n/a
414	Chichester	Policy 24: East Wittering and Bracklesham Strategic Development	Housing	n/a	East Wittering and Bracklesham	Chichester Local Plan 2014/2029 - adopted 14th July 2015	n/a
415	Chichester	Policy 24: East Wittering and Bracklesham Strategic Development	Employment	n/a	East Wittering and Bracklesham	Chichester Local Plan 2014/2029 - adopted 14th July 2015	n/a
416	Chichester	Policy BO1: Land at Highgrove Farm	Housing	n/a	Land at Highgrove Farm	Site Allocation Development Plan Document - adopted 22nd January 2019	n/a
417	Chichester	Policy BX1: Land west of the Street	Housing	n/a	Land west of The Street	Site Allocation Development Plan Document - adopted 22nd January 2019	n/a
418	Chichester	Policy CC1: Adjacent Tesco Petrol Station, Fishbourne Road	Housing	n/a	Adjacent Tesco Petrol Station	Site Allocation Development Plan Document - adopted 22nd January 2019	n/a
419	Chichester	Policy CC2: Bartholomews, Bognor	Housing	n/a	Bartholomew's, Bognor Road	Site Allocation Development Plan Document - adopted 22nd January 2019	n/a

420	Chichester	Policy CC3: 117 The Hornet	Housing	n/a	117 The Hornet	Site Allocation Development Plan Document - adopted 22nd January 2019	n/a
421	Chichester	Policy CC4: Shopwyke Strategic Developmeng Location, Oving	Housing	n/a	Shopwyke Strategic Development Location, Oving	Site Allocation Development Plan Document - adopted 22nd January 2019	n/a
422	Chichester	Policy CC5: Boys High School, Kingsham Road	Employment	n/a	Boys High School	Site Allocation Development Plan Document - adopted 22nd January 2019	n/a
423	Chichester	Policy CC6: Plot 12 Terminur Road (Chichester Enterprise Hub)	Employment	n/a	Plot 12 Terminus Road	Site Allocation Development Plan Document - adopted 22nd January 2019	n/a
424	Chichester	Policy CC7: Fuel Depot Site, Bognor Road (Adjacent to Springfield Park)	Employment	n/a	Fuel Depot Site	Site Allocation Development Plan Document - adopted 22nd January 2019	n/a
425	Chichester	Policy CC8: Springfield Park (adjacent to Fuel Depot) Oving	Employment	n/a	Springfield Park	Site Allocation Development Plan Document - adopted 22nd January 2019	n/a
426	Chichester	Policy HN1: Land south of Reedbridge Farm	Housing	n/a	Land South of Reedbridge Farm	Site Allocation Development Plan Document - adopted 22nd January 2019	n/a
427	Chichester	Policy PL1: Land north of Little Springfield Farm	Housing	n/a	Land north of Little Springfield Farm	Site Allocation Development Plan Document - adopted 22nd January 2019	n/a

428	Horsham	Policy SD1 - Strategic Policy: Land North of Horsham	Housing	n/a	Land North of Horsham	Horsham District Planning Framework 2015 - adopted 2007	n/a
429	Horsham	Policy SD1 - Strategic Policy: Land North of Horsham	Employment	n/a	Land North of Horsham	Horsham District Planning Framework 2015 - adopted 2007	n/a
430	Horsham	Policy SD10 - Strategic Policy: Southwater Strategic Site	Housing	n/a	Land West of Southwater	Horsham District Planning Framework 2015 - adopted 2007	n/a
431	Horsham	Policy SD11 - Strategic Policy: Land South of Billingshurst	Housing	n/a	Land South of Billingshurst	Horsham District Planning Framework 2015 - adopted 2007	n/a
432	Horsham	Page 31: Existing Commitments	Employment	n/a	Former Novartis site	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
433	Horsham	Page 31: Existing Commitments	Employment	n/a	Nowhurst Business Park	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
434	Horsham	Page 31: Existing Commitments	Employment	n/a	Land at Brinsbury College	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
435	Horsham	Page 31: Existing Commitments	Employment	n/a	Land north of Hilland Farm	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a

436	Horsham	Page 31: Existing Commitments	Employment	n/a	Land southwest of Platts roundabout	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
437	Horsham	Page 59	Housing	n/a	Land at Adversane	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
438	Horsham	Page 64	Housing	n/a	Land East of Billingshurst	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
439	Horsham	Page 68	Housing	n/a	Land West of Billingshurst	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
440	Horsham	Page 73	Housing	n/a	Land at Buck Barn	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
441	Horsham	Page 78	Housing	n/a	Land West of Crawley	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
442	Horsham	Page 85	Housing	n/a	Land at Kingsfold	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
443	Horsham	Page 90	Housing	n/a	Land North East of Henfield	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a

444	Horsham	Page 95	Housing	n/a	Land at Rookwood	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
445	Horsham	Page 99	Housing	n/a	Land West of Southwater	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
446	Horsham	Page 104	Housing	n/a	Ashington	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
447	Horsham	Page 105	Housing	n/a	Broadbridge Heath/ (Slinfold and Itchingfield Parishes)	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
448	Horsham	Page 106	Housing	n/a	Henfield	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
449	Horsham	Page 107	Housing	n/a	Horsham - Forest Ward	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
450	Horsham	Page 107	Housing	n/a	North Horsham	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
451	Horsham	Page 108	Housing	n/a	Partridge Green (West Grinstead)	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a

452	Horsham	Page 108	Housing	n/a	Pulborough/ Codmore Hill	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
453	Horsham	Page 110	Housing	n/a	Storrington and Sullington	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
454	Horsham	Strategic Policy 6: Economic Growth	Employment	n/a	Land at Lower Broadbridge Farm	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
455	Horsham	Strategic Policy 6: Economic Growth	Employment	n/a	Land South of Star Road Industrial Estate	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
456	Horsham	Strategic Policy 6: Economic Growth	Employment	n/a	Land Around Mercer Road, Warnham Station (North)	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
457	Horsham	Strategic Policy 6: Economic Growth	Employment	n/a	Graylands Estate	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
458	Horsham	Strategic Policy 6: Economic Growth	Employment	n/a	Broadlands Business Campus	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
459	Horsham	Strategic Policy 6: Economic Growth	Employment	n/a	Rosier Commercial Centre	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a

460	Horsham	Strategic Policy 6: Economic Growth	Employment	n/a	Land at Broomers Hill Business Park	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
461	Horsham	Strategic Policy 6: Economic Growth	Employment	n/a	North and south of Buck Barn Petrol Filling Station	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
462	Horsham	Strategic Policy 6: Economic Growth	Employment	n/a	Land South of Hilliers Garden Centre	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
463	Horsham	Strategic Policy 6: Economic Growth	Employment	n/a	Land South West of Hop Oast Roundabout	Reg 18 Draft Horsham District Local Plan 2019-2036 - Emerging	n/a
464	Arun District Council	Policy H SP1	Housing	n/a	Pagham South	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a
465	Arun District Council	Policy H SP1	Housing	n/a	Pagham North	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a
466	Arun District Council	Policy H SP1	Housing	n/a	West of Bersted	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a
467	Arun District Council	Policy H SP1	Housing	n/a	Littlehampton - West Bank	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a

468	Arun District Council	Policy H SP1	Housing	n/a	Barnham/Eastergate/Westergate	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a
469	Arun District Council	Policy H SP1	Housing	n/a	Fontwell	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a
470	Arun District Council	Policy H SP1	Housing	n/a	Yapton	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a
471	Arun District Council	Policy H SP1	Housing	n/a	Ford	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a
472	Arun District Council	Policy H SP1	Housing	n/a	Angmering North	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a
473	Arun District Council	Policy H SP1	Housing	n/a	Climping	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a
474	Arun District Council	Policy H SP1	Housing	n/a	Angmering South and East	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a
475	Arun District Council	Policy EMP SP3	Employment	n/a	Salt Box	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a

476	Arun District Council	Policy EMP SP3	Employment	n/a	Rowan Park	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a
477	Arun District Council	Policy EMP SP3	Employment	n/a	Oldland's Farm	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a
478	Arun District Council	Policy EMP SP3	Employment	n/a	Former LEC Airfield and adjoining land	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a
479	Arun District Council	Policy EMP SP3	Employment	n/a	Courtwick	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a
480	Arun District Council	Policy EMP SP3	Employment	n/a	North Littlehampton	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a
481	Arun District Council	Policy EMP SP3	Employment	n/a	West of A280 - North of Water Lane	Adpted Arun Local Plan 2011-2031 - adopted 18th July 2018	n/a
482	South Downs National Park	Page 172: Shoreham Cement Works	Housing	n/a	Shoreham Cement Works	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
483	South Downs National Park	Page 172: Shoreham Cement Works	Employment	n/a	Shoreham Cement Works	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a

484	South Downs National Park	Page 177: North Street Quarter and Adjacent Eastgate Area, Lewes	Housing	n/a	North Street Quarter and Adjacent Eastgate Area, Lewes	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
485	South Downs National Park	Page 177: North Street Quarter and Adjacent Eastgate Area, Lewes	Employment	n/a	North Street Quarter and Adjacent Eastgate Area, Lewes	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
486	South Downs National Park	Allocation Policy SD58: Former Allotments, Alfriston	Housing	n/a	Former Allotments	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
487	South Downs National Park	Allocation Policy SD60: Land at Clements Close	Housing	n/a	Land at Clement Close	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
488	South Downs National Park	Allocation Policy SD62: Land at Greenway Lane, Buriton	Housing	n/a	Land at Greenway Lane	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
489	South Downs National Park	Allocation Policy SD63: Land South of the A272 at Hinton Marsh, Cheriton	Housing	n/a	Land south of the A272	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
490	South Downs National Park	Allocation Policy SD64: Land South of London Road, Coldwaltham	Housing	n/a	Land South of London Road	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
491	South Downs National Park	Allocation Policy SD65: Land at Park Lane, Droxford	Housing	n/a	Land at Park Lane	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a

492	South Downs National Park	Allocation Policy SD66: Cowdray Works Yard, Easebourne	Housing	n/a	Cowdray Works Yard	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
493	South Downs National Park	Allocation Policy SD66: Cowdray Works Yard, Easebourne	Employment	n/a	Cowdray Works Yard	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
494	South Downs National Park	Allocation Policy SD67: Land at Egmont road, Easebourne	Housing	n/a	Land at Egmont Road	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
495	South Downs National Park	Allocation Policy SD68: Former Easebourne School, Easebourne	Housing	n/a	Former Easebourne School	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
496	South Downs National Park	Allocation Policy SD69: Land at Elm Rise, Findon	Housing	n/a	Land at Elm Rise	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
497	South Downs National Park	Allocation Policy SD70: Soldiers Field House Findon	Housing	n/a	Soldiers field House	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
498	South Downs National Park	Allocation Policy SD71: Land at Petersfield Road, Greatham	Housing	n/a	Land at Peersfield Road	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
499	South Downs National Park	Allocation Policy SD73: Land at Itchen Abbas House, Itchen Abbas	Housing	n/a	Land at Itchen Abbas House	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a

500	South Downs National Park	Allocation Policy SD47: Land at Castelmer Fruit Farm, Kingston Near Lewes	Housing	n/a	Land at Castelmer Fruit Farm	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
501	South Downs National Park	Allocation Policy SD76: Land at Old Malling Farm, Lewes	Housing	n/a	Land at Old Malling Farm	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
502	South Downs National Park	Allocation Policy SD77: Malling Brooks, Lewes	Employment	n/a	Malling Brooks	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
503	South Downs National Park	Strategic allocation Policy SD78: West Sussex County Council Depot	Housing	n/a	West Sussex County Council Depot and former Brickworks Site	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
504	South Downs National Park	Strategic Allocation Policy SD79: Holmbush Caravan Park, Midhursts	Housing	n/a	Holmbush Caravan Park	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
505	South Downs National Park	Allocation Policy SD80: Land at the Fairway, Midhursts	Housing	n/a	Land at the Fairway	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
506	South Downs National Park	Allocation Policy SD81: Land at Lamberts Lane, Midhursts	Housing	n/a	Land at Lamberts Lane Midhurst West Sussex GU29 9EA	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
507	South Downs National Park	Allocation Policy SD82: Land at Park Crescent, Midhurst	Housing	n/a	Land at Park Crescent	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a

508	South Downs National Park	Allocation Policy SD85: Land at Pulens Lane	Housing	n/a	Land at Pulens Lane	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
509	South Downs National Park	Allocation Policy SD88: Stedham Sawmill, Stedham	Housing	n/a	Stedham Sawmill	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
510	South Downs National Park	Allocation Policy SD88: Stedham Sawmill, Stedham	Employment	n/a	Stedham Sawmill	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
511	South Downs National Park	Allocation Policy SD89: Land South of Church Road, Steep	Housing	n/a	Land South of church Road	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
512	South Downs National Park	Allocation Policy SD90: Land at Ramsdean Road, Stroud	Housing	n/a	Land at Ramsdean Road, Stroud	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
513	South Downs National Park	Allocation Policy SD91: Land south of Heather close, West Ashling	Housing	n/a	Land south of Heather close	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a
514	South Downs National Park	Allocation Policy Sd92: Land at Long Priors, West Meon	Housing	n/a	Land at Long Priors, West Meon	Adopted South Downs Local Plan 2014-33 - adopted 02nd July 2019	n/a