



West Winch Housing Access Road

Environmental Statement - Chapter 5 – Approach to EIA

Author: WSP

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1 Approach to EIA

1.1 Introduction

- 1.1.1 This chapter outlines the approach to the Environmental Impact Assessment (EIA), in particular the objectives and overall strategy for the EIA developed by WSP and the wider Project Team. Scoping has been an ongoing process which is documented within this chapter, alongside the evidence base associated with elements scoped in and rationale of what is scoped out of the EIA.
- 1.1.2 The approach to consultation is also outlined in this chapter, together with the approach to proportionate assessment including the assessment criteria and the methodology for assessing cumulative effects.
- 1.1.3 The EIA has been undertaken in accordance with the EIA Regulations 2017 (**Ref. 5.1**), National Planning Practice Guidance (**Ref. 5.2**), IEMA's Environmental Impact Assessment Guide to Shaping Quality Development (**Ref. 5.3**) and guidance specific to the factors assessed (as listed in technical **chapters 6 to 16**).
- 1.1.4 A detailed overview of the Site's status in relation to relevant planning policy is discussed within the Planning Statement, which has been submitted within the planning application alongside this Environmental Statement (ES).
- 1.1.5 This guidance provides a common governing framework and methodology for the entire environmental assessment as reported in this ES. Where exceptions have been made to the adoption of the approach in a particular discipline, it is described and explained in the relevant chapter, as is any occasion where guidance specific to a particular technical discipline has been applied, including assumptions and / or limitations which are particular to a single assessment.



1.2 Objectives of the EIA

1.2.1 The key objectives of the EIA are as follows:

- Set the legal framework;
- Document the consultation process, including where comments have been raised in relation to EIA Scoping and Public Consultation;
- Consider the alternatives to the Proposed Scheme;
- Establish baseline environmental conditions at the Site and within the surrounding area;
- Identify likely significant environmental effects during the design process so that some effects can be avoided, prevented, reduced or, if possible, offset prior to the assessments within the ES (i.e. demonstrating an iterative approach to EIA);
- Identify, predict and assess the environmental effects associated with the Proposed Scheme: beneficial and adverse; permanent and temporary; direct and indirect and short / medium / long term; significant or not significant;
- Identify, predict and qualitatively assess the cumulative effects of the Proposed Scheme including those associated with the other developments;
- Identify suitable mitigation measures to avoid, prevent, reduce or, if possible, offset likely significant adverse effects on the environment and identify the likely significant residual effects following the implementation of these measures; and
- Identify monitoring measures where likely significant residual adverse effects are identified.

1.2.2 Although not a requirement of the EIA Regulations 2017, opportunities for environmental enhancement are also explored.



1.3 Screening (regulations 5, 6 and 7) and Scoping (Regulation 15)

Screening

- 1.3.1 As set out in Section 1.3 of **Chapter 1: Introduction**, the Proposed Scheme is considered to be an ‘EIA development’ as confirmed by NCC as Planning Authority in their scoping opinion (dated 15th November 2019) provided in response to WSP’s Combined Screening and Scoping Report formally submitted on 19th June 2019. An updated Scoping Report was subsequently undertaken in 2021 (**Appendix 1.1**).

Scoping Report

- 1.3.2 As set out in Section 1.3 of **Chapter 1: Introduction**, an EIA Scoping Report (**Appendix 1.1**) was submitted to NCC in March 2021 alongside a request for a formal Scoping Opinion in accordance with Regulation 15(1) of the EIA Regulations 2017. As part of NCC’s responsibility under Regulation 15(4) of the EIA Regulations 2017, consultation was undertaken, and the Scoping Report (issued March 2021) was uploaded to the public planning register for review. Members of the public, including nearby residents, were able to comment on the EIA Scoping Report.

Scoping Opinion

- 1.3.3 The EIA Scoping Opinion (**Appendix 1.2**) which included comments from statutory consultees and nearby residents, was received from NCC on 25th May 2021. The scoping responses are presented within each technical chapter (6-17) of this Environmental Statement (ES), with an indication of how they have been taken into account during the preparation of the ES and/or accompanying planning application documentation.
- 1.3.4 Following the EIA Scoping exercise and further consultation, the following technical disciplines are scoped into the EIA and assessed within this ES:
- Air Quality (**Chapter 6**);
 - Archaeology and Heritage (**Chapter 7**);
 - Ecology (**Chapter 8**);



- Landscape and Visual (**Chapter 9**);
- Noise and Vibration (**Chapter 10**);
- Water Environment (**Chapter 11**);
- Geology and Soils (**Chapter 12**);
- Materials and Waste (**Chapter 13**);
- Climate Resilience and GHG (**Chapter 14**);
- Population and Human Health (**Chapter 15**); and
- Cumulative Effects (**Chapter 17**).

1.3.5 For additional clarity a Traffic and Transport chapter (**Chapter 16**) has included within the ES following the submission of the EIA Scoping Report to align the Transport Assessment submitted within this planning application to the EIA.

1.3.6 The technical disciplines and their associated likely significant environmental effects have been taken forward and assessed within this ES.

Factors/Elements Scoped out of the Assessment

1.3.7 As part of the EIA scoping process, a number of factors and/or elements have been scoped out of the EIA and are therefore not reported in this ES. Table 1-1 summarises this aspect of the process and the justification for scoping out these factors/elements.

Table 1-1 - Elements scoped out of the assessment

Technical Chapter	Factor/Element scoped out	Justification
Air Quality	Change in dust and PM ₁₀ concentrations at receptors beyond 200m from the site boundary.	Changes beyond 200m from the site boundary are unlikely to give rise to significant impacts, as outlined in DMRB Guidance (Ref 5.4).
Air Quality	Change of NO ₂ , PM ₁₀ , and PM _{2.5} concentrations at receptors beyond 200m from the affected road network associated with construction and operational traffic.	Changes beyond 200m from the site boundary are unlikely to give rise to significant impacts, as outlined in DMRB Guidance (Ref 5.4).
Air Quality	Changes of NO _x concentrations and nitrogen deposition rates within Setchey SSSI associated with operational traffic.	This is a SSSI identified with geological interest. No sensitive features have been identified with respect to air quality.
Archaeology and Heritage	Construction effects (other built heritage assets).	Construction phase activities are short-term and temporary. The impacts from the phases of construction activities are not considered to be a significant change and have therefore been scoped out.
Archaeology and Heritage	Operational effects (buried heritage assets).	Operational (completed development) impacts are expected to represent insignificant environmental effects for buried heritage assets on the basis that once the Proposed Scheme has been completed, no further ground disturbance would occur and consequently there would be no additional impacts or resulting environmental effects.
Archaeology and Heritage	Cumulative effects (buried heritage assets).	An assessment of cumulative effects has been scoped out. Cumulative effects are 'elevated' effects which occur where the combined effect of the Proposed Scheme with other Proposed Schemes in the vicinity, on a discrete and significant shared heritage asset/resource, is more severe than that reported at the Site. This is on the basis that for intangible and deeply buried heritage assets it is not feasible to quantify accurately the nature of the resource across the assessment study area, which would enable the identification of a cumulative impact and potential elevated effect.
Ecology	Impacts on European/Ramsar sites (Habitats Regulation Assessment) (noise).	The nearest site, Roydon Common Ramsar site, is located approximately 6.1km to the east of the Proposed Scheme. Impacts to this site are not expected to arise from the Proposed Scheme.
Landscape and Visual	Townscape Assessment	Predicted neutral impact, based on the Proposed Scheme's positioning east of the settlement of West Winch, visually screened by the built environment and tree and hedgerow cover.
Noise and Vibration	Vibration (operation)	Operation vibration is scoped out of the assessment methodology as a maintained road surface will be free of irregularities as part of project design and under general maintenance, so operational vibration will not have the potential to lead to significant adverse effects. This is the recommendation set out in DMRB LA 111.
Water Environment	Alteration to hydromorphological regime.	Lack of main watercourses within close proximity to the Proposed Scheme with only field drains identified within this report.

Technical Chapter	Factor/Element scoped out	Justification
Water Environment	Detailed WFD assessment.	Lack of main watercourses within close proximity to the Proposed Scheme with only field drains identified within this report.
Geology and Soils	Potential effect on slope stability.	No significant slopes were noted during the walkover.
Materials and waste	Material resources required	The quantity of material resources required, during the operational phase (for example routine maintenance and repairs) is considered negligible and is not expected to have significant adverse effects.
Materials and waste	Waste generation	The quantity of waste generated during the operational phase (e.g. routine maintenance and repairs) is considered negligible and not expected to have significant adverse effects.
Climate Resilience and GHG	Disposal of waste A5	Emissions from the disposal of waste are unlikely to be large.
Climate Resilience and GHG	Land use, land use change and forestry A5	Emissions from the disposal of biomass, are not expected to be material as the Proposed Scheme area is currently agricultural land.
Climate Resilience and GHG	Maintenance, repair and refurbishment B2, B3 and B5	The Proposed Scheme is considered to require infrequent, if any, maintenance, repair and refurbishment, therefore subsequent emissions sources are not considered to be large.
Climate Resilience and GHG	Land use, land use change and forestry B8	The reduction in carbon sequestration due to the Proposed Scheme is not considered to be material as the Proposed Scheme is currently agricultural land.
Climate Resilience and GHG	Decommissioning process C1 (end of life)	Expected timescales for decommissioning are so far into the future that there is insufficient likelihood, type of scale of emissions activity to determine their likely magnitude, even if they take place at all. As such these emissions sources will not be considered.
Climate Resilience and GHG	Sea level rise, storm surge and storm tide, change in annual average precipitation, change in annual average temperature, solar radiation, soil moisture, runoff, soil stability	Assessed as low vulnerability.
Climate Resilience and GHG	Solar radiation	Assessed as low vulnerability.
Population and Health	Agricultural land holdings	Borough Council of Kings Lynn and West Norfolk (BCKLWN) and their legal advisors have undertaken liaison with those who own/lease agricultural land holdings within the Proposed Scheme boundary thus any further assessment is scoped out of the EIA process.
Other Issues	Earthquakes	The Proposed Scheme is not in, or close to, an active area.
Other Issues	Volcanic Activity	The Proposed Scheme is not in an active area and highly unlikely that an ash cloud could significantly impact on any aspect of the Proposed Scheme.
Other Issues	Sinkholes	This is likely to be covered in the geotechnical design, and there are no examples of roads that have been affected by sinkholes in the locality to warrant taking this event forward.
Other Issues	Tsunamis	The Proposed Scheme is located inland, outside a tsunamis risk zone.

Technical Chapter	Factor/Element scoped out	Justification
Other Issues	Coastal flooding, wave surges	The Proposed Scheme is located inland, outside a coastal area.
Other Issues	Avalanches	Not considered relevant given the geographical location of the Proposed Scheme. The Proposed Scheme's topography is generally flat and level, and therefore an avalanche will not occur.
Other Issues	Severe Weather - Cyclones, hurricanes, typhoons, storms and gales, thunderstorms, extreme temperatures (heatwave, drought and cold and snow),	Cyclones, hurricanes and typhoons do not occur in the UK. The risk is no different to similar roads or road users in the locality. Specific measures are therefore not considered to be required as part of the Proposed Scheme. The Proposed Scheme should not be vulnerable to drought as water is not an essential service during the construction, use or maintenance phases. The design of the sub-structure and bridges will be resilient to ground shrinkage and should remain in the design risk register until designed out.
Other Issues	Space Weather - Solar flares, Solar energetic particles, coronal mass ejections	There is no increased reliance on roadside technology therefore the Proposed Scheme is no more vulnerable than local routes in existence. Solar energetic particles which cause solar radiation storms, but only in outer space, so this major event type can be scoped out. Coronal mass ejections (CME) cause geomagnetic storms. The geomagnetic storm in 2003 caused the UK aviation sector to lose some Global Positioning System (GPS) functions for a day, however no known significant impact on road users or infrastructure was recorded.
Other Issues	Fog	Fog is one of the most common weather conditions in the UK, particularly throughout autumn and winter. Severe disruption to transport occurs when the visibility falls below 50m over a wide area. However, the risk for the Proposed Scheme should be no higher than the current local road network. Collision data over the period 2015-2020 shows there to be no accidents where fog was a contributory factor.
Other Issues	Wildfires: Forest fire, Bush/brush, pasture	Parts of the Proposed Scheme would be located in, and be surrounded by, areas of woodland that could be at risk of wildfire events during hot, dry periods and/or fires initiated by construction related activities. During construction, standard control measures would be implemented by the appointed contractor to manage the risk of fire. During operation, the risk is no different to similar roads or road users in the locality. Specific measures are therefore not considered to be required as part of the Proposed Scheme.
Other Issues	Human Diseases during construction and operation – Viral, Bacterial, Parasitic, Fungal, Prion	The Proposed Scheme is located in a developed country where the population is in general good health. Furthermore, the use of the Proposed Scheme (highway) is not going to give rise to any disease epidemics.
Other Issues	Animal Diseases - zoonotic: avian influenza, West Nile virus, Rabies - non-zoonotic: foot and mouth, swine fever	Low and highly pathogenic avian influenza has been recorded in poultry in the UK several times in the last 10 years, most recently in the winter of 2016/17, although with no human cases reported. There was a devastating foot and mouth outbreak in 2001. There are no known foot and mouth burial pits in the Proposed Scheme boundary. The use of the Proposed Scheme is not going to be the source of any disease epidemics and spread would be controlled through containment of infected animals including prohibition of transportation.

Technical Chapter	Factor/Element scoped out	Justification
Other Issues	Flooding – coastal flooding, fluvial flooding, pluvial flooding	<p>The Proposed Scheme is located inland, outside a coastal area.</p> <p>The Environment Agency (EA) Flood Map for Planning (Rivers and Sea) indicates that the Proposed Scheme alignment is located in the low-risk Flood Zone 1 where the risk of flooding from fluvial sources is less than 1 in 1,000 (0.1%) in any year. The very northern section of the A47 (adjacent to Hardwick Interchange) is partially located within Flood Zone 2. The EA's Long-Term Flood Risk map does not identify any fluvial flood risk areas within the Proposed Scheme 's boundary. There is a small area (approximately 0.004 Ha) to the east of the Constitution Hill Roundabout which encroaches into Flood Zone 2 (0.1-1% AEP). In the Flood Risk Assessment (FRA) it is initially proposed to mitigate this through the provision of compensatory storage on a level for level basis to the North of the A47.</p> <p>The King's Lynn and West Norfolk Level 1 Strategic FRA (November 2018) states that the predominant source of flooding is from tidal sources, although recent flooding has been largely from surface water. Fluvial flooding is one of the primary sources of flood risk within the King's Lynn and West Norfolk locality. The most significant watercourse in terms of fluvial risk is the River Great Ouse; however, there are several other watercourses that pose a significant risk including the River Nar.</p> <p>High levels of precipitation (i.e. in winter) can not only result in the flooding of the road infrastructure but can also damage bridge infrastructure (through increased scour and erosion of embankments). The design of the new over bridge on Rectory Lane to cross over the proposed WWHAR and the new foot/cycle bridge over Chequers Lane will have consideration to this.</p> <p>The King's Lynn and West Norfolk Level 1 Strategic FRA (November 2018) indicates that at the nearest settlement (Watlington) to West Winch, surface water flood risk consists predominantly of water ponding on roads, gardens and other open spaces. A total of 47 flood incidents along the A47 highway have been recorded since July 2008, by Highways England (now National Highways). The UK Climate Projections 2018 (UKCP18) suggests that climate change is projected to lead to wetter winters and drier summers, with more extreme rainfall events. The UKCP18 projections for changes in extreme precipitation in winter in the 25km grid square containing the Proposed Scheme under high emissions scenarios estimate that by the 2020s, precipitation on the wettest day in winter is expected to increase by approximately 3%, by 2050s by 7% and by 2080s by 17% (50th percentile).</p> <p>The increase in impermeable surfaces as a result of the Proposed Scheme, along with the likely increase in rainfall as a result of climate change over the lifetime of the Proposed Scheme, would increase flood risk if not mitigated. In addition there is a potential pollution threat to nearby water courses which is no greater than that associated with the existing highway. The design of the Proposed Scheme has been developed to include allowances for future climate change predictions that could result in flooding. The potential risk of breach events is considered in Chapter 11: Water Environment.</p>
Other Issues	Plants	Should invasive plant species be identified during ongoing ecological survey works, standard control measures will be implemented by the appointed contractor during construction to handle and dispose of any diseased plants and/or injurious weeds, and prevent their spread.

Technical Chapter	Factor/Element scoped out	Justification
Other Issues	Extensive public demonstrations which could lead to violence and loss of life.	The Proposed Scheme is located in a developed country that has steady, yet small population growth. England is politically stable with no direct border with countries experiencing conflicts. The Proposed Scheme is not considered highly controversial and should not lead to high profile public demonstrations.
Other Issues	Major Accident Hazard Chemical sites	There are no Control of Major Accident Hazard (COMAH) sites within a 3km corridor along the Proposed Scheme.
Other Issues	Major Accident Hazard Pipelines	<p>One low pressure and two high pressure National Grid gas pipelines run under sections of the Proposed Scheme and through the Proposed Scheme 's boundary.</p> <p>The following pipelines have also been identified in correspondence from the HSE but are located away from the Proposed Scheme such that further consideration is not necessary:</p> <ul style="list-style-type: none"> - 4427809 National Grid Gas PLC, Palm Paper Ltd / NGrid Offtake Facility. This pipeline is approximately 2.8km west of the Proposed Scheme 's boundary. - 1032059 Perenco to Shell Blend Gas pipeline. This pipeline is approximately 74km from the Proposed Scheme boundary. <p>The two high pressure gas pipelines are to be diverted (new sections of pipeline to be constructed) to meet current engineering and safety standards. There will be an increased risk of a major event during the construction phase due to the nature of the work required on the pipeline. However, any work within the consultation zone of the pipelines must be undertaken with the agreement of the pipeline operator, which will include risk assessment and method statements covering the works to be carried out before they can commence, under existing legal requirements, namely The Pipelines Safety Regulations 1996. Risks during maintenance and operation of the Proposed Scheme should not be significantly different than baseline situation.</p>
Other Issues	Fuel storage	There are no fuel storage sites within the study area other than two petrol stations, one approximately 555m west of the Proposed Scheme 's boundary (Esso) and one approximately 310m north (Sainsburys) of the Proposed Scheme.
Other Issues	Fires	<p>Fires could be initiated by construction related activities which impact areas adjacent to the construction activities. During construction, standard control measures would be implemented by the appointed contractor to manage the risk of fire.</p> <p>There are two petrol stations, one approximately 555m west of the Proposed Scheme 's boundary (Esso) and one approximately 310m north (Sainsburys) of the Proposed Scheme.</p> <p>Urban buildings in close proximity of the Proposed Scheme are low-rise and predominantly residential, although taller commercial properties exist.</p> <p>Notwithstanding this, the risk of fires affecting the Proposed Scheme during operation is no greater than risks for existing highways through/developments in an urban environment.</p>

Technical Chapter	Factor/Element scoped out	Justification
Other Issues	Road	<p>Significant transport accidents occur across the UK on a daily basis, mainly on roads, and involving private and/or commercial vehicles.</p> <p>During construction, there will be an increase in heavy construction plant and equipment on the local road network which may increase the risk of accidents.</p> <p>The Proposed Scheme has been designed to achieve a reduction in existing accident rates on the road network, and to take account of any accidental spillages through modern drainage and treatment systems. The environmental risks posed by spillages of hazardous loads as a result of road accidents will be considered as part of the EIA.</p> <p>The indicative design includes speed limit reductions from 40mph to 30mph between WWHAR junction and Hardwick Interchange, in addition a short section of the A10 in the centre of West Winch to be reduced to 20mph to create a ‘high street’ environment.</p>
Other Issues	Unexploded Ordnance	<p>A low potential exists for encountering unexploded ordnance during construction of the Proposed Scheme. Measures would be undertaken during construction to brief operatives to raise awareness of this issue, and to define appropriate response strategies such this be discovered during the works.</p> <p>There would be a limited risk of unexploded ordnance affecting the Proposed Scheme, once operational but no greater than similar schemes.</p>
Other Issues	Malicious Attacks: Chemical, Biological, Radiological, Nuclear, cyber,	<p>Extremists remain interested in Chemical, Biological, Radiological and Nuclear (CBRN) materials, however alternative methods of attack such as employing firearms or conventional explosive devices remain far more likely.</p> <p>Historical use has been in closed densely occupied structures (underground, buildings) or targeted at specific individuals.</p> <p>The Proposed Scheme is unlikely to be a target for this type of event due to the low number of exposed targets.</p> <p>Cyber-attacks occur almost constantly on key national and commercial electronic information, control systems and digital industries. Technology is not proposed to be installed as part of the Proposed Scheme (gantries and overhead signage). The Proposed Scheme not considered to be more vulnerable to attack than similar road infrastructure installed and running elsewhere on the strategic and other road networks. Highways England is accountable to the Secretary of State for Transport for ensuring the resilience of their strategic road network to national security risks, including from terrorism, cyber-attack, natural hazards and other risks outlines in the National Risk Assessment.</p>
Other Issues	Bridge failure	<p>Bridge works are proposed as part of the Proposed Scheme. These structures have been designed to meet modern safety standards, which reduces their likelihood of future failure.</p> <p>The risk associated with the Proposed Scheme of this event is considered no greater than other similar roads that include new structures designed to comparable standards.</p>

Technical Chapter	Factor/Element scoped out	Justification
Other Issues	Property or bridge demolition accidents	<p>The Proposed Scheme involves demolition works to take down a very small number of buildings and structures. At present, the dualling of the A47 may require the demolition of two residential properties located on the northern side of the existing A47 alignment. The risks of accidents occurring during these works would be taken into account by the appointed contractor, and considered as part of their detailed methodology and risk assessments in advance of these works.</p> <p>Surveys would be undertaken prior to the demolition of properties and structures to confirm whether any potentially harmful substances (e.g. asbestos) are present, and to determine the risk to people</p>



1.4 Consultation

- 1.4.1 In addition to the formal consultation undertaken in conjunction with the scoping process, technical and public consultation has been undertaken.

Technical Consultation

- 1.4.2 As part of the EIA process, technical consultation with a range of statutory and non-statutory consultees has been ongoing. Details of the technical consultation undertaken for each assessment is provided in the respective technical chapters.

Public Consultation

- 1.4.3 A public consultation ran for 8 weeks, from 14th November 2022 – 8th January 2023 via an online questionnaire. Three in-person exhibition events were also held during this time at various locations around the area of the Proposed Scheme, which provided an opportunity to see the proposals in person.
- 1.4.4 A virtual consultation room was available online throughout the consultation period using PinPoint ConnectAll. This included links to the consultation brochure and the consultation feedback questionnaire. Other material provided included banners of the Proposed Scheme, which presented more in-depth information and visuals of the different sections.
- 1.4.5 The consultation was promoted via the NCC social media channels throughout its 8 week duration, and extensively in the local area. The consultation was also promoted to local stakeholder and landowners groups. This included local members and the parish councils. In each instance they were encouraged to promote the consultation through their own local channels.
- 1.4.6 Posters were provided that were put up in key local locations.
- 1.4.7 A letter drop was sent to 1700 local residents at the start of the consultation which included details of the public exhibition events and how they could take part in the consultation.



- 1.4.8 Brochures were printed and were made available on request or at the 3 public exhibition events.
- 1.4.9 The results of public consultation have been considered within the design of the Proposed Scheme. Overall, consultation resulted in 149 survey responses and 18 written responses. The results demonstrate a mix of support and concern, in particular over congestion and impact to surrounding areas.

1.5 Approach to the assessment of the Proposed Scheme

- 1.5.1 This section outlines the phases of the Proposed Scheme that have been assessed, together with the approach to the baseline conditions, future baseline conditions, cumulative effects and design tolerances. It also sets out the overarching approach to the EIA, together with project specific requirements for the assessment of effects.
- 1.5.2 The Proposed Scheme has been assessed against the description, design principles and tolerances and supporting plans as detailed in **Chapter 3: Description of the Proposed Scheme**. The maximum extent of the planning application boundary and scheme footprint has been assessed as the worst-case situation. There is therefore some degree of flexibility to allow the Proposed Scheme to evolve (i.e. reduce in size) if necessary.

Baseline Scenario

- 1.5.3 Baseline information (environmental characteristics and conditions) has been collated based upon surveys undertaken and desk-based information available at the time of the assessment. Technical chapters 6 to 16 provide details of the baseline information and a summary is provided in **Chapter 2: The Existing Site**. Any limitations in establishing the baseline are described in technical chapters 6 to 16.
- 1.5.4 The dates of surveys and the dates when data sources have been accessed are provided within technical chapters 6 to 16.



Future Baseline

- 1.5.5 The assessment has also taken into consideration the likely evolution of the current state of the environment (baseline scenario) without implementation of the Proposed Scheme, as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge, known as the future baseline.
- 1.5.6 The future baseline scenario is summarised in **Chapter 2: The Existing Site** and technical chapters 6 to 16.
- 1.5.7 Due to the limitations, necessary assumptions and lack of evidence associated with the future baseline (i.e. it cannot be accurately measured), a detailed consideration of the effects of the Proposed Scheme against the future baseline would generally not result in a robust assessment. However, consideration has been given, in descriptive terms, within each technical chapter to likely significant environmental effects arising from the Proposed Scheme in relation to the future baseline.
- 1.5.8 For some assessments, such as **Chapter 6: Air Quality, Chapter 10: Noise and Vibration, and Chapter 16: Traffic and Transport** the future baseline is a required part of the methodology. Further detail is provided in each of these chapters, where relevant.

Assessment of Major Accidents and Disasters

- 1.5.9 Schedule 4(8) of the EIA Regulations 2017 states that the ES must include the following:

“A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned.... Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies”.



1.5.10 As stated in Table 1-5, due to the nature of the Proposed Scheme, it is unlikely that major accidents and/or disasters could occur. Measures are included in the Construction Environmental Management Plan (CEMP) to limit the risk of major accidents and/or disasters during construction and all required processes will be followed in relation to the design and maintenance of the Proposed Scheme, such as:

- **Flooding:** The majority of the Site is located within a Flood Zone 1 (i.e. it has a low probability of flooding from rivers or the sea). As discussed in **Chapter 11: Water Environment**, the very northern section of the A47 is located within Flood Zone 2, and is at risk of surface water flooding. Following the implementation of mitigation measures as set out in the Flood Risk Assessment (**Appendix 11.1**) and Surface Water Drainage Strategy (**Appendix 11.2**), the effect of changes to the risk of flooding during the construction and operational stages are not anticipated to be significant. Therefore, the risk of a major accident or disaster associated with flooding is considered to be as low as reasonably practicable;
- **Security:** Major accidents or disasters relating to security could occur, for example, due to vandalism, arson or terrorist events. The Proposed Scheme will incorporate security measures which will reduce the risk of a major accident or disaster related to security to as low as reasonably practicable, for example, the erection of security hoarding during the construction stage, and security measures such as work areas being fenced off from the general public will be implemented on Site during operation;
- **Severe Weather:** Severe weather includes storms and gales, lightning, sub-zero temperatures and heavy snow and heatwaves. The risk of severe weather upon the Proposed Scheme is no different to similar roads or road users in the locality. Specific measures are therefore not considered to be required as part of the Proposed Scheme. However,



the Proposed Scheme design will include climate resilience measures, accounting for resilience to temperature changes;

- **Construction:** Major accidents and disasters associated with the construction of the Proposed Scheme are considered to be as low as reasonably practicable. The construction of the Proposed Scheme will be managed and undertaken by competent contractors and will be subject to suitable method statements for all activities;
- **Fire:** The design of the Proposed Scheme will follow good practice guidance to reduce the risk of a major accident or disaster associated with fire during the operational stage of the Proposed Scheme to as low as reasonably practicable. In addition, fire suppression systems would be included in the detailed design where required; and
- **Unexploded Ordnance (UXO):** The Site is located within an area described as at low risk of UXO (**Ref. 5.5**), therefore the risk of a major accident or disaster associated with UXO is considered to be as low as reasonably practicable.

1.5.11 This review did not identify any likely significant effects from major accidents or disasters that would require assessment under the EIA Regulations 2017, and therefore major accidents and disasters are not considered further in this ES.

Phases of the Proposed Scheme

1.5.12 Consideration has been given to construction and operational phases of the Proposed Scheme. An overall summary of the anticipated construction and operational phase timeframes is presented in **Chapter 3: Description of the Proposed Scheme**, which has been considered in technical chapters 6 to 16.

Design Principles

1.5.13 The design principles are outlined in **Chapter 3: Description of the Proposed Scheme**. There is a degree of flexibility within some of the



parameter plans to allow the Proposed Scheme to evolve through the detailed design stages and reserved matters applications.

Assessment Criteria

- 1.5.14 The classification of each effect identified has been assessed in line with the Design Manual for Roads and Bridges (DMRB) Standard (**Ref. 5.6**) based on the magnitude of change (or impact) due to the Proposed Scheme and the sensitivity/value of the affected receptor to change, as well as a number of other factors that are outlined in more detail below. The classification of residual effects has been assessed with regard to the extent to which additional mitigation measures will avoid, prevent, reduce or, if possible, offset adverse effects or enhance beneficial effects.
- 1.5.15 The assessment of likely effects presented in technical chapters 6 to 16 have taken into account a number of criteria to determine whether or not the likely effects are significant in terms of the EIA Regulations. Wherever possible and appropriate, the effects have been assessed quantitatively. The following criteria have been taken into account when classifying the likely effects:
- Relevant legislation and planning policy;
 - International, national, regional and local standards;
 - Likelihood of occurrence of the effect;
 - Geographical extent of effect;
 - Sensitivity and/or value of the receptor;
 - Magnitude and complexity of impact;
 - Whether the effect is temporary or permanent;
 - Duration (short, medium or long-term), frequency and reversibility of effect;
 - Whether the effect is direct or indirect, secondary or transboundary;



- Inter-relationship between different effects (both cumulatively and in terms of likely effect interactions); and
- The outcomes of consultations.

1.5.16 Where factor specific methodology deviates from this approach, for example as a result of following factor specific guidance, this is set out in the methodology section of the technical chapter.

Sensitivity/Value of Receptors

1.5.17 The sensitive receptors considered within this ES are identified within technical chapters 6 to 16 and illustrated on **Figure 2.1: Environmental Features Plan**. The sensitivity of these receptors to change is also defined within technical chapters 6 to 16 and has been determined where available and appropriate by quantifiable data, the consideration of existing designations and professional judgement. The categories used (very high, high, medium, low and negligible), unless otherwise stated, are shown in Table 1-2. Where factor specific methodology deviates from this approach, for example, as a result of following factor specific guidance, this is set out in the methodology section of the technical chapter.

Magnitude Of Change (Impact)

1.5.18 The magnitude of change (impact) is predicted as a deviation from the established baseline conditions, as a result of the Proposed Scheme. The magnitude of these changes is also defined within technical chapters 6 to 16 and has been determined where available and appropriate by quantifiable data, available appropriate national and international standards or limits (World Health Organisation (WHO) Limits, European Union (EU) Quality Standards, etc.) and professional judgement. The scale used (major, moderate, minor, negligible and no change), unless otherwise stated, is shown in Table 1-2.

1.5.19 The magnitude of change identified is based on the peak potential magnitude of change, i.e. the greatest likely magnitude of change that may be experienced by a sensitive receptor (existing or proposed).



Classifying Effects

1.5.20 Determining the classification of effects has been undertaken using professional judgements (assumptions and value systems) that underpin the attribution of significance. Each effect has been assessed against the sensitivity of the receptor and the magnitude of change, as shown in Table 1-2. Where more than one effect classification exists for any given scenario (e.g. slight or moderate), professional judgement is used to assign a single effect classification.

Table 1-2 - Matrix for classifying effects

Significance Matrix	No Change in Magnitude	Negligible Change in Magnitude	Minor Change in Magnitude	Moderate Change in Magnitude	Major Change in Magnitude
Very High Sensitivity	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large
High Sensitivity	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
Medium Sensitivity	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
Low Sensitivity	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
Negligible Sensitivity	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight

1.5.21 The terms as used within Table 1-2 have been defined below, applying to both beneficial and adverse effects:

- **Very Large effect:** effects at this level are material in the decision-making process;
- **Large effect:** effects at this level are likely to be material in the decision-making process;



- **Moderate effect:** effects at this level can be considered to be material decision-making factors;
- **Slight effect:** effects at this level are not material in the decision-making process; and
- **Neutral effect:** no effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

1.5.22 Unless otherwise stated in the technical chapters of this ES, effects that are classified as **moderate or above** are considered to be significant. Effects classified as below **moderate** (e.g. slight or neutral) are considered to be not significant.

1.5.23 Tables summarising the potential effects associated with each factor, required mitigation measures and residual effects are provided at the end of each technical chapter. The tables provide a clear distinction of the type of effect:

- Beneficial or adverse;
- Permanent or temporary;
- Direct or indirect;
- Short, medium or long-term;
- Secondary, cumulative or transboundary; and
- Significant or not significant.

1.5.24 In terms of the duration of an effect, short-term has been considered as 2 year(s) (or below), a medium-term effect has been considered to be between 2 and 10 years in duration and a long-term effect has been considered to be greater than 10 years in duration. Any variation to these definitions arising, for example, from differences in assessment methodology or guidance is explained in technical chapters 6 to 16.



Mitigation and Monitoring

1.5.25 Additional (secondary and tertiary) mitigation describes actions that will require further activity in order to achieve the anticipated outcome, and measures that will be required regardless of any EIA assessment, as it is imposed, for example, as a result of legislative requirements and/or standard sectoral practices. Examples of secondary mitigation include additional detailed design to comply with elements such as proposed lighting limits. Examples of tertiary mitigation include considerate contractor's practices that manage activities which have potential nuisance effect (e.g. through the implementation of a CEMP).

1.5.26 Where likely significant adverse effects have been identified in the assessment, measures to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment are described. Monitoring is required where there are significant adverse residual effects. In some cases, for instance where there is uncertainty that residual effects remain, it may also be appropriate to implement monitoring.

1.5.27 Proposed additional mitigation and monitoring measures are set out within technical chapters where necessary. **Chapter 3: Description of the Proposed Scheme** sets out the embedded (primary) mitigation required as part of the Proposed Scheme. The mechanism by which the measures are to be secured is also recorded.

1.6 Cumulative Effects

1.6.1 Schedule 4(5)(e) of the EIA Regulations 2017 states that the ES should include a description of the likely significant effects of the development on the environment resulting from:

'the cumulation of effect with other existing and / or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources.'



1.6.2 Regulation (4)(2)(e) refers to the need to assess:

‘the interaction between the factors referred to in sub-paragraphs (a) to (d)’.

1.6.3 There is no widely accepted methodology or best practice for assessing cumulative effects, although various guidance documents exist. The approach for assessing cumulative effects was outlined in the EIA Scoping Report (**Appendix 1.1**) and is summarised below. The approach adopted is based on previous experience, the types of receptors being assessed, the nature of the Proposed Scheme, the other developments under consideration and the information available to inform the assessment. The assessment of cumulative effects is presented in **Chapter 17: Cumulative Effects**.

1.6.4 Effect interactions, or intra-project effects, are the combined or synergistic effects caused by the combination of effects of the Proposed Scheme on a particular receptor which may collectively cause a greater effect than individually. In-combination, or inter-project effects are the combined effects of the Proposed Scheme on a common receptor together with other developments.

1.6.5 Further details regarding the scope and methodology of the assessment of cumulative effects, the identification of relevant committed developments and a description of those included within the assessment are provided in **Chapter 17: Cumulative Effects**.

1.6.6 Through analysis of NCC’s online planning portal (**Ref. 5.7**), a number of other developments have been identified and are considered within this ES. These are presented in Table 1-3. NCC have agreed upon these other developments to be included within the cumulative effects assessment. Further details regarding the scope and methodology of the assessment of cumulative effects, the identification of relevant other developments and a description of those included within the assessment are provided in **Chapter 17: Cumulative Effects**.

Table 1-3 - Developments included within cumulative effects assessment

Ref.	Planning Reference	Description	Address	Approximate distance from the Proposed Scheme	Status
1	23/00269/F	Proposed product display area and factory retail outlet	LeisureGrow Products Ltd (Old Gardam Site) Clenchwarton Road West Lynn King's Lynn Norfolk	2km north west	Application permitted (Tue 23 May 2023)
2	20/01957/FM	Construction of 78 affordable dwellings and associated access, infrastructure and landscaping	Land E of Losinga Road W of Waterside And N of Salters Road King's Lynn Norfolk	3km north	Application Permitted (Thu 02 Sep 2021)
3	17/01151/OM	Outline Major Application: Sustainable mixed-use urban extension comprising: up to 450 dwellings, a mixed use local centre comprising Class A uses (including retail facilities and public house) and Class D1 (such as creche/day centre/community centre) and B1 uses (such as offices), open space and landscaping, wildlife area, childrens play areas, sustainable urban drainage infrastructure, access and link road and associated infrastructure	Land NW of South Wootton School Off Edward Benefer Way King's Lynn Norfolk	3.9km north	Application Permitted (Mon 15 Apr 2019)
4	23/00195/F	Retrospective: Warehouse extension associated with the existing building to the Southern side of the site	Coolstak Lynn Road West Winch King's Lynn Norfolk PE33 0PD	Adjacent to the south boundary	Application permitted (Thu 27 Jul 2023)
5	21/01873/FM	Construction of 226 new homes and associated green space, landscaping and ancillary infrastructure	Land SE of 60 Queen Mary Road N of Railway Line And S of Parkway Gaywood King's Lynn Norfolk	1.4km north	Application permitted (Wed 30 Mar 2022)
6	14/01690/OM	Construction of up to 81 dwellings with access road	Land South of Russett Close King's Lynn Norfolk	3.3km north	Application permitted (Thu 26 Mar 2015)

Ref.	Planning Reference	Description	Address	Approximate distance from the Proposed Scheme	Status
7	14/01114/OM	Outline Application: mixed use development comprising business / industrial / storage and distribution floorspace (Class B1 / B2 / B8), DIY superstore and garden centre (Class A1), limited assortment of discount supermarket (Class A1), Drive-Thru Restaurant (Class A3 / A5), Family Public House (Class A4), Hotel (Class C1), Car Showroom (Sui Generis) and associated access, car parking, road infrastructure, servicing and associated works.	Morston Point Hardwick Industrial Estate King's Lynn Norfolk	800m north	Application Permitted (Fri 06 Nov 2015)
8	16/02231/OM	Residential development of the land to provide up to 600 dwellings, incorporating affordable housing, together with a local centre for uses A1, A2, A3 and/or A5 (600m ²) with the total quantum of A1 net sales area not to exceed 279m ² in the alternative, D2 community floorspace (up to 500m ²), open space, formal sport pitches, a car park to serve Reffley Wood and associated development to include substations, drainage features, roads, cycle and pedestrian paths and other such works.	Land West of Knights Hill Village Grimston Road South Wootton Norfolk	4.7km north east	Application Permitted (Appeal Allowed) – 14 th July 2020
9	17/01106/OM	Residential development for up to 125 dwellings together with associated works.	Land On the West Side of Nursery Lane South Wootton Norfolk	4.6km north	Application Permitted 3rd April 2019.



1.7 Environmental Enhancement

1.7.1 Although not a requirement of the EIA Regulations 2017, opportunities for environmental enhancement are also explored. However, environmental enhancement measures are not taken account of in the assessment of likely significant effects.

1.8 Limitations and Assumptions

1.8.1 Schedule 4(6) of the EIA Regulations 2017 states that an ES should include *'...details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved...'*

Where there are limitations or assumptions used within the EIA, these are clearly identified in this ES. Limitations and assumptions specific to certain assessments have been identified in the appropriate technical chapters 6 to 16.

1.9 References

- **Reference 5.1:** Town and Country Planning (Environmental Impact Assessment) Regulations 2017. Statutory Instrument 2017 No. 571.
- **Reference 5.2:** [Planning Practice Guidance](#)
- **Reference 5.3:** [IEMA Environmental Impact Assessment Guide to Shaping Quality Development](#)
- **Reference 5.4:** DMRB Guidance Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques. Part 1 HA 207/07 Air Quality
- **Reference 5.5:** Zetica UXO (2022), [Risk Maps](#).
- **Reference 5.6:** [Standards for Highways \(2020\) DMRB](#)
- **Reference 5.7:** [Norfolk County Council, Planning Portal](#)