# 2.0 Environmental Impact Assessment Approach

## 2.1 EIA Process and Objectives

2.1.1 The overall aim of this ES is to provide an objective and systematic account of the significant environmental effects of the development and to assess the ability of the proposed Gillingham SSA development and the surrounding area to accept those impacts. The overall EIA process is shown in Diagram 2.1 below (IEMA, 2004).

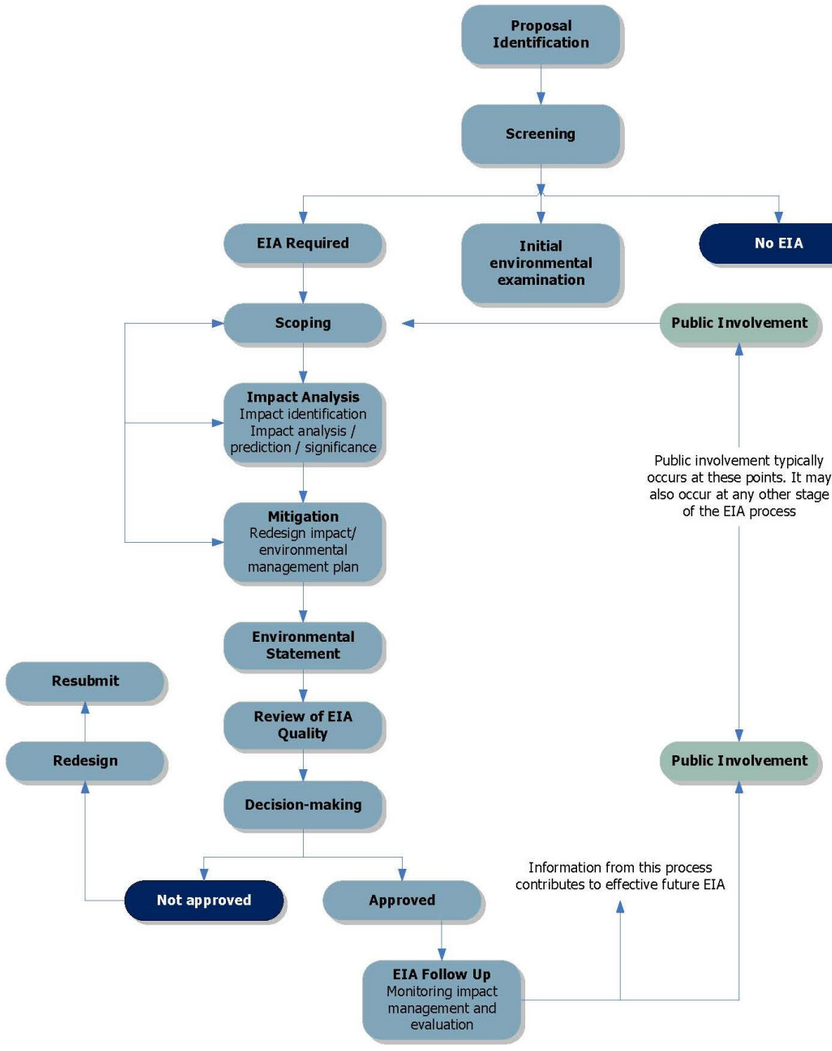



**Diagram 2.1 The EIA process**

2.1.2 The immediate objectives of EIA are shown in Diagram 2.2 (IEMA, 2004):

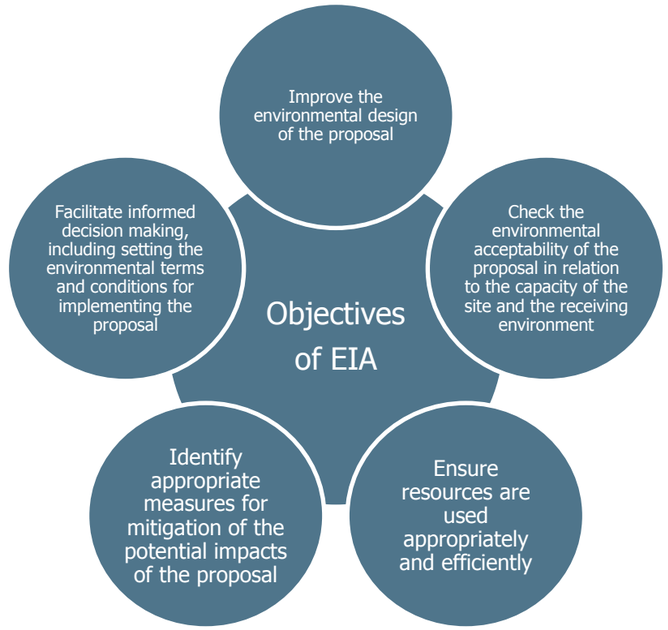



**Diagram 1.2 The immediate objectives of EIA**

## 2.2 Scope of Work

### Geographic Scope

2.2.1 The EIA directly covers the physical extent of the Site as shown in the red line boundary plan Figure 2.2. It is defined by the area of land to be used, the nature of the current environmental conditions and the manner in which impacts are likely to be generated. It is important to note however that the influence of many predicted impacts can extend beyond the immediate Site boundary, for example, the effects on some species that are primarily located off-site may use the site for foraging. Where identified and relevant, these impacts have also been assessed as part of the EIA.

2.2.2 The geographical extent of the EIA also considers the potential implications of related and un-related development activities. The potential cumulative effects of the development in association with other developments both during construction and on completion are included where relevant as required by Schedule 4, Part 1, Paragraph 4 of the EIA Regulations (HMSO, 2011). These sites are listed in Table 2.2.

### Temporal Scope

2.2.3 Under the current programme, it is expected that construction will take place between 2019 and 2033.

2.2.4 The assessments presented herein are largely based on the comparison of expected impacts compared with current or recent baseline environmental conditions. This is with the exception of topics such as air quality and landscape and visual assessments which factor in future baseline changes into the assessments in future year impact scenarios. These approaches are explained in further detail in the relevant chapters concerned.

### Technical Scope

2.2.5 In order to ascertain the likely scope of the EIA, the scoping process involved the following steps:

- Identification of the planning application boundary;
- Identification of the key characteristics of the Site and the establishment of the environmental baseline through a series of desk and field studies;
- Identification of gaps in the baseline and the further survey work required to address these shortfalls;
- Initial consideration of the potential sources and nature of environmental impacts through assessment against the environmental baseline; and
- Definition of impact assessment methodologies to be utilised.

2.2.6 The scope of documentation to be submitted in connection for the outline application for each of the three sites is identified in the Masterplan Framework (MPF). However, it is likely that the following documents will be required over and above those used to produce this ES:

- Planning application forms and certificates;
- Site Location Plan;
- Indicative Site Layout Plans;
- Access Plans;
- Design and Access Statement;
- Planning Statement
- Stand-alone technical reports based on ES technical chapters focussing on the relevant site;
- Lighting Assessment;
- Site-wide Agricultural Land Assessment;
- Statement of Community Involvement; and
- Draft S106 Agreement Heads of Terms.

2.2.7 As noted above, the EIA Scoping Request for the Gillingham SSA was submitted to NDDC on 20th October 2014. As part of this formal scoping process NDDC consulted with the relevant internal departments in the Council and externally with statutory consultees, including Natural England, the Environment Agency, and with other non-statutory consultees as NDDC deemed relevant. Table 2.1 provides a list of the consultees who provided responses as part of this Scoping consultation. These responses have been taken into consideration in determining the scope of the EIA and the table also provides a summary of the comments received and signposts to where these have been addressed in the ES.

2.2.8 Other topic specific consultations that have been undertaken as part of the process are discussed within the relevant topic chapters.

**Topics scoped into the ES**

2.2.9 The topics that were formally agreed through the Scoping process, i.e. those which have the potential to give rise to significant environmental effects and are therefore addressed as part of this ES are listed below:

- Chapter 6: Landscape and Visual Impact;
- Chapter 7: Ecology;
- Chapter 8: Transport and Access;
- Chapter 9: Flood Risk and Surface Water Drainage, (Utility Assessment supplied at Appendix 2.1). It is noteworthy that this Utility Assessment does not assess the environmental effects of off-site utility connections because the nature and form of those connections will be established with the relevant statutory consultees following further survey and assessment. The applicants are working collaboratively with these consultees in this regard.
- Chapter 10: Noise and Vibration;
- Chapter 11: Air Quality;
- Chapter 12: Cultural Heritage;
- Chapter 13: Ground Conditions;
- Chapter 14: Socio-Economics; and
- Chapter 15: Energy.

2.2.10 The specific focus of the above assessments is detailed within each chapter.

**Topics not considered further in the ES**

2.2.11 Issues which have been assessed as unlikely to give rise to significant environmental effects have been omitted (also termed as 'scoped out') from the EIA and are detailed below with reasons provided as to why they are not considered to give rise to significant environmental effects:

- **Lighting**
  - It is considered that there is not the potential for significant lighting effects to arise as a result of the development and as such a lighting chapter is not considered to be required. Lighting design issues will be considered within the Development Description and supported by a technical Lighting Report.
- **Waste**
  - Site is currently predominantly a Greenfield site and therefore does not generate significant levels of waste. There is currently sufficient capacity within the County to be able to accept construction waste and therefore it is not considered that the construction waste would result in a significant effect. The residential element of the Proposed Development will be managed through the existing service operated by NDDC and will represent a relatively small increase on their current service and one that will be absorbed into their current contract. The waste generated by the non-residential elements of the scheme is not deemed to be significant in terms of local and regional waste generation figures and capacity and as such, waste has been scoped out of further assessment in the ES. It should be noted that construction waste will also be managed through a Site Waste Management Plan (SWMP) that will be developed.
- **Human Health**
  - Human health assessment has previously been considered, where appropriate, within specific topic chapters; namely air quality, noise and vibration. It is not considered necessary for this application to be supported by a specific Health Impact Assessment, as there are no specific features of the Proposed Development that present particular health issues or concerns.
- **Accidents, Fire and Natural Disasters**
  - It is considered that, while there is always a potential risk of an accident, fire or natural disaster that could result in a significant environmental effect; this risk, can be appropriately mitigated though embedded design measures and through compliance with statutory design guidelines. It is subsequently proposed that these potential risks are scoped out of future assessments for the Proposed Development.

**Table 2.1 Scoping Comments and Response Table**

| EIA Scoping Comments and Responses | | |
|---|---|---|
| **Consultee** | **Comment** | **Response / Where this is addressed** |
| **Landscape and visual impact** | | |
| North Dorset District Council | Agree with Request for Scoping Opinion letter dated 20th October 2014. No further comments. | ES Chapter 6 and Technical Appendix 6 |
| **Ecology** | | |
| North Dorset District Council | As you are aware protected species occur within the site, and there are a number of hedgerows and trees worthy of protection. | ES Chapters 6 & 7 and Technical Appendices 6 & 7 |
| **Transport and access** | | |
| Dorset County Council | The ES should include a comprehensive Transport Assessment (TA) prepared in accordance with DfT Guidance on Transport Assessments (2007), which would include an outline Travel Plan. The TA should include an assessment of the potential effects as outlined below, using standalone junction modelling software, traffic survey data and assessment methodology as agreed with the Highway Authority during pre-application discussions.<br>The ES should address the following transportation and access related effects:<br>• Temporary disruption to pedestrians, cyclists, buses and road vehicle users during the construction works, including public footpaths;<br>• Temporary generation of construction-related traffic during the construction works;<br>• Effects upon traffic flows and capacities of the local highway network;<br>• Effects upon pedestrian and cycle accessibility. | ES Chapter 8 and Technical Appendix 8 |
| **Flood risk and drainage** | | |
| Environment Agency | The existing public sewer network does not have sufficient capacity to drain a development of this scale.<br>The surface water drainage strategy will be considered and approved by the Environment Agency and the Local Planning Authority in consultation with the Local Lead Flood Authority. There are no public surface water systems available to serve this development and we anticipate a flood risk assessment that will utilise new outfalls to the existing watercourse with any necessary flood risk measures. We would also wish to see an assessment for the risk of groundwater flooding affecting the site under extreme conditions.<br>Peak foul flows from the site are predicted to increase risk of sewer flooding to downstream property. We would seek assessments that consider the impact of new foul water connections and any necessary measures that are needed to mitigate the risk of sewer flooding and deteriorating water quality.<br>We will need to work with the developer to consider a drainage strategy and participate in the master-planning arrangements that will be undertaken for a site of this scale.<br>A foul water drainage strategy will need to consider the following points:<br>• Development proposals and phasing arrangements for the site;<br>• Points of connection to the public foul sewer;<br>• Gravity or pumped discharges; | ES Chapter 9 and Technical Appendix 9 |

| | | |
|---|---|---|
| | • Schematic proposals with design flows for critical sewer routes and adoption requirements;<br>• Trigger points for capacity improvements; and<br>• Off-site requisition arrangements/capacity improvements.<br>Network modelling of the public sewer system will normally be required with flow surveys and verification with simulations to test a range of engineering options and cost estimates for sustainable solutions.<br>Incremental flows over the progress of the development will be used to appraise the hydraulic and process loading required at the sewage treatment works and assist in planning capital investment. There is a high probability for future expansion of the works during the plan period. | |
| | | |
| **Noise and air quality** | | |
| North Dorset District Council | Agree with Request for Scoping Opinion letter dated 20th October 2014. No further comments. | Noise: ES Chapter 10 and Technical Appendix 10<br>Air Quality: ES Chapter 11 and Technical Appendix 11 |
| **Cultural heritage** | | |
| North Dorset District Council | There is a high potential for as yet unrecorded archaeological remains to be present for a site of this size close to an historic town with known remains in the vicinity. Therefore it is considered that the site requires an archaeological assessment and an archaeological field evaluation before an informed planning decision can be made on a planning application. The assessment also needs to consider the impact of the proposed development on the setting of the Scheduled Monuments and other heritage assets surrounding the site; ie King's Court Place, and Deer Park. | ES Chapter 12 and Technical Appendix 12 |
| **Ground conditions** | | |
| North Dorset District Council | To identify or dismiss any possibility of contamination a desk top study of the site and potential impact or remediation is necessary. | ES Chapter 13 and Technical Appendix 13 |
| **Socio-economics** | | |
| North Dorset District Council | In addition to the matters listed in your letter: the housing mix, population projections, and employment needs should be explored; healthcare provisions doctors/dentists/ambulance; health risk identified by the Health and Safety Authority consultation zone. | ES Chapter 14 |
| **Energy** | | |
| North Dorset District Council | In July 2013, Government issued a Written Ministerial Statement on the changes to Part L of the Building Regulations for 2013, setting out the uplift to Part L. This year the Queen's Speech reiterated the zero carbon homes 2016 policy and the intention to introduce the Allowable Solutions mechanism bringing in the necessary powers through the Infrastructure Bill. In this context, the ES should look at the phasing of development to completion and assess what the needs for the entire site might be and consider the alternatives to achieving these targets. | ES Chapter 15 and Technical Appendix 15 |

### Construction Environmental Management Plan (CEMP)

2.2.12 The potential environmental effects of the remaining construction phases will be controlled through a Construction Environmental Management Plan (CEMP). A CEMP will be prepared prior to commencement of construction and would be agreed with NDDC.

### Cumulative Scope

2.2.13 As required by Schedule 4, Part 1, Paragraph 4 of the EIA Regulations, the likely effects of the Proposed Development and the likely effects of other developments in the geographical area of the Site have been considered in order to determine the likelihood of cumulative effects.

2.2.14 The EIA Regulations require consideration of developments that have been undertaken recently or are currently under construction, those for which planning permission exists or those which could be reasonably considered to be coming forward.

2.2.15 An initial search was carried out by the WYG Planning Team to identify newly committed or proposed developments within the vicinity of the Proposed Development. This involved a consideration of relevant planning policy and an online search of the NDDC's planning application database, from this search, a provisional list of developments was drawn up. This was then agreed with planning officers at NDDC.

2.2.16 The developments to be considered as part of the cumulative assessment are set out in the Table 2.2.

**Table 2.2 - Cumulative Developments**

| Table 2.2: Cumulative Impacts | | | | |
|---|---|---|---|---|
| **Site** | **Applicant** | **Application Ref** | **Total** | **Status** |
| Land East Of Barnaby Mead, Gillingham | The PG Ridgley Trust | 2/2016/0149/OUT | Up to 50 dwellings | Approved, 2 October 2017 (Not commenced) |
| Land To The East Of Lodden Lakes, New Road, Gillingham | Taylor Wimpey UK Ltd | 2/2014/0968/OUT | Up to 90 dwellings | Approved, 14 May 2015 (Not commenced) |
| Orchard Park Garden Centre, Shaftesbury Road, Gillingham | Milton Park (Dorset) Ltd | 2/2014/1590/FUL (renewal of 2/2011/0987/PLNG) | Erect extension to existing retail building | Approved, 5 May 2015 (Not commenced) |
| Bourton | Clublight Developments Ltd | 2/2016/0610/REM | 35 dwellings | Due to commence 2017 |
| Land adjacent to Greenacres, Sailsbury Road, Shaftesbury | Persimmon Homes (South Coast) Limited | 2/2012/0310/PLNG and 2/2016/0658/PAEIA | 238 dwellings | 41 units commenced and application approved for 97 units, 5 September 2017 |
| Land West of A350 Littledown, Shaftesbury | | 2/2015/0598/OUT | 170 dwellings | Approved, 16 March 2017 |

2.2.17 An assessment of inter-relationship of effects has also been made in relation to the development. This is where there is more than one effect identified on a single receptor. The individual effects themselves may not be of a significant nature but in combination the effect will potentially be of greater significance. The inter-relationship assessment of effects is carried out in the conclusions at Chapter 16 of this ES.

## 2.3 Assessment Criteria

### Overview

2.3.1 The assessments presented in this ES have considered the potential for significant environmental impacts to affect the baseline conditions as a direct/indirect result of the development. The baseline conditions are defined as the existing state of the environment and how it may develop in the future in the absence of the proposals. This is a requirement of the EIA Regulations which in Schedule 4, Part 1, Paragraph 3 require a description of the aspects of the environment likely to be significantly affected by the Proposed Development (HMSO, 2011).

2.3.2 Predictions are necessary when forecasting future impacts. In order to ensure that predictions are as accurate as possible, the EIA Regulations (Schedule 4, Part 1, Paragraph 4) require a description from the applicant or appellant of the forecasting methods used to assess the effects on the environment

(HMSO, 2011). Assessments have been undertaken in accordance with best practice guidelines published by the relevant professional bodies. Industry standard approaches, for example, the Chartered Institute of Ecology and Environmental (CIEEM) Guidelines for Ecological Impact Assessment in the United Kingdom (IEEM, 2006), the Landscape Institute / Institute of Environmental Management and the Countryside Agency's Guidelines for Landscape and Visual Impact Assessment Third Edition (LI/IEMA et al, 2013), CIRIA C552 (Rudland, D J et al. 2001), Institute of Environmental Assessment Guidelines for the Environmental Assessment of Road Traffic (IEA, 1993) etc., have been used in undertaking the impact assessments. Each chapter's methodology section provides details of the assessment criteria and terminology in the context of that technical discipline.

2.3.3 Where there is no topic specific guidance available, a common framework of assessment criteria and terminology has been developed drawing upon WYG's experience of undertaking EIA, for the presentation of predicted impacts. This is based on a widely used 'matrix approach' to environmental assessment which is based on the characteristics of the impact (magnitude and nature) and the sensitivity of the receptor, as described further below. This is known as a 'Type 3 assessment framework' by Wood (2008). It is recognised that the level of transparency in the approach is comparatively high, with the sensitivity framework incorporating useful examples and the descriptors serving to provide a fuller account of decision factors (Wood, 2008). Therefore, the approach does go some way to enhance the transparency of the assessment in the sense that the reader is potentially in a better position to 'calibrate' the language terms used by experts (Wood, 2008).

### Receptor Sensitivity

2.3.4 The sensitivity of a receptor refers to its importance, i.e. its environmental value/attributes. This may include a feature's level of statutory designation, for example if a site has a European designation (e.g. Special Area of Conservation) it will generally be regarded as more important/sensitive than another site with a national or local designation (e.g. Local Nature Reserve). The terminology defining sensitivity can vary according to discipline or the methodology being used. However, within this ES sensitivity is generally determined as **Very High**, **High**, **Medium** or **Low**.

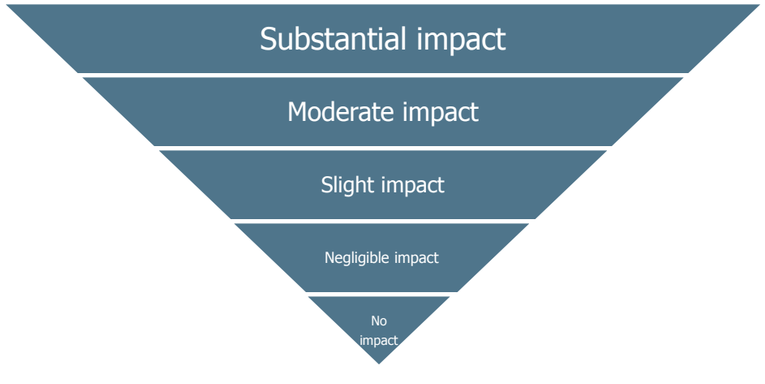
2.3.5 Each individual chapter within this ES considers the attributes of specific receptors in more detail.

### Determining Impact Magnitude

2.3.6 Magnitude is determined by predicting the scale of any potential change in the baseline conditions. Where possible, magnitude has been quantified; however where this has not been possible a fully defined qualitative assessment has been undertaken. The assessment of magnitude is carried out considering any 'design mitigation', i.e. relevant design features, in the proposal forming part of the development description. This may result in the need for 'additional mitigation' i.e. that which results from the EIA process, to reduce impacts further. Therefore, the magnitude of impacts both before and after 'additional mitigation' has been stated.

2.3.7 Magnitude will be defined within each chapter along a sliding scale. Typical terms that can be used are shown in Diagram 2.3. Reducing impacts are lower down the pyramid.

**Diagram 2.2 Pyramid depicting the relative scale of impact magnitude terminology**




2.3.8 As shown in Diagram 2.3; an impact of substantial magnitude is far worse than an impact of negligible magnitude or no impact.

### Determining the Significance and Nature of Effects


**Diagram 2.3 Significance of effects process equation**

2.3.9 To determine the significance of effect the assessor combines the predicted magnitude of impact (change) with the assigned sensitivity (value) of the receptor. This is shown as an equation in Diagram 2.4.

2.3.10 Table 2.3 shows how the interaction of magnitude and sensitivity can be combined to determine the significance of an environmental effect on a scale (note this does not define whether an impact is significant or not, see below). Deviation from the terminology may occur in cases where an established methodology requires this, which will be explained in relevant chapters.

2.3.11 The definition of at what level of significance a significant impact arises is provided within the topic method section of each chapter of the ES. This is important in the context of the EIA Regulations which in Schedule 4, Part 1, Paragraph 4 require a description of the likely significant effects of the development (HMSO, 2011) which should cover the direct effects and any indirect, secondary, cumulative, short medium and long-term, permanent and temporary, positive and negative effects of the Proposed Development. Therefore, environmental effects are described as:

- Adverse or beneficial;
- Direct or indirect;
- Temporary or permanent;
- Short, medium or long term;
- Reversible or irreversible; and
- Cumulative.

2.3.12 Adverse describes effects which are undesirable and beneficial describes effects which are desirable, and are used to describe effects resulting from impact magnitudes which are either negative or positive.

2.3.13 Each effect will have a source originating from the development, a pathway and a receptor. Effects which operate this direct way are regarded as direct effects. Effects on other receptors via subsequent pathways are regarded as indirect effects.

2.3.14 Each individual chapter within this ES considers the nature of effects and significance of effects and their definitions in more detail as required.

**Table 2.3 Example Significance of Effects Matrix**

| | | Magnitude of Impact | | | |
|---|---|---|---|---|---|
| | | **Substantial magnitude** | **Moderate magnitude** | **Slight magnitude** | **Negligible magnitude** |
| **Sensitivity of Receptor** | **Very High** | Major | Major | Major/ Intermediate | Neutral |
| | **High** | Major | Major/ Intermediate | Intermediate/ Minor | Neutral |
| | **Medium** | Major | Intermediate | Minor | Neutral |
| | **Low** | Intermediate/ Minor | Minor | Neutral | Neutral |

### EIA Assumptions and Limitations

2.3.15 The following key assumptions have been made in preparing the ES:

- All legislative requirements will be met.
- The pre-additional mitigation effects assessment reported within this ES assumes the project will be constructed in accordance with industry standard techniques and currently enforced mandatory minimum standards, and assumes suitably experienced contractors will be appointed to design, construct and commission the development. The base assessment is reported on the design, construction, and operation of the development as provided within the description given in Chapter 3.
- The potential environmental effects of the construction phase will be controlled through a Code of Construction Practice. A Construction Environmental Management Plan (CEMP) will be prepared prior to commencement of construction and will contain all the design and additional mitigation as identified and reported within this ES and any subsequently agreed requirements, expected to be enforced by planning conditions. The details of these documents would be agreed with EHDC prior to construction commencing.

2.3.16 Where further assumptions have been made for individual topic assessments these will be identified within the relevant topic chapters.

2.3.17 Any limitations or uncertainties associated with impact prediction or the sensitivity of receptors due to the absence of data or other factors will give rise to uncertainty in the assessment. Schedule 4, Part 1, Paragraph 7 of the EIA Regulations requires that an ES state whether any "difficulties (technical deficiencies or lack of know-how) were encountered by the Applicant in compiling the required information." (HMSO, 2011). In this case any limitations in the assessments are referred to in the relevant chapter of this ES.

### Proposed Mitigation Measures

2.3.18 A description of the mitigation measures is one of the requirements of the EIA Regulations. Schedule 4, Part 1, Paragraph 5 of the EIA Regulations sets out the information that must be included in an ES and this includes "a description of the measures envisaged to prevent, reduce and where possible, offset any significant adverse effects on the environment." (HMSO, 2011).

2.3.19 In order to reduce the magnitude of the impact and therefore the significance of the environmental effect, where possible, mitigation measures have been identified. The following hierarchy, and terminology, has been used when determining mitigation measures as depicted in Diagram 2.5.

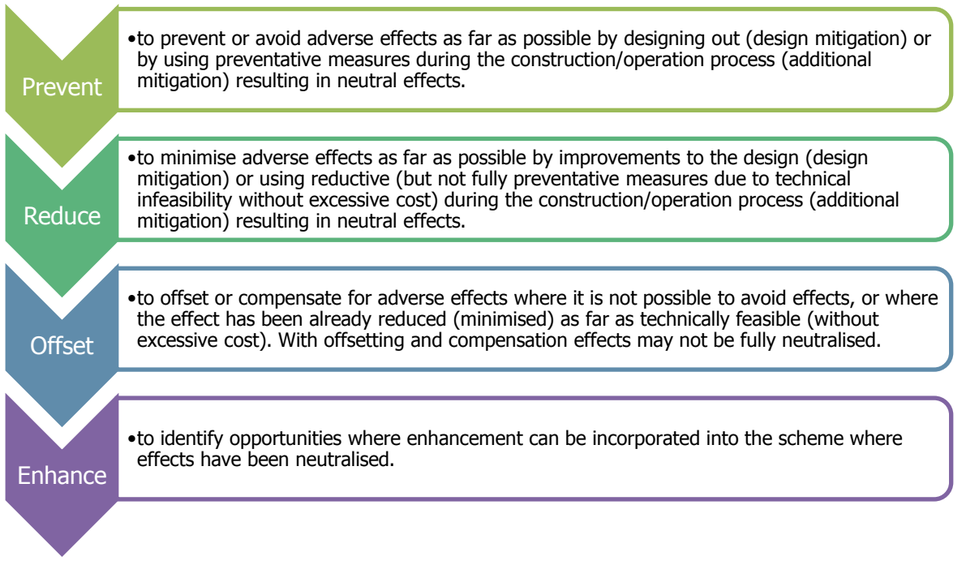



**Diagram 2. 4 The mitigation hierarchy applied in EIA**

2.3.20 When describing mitigation measures, they generally fall under two headings, 'design mitigation' and 'additional mitigation'.

2.3.21 Design mitigation is where the design of the site has been altered to take into account a particular issue or accommodate an important feature. This will generally be part of the project description but will also be identified in the relevant chapter under the 'Mitigation within the Submitted Design' sub heading. The strategic development of the masterplan for the development has involved the consideration of potential impacts of alternative designs and layouts of the site. This is described in Chapter 4 of this ES. In addition, specific features of the development have been included in the fixed design of the site, structures and buildings to avoid or reduce impacts. Therefore the mitigation of impacts has been integral to the design process undertaken and was facilitated by:

- Early identification of the baseline environment;
- Preliminary identification of potential significant impacts by technical specialists; and
- Engagement with key stakeholders including statutory and non-statutory organisations and the public through the consultation strategy.

2.3.22 Additional mitigation is all other mitigation that has been identified as a result of the impact assessment that has been undertaken on the fixed design scheme. Clear details of when and how the mitigation measures identified in the chapter will be implemented have been given. An assessment of 'residual' magnitude is conducted following the determination of suitable additional mitigation measures. The subsequent assessment of residual significance identifies the residual environmental effects, these being the final outcome of the EIA process. Statements are made of whether residual effects are significant or not.

## 2.4 References

Her Majesty's Stationery Office (HMSO), 2011. The Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (SI 1824).

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The Landscape Institute / Institute of Environmental Management and the Countryside Agency, 2002. Guidelines for Landscape and Visual Impact Assessment. Third Edition.

Wood G., 2008. Thresholds and criteria for evaluating and communicating impact significance in environmental statements: 'See no evil, hear no evil, speak no evil'? Environmental Impact Assessment Review. Volume 28. 22-38.