

2. EIA Methodology

Appendix 2.1

EIA SCOPING REPORT



ENVIRONMENTAL IMPACT ASSESSMENT SCOPING REPORT



Request for a scoping opinion for

Goodison Park

Goodison Rd

Liverpool L4 4EL

May 2017

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CONTENTS

1	Introduction	3
1.1	Overview.....	3
1.2	Environmental Impact Assessment	4
2	Overview of the Proposed Development.....	11
2.1	Site Description	11
2.2	Site Context	11
2.3	The Proposed Development	11
3	Proposed Scope of the EIA	14
3.1	The Focus of EIA	14
3.2	Relevant Planning Policy and Guidance	14
3.3	Receptors	14
3.4	Cumulative Effects: Consented and Reasonably Foreseeable Schemes	16
3.5	Assessment Scenarios.....	19
3.6	Associated Development.....	19
3.7	Approach to Assessment of Parameters.....	19



3.8	Design Interventions.....	20	6.11	Wind.....	69
3.9	Consideration of Alternatives	21	7	Summary and Conclusions	72
3.10	New Topics Required under the 2017 Regulations	22	7.1	Request for a Scoping Opinion	72
3.11	Structure of the ES.....	38	7.2	List of consultees.....	72
3.12	Assessment of significance.....	42	7.3	How to Comment	72
3.13	Competent experts	43	7.4	Period for Adopting Scoping	72
4	EIA Technical Chapters.....	45	8	Works Cited	73
5	Scoped Out Topics.....	46			
5.1	Waste	46			
6	Scoped In Topics.....	47			
6.1	Ground Conditions	47			
6.2	Water Environment	49			
6.3	Biodiversity (including Flora & Fauna)	52			
6.4	Socio-economics.....	53			
6.5	Townscape & Visual	55			
6.6	Archaeology & built Heritage	56			
6.7	Transportation	58			
6.8	Air Quality.....	63			
6.9	Noise & Vibration	65			
6.10	Daylight, Sunlight & Overshadowing	67			

1 Introduction

1.1 OVERVIEW

Everton Football Club (EFC) (hereafter, 'the Applicant') is seeking to relocate from Goodison Park, Goodison Rd, Liverpool L4 4EL to a proposed new stadium at Bramley-Moore Dock approximately 2.5km to the south-west of the site. This Request for a Scoping Opinion relates to a proposed redevelopment of the Goodison Park site (hereafter, 'the application site').

This Environmental Impact Assessment (EIA) scoping report has been prepared by CBRE on behalf of the Applicant to set out the scope of the EIA and associated Environmental Statement (ES) to support a detailed planning application for the development of the application site. It brings together the results of early consultations and desk based assessments already undertaken, which have helped to establish the scope and methodology that will be applied to the EIA.

The Applicant is currently undertaking a pre-application masterplanning process for the application site. The objectives of this report are to accompany a formal request to LCC for an EIA Scoping Opinion and also to facilitate wider consultation with stakeholders likely to have an interest in the development proposals. The report therefore outlines:

- some of the key considerations of the EIA process and the approach that will be adopted for the EIA in light of the existing knowledge of the application site and Applicant's development proposals;
- the additional information which is to be collected to characterise the baseline environment of the application site;
- the potential environmental impacts and likely effects anticipated at this stage;
- the methods for predicting and assessing the scale of effect and the likely significance of each anticipated effect;
- the opportunities for mitigation of identified effects;
- the environmental issues that are considered unlikely to give rise to significant environmental effects; and
- pathways for further consultation with the local planning authority, and other relevant bodies on the environmental issues to be addressed as part of the design and EIA process.

A full ES will accompany the detailed planning application which is to be submitted in due course for the development of the application site

Goodison Park

Goodison Park is Everton Football Club's current home stadium. The stadium has been home to the Club for 124 years, since opening in 1892, and remains one of the oldest purpose-built football grounds in the country.

The application site is located within the administrative area of Liverpool City Council ("LCC"), to the north of the city centre. The location of the site is shown in **Figure 1**, provided in **Appendix A**.

The site is bound by Goodison Road to the west, Spellow Lane to the south-west, Walton Lane to the south, Bullens Road to the east, Gwladys Street to the north and Goodison Place and Church of St Luke the Evangelist to the north-west.

The stadium – which has capacity to seat up to 39,150 people – and ancillary structures (e.g. turnstile entrances and ticket offices) cover much of the application site, with the exception of the southern portion of the site, which comprises hardstanding. Goodison Avenue, a small vehicle access road, extends from Goodison Road eastwards into the southern portion of the site. Car parking areas are located to the north and south of the access road.



Introduction

Adjacent Sites and Land Uses

The area surrounding the site is characterised primarily by terraced residential properties. Stanley Park, which includes areas of green space, a lake and leisure facilities, is separated from the application site by Walton Lane to the south. Anfield Cemetery adjoins the park to the north-east. Both Stanley Park and Anfield Cemetery are listed in the National Register of Historic Parks and Gardens. Other land uses in proximity to the site include schools, places of worship, shops, bookmakers, public houses, hot food takeaways and hotels.

Baseline Conditions

The baseline for the EIA will be taken as the application site and its immediate surrounds.

The Proposed Development

The Applicant will be seeking permission to comprehensively redevelop the application site to deliver a residential-led mixed use scheme, also comprising a range of flexible uses – including community, education, health, leisure, retail and/or commercial – together with access, car parking, landscaping and public realm improvement works (from herein referred to as “the proposed development”). The proposed development is described further in Section 2.

Consultation

The proposed consultees to the EIA scoping process are listed at Section 7.2.

In addition, as part of the pre-application design and planning process, the Applicant will continue to engage in a programme of consultation with local stakeholders which provides for meetings with LCC and other

statutory consultees, correspondence and meetings with political representatives as well as local groups and organisations, public exhibition, media briefings, a dedicated website, and a single point of contact for enquiries.

1.2 ENVIRONMENTAL IMPACT ASSESSMENT

The Purpose of Environmental Impact Assessment

Environmental Impact Assessment (EIA) is a formal process for ensuring that the likely significant effects of a new development on its surrounding environment are fully identified and taken into account before that development is allowed to proceed.

The Department of Communities & Local Government’s Planning Practice Guidance [1] states that the purpose of EIA is:

“to protect the environment by ensuring that a local planning authority when deciding whether to grant planning permission for a project, which is likely to have significant effects on the environment, does so in the full knowledge of the likely significant effects, and takes this into account in the decision making process”

The Development in the Context of the EIA Regulations 2011

The proposed development is not Schedule 1 development, for which EIA would be mandatory; it is however of a type listed within the descriptions of development contained within Schedule 2, falling under category 10(b) urban development projects (including the construction of shopping centres and car parks, sports stadiums, leisure centres and multiplex cinemas).

A development is considered to be Schedule 2 development if any part of it lies within a ‘sensitive area’ or if it meets or exceeds the relevant thresholds and criteria for that category of development, as detailed in the Town and



Introduction

Country Planning (Environmental Impact Assessment) Regulations 2011 (as amended) (herein the "EIA Regulations 2011"). For category 10(b) projects, these are as follows:

- (i) The development includes more than 1 hectare of urban development which is not dwelling-house development; or
- (ii) the development includes more than 150 dwellings; or
- (iii) the overall area of the development exceeds 5 hectares.

The proposed development does not lie within a sensitive area, as defined in the EIA Regulations 2011. However, on the basis that the development will exceed the 150 dwelling threshold, the proposed development is Schedule 2 development and would therefore fall within the scope of the regulations.

In the interests of undertaking a robust assessment of the likely significant environmental effects of the proposals, it is intended to voluntarily submit an Environmental Statement (ES) to LCC in conjunction with the proposed planning application.

Scoping

Scoping is an important, though optional exercise undertaken throughout the early stages of the EIA process. Its purpose is to focus the EIA and resultant ES on key issues and avoid the unnecessary examination of minor issues.

This report is a request for a scoping opinion submitted under Regulation 13(1) of the EIA Regulations 2011.

In accordance with Regulation 13(2), this request is accompanied by:

- A plan sufficient to identify the land; and

- A brief description of the nature and purpose of the development and of its possible effects on the environment.

In accordance with best practice, the opportunity to include additional information, beyond the minimum requirements of the EIA Regulations 2011, has been taken to provide LCC, statutory consultees and other stakeholders with a better understanding of the proposed approach that will be taken to the EIA process, the various technical assessments being undertaken and the intended structure of the ES. Scoping is an ongoing process with consultation undertaken by the local authority with the relevant statutory bodies and other stakeholders regarding the content of this scoping report. A scoping opinion will be provided by the local authority at the end of a five week period. During this time, the applicant and technical team will continue to undertake consultation with all relevant statutory consultees and local stakeholders to ensure that the scoping opinion is based on the most recent discussions and any relevant environmental assessments which might avoid the need for duplication.

Forthcoming Changes to the EIA Regulations

This request for a scoping opinion is submitted under the EIA Regulations 2011 [2] [3]. The 2011 regulations are the relevant environmental impact regulations against which the proposed development is to be assessed.

The EIA Regulations 2011 are due to be replaced by the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ("EIA Regulations 2017") on the 16 May 2017 [4]. The EIA Regulations 2017 contain transitional provisions under Regulation 76 stating that where a request for a scoping opinion has been submitted prior to the 16th May 2017, the EIA Regulations 2011 continue to apply and will continue to form the basis for LCC's decision on the Applicant's planning application.



Introduction

Whilst it is beneficial for any future application(s) to be determined under the EIA Regulations 2011, where the regulatory framework and case law is already well established, the Applicant is committed to meeting the spirit and technical requirements of the EIA Regulations 2017. This request for a scoping opinion therefore includes consideration of likely significant impacts on climate change, biodiversity, land, human health and major accidents and disasters. The ES will address the main alternatives and the reasonable alternatives considered by the Applicant. It will include CVs for all technical consultants to demonstrate that the EIA and resultant ES is being prepared by consultants who, in the opinion of the Applicant, are competent experts in their respective fields.

Requirements of an Environmental Statement

Regulation 2(1) of the EIA Regulations 2011 defines an ES as a statement:

that includes such of the information referred to in Part I of Schedule 4 as is reasonably required to assess the environmental effects of the development and which the applicant can, having regard in particular to current knowledge and methods of assessment, reasonably be required to compile, but that includes at least the information referred to in Part II of Schedule 4.

Schedule 4 Parts I and II are replicated in **Tables 1.1 and 1.2** below for the EIA Regulations 2011 and the EIA Regulations 2017.



Introduction

Table 1.1:

Specified Information within Schedule 4 of the EIA Regulations 2011 (Parts 1 and 2) & 2017 (Consolidated)

EIA REGULATIONS 2011 [REGULATION 2(1)]	EIA REGULATIONS 2017 [REGULATION 18(3)]
SCHEDULE 4: PART I	SCHEDULE 4: PARTS I & II (NOW CONSOLIDATED)
<p>1. Description of development, including in particular:</p> <p>a. a description of the physical characteristics of the whole development and the land-use requirements during the construction and operational phases.</p> <p>b. a description of the main characteristics of the production processes, for instance, nature and quantity of materials used.</p> <p>c. an estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed development.</p> <p>- -</p>	<p>1. Description of the development, including in particular:</p> <p>a. a description of the location of the development;</p> <p>b. a description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases;</p> <p>c. a description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used;</p> <p>d. an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases.</p>
<p>2. An outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for his choice, taking into account the environmental effects.</p>	<p>2. A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.</p>
<p>3. A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the interrelationship between the above factors.</p>	<p>3. A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development 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.</p>

Introduction

EIA REGULATIONS 2011 [REGULATION 2(1)]	EIA REGULATIONS 2017 [REGULATION 18(3)]
<p>4. A description of the likely significant effects of the development on the environment, 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 development, resulting from: (a) the existence of the development; (b) the use of natural resources; (c) the emission of pollutants, the creation of nuisances and the elimination of waste, and the description by the applicant of the forecasting methods used to assess the effects on the environment. [5]</p>	<p>4. A description of the factors specified in Regulation 4(2) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.</p>
<p>5. A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.</p>	<p>5. A description of the likely significant effects of the development on the environment resulting from, inter alia:</p>
<p>6. A non-technical summary of the information provided under paragraphs 1 to 5 of this Part.</p>	<p>a. the construction and existence of the development, including, where relevant, demolition works;</p>
<p>7. An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information.</p>	<p>b. the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;</p>
<p>PART II</p>	<p>c. the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;</p>
<p>1. A description of the development comprising information on the site design and size of the development.</p>	<p>d. the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);</p>
<p>2. A description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects.</p>	<p>e. the cumulation of effects 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;</p>
<p>3. The data required to identify and assess the main effects which the development is likely to have on the environment.</p>	<p>f. 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;</p>
<p>4. An outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for his choice, taking into account the environmental effects.</p>	<p>g. the technologies and the substances used.</p>

Introduction

EIA REGULATIONS 2011 [REGULATION 2(1)]	EIA REGULATIONS 2017 [REGULATION 18(3)]
	<p>The description of the likely significant effects on the factors specified in Regulation 4(2) should cover 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. This description should take into account the relevant environmental protection objectives established at the national level.</p>
<p>5. A non-technical summary of the information provided under paragraphs 1 to 4 of this Part.</p>	<p>6. A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.</p>
	<p>7. A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.</p>
	<p>8. 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. Relevant information available and obtained through risk assessments. 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.</p>
	<p>9. A non-technical summary of the information provided under paragraphs 1 to 8.</p>
	<p>10. A reference list detailing the sources used for the descriptions and assessments included in the environmental statement.</p>

Source: EIA Regulations 2011 & 2017

Introduction

Structure of this Report

The remainder of this report is structured as follows:

- Section 2: Overview of the Proposed Development;
- Section 3: EIA Methodology;
- Section 4: EIA Technical Chapters;
- Section 5: Scoped Out Topics;
- Section 6: Scoped In Topics; and
- Section 7: Summary and Conclusions.



2 Overview of the Proposed Development

2.1 SITE DESCRIPTION

The application site is located to the east of Goodison Road and is centred on National Grid Reference (NGR) SJ 35897, 93976, on **Figure 1, Appendix A**.

The site is currently occupied by Goodison Park, Everton Football Club's home stadium. The overall site area is 3.2 ha.

The site is bound by Goodison Road to the west, Spellow Lane to the south-west, Walton Lane to the south, Bullens Road to the east, Gwladys Street to the north and Goodison Place and Church of St Luke the Evangelist to the north-west.

The stadium – which has capacity to seat up to 39,150 people – and ancillary structures (e.g. turnstile entrances and ticket offices) cover much of the site. The stadium adjoins the northern site boundary along its entire length and also adjoins the eastern and western site boundaries along much of their length. The only part of the site where the stadium does not extend to is the southern portion of the site, which comprises hard standing. Goodison Avenue, a small vehicle access road, extends from Goodison Road eastwards into the southern portion of the site. Car parking areas are located to the north and south of the access road. These car parking areas are used in relation to the wider club operations and, as such, are in operation on non-match days. These areas are also used for storage of equipment, such as stadium lighting equipment. Pedestrian access to the southern portion of the site is provided by gates located in the south-western corner of the site, adjacent to Spellow Lane. Access to the stands for match attendees is also provided directly into the stadium along the eastern and western facades of the stadium.

2.2 SITE CONTEXT

The area surrounding the site is characterised primarily by terraced residential properties. Gwladys Street Community Primary and Nursery School is located close to the site, on the opposite side of Bullens Road to the east of the site. Another school, Everton Free School, is located approximately 150 metres to the west of the site on Spellow Lane. In addition to Church of St Luke the Evangelist, two other places of worship are located close to the site: Salop Chapel Free Presbyterian Church and Spellow Lane Church, located approximately 30 metres and 110 metres to the west of the site respectively.

Stanley Park is separated from the application site by Walton Lane to the south. The park includes a lake, areas of green space and leisure facilities, including football pitches. Anfield Cemetery adjoins the park to the north-east. Both Stanley Park and Anfield Cemetery have been classified as Registered Historic Parks and Gardens of special historic interest by Historic England (Grade II*).

Other land uses in proximity to the site include shops, bookmakers, public houses, hot food takeaways and hotels.

2.3 THE PROPOSED DEVELOPMENT

The Need for the Development

Goodison Park has been home to Everton Football Club for 124 years since opening in 1892 and remains one of the oldest purpose-built football grounds in the country. However, the Club now falls behind many similar clubs in ground capacity and quality of facilities.

The challenges of Goodison Park have long been recognised. Its age, size and configuration restrict commercial growth and the Club has regularly



Overview of the Proposed Development

explored the potential of developing and extending existing stands on the same footprint. However, current legislation and fan expectations would result in a significant reduction in capacity. Therefore, the Club has recognised that a new stadium with increased capacity will require a move from the existing ground at Goodison Park.

This vision is not a new one, and indeed EFC has been looking for an alternative site for some time with initial discussions about the limitations of Goodison and the need to consider a move dating back to before 2001. The Club is now proposing to move to a new purpose-built stadium at Bramley-Moore Dock.

Vacating Goodison Park creates an opportunity for the Applicant to redevelop the site as a community hub and focal point, which could also spark further regeneration of the wider Everton area in the future.

The proposed residential units will assist the local authority in achieving its housing targets; while the proposed community uses will also provide valuable services for existing local residents, as well as new residents moving to the site.

The proposals will contribute to the Club's community engagement programme ("Everton in the Community"), demonstrating the Club's ongoing and long-term commitment to investing in the local community.

Description of Development

The development proposals are currently in their early stages and will continue to be developed through an iterative design process that takes into account existing site constraints and opportunities, as well as consultation with LCC, local residents and other stakeholders.

At this stage, it is envisaged that the proposals will broadly comprise:

- Demolition of the existing stadium and associated structures;

- Site clearance and ground preparation works, including removal of hardstanding areas;
- Construction of up to 500 residential units;
- Construction of up to 23,000 square metres (GIA) of floorspace across the following flexible uses: community, healthcare, education, leisure, hotel, retail and/or commercial (use classes: A1, A2, A3, A4, A5, B1, C1, C2, C3, D1 and/or D2);
- Car parking and access works, including the provision of up to 650 car parking spaces;
- Public realm improvement works and the creation of green spaces. It is envisioned that elements of the site's historic use will be retained within the landscaping and public realm improvements; and
- Access improvement works. Multiple access points on to the site are anticipated;

The energy strategy for the scheme is yet to be established. At this stage it is considered that the proposals could include Combined Heat and Power (CHP) plant.

Under the proposals, building heights will vary across the site. At this stage, it is anticipated that maximum building heights will not exceed 61.5m AOD (circa 19 storeys).

It is anticipated that the proposed development will be delivered in a phased approach. Construction of the scheme will not begin until the Club have vacated the site.

Off-site Works

Until the design has progressed further, it is not known exactly what off-site (associated development) works may be required to facilitate the development, though such works may comprise:



Overview of the Proposed Development

- Highways works; and
- Improvement works to infrastructure, including utilities.

Such works will be discussed with LCC and the appropriate consultees to ensure that they have been adequately assessed within the EIA.

Form of Application

Submission of an outline planning application for the scheme is proposed, with all matters reserved, with the exception of the main road accesses into the site, which would be fixed as part of any permission.



3 Proposed Scope of the EIA

3.1 THE FOCUS OF EIA

EIA is a process that should be focussed on the likely significant environmental effects of a proposed development. It is not intended to be a process to address all of the possible environmental effects.

One of the main criticisms of current EIA practice is that the scope is often drawn too widely, which results in environmental statements which are unnecessarily long and are less useful for their intended purpose, i.e. to act as a decision-making tool.

“At its best, EIA helps to shape the design and siting of development such that social value to communities and broader economic value to investors can both be met, without eroding natural capital and pushing the boundaries of environmental limits – a tool that can truly support moves towards sustainability. However, the many competing demands can often serve to stifle the process, resulting in reams of information that mask the key environmental issues that need to be considered.” [5]

This section outlines the proposed scope of the EIA for the redevelopment of the Goodison Park site.

3.2 RELEVANT PLANNING POLICY AND GUIDANCE

The following is the predominant planning policy and guidance relevant to the proposed development:

- National Planning Policy Framework (NPPF) (2012) [6];
- Planning Practice Guidance (2014) [1];
- Saved Liverpool Unitary Development Plan: A Plan for Liverpool (2002) [7];

- The Draft Liverpool Local Plan (2016) [8] – this is due for adoption Dec 2017/Jan 2018 and therefore, careful consideration will be given to emerging policies as it progresses;
- Institute of Environmental Management and Assessment (IEMA) Guidelines for environmental impact assessment [9].

In addition, consideration will also be given to relevant Supplementary Planning Documents (SPDS) and Supplementary Planning Guidance (SPGs) as well as the relevant policy requirements of Sefton Council, given that this Council area is located approximately 650m to the north of the application site.

3.3 RECEPTORS

The following key receptors have been identified in the vicinity of the site. It is proposed that the assessments will focus on identifying the effects of the scheme at/on these receptors within the relevant chapters of the ES:

- European-designated Natura 2000 sites located within a 10km radius of the site:
 - Dee Estuary Special Area of Conservation (SAC);
 - Sefton Coast SAC;
 - Ribble & Alt Estuaries Special Protection Area (SPA) and Ramsar Site;
 - Mersey Estuary SPA and Ramsar Site;
 - Mersey Narrows & North Wirral Foreshore SPA and Ramsar Site; and
 - Liverpool Bay SPA.

Proposed Scope of the EIA

- Residential properties and other uses sensitive to noise and air quality impacts in proximity to the application site and local road network, including:
 - residential properties located along Goodison Road, Spellow Lane, Oxtan Street, Winslow Street, Eton Street, Neston Street, Andrew Street, Nimrod Street, Gwladys Street, Leta Street, Bullens Road, Muriel Street and Diana Street;
 - Gwladys Street Community Primary and Nursery School and Everton Free School; and
 - Church of St Luke the Evangelist, Salop Chapel Free Presbyterian Church and Spellow Lane Church;
- Residential properties and other uses sensitive to daylight, sunlight, overshadowing and/or wind impacts, either directly adjacent or in very close proximity to the site;
- Statutory and non-statutory designated built heritage assets in proximity to the application site, including:
 - Listed buildings, including Anfield Cemetery (Grade II*), Stanley Park, Liverpool (Grade II*) and a number of Grade II listed buildings; and
 - Anfield Cemetery (Grade II*) and Stanley Park, Liverpool (Grade II*) Registered Historic Parks and Gardens of special historic interest;
- Walton on the Hill Conservation Area (located approximately 525m to the north of the site);
- Liverpool Maritime Mercantile City UNESCO World Heritage Site (located approximately 2.2km to the south west of the site);
- Any previously unrecorded archaeological assets that may be present in the ground beneath the application site;
- National, County, and District Landscape Character Areas within the visual envelope of the site;
- Any statutory and non-statutory designated landscapes within the visual envelope of the site;
- Geology and aquifers beneath the application site, comprising Chester Pebble Beds Formation bedrock (Principle Aquifer);
- Surface water features including:
 - Stanley Park Lake (separated from the application site by Walton Lane to the south);
 - The River Mersey (located approximately 2.7km to the west of the site); and
 - The Leeds & Liverpool Canal, which runs from north to south, approximately 1.5km to the west of the application site;
- Local social and community services, including primary schools, secondary schools, and primary healthcare facilities;
- The townscape character of the local urban environment;
- Locations in the local area with open views of the site; and
- Sensitive receptors that would be brought to the site under the proposals, including site workers during the construction phase and those using/occupying the proposed residential properties, and other proposed uses, once operational.

Proposed Scope of the EIA

3.4 CUMULATIVE EFFECTS: CONSENTED AND REASONABLY FORESEEABLE SCHEMES

The EIA Regulations 2011 require the consideration of cumulative effects. Good practice guidelines recommend that an EIA should assess the effects of a development cumulatively with other developments only where there are likely to be significant effects. For the purposes of the ES, cumulative effects will be considered both through the combination of different aspects of the Proposed Development (“**intra-project effects**”) and in terms of the effects from the interaction of the Proposed Development with other projects which have been implemented or approved or which are reasonably foreseeable as being approved and which do not form part of the baseline conditions described in Section 3.5 below (“**inter-project effects**”)

Table 3.1 sets out the cumulative schemes that are considered relevant to the redevelopment of the site, though the relevance of each scheme will depend upon the topic being assessed. This list has been compiled in consultation with LCC.

We welcome views from the consultees on other consented and reasonably foreseeable schemes that should be considered in the cumulative assessment within the EIA.

Proposed Scope of the EIA

Table 3.1

Consented and reasonably foreseeable developments

SCHEME	DESCRIPTION	STATUS
Bramley Moore Dock Stadium	Proposals for a new stadium for Everton Football Club at Bramley Moore Dock	Planning application to be submitted Q4 2017
Liverpool Waters (100/2424)	The comprehensive redevelopment of up to 60 hectares of former dock land comprising a maximum of 305,479sqm office space, 752,675 sqm of residential space accommodating 9,152 homes, 69,735 sqm of hotel and conference facilities, 24,696 sqm comparison retailing, 7,768 sqm convenience retailing, 8,588 sqm financial and professional services, 33,638 sqm cafes and restaurants, 20,210 sqm drinking establishments, 9,764 sqm of non-residential institutions, 33,299 sqm assembly and leisure, and public open spaces.	Outline permission granted June 2013
"Clock Tower Drive", off Rice Lane, Walton (former Walton Hospital Site) (15F/1129)	To erect 195 dwellings	Under construction. Completion anticipated February 2019
"Claremont Gardens", Westminster Road, Sellar Street, Easby Rd (11F/1146 & others)	274 homes total (of which 253 are built as of May 2017).	Under construction. Completion anticipated December 2017
Project Jennifer, Great Homer Street (13RM/1269)	New District Centre with Sainsburys superstore, petrol station, and non-food retail units	Under construction. Completion anticipated May 2017
"The Parks" — Phase 4 (15RM/1499)	To erect 106 x 2 and 3 storey homes.	Under construction. Completion anticipated Spring 2019

Proposed Scope of the EIA

Cemex UK Ltd, Regent Road (16F/2999)	To erect asphalt manufacturing plant with ancillary weighbridge, control room, staff welfare facilities and car parking (1.18ha)	Permission granted January 2017
"The Parks" – Phase 5 (08F/0247)	113 new homes	Detailed planning application awaited
Land at Commercial Road	110 new build apartments	Planning application awaited following press announcement

The list of cumulative schemes provided in the table above will be kept under review up to the point of application submission. Cumulative assessments will be dependent on the availability of publically available information.

Proposed Scope of the EIA

3.5 ASSESSMENT SCENARIOS

Geographical Scope of Assessment

The redline boundary for the application site is shown in Figure 1, Appendix A.

The relevant geographical scope of assessment for each topic is stated within the technical sections contained in Sections 5 and 6 of this report.

Temporal Scope of Assessment

It is anticipated that the proposed development will be delivered in a phased approach. Construction would begin following the Club's vacation of the site, which is currently anticipated to be in Q2/Q3 2021, following completion of the new stadium construction in March 2021 and prior to commencement of the 2021/2022 football league season. At this stage, it is envisaged that construction of the proposed scheme as a whole would be completed by 2026 ("the opening year").

The term 'opening year' is referenced throughout the remainder of this report. This is to reflect the fact that, should the indicative programme change prior to the submission of the planning application, which might arise due to delays in finalising the design of the new stadium etc., the ES would assess a different opening year to that currently indicated, for example 2027.

Opening Year Assessment Scenarios

The 'Do Nothing' Scenario (the Baseline)

Under the do nothing scenario, the site would continue in its current use as EFC's home stadium.

In the ES, this scenario will take account of the likely evolution of the application site as far as natural changes can reasonably be assessed on the information which is available.

The 'Do Something' Scenario

Under the do something scenario, the application site would be developed in accordance with the scheme description provided in Section 2 of this report. This scenario would also assume that other consented developments (as listed in Table 3.1) would come forward and these would therefore be included within the assessment scope.

3.6 ASSOCIATED DEVELOPMENT

Associated development is that which does not form part of a planning application but which is required in order for a development to progress. This might include the upgrading of road junctions and/or the delivery of off-site service/utilities infrastructure.

Whilst the associated development required to deliver the proposed schemes has yet to be confirmed, a suitable level of consideration will be given to its effects within the relevant chapters of the ES should it be required.

3.7 APPROACH TO ASSESSMENT OF PARAMETERS

A number of parameter plans, parameter statements and design codes will be submitted as part of the outline planning application for the Goodison Park scheme. The parameter plans will show information including maximum building heights, maximum and minimum building footprints and floorspace areas for each land use, maximum excavations and maximum parking spaces.



Proposed Scope of the EIA

Given that the planning application will be in outline, it is anticipated that wirelines will be used for the assessment of the visual effects of the scheme. As a minimum, wirelines would be set to the maximum parameters of the development (i.e. maximum height and scale of the buildings). The viewpoints, and the nature of the visualisations that will be prepared as part of the assessment, will ultimately be agreed through consultation with LCC's Landscape Officer.

Maximum parameters for floorspace areas for the proposed flexible uses, residential unit numbers and car parking will be used in the other relevant assessments to ensure a robust approach to the EIA. The socio-economic assessment will also utilise minimum parameters for the proposed land uses as these would better provide a more robust approach to certain elements of this assessment, such as the assessment of the impacts of operation of the scheme on the local economy.

The size of units has a bearing on the resident population and, in turn, the level of demand for local services. In order to provide a robust assessment, an optimal preferred mix of residential units based on current demand in the local area will be identified and assessed alongside a 'worst case' mix to allow for potential changes in demand in the future. This will include a mix with a higher percentage of larger residential units, which would result in increased demand for local healthcare and education services.

The revised design then undergoes a further impact assessment and, if required, additional mitigation and enhancement measures (which are not incorporated into the design and/or relate to the management of the proposed development) are identified. The ES will include an assessment of residual effects which are those likely to arise after any additional proposed mitigation and enhancement has been applied.

3.8 DESIGN INTERVENTIONS

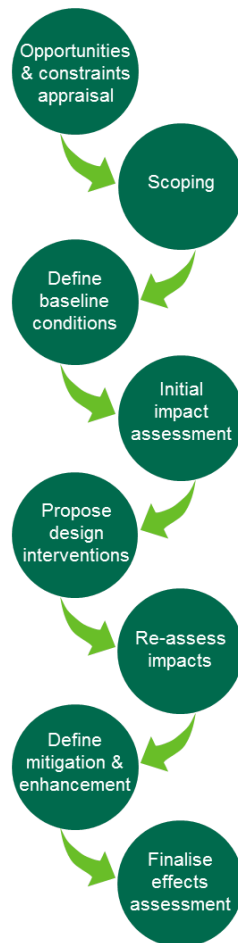
EIA is an iterative process, as illustrated in **Figure 3.1**. An initial impact assessment of the proposed development is undertaken, on the basis of which recommendations are made on how the proposed development could be altered to lessen adverse effects and improve beneficial effects. Where these measures are incorporated into the design of the development and as such, will be shown on the application plans, they are termed 'design interventions'.



Proposed Scope of the EIA

Figure 3.1

Iterative EIA Approach including Design Interventions



3.9 CONSIDERATION OF ALTERNATIVES

As noted in Table 1.1 in Section 1 above, Schedule 4 of the EIA Regulations 2011 requires the ES to contain an outline of the main alternatives studies by the Applicant and an indication of the main reason for its choice of development after taking account of environmental effects. The EIA Regulations 2017 re-word this requirement to require:

"A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects".

Government Planning Practice Guidance on Environmental Impact Assessment states at paragraph 035 that:

"Where alternative approaches to development have been considered, the Environmental Statement should include an outline of the main alternatives studied and the main reasons for the choice made, taking into account the environmental effects"

Potential alternatives can be broadly grouped into the following categories:

- Alternative sites;
- Alternative land uses;
- Alternative processes; and
- Alternative development layouts.

In this instance, the Applicant will not be considering alternative sites. The Goodison Park site will become vacant as a result of the Club's proposed move to a new stadium at Bramley-Moore Dock and the current proposals relate to a redevelopment of the Goodison Park site specifically. Alternative

Proposed Scope of the EIA

processes, which are typically more relevant for industrial uses, will also not be considered.

The EIA will therefore focus on the consideration of alternative land uses and alternative layouts.

3.10 NEW TOPICS REQUIRED UNDER THE 2017 REGULATIONS

The EIA Regulations 2017 introduce new topics that need to be considered within the scope of an EIA. The new topics include human health, climate change, land (for example land take) and the vulnerability of the development to risks of major accidents and/or disasters. These new requirements will not apply in the case of the Proposed Development and to LCC's assessment of the Applicant's ES and its determination of the Stadium planning application as a result of the transitional provisions contained in the EIA Regulations 2017. The Applicant aims to address the new topic areas set out in the 2017 Regulations but this will be on a voluntary basis, without prejudice to the operation of the transitional provisions and LCC's determination of its planning application under the EIA Regulations 2011.

Stand-alone technical chapters are not proposed for these topic areas, instead where the risks of major accidents and/or disasters or effects of the development in relation to human health, climate change or land are relevant to a specific technical assessment, this will be stated and assessed within the respective ES chapter/report.

Further information on each of these topic areas and how they will be considered throughout the ES is provided below.

Climate Change

Under the new 2017 regulations, the consideration of climate change within EIAs will be mandatory. Consequently, where climate change is relevant to a technical assessment – for example, as a result of the vulnerability of the baseline environment to projected changes – this will be stated and taken into account within the respective ES chapter/report.

A summary of key climate change projections within the UK and modelled climate variables specific to the application site are set out below.

The following will be considered in each of the technical chapters/reports within the context of the outlined climate change projections:

- The vulnerability of the baseline environment to projected changes;
- The vulnerability of the proposed development to climate change; and
- The effect of the proposed development within the context of climate change.

If climate change does not affect the assessment of the technical discipline, this will be stated.

Summary of Climate Change Projections

Key climate projections for the UK are as follows:

- Summers will become hotter and drier;
- Winters will become milder and wetter;
- Soils will become drier on average;
- Snowfall and the number of very cold days will decrease;
- Sea levels will rise; and

Proposed Scope of the EIA

- Storms, heavy and extreme rainfall, and extreme winds will become more frequent.

Table 3.2 below summarises the results of the UK Climate Projections (UKCP09) for the north-west regional area.

Table 3.2

UKCP09 Projections for Climate Variables for a Medium Emissions Scenario in the North West [10]

Variable	2040-2069 Projections		
	UKCP09 Probability Level ¹		
	10% (Approx. Lower Limit)	50%	90% (Approx. Upper Limit)
Mean annual temp (°C)	1.4	2.3	3.3
Mean temp. over summer months (JJA) (°C)	1.2	2.6	4.1
Mean temp. over winter months (DJF) (°C)	1.1	1.9	3.0
Mean winter precipitation change (mm)	3	13	26
Mean summer precipitation change (mm)	−36	−18	1

1. The following probability levels of projections have been used: 10% level – indicates that 10% of the UKCP09 model runs fall at or below the specified value. 50% level – indicates that 50% of the UKCP09 model runs fall at or below the specified value. 90% level – indicates that 90% of the UKCP09 model runs fall at or below the specified value.

Human Health

Many technical chapters/reports already address the potential implications of their topics on human health by virtue of set target values or objectives

Proposed Scope of the EIA

(e.g. contaminated land, air quality or noise) based on human health tolerances or through the consideration of policy requirements and targets promoting healthier behaviours (e.g. active travel such as cycling and walking). Where relevant it will be stated within each ES chapter/report how the respective technical assessment takes these factors into consideration. Relevant literature or studies, which draw upon the human health outcomes anticipated as a result of the use of these targets, will be referenced where necessary.

For example, with regard to air quality, the limit values are informed by guidelines set by the World Health Organisation (WHO) and therefore, the WHO Air quality guidelines would be referenced with regard to the potential impacts on human health.

Land

Given that the existing site is entirely urban in nature, the proposals will not result in any additional land take. However, the proposals will result in changes in land use at the site. The effects of the scheme in relation to land use will be discussed within the Site Description and Development Proposals chapter within the main volume of the ES. This chapter will provide information on the existing and proposed land uses at the site and in the surrounding area.

Risk of Major Accidents and/or Disasters

In the absence of recognised guidance on this subject in the context of EIA, CBRE has reviewed a range of sources providing guidance related to the topic, including:

- Cabinet Office National Risk Register of Civil Emergencies 2015 Edition [11];
- UK Government Emergency Response & Recovery Guidance [12]; and
- International Federation of Red Cross & Red Crescent Societies Disaster and Crisis Management Guidance [13].

A disaster can be defined as “a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community’s or society’s ability to cope using its own resources. Though often caused by nature, disasters can have human origins” [13].

An accident can be defined as “an unfortunate incident that happens unexpectedly and unintentionally, typically resulting in damage or injury” [14].

The EIA Regulations 2017 state that the following should be provided within the ES in relation to this topic:

“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.”

The National Risk Register of Civil Emergencies (NRR) [11] is the unclassified version of the National Risk Assessment (NRA), a classified assessment of the risks of civil emergencies facing the UK over the next five years. The NRR provides an overview of the main types of civil emergencies that could affect the UK. It also sets out the definition of an emergency as it appears in the Civil Contingencies Act 2004, and shows, within the risk matrices, how these emergencies compare in terms of likelihood, and the scale and extent of the consequences.

What is a civil emergency?

The NRR states that the Civil Contingencies Act 2004 (the Act) describes an emergency as:

Proposed Scope of the EIA

- *“an event or situation which threatens serious damage to human welfare in a place in the United Kingdom*
- *an event or situation which threatens serious damage to the environment of a place in the United Kingdom*
- *war, or terrorism, which threatens serious damage to the security of the United Kingdom.”*

What is a risk of civil emergency?

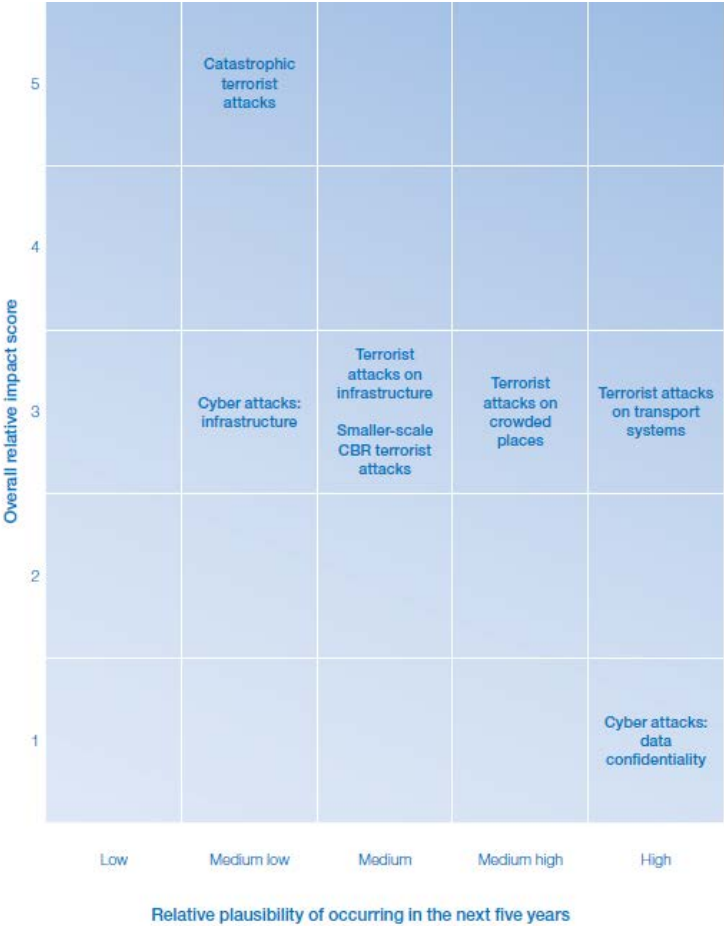
Every two years the UK Government produces a classified assessment of the risks of civil emergencies facing people in the UK – the NRA. In both the NRA and NRR, how serious the risk of an emergency is depends both on the likelihood of it happening over the next five years and on the consequences or impacts that people will feel if it does. When identifying risks for the NRA and NRR, a ‘reasonable worst case’ is chosen which represents a challenging manifestation of the scenario after highly implausible scenarios are excluded.

The following two matrices shown in **Figure 3.2** and **Figure 3.3** represent the key risks of civil emergencies in the NRA, as identified in the 2015 edition for the following five years. As the proposed development’s life span is significantly greater than five years, a comprehensive list of potential major disasters and accidents has been reviewed in the context of the potential for climate change to exacerbate their likelihood and severity, their inclusion (or exclusion) from the NRR, their relevance to the proposed development, and whether mitigation is already in place within appropriate legislation or national procedures.

In such instances, those major disasters and/or accidents will be ‘scoped out’ of further assessment beyond the scoping stage. The major disasters that are proposed to be scoped out are provided in **Table 3.3** below, alongside explanatory reasoning.

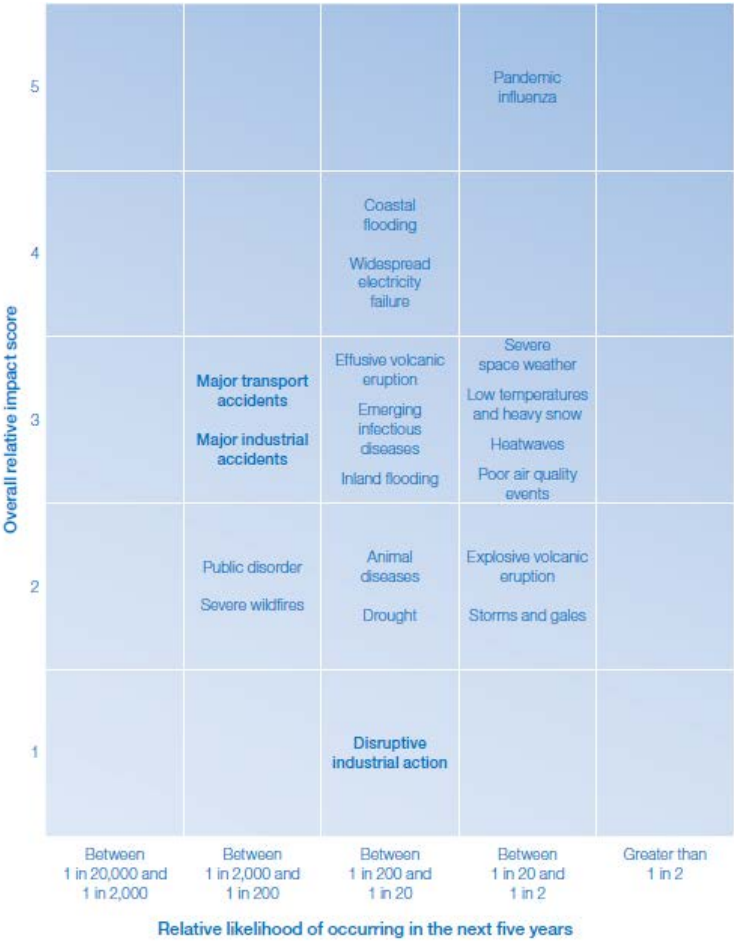
Proposed Scope of the EIA

Figure 3.2
Risks of Terrorist and other Malicious Attacks



Source: Cabinet Office, 2015: NRR

Figure 3.3
Other Risks



Source: Cabinet Office, 2015: NRR

Proposed Scope of the EIA

Table 3.3

Major Disasters and Accidents to be 'Scoped Out' of Further Assessment

MAJOR DISASTER / ACCIDENT TYPE	DEFINITION & CHARACTERISTICS	REASONING
Biological hazards: epidemics	An unusual increase in the number of cases of an infectious disease which already exists in a certain region or population. It can also refer to the appearance of a significant number of cases of an infectious disease in a region or population that is usually free from that disease. Potential to cause widespread loss of life.	The proposed development may include healthcare uses and would introduce new residents to the site who could be affected by this accident/disaster type, should an event occur in the local area. However, the existing hospital and healthcare facilities in the local area, as well as any healthcare uses at the site (should they come forward), are/would be governed by NHS policy regarding the prevention of the spread of infectious diseases (as provided with the NHS England Emergency Preparedness, Resilience and Response Framework [15]). On this basis, it is considered that suitable mitigation is already in place, such that further assessment of potential risks within the EIA would be a reiteration and hence unnecessary and inappropriate given the terminology used within the EIA Directive 2014/52/EU. For this reason, this disaster/accident type is proposed to be scoped out of further consideration.
Biological hazards: animal and insect infestation	Pervasive influx and development of insects or parasites affecting humans, animals, crops and/or materials.	It is considered that the proposed development is not of a nature such that it would result in a pervasive influx of insects or parasites affecting humans, animals, crops and/or materials. This disaster/accident type is therefore not considered relevant to the scheme and is proposed to be scoped out of further consideration as a result.
Earthquakes	A tremor of the surface of the Earth, sometimes severe and devastating, which results from shock waves generated by the movement of rock masses deep within the Earth, particularly near boundaries of tectonic plates. Potential to damage property and cause loss of life.	The UK is not generally associated with earthquakes; however, between 20 and 30 earthquakes are felt by people each year, and several hundred quakes of a lower magnitude are recorded by seismometers. Most of these are very small and cause no damage [16]. It is considered that the likelihood of an earthquake with a magnitude sufficient to cause damage to buildings and/or loss of life occurring and impacting the site is extremely low. On this basis, this disaster/accident type is proposed to be scoped out of further consideration.
Mass movement	The downward movement of soil, rock, debris, snow and/or ice controlled by gravity. This includes <u>landslides, rockfalls, subsidence,</u>	The topography of the site is not considered to be sufficiently steep such that a major mass movement disaster could arise. This disaster/accident type is therefore proposed to be scoped out of further consideration.

Proposed Scope of the EIA

	<u>dry or wet mass movements and avalanches.</u> Potential to damage property and cause loss of life.	
Tsunamis	A series of waves caused by a rapid displacement of a body of water (e.g. ocean, lake). The waves are characterised by a very long wavelength and their amplitude is much smaller offshore. The impact in coastal areas can be very destructive as the waves advance inland and can extend over thousands of kilometers.	<p>Under the proposals, new residents and site users would be brought to the site that could potentially be affected by any disaster/accident occurring at the site.</p> <p>Given the in-land location of the site and the fact that the NRR does not list tsunamis as a recognised risk, this disaster/accident type is proposed to be scoped out of further consideration.</p>
Volcanic eruptions	The occurrence of a violent discharge of volcanic material from a volcano or volcanic vent. Potential to damage property and cause loss of life.	<p>Should explosive volcanic eruption styles, emitting mainly ash, coincide with unfavourable weather conditions, they can result in significant ash reaching the UK. In April 2010, the relatively small magnitude explosive eruption of the Eyjafjallajökull volcano in Iceland coincided with north-westerly winds and high pressure, resulting in airspace closures over much of the UK and Northern Europe for six days.</p> <p>Effusive volcanic eruption styles emitting volcanic gases can potentially cause visible pollution across the UK and Northern Europe, and historically, such events have coincided with mass crop failure and thousands of excess deaths.</p> <p>Effusive volcanic eruptions have between a 1 in 200 to 1 in 20 likelihood of occurring in the next five years with the likelihood significantly higher for explosive volcanic eruptions ranging from 1 in 20 to 1 in 2 of occurring over the next five years. The implications of this are: disruption to aviation; public health and environmental impacts; and economic impacts. However, such impacts are not specific to the nature of the proposals or the location of the application site. On this basis, this disaster/accident type is proposed to be scoped out of further consideration.</p>
Drought	A period of dryness especially when prolonged; specifically, one that causes extensive damage to crops or prevents their successful growth.	<p>Drought is currently considered to have a 1 in 200 to 1 in 20 likelihood of occurring over the next five years. Climate change may increase the risk of droughts but not necessarily lead to a more frequent use of restrictions on water. Planning for periodic restrictions on non-essential water use is an integral part of water resource management by water companies. Over the past 40 years, England has experienced five long-duration drought events and two short-duration events. During the 2010–12 drought, despite some parts of south-east and eastern England recording their lowest 18-month rainfall in at least 100 years, its impact extended only as far as the inconvenience for 20 million domestic customers of a temporary ban on the use of hosepipes. The environment and agriculture sectors were also temporarily affected by this drought.</p>

Proposed Scope of the EIA

The proposed development will have a requirement for a substantial quantity of water, associated with the needs of future residents and other site users. It is intended that the design will respond to these requirements with a considered strategy to reduce water consumption, this would also include a consideration for climate change. However, it is not considered that the potential effects of drought would be of particular detriment to the proposed development, nor that the proposed development would result in an increase in the risk of drought conditions at the site or in the surrounding area. This disaster/accident type is therefore not considered within the EIA but will be responded to within the sustainability strategy and the design and access statement as appropriate.

Extreme temperatures

A heat wave is a prolonged period of excessively hot and sometimes also humid weather relative to normal climate patterns of a certain region.

A cold wave can be both a prolonged period of excessively cold weather and the sudden invasion of very cold air over a large area. Along with frost it can cause damage to agriculture, infrastructure, property.

Low Temperatures and Heavy Snow

There have been a number of recorded occasions of snow covering large areas of the country for over a week. The winter of 2009–10 saw a prolonged spell of cold weather that lasted for approximately a month. During this time, snowfalls of up to 40cm were recorded in parts of north-west England and south and east Scotland. Many other areas experienced snow cover of 10cm or more throughout this period. In Northern Ireland in February 2001, strong north-easterly winds and heavy snow caused travel disruption for up to five days and brought down power lines.

Heatwaves

The Met Office uses a range of threshold temperatures, varying by region, to define a heatwave. High temperatures were widespread during August 1990, reaching a record 37.1°C in one part of England. In August 2003, the UK experienced heatwave conditions lasting 10 days and resulting in 2,000 excess deaths. During this heatwave, a record maximum temperature of 38.5°C was recorded at Faversham in Kent. In July 2006, similar conditions occurred, breaking records and resulting in the warmest month on record in the UK.

The likelihood of either heat waves or extreme low temperatures with heavy snow occurring over the next five years is considered to range from 1 in 20 to 1 in 2.

Consequences may include:

- an increased number of admissions to hospital and consultations with GPs, and additional demands placed on the emergency services;

Proposed Scope of the EIA

		<ul style="list-style-type: none">▪ fatalities, particularly among the vulnerable and elderly; for example, in the case of heatwaves, an estimated 75 extra deaths per week for each degree of increase in temperature;▪ disruption to travel and logistics, due to deterioration of the road, runway surfaces and vehicle breakdowns;▪ loss of/interruption to supply of essential goods and services and disruption to transport and communications networks;▪ depending on the nature of the severe weather, economic impact and environmental damage. <p>The proposed development would result in new residents and other site users being brought to the site that could potentially be affected by prolonged periods of excessive hot or cold weather. The proposed development will be built to the latest Building Regulations requirements and with consideration of potential temperature highs and lows as part of its typical operation to ensure appropriate thermal comfort. This will include an allowance for climate change. Therefore, it is considered that an appropriate climate can be maintained within the proposed buildings.</p> <p>Cold Weather Alerts and a Heat Health Watch Service are currently provided by Public Health England. The purpose of these services is to provide health advice for the public and healthcare workers in England, according to levels of heat forecast/measured by the Met Office.</p> <p>On this basis, it is considered that suitable mitigation is already in place, such that further assessment of potential risks within the EIA would be a reiteration and hence unnecessary and inappropriate given the terminology used within the Directive. For this reason, this disaster/accident type is proposed to be scoped out of further consideration.</p>
Wildfires	Wildfire describes an uncontrolled burning fire that occurs in a wild area, which can cause loss of life and damage to forestry, agriculture, infrastructure and buildings.	Given the site’s urban setting, this disaster/accident type is not considered relevant to this scheme and is proposed to be scoped out of further consideration as a result.
Tidal waves	A tidal wave/storm surge is the rise of the water level in the sea, an estuary or lake as result of strong wind driving the seawater towards the coast. This so-called wind setup is superimposed on the normal	<p>Under the proposals, new residents and site users would be brought to the site that could potentially be affected by any disaster/accident occurring in the vicinity.</p> <p>Given that the site is located approximately 2.7km from the nearest coastline and is within Flood Zone 1 —</p>



Proposed Scope of the EIA

astronomical tide. The mean high water level can be exceeded by five and more metres. The areas threatened by storm surges are coastal lowlands.

suggesting the site is predominantly at low risk of flooding from both tidal and fluvial sources —; it is considered unlikely that a tidal wave/storm surge hitting the nearest coastline would result in significant damage to property or loss of life at the application site.

On this basis, this disaster/accident type is proposed to be scoped out of further consideration.

Industrial accidents Danger originating from technological or industrial accidents, dangerous procedures, infrastructure failures or certain human activities, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Accident release

Occurring during the production, transportation or handling of hazardous chemical substances

Explosions

Disasters will only be classified as explosions when the explosion is the actual disaster. If the explosion is the cause of another disaster, the event will be classified as the resulting disaster.

Chemical explosion

Violent destruction caused by explosion of combustible material, nearly always of chemical origin.

Nuclear explosion/Radiation

Accidental release of radiation occurring in civil facilities, exceeding the internationally established safety levels.

Mine explosion

Accidents which occur when natural gas or coal dust reacts with the air.

Pollution

Whilst the proposed development will have a number of construction processes on site during the construction phase, these will be covered by an appropriate Construction and Environmental Management Plan to prevent accidental release of contaminants or other pollution.

The NRR states that the current legislation that seeks to prevent and mitigate the effects of major accidents involving dangerous substances is the Control of Major Accident Hazard Regulations 1999 (COMAH) under which major hazard sites are regulated and inspected in accordance with the regulations. The proposed development would not fall under the requirements of the COMAH Regulations and as such, this disaster/accident type is not considered relevant to this scheme and is proposed to be scoped out of further consideration as a result.

Proposed Scope of the EIA

Degradation of one or more aspects in the environment by noxious industrial, chemical or biological wastes, from debris or man-made products and from mismanagement of natural and environmental resources.

Acid rain

A washout of an excessive concentration of acidic compounds in the atmosphere, resulting from chemical pollutants such as sulphur and nitrogen compounds. When deposited these increase the acidity of the soil and water causing agricultural and ecological damage.

Chemical pollution

A sudden pollution of water or air near industrial areas, leading to internal body disorders with permanent damage of the skin.

Atmosphere pollution

Contamination of the atmosphere by large quantities of gases, solids and radiation produced by the burning of natural and artificial fuels, chemicals and other industrial processes and nuclear explosions

Electricity, gas, water supply or sewerage system failure

Failure of electricity, gas, water supply or sewerage system infrastructure can arise for a variety of reasons.

Power failures can result from faults at power stations, damage to electric transmission lines, substations or other parts of the distribution system, a short circuit, or the overloading of electricity mains.

Gas, water supply and sewerage system failures generally occur due to damage to key elements of the systems infrastructure, such as water mains, sewers and storage facilities.

The utilities design for the proposed development is currently being considered and progressed. In consultation with all the respective utilities providers existing and future capacity/demand will be considered and appropriate measures implemented to ensure that the proposed development is sufficiently serviced. In addition to this, a consideration of resilience to potential systems failure will also be incorporated as appropriate.

Furthermore, the utilities providers already have in place procedures to allow users to report a failure in supply of a particular utility so that repairs and continuation of supply can be enabled.

On this basis, it is considered that suitable mitigation is already in place, such that further assessment of potential risks within the EIA would be a reiteration and hence unnecessary and inappropriate given the terminology used within the Directive. For this reason, this disaster/accident type is proposed to be scoped out of further consideration.



Proposed Scope of the EIA

Urban fire	Urban fires describe an uncontrolled burning fire that occurs within an urban area. These fires can cause damage to buildings and vegetation and cause loss of life.	<p>Under the proposals, new residents and site users would be brought to the site that could be affected by an urban fire should it occur.</p> <p>Procedures are already in place to allow site users to report a fire to the emergency services, who will attend site and act to resolve the incident.</p> <p>On this basis, it is considered that suitable mitigation is already in place, such that further assessment of potential risks within the EIA would be a reiteration and hence unnecessary and inappropriate given the terminology used within the Directive. For this reason, this disaster/accident type is proposed to be scoped out of further consideration.</p>
Terrorist incidents	The calculated use of violence (or the threat of violence) against civilians in order to attain goals that are political or religious or ideological in nature. Loss of life and/or destruction of property/infrastructure can result.	<p>Under the proposals, new residents and site users would be brought to the site that could be affected by a terrorist incident should one occur at the site.</p> <p>Procedures are already in place to allow site users to report such an event to the police/emergency services, who would attend site and act to resolve the incident.</p> <p>On this basis, it is considered that suitable mitigation is already in place, such that further assessment of potential risks within the EIA would be a reiteration and hence unnecessary and inappropriate given the terminology used within the Directive. For this reason, this disaster/accident type is proposed to be scoped out of further consideration.</p>
Famine/ food insecurity	Food-security emergencies are complex disasters with multiple root causes. Severe drought and/or conflict can produce an acute food emergency, whereas chronic food insecurity is often a reflection of poverty, a worsening debt crisis, the economic effects at household level of the HIV/AIDS pandemic or mismanagement or abuse of water resources. In such cases, food can be both unavailable (insufficient production) and inaccessible (distribution problems, beyond consumers' purchasing power).	<p>The proposed development will not affecting the means of food production or agricultural land. The proposed development may potentially have a regenerative effect on the local area that could assist in alleviating poverty.</p> <p>Given the nature of the proposals and the location of the site, this disaster/accident type is not considered relevant to this scheme and is proposed to be scoped out of further consideration as a result.</p>
Displaced	Displaced populations leave their homes in groups, usually due to a sudden impact, such as an earthquake or a flood, threat or conflict.	Given the nature of the proposals and the location of the site, this disaster/accident type is not considered relevant

Proposed Scope of the EIA

populations	<p>There is usually an intention to return home.</p> <p>Migration and displacement are interlinked, but must be distinguished. Displaced populations — either across borders such as refugee influxes, or within a country because of disasters or armed conflict — usually need relief operations combined with efforts aiming at collective and lasting solutions. Migration on the other hand usually involves more individual social assistance, legal protection and personal support.</p> <p>The responsibility for refugees and all displaced populations primarily rests with the host government. It is the mandate of the United Nations High Commissioner for Refugees to protect and assist refugees. The World Food Programme has a mandate to provide emergency food relief, although it may require assistance with supplies and distribution.</p>	to this scheme and is proposed to be scoped out of further consideration as a result.
Complex emergencies	<p>Some disasters can result from several different hazards or, more often, to a complex combination of both natural and man-made causes and different causes of vulnerability. Food insecurity, epidemics, conflicts and displaced populations are examples. Complex emergencies are typically characterized by:</p> <ul style="list-style-type: none">■ extensive violence and loss of life;■ displacements of populations;■ widespread damage to societies and economies;■ the need for large-scale, multi-faceted humanitarian assistance;■ the hindrance or prevention of humanitarian assistance by political and military constraints; and	Given the nature of the proposals and the location of the site, this disaster/accident type is not considered relevant to this scheme and is proposed to be scoped out of further consideration as a result.

Proposed Scope of the EIA

- significant security risks for humanitarian relief workers in some areas.

The major disasters that are proposed to be 'scoped in' (given detailed consideration within the main volume of the ES or included within the ES technical appendices but not meriting a stand-alone technical chapter within the main volume of the ES) are provided in **Table 3.4** below. The location in the ES where the results of the assessment will be provided is indicated and explanatory reasoning is also provided.

Table 3.4

Major Disasters and Accidents to be 'Scoped In' for Further Assessment

MAJOR DISASTER / ACCIDENT TYPE	DEFINITION & CHARACTERISTICS	ASSESSMENT REPORTING	REASONING
Severe Weather: Storms	<p><u>Tropical storms, hurricanes, typhoons and cyclones</u> are a large scale closed circulation system in the atmosphere which combines low pressure and strong winds that rotate counter clockwise in the northern hemisphere and clockwise in the southern hemisphere. Potential to cause extensive damage.</p> <p>A <u>winter storm</u> emerges from an extra-tropical cyclone, a synoptic scale low pressure system that occurs in the middle latitudes of the Earth and is connected to fronts and horizontal gradients in temperature and dew point. A winter storm is associated with high wind speeds, gusts, thunderstorms, rain and often storm surges.</p> <p>A <u>severe storm or thunderstorm</u> is the result of convection and condensation in the lower atmosphere and the accompanying formation of a cumulonimbus cloud. A severe storm usually comes along with high winds, heavy precipitation (rain, sleet, hail), thunder and lightning.</p>	To be assessed in the Wind Chapter, and in the Flood Risk Assessment (FRA), provided in the ES appendices.	<p>Storms and gales are anticipated by the NRR to have between a 1 in 20 and 1 in 2 likelihood of occurring in the next five years.</p> <p>The most significant storms in recent decades were those of 16 October 1987 and 25 January 1990. The first brought down an estimated 15 million trees in the south-east of England. By contrast, the 1990 storm was more extensive and had higher peak wind speeds. The net effect was a much higher death toll but less damage to trees and property.</p> <p>More recently, on 28 October 2013, a severe storm, which the media named the 'St Jude's Day' storm, travelled across southern England. The timing of the storm meant that trees were still in full leaf and vulnerable to strong winds. The path of the storm was also significant — strong gusts of 70 to 80 mph are rare in southern England, making these areas more vulnerable to the impacts of severe weather. Falling trees were the main cause of disruption, contributing to widespread transport disruption and power outages, with more than 660,000 homes left without power. Four people died as a result of falling trees.</p> <p>Under the proposals, new residents and other site users would be brought to the site that</p>

Proposed Scope of the EIA

A hail storm is a type of storm that is characterised by hail as the dominant part of its precipitation. The size of the hailstones can vary between pea size (6mm) and softball size (112mm) and therefore cause considerable damage.

Lightning is an atmospheric discharge of electricity, which typically occurs during thunderstorms, and sometimes during volcanic eruptions or dust storms.

Tornadoes are rotating columns of air (vortex) that emerge out of the base of a cumulonimbus cloud and have contact to the Earth's surface. Typically a tornado forms during a severe convective storm in so-called supercells and is often visible as a funnel-shaped cloud. Tornadoes are usually short-lived, lasting on average no more than 10 minutes. They can generate wind speeds above 400 km/h and are considered the most destructive weather phenomenon. The intensity of tornadoes is assessed using the Enhanced Fujita Scale. Other names for this weather phenomenon are twister, waterspout.

Local windstorm refers to strong winds caused by regional atmospheric phenomena which are typical for a certain area. These can be katabatic winds, foehn winds etc.

A sandstorm/dust storm typically occurs in arid or semi-arid regions if high wind speeds cause the transportation of small particles like sand or fine clastic sediment by saltation and/or suspension.

A snowstorm refers to a storm, usually in the winter season, where large amounts of snow fall. If it's a severe snowstorm that meets certain criteria, such as strong winds, blowing snow and low or falling temperatures, it's called blizzard.

could potentially be affected by any storm hitting the site.

The proposed development will be required to meet building regulations, and will be assessed in the context of different wind strengths and directions to ensure that the proposed buildings will be capable of withstanding storms and that the surrounding pedestrian environment meets both pedestrian safety and comfort criteria.

The Met Office also operates a national severe weather warning service to warn the public and emergency responders of severe or hazardous weather which has the potential to cause danger to life or widespread disruption.

Floods	A rising and overflowing of a body of water especially onto normally	To be assessed in the	Reference to the Environment Agency’s (EA) Flood Map for Planning indicates that the site
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Proposed Scope of the EIA

	dry land. Potential to damage property and cause loss of life.	Flood Risk Assessment (FRA), provided in the ES appendices	lies within Flood Zone 1 where there is an annual probability of flooding from rivers and sea of 1:1000. Despite this low probability of flooding, since the site comprises an area greater than 1 ha in size, a Flood Risk Assessment (FRA) will be undertaken as part of the EIA. The assessment will include provision of a surface water drainage strategy for the development and an assessment of whether or not it will increase the risk of flooding at off-site receptors. The FRA report will be provided in the ES appendices. The likelihood of a major flood event occurring at the site is considered sufficiently low such that it is considered that detailed consideration of this disaster type within the main volume of the ES is not warranted.
Transport accidents	Disaster type term used to describe technological transport accidents involving mechanised modes of transport. It comprises of four disaster subsets: accidents involving air, boat, rail transport and accidents involving motor vehicles on roads and tracks.	To be assessed within the Transportation chapter within the main volume of the ES	Given the nature of the proposals and the site setting, accidents related to air, boat and rail transport are not considered relevant to the proposals and it is therefore proposed that they are scoped out of further consideration. The proposals include new access roads and car parking areas across the site and transport patterns on the surrounding network will also be affected as a result of the scheme. The effects of the proposals in regards to motor vehicle accidents at the site and on the surrounding network will be assessed in the Transportation ES chapter and the TA, which will be included within the ES appendices.

Proposed Scope of the EIA

3.11 STRUCTURE OF THE ES

There is no defined structure for an ES, provided that it meets the requirements outlined in Regulation 2(1) of the EIA Regulations 2011. This section sets out the proposed structure for the ES.

Volumes of the ES

The ES will be presented in three separate parts:

Volume I will comprise the non-technical summary of the information contained in Volumes II & III to make it readily understandable to non-specialists.

Volume II will be the main volume of the ES and will describe: the proposals, the alternative options considered, the baseline environmental conditions, the likely significant effects of the development, the proposed mitigation measures, cumulative effects and the residual environmental effects.

Volume III will comprise the appendices that contain all of the technical reports that have informed the assessments contained in Volume II, as well as assessments of topics not considered to require a stand-alone chapter within Volume II.

The proposed structure of Volume II (the main volume of the ES) is shown in **Table 3.5** below.

Table 3.5

Proposed structure of Volume II of the ES

CHAPTER	CONTENT
Introduction	Scheme background; scheme context; explanation of EIA and the EIA Regulations 2011; the structure of the ES; information on the project team and chapter authors; where to view hard copies of the ES; how to comment etc.
EIA Methodology	Approach to EIA process, including: consultation, responses received and how/where issues have been addressed within the ES, discussion of issues scoped out of the EIA, structure of technical chapters, and assessment of residual impact significance
Application Site & Proposed Development	Description of site and the wider study area; description of the elements of the development relevant to the assessment of its possible effects on the environment, including phasing, associated development etc.
Construction Strategy & CEMP	Describes the demolition and construction strategy, including indicative phasing of the works, and the proposed mitigation measures to be adopted through the Construction Environmental Management Plan
Alternatives & Design Evolution	Outline of the alternatives considered by the applicant, including alternative layouts etc.
Technical chapters	Detailed assessment of each environmental topic area, including consideration of direct, indirect, primary, secondary, short, medium and long-term and cumulative effects
Other Issues	Assessment of the 'scoped down' environmental topic areas, including consideration of direct, indirect, primary, secondary, short, medium and long-term and cumulative effects.

Proposed Scope of the EIA

Cumulative Effects	Assessment of cumulative effects (multiple effects and different multiple effects) of the proposed development and other consented and reasonably foreseeable schemes and on key receptors.
Residual Effects Summary & Conclusions	Full list of the residual effects of the development, the mitigation measures proposed and how these are to be secured; details on how to comment, what the determination period is etc.

Structure of the Technical Chapters

The technical chapters will be structured as follows:

- Introduction;
- Methodology;
- Baseline conditions;
- Potential significant impacts;
- Design interventions;
- Assessment pre-mitigation;
- Mitigation & enhancement measures;
- Assessment post-mitigation; and
- Inter-project Impacts.

The structure of the technical chapters – particularly the use of tables – has been devised to make the technical assessments better focussed and more accessible to readers, and to reduce the length of the main volume of the environmental statement.

Where information has been summarised in the tables, references are provided as to where the full information is provided in the technical appendices.

Introduction

This section provides details of:

- the company that has undertaken the technical assessment, as well as the author(s) and their professional qualifications;
- the purpose of the chapter;
- a list of figures supporting the assessment, which are provided together at the end of the chapter; and
- a list of all of the technical appendices that are relevant and referenced within the chapter.

Methodology

This section provides details of:

- the legislation, guidance, standards and policies that have informed the assessment;
- the consultees that have been contacted in preparing the chapter (e.g. technical officers at the local planning authority and officers at statutory consultees, such as the Environment Agency);
- the comments raised during scoping and a commentary on how the comments have been addressed within the assessment;
- where relevant, a description of how climate change, human health and risk of major accidents and/or disasters have been taken into account within the assessment;

Proposed Scope of the EIA

- where relevant, any alternatives to the proposed development as set out in the Alternatives & Design Evolution chapter that have been considered and assessed;
- how baseline conditions have been assessed (e.g. site visits/surveys/review of publicly available data) and the scale of sensitivity adopted within the assessment;
- how magnitude has been assessed – specifically whether there are any aspects of the project that are relevant to the assessment but not described in the Application Site & Proposed Development chapter – and the scale of magnitude adopted within the assessment;
- how significance has been assessed (e.g. whether a matrix or some other approach has been adopted);
- any associated development (i.e. development which is required to facilitate the development but does not form part of the planning application, such as off-site utilities works) that is relevant to the assessment; and
- any assumptions or limitations.

Baseline Conditions

This section takes the form of a table that provides a list of:

- the key receptors that have been identified;
- a brief description of those receptors;
- the sensitivity attributed to each receptor; and
- where further details can be found within the relevant technical appendices.

Potential Significant Impacts

This section takes the form of a table that provides details of the potentially significant impacts of the proposed development, split by phase (i.e. construction or operation), and whether those impacts are likely to be adverse or beneficial in nature. It should be noted that the term construction phase has been used within this ES to refer to both the demolition and construction activities anticipated as a result of the proposed development.

Design Interventions

This section takes the form of a table and lists the design interventions that have been taken to address the potential significant impacts of the proposals, the reason(s) that the intervention was included (e.g. the siting of a building so as to avoid particularly sensitive habitats within the site boundary) and where further details can be found within the relevant technical appendices.

Assessment Pre-Mitigation

This section takes the form of a table and includes details of:

- whether the impact is relevant to the construction or operational phase of the development;
- the receptor(s) that are likely to be affected;
- the impact (including consideration of any design intervention);
- the magnitude of the pre-mitigation impact;
- the significance of the pre-mitigation impact;
- whether mitigation is proposed; and

Proposed Scope of the EIA

- where further details can be found within the relevant technical appendices.

Mitigation and Enhancement Measures

This section takes the form of a table and includes details of:

- the phase during which the mitigation or enhancement measures will be implemented;
- the possible effect that is being mitigated;
- the mitigation and/or enhancement measure(s) being proposed;
- how each measure will be secured and when it will be triggered;
- the magnitude of the effect post-mitigation;
- whether the post-mitigation effect is adverse or beneficial; and
- where further details can be found within the technical appendices.

Assessment Post-Mitigation

This section takes the form of a table and includes details of:

- the phase during which the impact is applicable;
- the receptor(s) affected;
- the residual effect following the implementation of mitigation/enhancement measures; and
- the significance of the effect and whether it is adverse or beneficial, short-, medium- or long-term, direct or indirect, permanent or temporary, and reversible or irreversible.

Inter-Project Impacts

This section takes the form of two tables. The first table includes details of:

- the list of schemes identified through scoping as having the potential to result in inter-project effects alongside the development proposals;
- a brief description of the other scheme(s), including a statement on where it is in the planning/construction process; and
- a description of whether the scheme is likely to result in inter-project effects for the specific topic area under consideration.

For those cumulative schemes considered relevant to the specific topic, the second table includes details of:

- the phase during which inter-project effects may arise;
- the receptor(s) likely to be affected;
- any additional measures that are required to mitigate the identified inter-project impacts; and
- the significance of the effect and whether it is adverse or beneficial, short-, medium- or long-term, direct or indirect, permanent or temporary, and reversible or irreversible.

In some instances, for example where the cumulative schemes are not of relevance to the specific topic, a second table is not presented but reference made to the preceding Section 'Assessment Post-Mitigation' table, as the residual effect assessment remains the relevant one.

This is also the case where cumulative schemes may be intrinsically considered within the main technical assessment, such as with transportation where committed developments are included in the modelling.

Proposed Scope of the EIA

3.12 ASSESSMENT OF SIGNIFICANCE

Department of Communities and Local Government (DCLG) Guidance suggests that it is advantageous to devise generic assessment criteria for determining the significance of impacts that can apply for all environmental topics considered within an ES. This ensures that, where possible, effects are assessed in a comparable manner.

In line with DCLG Guidance and prevailing good practice, each of the environmental issues within this ES has been assessed following the same overall approach with respect to the identification of receptor sensitivity, magnitude of effects and significance of impacts. This allows all identified impacts to be assessed using the same descriptors rather than being ascribed different descriptors due to the use of different guidelines in each ES chapter.

Where methodologies have been adapted from specific industry recognised guidelines, e.g. Landscape Institute and Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines, an explanation as to the chosen methodology is provided (typically within the technical appendices).

Prevailing good practice suggests that environmental impacts should be considered in terms of the importance, value or sensitivity of receptors and the predicted scale, or magnitude, of the potential effects. The significance of potential impacts should then be determined through consideration of respective sensitivity and magnitude.

Receptors & Sensitivity

Receptors are defined as the physical resources or user groups that are subject to impacts. They have been identified through a combination of desk-top studies and site visits undertaken by the various members of the EIA team. Further details are provided in each of the technical chapters,

but sensitivity may depend on factors such as: rarity; quality; importance in an international, national, regional or local context and/or replaceability etc.

The sensitivity of receptors is considered as being 'very high', 'high', 'medium', 'low' or 'negligible'. A table is included within the methodology section of each chapter explaining the rationale for each of these criteria. A summary is then provided at the end of the baseline conditions section to draw conclusions relating to the perceived sensitivity of identified receptors.

Impacts & Magnitude

Impacts are generally understood to be the changes resulting from an action.

The magnitude of an impact is considered as being 'very large', 'large', 'medium', 'small' or 'negligible'. As with sensitivity, a table is included in each chapter explaining the rationale for each of these criteria. Where it is possible to do so, criteria are based on recognised standards and guidelines. Where this not possible, the criteria are based on expertise and professional experience.

Effects & Significance

Effects are generally understood as the consequences of impacts. The significance of the effect is informed by the magnitude of the impact and the sensitivity of the receptor.

The assessment of significance within the ES is also considered using a common scale, with effects described as being 'major', 'moderate', 'minor' or 'negligible' (which also includes neutral or no impact assessments). Rather than prescribing a particular methodology (e.g. the use of a significance matrix), the method for ascribing significance is left to the judgement of each technical consultant, so that it reflects best practice within their specialist area. Effects are considered to be 'Significant' in

Proposed Scope of the EIA

accordance with the EIA Regulations 2011 where they are of 'Moderate' or 'Major' significance.

In addition to the significance of the effect, statements are also made as to whether effects are adverse or beneficial, direct or indirect, temporary or permanent, reversible or irreversible, short-, medium- or long-term and/or cumulative. Definitions and examples for each are provided below:

- **Adverse** – a harmful or unfavourable effect (e.g. the loss of trees to allow the construction of new buildings)
- **Beneficial** – a favourable or advantageous effect (e.g. the creation of jobs as a result of proposed construction works)
- **Direct** – an effect without intervening factors (e.g. the removal of trees to allow for the construction of new buildings)
- **Indirect** – an effect not directly caused by the development (e.g. changes to the pattern of traffic movements across the road network as a result of a new road being constructed)
- **Temporary** – an effect lasting only for a limited period of time (e.g. piling during construction)
- **Permanent** – an effect lasting or intended to last or remain unchanged indefinitely (e.g. land reclamation from the sea)
- **Reversible** – an effect that is capable of being reversed so that the previous state is restored (e.g. the removal of solar panels to revert to grazing pasture)
- **Irreversible** – an effect that is not capable of being undone or altered (e.g. gravel extraction)
- **Short term** – an effect lasting between 0 and 7 years
- **Medium term** – an effect lasting between 7 and 15 years

- **Long term** – an effect lasting more than 15 years
- **Cumulative** – increasing by one addition after another (e.g. traffic generated by a number of different developments occurring in close proximity to one another)

Assessment of Cumulative Effects

Cumulative effects can be either:

- The combined or inter-project effect of the proposed development together with other existing or reasonably foreseeable developments (taking into consideration effects at both the construction and post-construction/operational phases); and
- The combined, synergistic or intra-project effects caused by the combination of a number of effects on a particular receptor (taking into consideration effects at both the construction and operational phases), which may collectively cause a more significant effect than individually.

Where relevant, inter-project effects are described within each technical chapter. Intra-project effects, meanwhile, will be considered within the Summary of Mitigation & Residual Effects of the ES chapter.

3.13 COMPETENT EXPERTS

Regulation 18(5) of the EIA Regulations 2017 states that:

18(5) In order to ensure the completeness and quality of the environmental statement –

- (a) The developer must ensure that the environmental statement is prepared by competent experts; and



Proposed Scope of the EIA

- (b) The environmental statement must be accompanied by a statement from the developer outlining the relevant expertise and qualifications of such experts.

CVs will be provided within the ES for each of the key consultants responsible for co-ordinating the EIA and undertaking the technical assessments..



4 EIA Technical Chapters

An initial list of potential technical topics has been prepared based on the potential for each topic to exhibit significant environmental effects as a result of the proposed development. This evaluation process has included provisional assessments for each topic.

Based on this initial evaluation process, **Table 4.1** summarises the proposed scope of the EIA and outlines the technical topics that will be:

- ‘Scoped In’ – those topics where further assessment beyond the scoping stage is considered necessary. As the scheme designs develop, assessments progress and consultations continue with LCC and other consultees, the proposed approach to the consideration of these topics within the ES will be established:
 - Those topics where significant environmental effects are considered likely will be included for detailed consideration within a stand-alone technical chapter in the main volume of the ES;
 - Those topics where significant environmental effects are considered unlikely, but further assessment is required to satisfy planning requirements, will be included within the ES technical appendices but not meriting the preparation of a stand-alone technical chapter within the main volume; and
- ‘Scoped Out’ – those topics where further assessment beyond the scoping stage is not considered necessary as it is considered unlikely that they would exhibit significant environmental effects and they are not specifically required to satisfy planning requirements.

Table 4.1

Proposed Approach to Topics Scope of the ES

SCOPED IN	SCOPED OUT
Socio-Economics	Waste
Ground Conditions	
Water	
Biodiversity	
Townscape & Visual	
Heritage	
Transport	
Air Quality	
Noise & Vibration	
Daylight, Sunlight & Overshadowing	
Wind	

The reasons behind the decision not to undertake further assessment beyond the scoping stage for those topics proposed to be ‘scoped out’ and the means by which the ‘scoped in’ topics will be addressed in the ES are provided in the sections that follow.

5 Scoped Out Topics

This section considers those technical topics that are considered unlikely to exhibit significant environmental effects and therefore those it is proposed to 'scope out' of the ES.

5.1 WASTE

Waste will be produced during the construction phase. Material arising from the demolition of the existing stadium will be re-used wherever possible to minimise the amount of waste generated. Any areas of poor quality soils that may be encountered are likely to require off-site disposal at an appropriately licensed facility. Measures to ensure the appropriate management of waste produced during the construction phase will be included within the Construction Environmental Management Plan (CEMP), which will be submitted to LCC in due course.

The scheme will be designed in accordance with LCC's requirements for waste collection and recovery, which encourage the separation of waste at source to minimise the volume taken to landfill. This will include for the design of access roads and junctions to accommodate waste collection vehicles. Waste collection will be discussed in the Design & Access Statement, which will be submitted alongside the planning applications.

No significant effects on waste capacity are envisaged as a result of the proposed developments. It is therefore proposed that waste be scoped out of further consideration in the EIA.

6 Scoped In Topics

This section considers those technical topics where further assessment beyond the scoping stage is considered necessary. As the scheme designs develop and consultations continue with LCC and other consultees, the proposed approach to the consideration of these topics within the ES will be established:

- Those topics where significant environmental effects are considered likely will be included for detailed consideration within a stand-alone technical chapter in the main volume of the ES; and
- Those topics where significant environmental effects are considered unlikely, but further assessment is required to satisfy planning requirements, will be included within the ES technical appendices but not meriting the preparation of a stand-alone technical chapter within the main volume.

6.1 GROUND CONDITIONS

Context

The proposed developments would introduce new residents and other site users to the site, who could be adversely affected by any existing contamination that may be present. There would also be the potential for contaminants to be released to soils at the site associated with construction and operation of the proposed development.

Baseline Conditions

A review of British Geological Survey (BGS) maps indicates that the bedrock geology underlying the site comprises Chester Pebble Beds Formation. Superficial deposits are not present, with the exception of a portion of the southern part of the site adjacent to Walton Lane, where

Devensian Till is recorded. It is likely that a layer of Made Ground (Fill) overlies the existing deposits beneath the site.

An initial review of historic maps indicates that the site was under agricultural use in 1850. By 1890, much of the site remained open ground, with the exception of the south western portion, where a line of terraced residential properties, with gardens, are indicated. At this time, residential areas surrounded much of the site and the roads bounding the site to the south and west are in a similar arrangement to the present day.

The football stadium was opened in 1892. 1908 maps indicate that the stadium was located in the centre of the site, with terraced residential properties also present within the site, along the northern boundary and in the south western part of the site. St Luke's Church is also present adjacent to the site, as is a school, at the location of the present day Gwladys Street Community Primary and Nursey School.

Maps indicate that the residential properties in the northern part of the site were removed between 1928 and 1938, with the stadium stands subsequently extending into this area. Maps indicate that the terraced properties in the south western part of the site were present as recently as 1988.

Given the lack of potential sources of contamination at the site and the surrounding area both at the current time and historically, the potential for substantial levels of historic contamination to be present beneath is considered likely to be relatively low.

Key Issues and Requirement for Assessment

Potential Effects during Construction

Activities undertaken as part of the construction process would have the potential to give rise to effects on ground conditions and related receptors.



Scoped In Topics

Such activities are likely to include backfilling, localised excavations, construction of piled or other foundations, construction of below ground services or other infrastructure, dewatering and groundwater control, waste treatment and disposal. The potential effects arising from such activities could be relevant to both human (construction workers, neighbours) and environmental (flora, fauna, groundwater and surface waters) receptors. Standard best practice construction measures, including the use of Personal Protective Equipment (PPE) by construction workers, would be implemented during construction. This would be secured through the CEMP. With these measures in place, the risk of contamination of soils or other receptors is considered likely to be low.

Potential Effects during Operation

During the operational phase of the scheme, the presence of any residual contamination (in solid, liquid or gaseous form) could give rise to effects on both human (site occupiers and visitors, neighbours) and environmental (flora, fauna, groundwater and surface waters) receptors.

Assessment Methodology

Reporting

Given the nature of the proposed development and the limited potential for historic ground contamination identified in the initial review, at this stage, it is considered that significant environmental effects related to this topic are unlikely. On this basis, it is currently proposed that the assessment of effects related to ground conditions can be covered sufficiently within a Phase 1 geo-environmental risk assessment, which will be provided within the appendices of the ES. As the scheme designs develop, assessments progress and consultations continue with LCC and other consultees, the proposed approach to the consideration of this topic within the ES will be reviewed and should significant environmental effects

be considered likely, a Ground Conditions chapter would be included within the main volume of the ES.

The proposed scope of the Phase 1 geo-environmental risk assessment is described below.

Phase 1 Geo-environmental Risk Assessment

The assessment will address issues relating to existing geoenvironmental conditions at the site, with the aim of ensuring that suitable and safe conditions are achieved for the proposed end-use. Consideration will be given to the site's conceptual model including geology, hydrology, hydrogeology and the geoenvironmental conditions (including issues associated with soil gases, chemicals within site soils and groundwater). A range of impacts associated with the design, construction and operation of the proposed development will be considered.

Land contamination is regulated under several regimes, including environmental protection, pollution prevention and control, waste management, planning and development control, and health and safety legislation. The primary regulatory regime under which contaminated land is managed in the UK is Part 2A of the Environmental Protection Act. The framework for the assessment of potential land contamination adopted in this assessment will be based on current guidance documents regarding the implementation of these regimes and the assessment of potentially contaminated land, with particular reference to: the Environment Agency Model Procedures and their Guiding Principles on Land Contamination; and the relevant British Standard (BS10175:2011).

An understanding of the baseline conditions will be obtained from a review of published mapping and any existing ground investigation reports related to nearby sites.

Scoped In Topics

The geological conditions at the site will be determined by reference to data available from the British Geological Survey (maps and borehole logs) and to any existing site investigation reports.

The site history will be determined in further detail with reference to published Ordnance Survey mapping (dating back to the mid-1800s) and to other accessible information and reports (via internet searches). Recent and historic uses of the land at the site will then be interpreted to determine the likely location, nature and scale of any ground contamination.

Baseline conditions will be assessed for the development confines and for a distance of up to 250m beyond. This “halo” around the site boundary is considered in order to take into account the potential for off-site contamination sources and receptors. The baseline data will be sourced from a desk based study and site walkover survey together with available data on the geological and geo-environmental conditions from any existing site investigation reports, together with published information and existing borehole logs published by the British Geological Survey.

Consideration of the future baseline will take into account currently planned development (and any associated remediation works) which may affect the contamination status of land and/ or may affect the development of the project itself.

A conceptual model of the site will be developed that describes its environmental features together with the expected interaction of potential contamination sources with the environment. Assessment of the potential interactions will then be undertaken by means of a Source – Pathway – Receptor analysis of the site in accordance with the guidance documents referred to above.

Where a source, relevant pathway and receptor are present, or could be created as a result of the proposed development, a “contaminant linkage”

is present. The presence (or potential presence) of such a linkage gives rise to a circumstance through which some level of environmental harm could occur which requires assessment and the identification of mitigation, as appropriate.

The following resources/receptors will be considered in the risk assessment: construction workers, future site users, surrounding land users, controlled waters (groundwater and surface water bodies), ecology, and the built environment.

Incorporation of mitigation, such as PPE and the health & safety regime for construction workers, will address the majority of any potential health risks associated with the development itself.

6.2 WATER ENVIRONMENT

Context

The Environment Agency’s Flood Map for Planning shows the site to be located within Flood Zone 1, which indicates that the site has a less than 1 in 1,000 annual probability of river or sea flooding. This represents a ‘low’ risk of flooding from these sources. Nevertheless, a risk of flooding may arise from other sources, such as surface water, groundwater or infrastructure failure. Flooding could adversely affect new buildings and site users brought to the site under the proposals.

Furthermore, there may also be the potential for historic contaminants, already present at the site, or new contaminants, associated with construction and operation of the proposed developments, to be released to surface and groundwaters as a result of the proposals.



Scoped In Topics

Baseline Conditions

The nearest surface water feature to the site is Stanley Park Lake, which is separated from the application site by Walton Lane. Other surface water features in proximity to the site include:

- The River Mersey (located approximately 2.7km to the west of the site); and
- The Leeds & Liverpool Canal, which runs from north to south, approximately 1.5km to the west of the application site;

The Environment Agency's Flood Map for Planning shows the site to be located within Flood Zone 1, which indicates that the site has a 'low' risk of flooding from rivers and sea. The UK Government's Long Term Flood Risk Information map indicates that the majority of the site is at a very low risk of surface water flooding; however, a small portion of the site is indicated as at low risk, while an even smaller area is indicated as at medium risk. Areas adjacent to the site are also generally at low risk of surface water flooding; however some areas, for example the Gwladys Street Primary and Nursery School, are shown to be at a higher risk.

The Chester Pebble Beds Formation bedrock that underlies the site is classed as a Principle Aquifer. A portion of the site also falls within a nitrate vulnerable zone.

A summary of an initial review of historic maps is provided in the Ground Conditions section above. Given the lack of potential sources of contamination at the site and the surrounding area both at the current time and historically, the potential for substantial levels of historic contamination to be present in groundwaters beneath the site is considered likely to be relatively low.

Key Issues and Requirement for Assessment

An initial review of the proposals and the existing surrounding water environment suggests that potential effects during the construction and operational phases may include:

Surface water

- Changes to the surface water flow regime across the site, impacting available capacity within sewer networks
- Increases in surface water discharge rates which may increase flood risk to the site, adjacent sites and areas downstream

Water quality

- Deterioration of the quality of surface water run-off from the site which may impact the quality of downstream water bodies and ground water through infiltration
- Accidental leaks and spillages of hazardous material which could adversely affect the quality of downstream water bodies and groundwater through infiltration

Groundwater

- Impacts to the local groundwater regime and hydrogeological profile due to the proposed development

Water supply and foul water

- Increased water demand and foul water demands from the site placing pressure on infrastructure

Scoped In Topics

Assessment Methodology

Reporting

Given the generally low risk of flooding at the site and limited potential for historic groundwater contamination identified in the initial review, at this stage, it is considered that significant environmental effects related to this topic are unlikely. On this basis it is currently proposed that the assessment of effects related to the water environment can be covered sufficiently within a Phase 1 geo-environmental risk assessment a Flood Risk Assessment (FRA) and foul and surface water drainage strategies. These reports will be provided within the appendices of the ES. As the scheme designs develop, assessments progress and consultations continue with LCC and other consultees, the proposed approach to the consideration of this topic within the ES will be reviewed and should significant environmental effects be considered likely, a Water Environment chapter would be included within the main volume of the ES.

The scope of the Phase 1 geo-environmental risk assessment has already been described under the Ground Conditions section above (6.1). The proposed scope of the FRA is described below.

FRA & Drainage Strategy

Consideration will be given to the proposed development's vulnerability to flooding within the context of the site conditions including the effects of climate change. A range of impacts associated with the design, construction and operation of the proposed development will be considered.

The assessment methodology will include completion of the baseline assessment, followed by prediction of the effects. Effects will be assessed for both the construction and operational phases of the development.

As part of the assessment, the following will be undertaken:

- A review of Environment Agency flood maps and the LCC Strategic Flood Risk Assessment to identify sources of flooding that may affect the site and how the risk of flooding to the site can be mitigated;
- The preparation of a site specific Flood Risk Assessment (FRA), which will assess the effects of the proposals in regards to flood risk from all sources (rivers, sea, surface water, groundwater, infrastructure failure etc.), including a consideration of the effects of climate change. Design interventions and/or mitigation measures will be recommended where necessary to ensure the proposals are safe and generally improve the risk of flooding to the site and surrounding areas;
- Identification of existing foul and surface water sewer infrastructure and estimation of existing discharge volumes and peak flows, to enable comparison with the proposed development;
- The preparation of a surface water drainage strategy to ensure flood risk is not increased as a result of the development, including allowances for climate change. Surface water discharge rates will be agreed in consultation with United Utilities and the Lead Local Flood Authority; and
- The preparation of a foul water drainage strategy in liaison with United Utilities, to ensure downstream sewer networks have sufficient capacity for any increased effluent flow rates and volumes generated by the site; identification of downstream improvements if required.

The FRA will be undertaken in accordance with the following guidance:

- Environment Agency 'Flood Risk Assessment (FRA) Guidance Note 1';
- 'National Planning Policy Framework' (2012);



Scoped In Topics

- Department of Communities and Local Government 'Flood risk and Coastal Change – Site Specific Flood Risk Assessment' (2012); and
- The Environment Agency 'Flood Risk Assessments: Climate Change Allowances'.

6.3 BIODIVERSITY (INCLUDING FLORA & FAUNA)

Context

The proposed redevelopment of the Goodison Park site has the potential to affect any flora and fauna present at the site or in its immediate proximity.

Baseline Conditions

The following European-designated Natura 2000 sites have been identified within a 10km radius of the site:

- Dee Estuary Special Area of Conservation (SAC);
- Sefton Coast SAC;
- Ribble & Alt Estuaries Special Protection Area (SPA) and Ramsar Site;
- Mersey Estuary SPA and Ramsar Site;
- Mersey Narrows & North Wirral Foreshore SPA and Ramsar Site; and
- Liverpool Bay SPA.

No statutory designated ecological sites (e.g. Sites of Special Scientific Interest (SSSIs), SACs, SPAs etc.) have been identified within 2km of the site. A review of locally designated ecological sites has yet to be undertaken but it is anticipated that such sites are likely to be present within the local area.

Habitats at the site comprise hardstanding, the stadium and ancillary structures. A tree is also present immediately adjacent to the northern

boundary of the site, within the grounds of Church of St Luke the Evangelist.

Due to the lack of naturalised habitats at the site, its biodiversity value is generally considered to be low and it is unlikely to support a wide variety of protected species. Nevertheless, it is possible that the site could still support some protected and notable species, in particular roosting bats and some species of nesting birds.

The area around the site is characterised predominantly by residential properties to the north, east and west, with Stanley Park a short distance to the south (beyond Walton Lane), which includes areas of open water and public amenity park. Gwaldys Street Primary School lies adjacent to the north-eastern corner of the site, with Anfield Cemetery lying beyond.

Key Issues and Requirements for Assessment

The potential for sensitive ecological features to be affected by the proposed development will need to be assessed, taking into consideration any direct loss of habitats and associated flora or fauna; indirect effects; effects on any sites of nature conservation importance; and specific effects on protected species, both during the construction and operational phases of the development.

The main potential effects which will be considered are as follows:

Construction

- Temporary and permanent land-take;
- Disturbance (visual, noise, lighting);
- Pollution (dust generation, pollution of aquatic habitats); and
- Construction site hazards.

Scoped In Topics

Operation

- Anthropogenic / urban effects (including recreational pressure, disturbance & traffic);
- Air quality impacts;
- Pollution of water resources; and
- Permanent lighting

Assessment Methodology

Given the generally low ecological value of the site and its urban setting, at this stage, it is considered that significant environmental effects related to this topic are unlikely. On this basis, it is currently proposed that the assessment of effects related to biodiversity can be covered sufficiently within a Preliminary Ecological Appraisal (PEA). If the PEA results should indicate the requirement for any targeted protected species surveys, these would be undertaken and output report(s) would be included in ES appendices.

As the scheme designs develop, surveys progress and consultations continue with LCC and other consultees, the proposed approach to the consideration of this topic within the ES will be reviewed and should significant environmental effects be considered likely, a Biodiversity chapter would be included within the main volume of the ES.

The proposed scope of the PEA is provided below.

Preliminary Ecological Appraisal

Desktop Study

A desktop study will be undertaken. This will involve contacting the local biological records centre – Merseyside Environmental Advisory Services

(MEAS) – and reviewing electronic resources (e.g. the MAGIC database and the NBN Atlas) to identify any known ecological constraints such as relevant nearby statutory or non-statutory nature conservation designations, or known records for protected or notable species.

Phase 1 Habitat Survey

The site will be surveyed with regard to the Extended Phase 1 Survey methodology (Joint Nature Conservation Committee, 2010 [17]). The broad habitat types present will be identified and mapped and an assessment of the species composition of each habitat will be undertaken. As part of this, consideration will be given to the immediately adjacent areas. The presence of any invasive or noxious plants or weeds that are listed on Schedule 9 of the Wildlife and Countryside Act 1981 will also be recorded.

This survey will record the presence of, or potential for, habitats capable of supporting protected or otherwise notable species. This will then inform the potential requirement for any focused protected species surveys.

Potential Phase 2 Surveys

As discussed above, should the results of the PEA indicate that further protected species surveys are required, these would also be undertaken and output reports provided within the appendices of the ES.

6.4 SOCIO-ECONOMICS

Context

The proposed redevelopment will provide new community facilities, which will enhance the local provision of community facilities in the area.



Scoped In Topics

The proposed residential units will also increase the local resident population. These residents will have an impact on the local economy as well as on local social and community facilities. Furthermore, the proposed community facilities and other likely proposed uses (retail/commercial etc.) will bring jobs to the site.

This section of the ES will consider the impacts of the proposed development on the local economy as well as on local social, health and community facilities.

Baseline Conditions

In the 2011 census, the population of Liverpool City was estimated to be 465,700, while the population of the wider Liverpool City region was estimated to be 1,506,500. Between 2001 and 2011, the number of residents of the city rose by 6.1%. This represents a slower increase than nationally (7.4%). In this period, the biggest increase in the city's population occurred in the 20-29 age group, while there were also sizeable increases in the 40-64 and 75+ age groups. By contrast, the city's populations aged 5-14 years, 35-39 years and 65-74 years all decreased over the period. ONS projections (2014) forecast that Liverpool City's population will grow to around 495,600 by 2024, while the population of the Liverpool City Region will grow to 1,559,800.

According to ONS figures, the Gross Value Added (GVA) for Liverpool City was £10.9 billion in 2015. GVA per head was reported to be £22,790, which represents 89.9% of the UK average value. ONS Active Business Rate (Businesses per 10,000 Residents aged 16+) data indicates that there were 61 active businesses in Liverpool City per 10,000 Residents aged 16+ in 2015, which is lower than the Great Britain average of 73. In 2016, ONS data indicates that 718,700 people were in employment in the Liverpool City Region, which equates to 72.3% of the population of the region. This is lower than the Great Britain average (77.8%). In regards to

earnings, ONS data indicates that both gross weekly pay and hourly pay, excluding overtime, were lower in the Liverpool City Region (£504.1 and £12.86 per full-time worker respectively) than the average for Great Britain (£541.0 and £13.66 per full-time worker respectively).

Approximately 41 GP surgeries and 19 dental surgeries have been identified within a 2km radius of the site. Approximately 21 hospitals have been identified within 5km of the site, three of which have an A&E department (The Royal Liverpool University Hospital, Aintree University Hospital and Arrowse Park Hospital). Approximately 15 primary schools have been identified within 1km of the site, while approximately 27 secondary schools have been identified within 3km of the site.

Key Issues and Requirements for Assessment

A range of community facilities will be provided at the site under the proposals, which will enhance the existing provision within the local area.

The development will have a number of economic impacts both during construction and once occupied:

- Construction employment, including secondary local benefits in terms of job creation within the supply chain;
- On-site employment within the proposed community facilities and other likely proposed uses (retail/commercial etc.);
- Expenditure impacts, in turn supporting local jobs and helping to maintain local shops and services; and
- Labour market impacts through additional labour force.

Additional residents will also require the use of local healthcare, education, social and community services to meet their needs. While it is possible that some of these needs may be met by new services/facilities provided at the site under the proposals, many will need to be met by other providers in

Scoped In Topics

the local area. Where these services are provided by the public sector, as opposed to the private market, there is a need to assess whether additional demand can be met within existing and planned provision. If these needs cannot be met, there may need to be mitigative action before mainstream funding is allocated in line with the rise in population.

Assessment Methodology

A Socio-Economic Impact Assessment will be completed as part of the EIA process in order to assess these potential impacts. The finding of the assessment will be provided in the Socio-Economics chapter of the ES.

The assessment will be carried out as a desk-based exercise in accordance with the EIA methodology outlined in Section 3 of this report. In carrying out the assessment, regard will be given to relevant good practice guidance and advice, including that set out in the HCA Additionality Guide. To inform the assessment, consideration will be given to census and other published information. Consultations will also be undertaken with Liverpool City Council (including as the Local Planning Authority and Local Education Authority) and the Liverpool Community Health NHS Trust and the NHS Liverpool Clinical Commissioning Group wherever possible.

Analyses will be undertaken to demonstrate the economic impact of the proposed new residential and community floorspace, as well as any floorspace proposed for other uses as the designs progress. The assessment will be based on industry best practice, national benchmarks and local data specific to the area and scheme.

In regards to social and community infrastructure impacts, the main areas of consideration for a development of this size are primary and secondary education and health. The assessment will therefore consider the current and future supply of the following, together with the level of demand anticipated as a result of the new development:

- Primary schools
- Secondary schools
- GP services
- Hospitals

Impacts on crime will be assessed on the basis of estimates of temporary construction employment on-site, crime rates per 1,000 people in the local area, and effects arising from the improved public realm.

Also included will be an assessment of environmental and social benefits as a result of the scheme. The proposals will provide green spaces, as well as S106 and/or Community Infrastructure Levy (CIL) contributions, the health, social and economic benefits of which will all be taken into consideration.

6.5 TOWNSCAPE & VISUAL

Context

The proposed development will result in impacts on the local townscape character and on local visual receptors.

Baseline Conditions

A review of landscape and townscape related designations in the area surrounding the site has been carried out.

Statutory and non-statutory designated assets in proximity to the application site that are considered indicators of landscape quality include:

- Liverpool (Grade II*) Registered Historic Parks and Gardens of special historic interest (located adjacent to Walton Lane on the southern boundary of the site); and



Scoped In Topics

- Liverpool Maritime Mercantile City UNESCO World Heritage Site (located approximately 2.2km to the south west of the site).

Key Issues and Requirements for Assessment

An assessment of potential effects on the following receptors will be undertaken within the ES.

Landscape/Townscape Receptors:

- Landscape features within the application site boundary;
- National, County, and District Landscape Character Areas within the visual envelope of the site; and
- Impact on any statutory and non-statutory designated landscapes within the visual envelope of the site.

Visual Receptors:

- Local residents;
- Users of Public Rights of Way;
- Motorists/cyclists;
- Workers; and
- Visitors engaged in recreational/cultural pursuits.

Assessment Methodology

A Townscape and Visual Impact Assessment (TVIA) will be undertaken in accordance with the Guidelines for Landscape and Visual Impact Assessment (published by the Landscape Institute and Institute of Environmental Management & Assessment, Third Edition dated 2013).

Given that the planning application will be in outline, it is anticipated that wirelines will be used for the assessment of the visual effects of the scheme. As a minimum, the wirelines would be set to the maximum parameters of the development (i.e. maximum height and scale of the buildings). The viewpoints, and the nature of the visualisations that will be prepared as part of the assessment, will ultimately be agreed through consultation with LCC's Landscape Officer.

It is anticipated at the current time that a Townscape and Visual chapter will be provided within the main volume of the ES; while the TVIA report will be provided in the ES appendices.

6.6 ARCHAEOLOGY & BUILT HERITAGE

Context

The historic environment comprises archaeological sites and monuments, historic buildings and structures, and the broader historic landscape. New development can have a direct impact on heritage assets including buried archaeological remains, and can also impact on the setting of designated heritage assets.

Baseline Conditions

Although no statutory designated built heritage assets have been identified within the site boundary, the following statutory heritage designations have been identified in a 1km radius of the site:

- 53 listed buildings, including Anfield Cemetery (Grade II*) and Stanley Park, Liverpool (Grade II*);
- Two Registered Historic Parks and Gardens of special historic interest (Anfield Cemetery (Grade II*) and Stanley Park, Liverpool (Grade II*)); and

Scoped In Topics

- Walton on the Hill Conservation Area (located approximately 525m to the north of the site).

It is likely that a number of non-statutory designated heritage assets are also present within this study area.

Furthermore, Liverpool Maritime Mercantile City UNESCO World Heritage Site is located approximately 2.2km to the south west of the site.

Key Issues and Requirements for Assessment

Due to the likely height of some of the proposed buildings (particularly the taller elements that may come forward), there is the potential for impacts to the setting of local built heritage assets.

The proposed development has the potential to impact upon any buried archaeological remains which may be present beneath the site. The potential for previously unrecorded archaeological assets to be found within parts of the site where foundations/basement structures have been present in the past is likely to be low, as any assets previously present are likely to have been truncated or entirely lost through the construction of these structures. However, in parts of the site that are relatively unaffected by past development, the potential for previously unrecorded archaeological assets to be found would be higher.

Assessment Methodology

A Heritage assessment will be undertaken in accordance with the Standard and Guidance for Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists 2014) and the report will be included within the ES appendices.

The assessment will focus on the potential effects of the proposed scheme on both the identified archaeological resource at the site and the setting of any local built heritage assets.

The assessment of impacts on the setting of built heritage assets will be undertaken drawing upon Accurate Visual Representations (AVRs), which will be prepared and included within the ES to support the assessment of townscape and visual effects (Section 6.5 above). The AVR locations will be agreed with LCC in due course.

Furthermore, data gathering for the assessment will also focus on accessing the information held on (or at):

- The National Monuments Record held by the English Heritage Archive (EHA);
- Aerial photographs held by Liverpool City Council and the English Heritage Archive;
- The Merseyside Historic Environment Record, for details of recorded heritage assets and archaeological remains;
- Documentary sources and historic mapping of relevance to the historic development of the site and study area including, where appropriate, Tithe, Apportionment, Estate and Parish maps;
- Published reports and syntheses relating to archaeological investigations in this area;
- Unpublished research reports and archives;
- Geological and Ordnance Survey Maps;
- Historic Landscape Character Assessments;
- Any available geophysical and geotechnical data; and

Scoped In Topics

- The application site itself, which will be subject to a walk-over inspection during a site visit.

Following completion of the initial desk-based assessment of archaeological impacts, consultation will be undertaken with LCC's historic environment advisors. This consultation will seek approval of the contents of the assessment, and will identify any requirements regarding the need for further archaeological assessment work. Should it be established that further assessment work is required to form part of the EIA submission, the scope of this work will be agreed with LCC and the necessary reported will be provided within the ES. Should results indicate that significant adverse effects related to archaeology are likely, an Archaeology chapter would be included within the main volume of the ES.

Similarly, should significant effects be anticipated in regards to built heritage, a Built Heritage chapter would be included within the main volume of the ES.

6.7 TRANSPORTATION

Context

Given the nature of the proposed development, during the operational phase, the scheme will generate vehicular trips on the local highway network. Vehicle trips will also be generated temporarily on the local road network during the construction phase as a result of construction vehicles moving to and from the site.

Increased use of the highway network by vehicles associated with the proposed development has the potential to impact upon sensitive receptors, such as other highway users and residents located in close proximity to the affected highway links.

Baseline Conditions

Local highway network

The application site is bordered by existing residential streets to the north, east and west. To the south is Walton Lane, which provides a main through route between the A59 and the A580, which provide an onward route out of Liverpool to the M57 at Knowsley. The application site would be accessed from Walton Lane via existing junctions with Bullens Road (priority give way junction) and also Spellow Lane (signalised) which leads onto Goodison Road. Walton Lane is a 30mph four lane carriageway (two lanes in each direction) with a central reservation.

Due to the current use of the site as a football stadium, to protect surrounding local residents from parking on match days (at Goodison and Anfield stadiums), there is a Residents Parking Zone in place, which is enforced on match days only. As such, to park within the area on match days, vehicles must display a valid permit.

Rail

The nearest station to the application site is Kirkdale. This is located a 1.4km distance / 16 minute walk time (based on a speed of 5km/hour) from the application site and provides access to the Merseyrail Northern Line with connections to residential areas to the north of the application site, and onwards access to Preston via Ormskirk and Wigan via Kirkby. Sandhills is the next station on the line located just three minutes by train south of Kirkdale. Sandhills is the point of interchange for services northwards to Southport and southwards to Hunts Cross via Liverpool City Centre, followed by a stop at Liverpool South Parkway, a major Park & Ride (P&R) station in south Liverpool. Services on the Northern Line heading into Liverpool City Centre from Kirkdale run two services every 15 minutes between 7am and 8pm Monday - Saturday, and one service every 15 minutes at other times. Liverpool Central is approximately a 9-minute

Scoped In Topics

train journey from Kirkdale, providing access to the city centre for services such as hotels but also the Wirral Line in a westbound direction to serve the Wirral. From Moorfields, eastbound services on the Wirral Line provide a connection to Liverpool Lime Street (and then on to Liverpool Central as noted above) from where longer distance mainline services to destinations including Manchester, London, Birmingham, Preston, Blackpool and Wigan are accessible.

Bank Hall station is located 2.1km distance / 25 minute walk from the application site. Located on the Northern Line for services to Southport and Hunts Cross, this provides an additional option to avoid the need for interchange at Sandhills.

Bus Services

The application site is well placed for access to existing bus routes, with A59 Walton Road and Walton Lane the key locations to alight, which are a short walk from the site. From Liverpool City Centre, there are frequent services running to via multiple routes. There are also a number of services that do not operate via the city centre, connecting the wider Liverpool area with the application site. Key bus routes are as follows:

- 19/19A, 20, 21, 130*, 210*, 250* from Queens Square Bus Station;
- 19/19A, 20, 21, 130* from Paradise Street Interchange;
- 350/351, 311, 210*, 250* from Thomas Street Stand EA; and
- Services which don't operate via the City Centre but serve the vicinity of the application site include 68/168 (Bootle – Aigburth Vale) and 62/162 (Crosby/Bootle – Penny Lane).

Walking and cycling

There are existing footways along the surrounding residential streets as well as along Walton Road and Walton Lane. A pelican crossing point is provided at the junction of Spellow Lane and Walton Road providing a controlled crossing point across both roads.

There are no cycling infrastructure provisions in the vicinity of the site, however there are cycle routes signed along some of the adjacent residential streets including National Route 810 of the National Cycle Network which passes along Diana Street from Walton Lane, on to Bullens Road then Gwladys Street onto City Road.

Key Issues and Requirements for Assessment

Given the nature of the proposed development, during the operational phase, the scheme will generate vehicular trips on the local highway network; with trips associated with the scheme likely to provide a more consistent presence on the highway network in comparison to the current usage, which supports large volumes of movements on match days only.

Vehicle trips will also be generated temporarily on the local road network during the construction phase as a result of construction vehicles moving to and from the site.

Increased use of the highway network by vehicles associated with the proposed development has the potential to impact upon sensitive receptors, such as other highway users and residents located in close proximity to the affected highway links. Potential impacts include severance, driver delay and accidents and safety.

Scoped In Topics

Assessment Methodology

A Transportation chapter will be provided within the main volume of the ES. The chapter will be supported by a full Transport Assessment (TA) as well as a site Travel Plan, which will cover the management and monitoring of movements and access to the application site during construction as well during the operational phase. The TA and Travel Plan will be provided within the ES appendices.

A package of mitigation measures will be identified and reported in the chapter. These measures will assist in reducing the significance of the effects of the proposed development upon sensitive receptors.

Establishment of a study area

Whilst the extents of the proposed development are already identified, the implications for transport will be further reaching and one of the first steps will be the identification of an appropriate study area for considering transportation effects within. This would be scoped as part of the Transport Assessment and the same study area applicable to the EIA.

Receptor identification

An early stage of the assessment would be the identification of sensitive receptors within the transport study area that may be impacted upon by the proposed development during the construction and/or operation phase. These would consist of certain highway users groups as well as receptors located in close proximity to the highway.

Developing an understanding of the baseline position

The first step will be to collate a robust and solid understanding of the baseline position for the proposed development, building upon the details outlined earlier within this section. This will cover all modes of transport

and set out what currently occurs in relation to transport in the vicinity of the application site. Additional baseline data to collect or collate includes:

- Traffic flows for the key routes around the application site to cover the study area.
- Information on the current operation of traffic signals in the area.
- Location of pedestrian crossing points.
- Audit and identification of existing on and off-road cycling infrastructure between the application site and Liverpool City Centre.
- Accident and non-injury data.
- Details on public transport provisions for bus and rail including service providers, frequencies, and routes.
- Extents of highway boundaries and existing Traffic Regulation Orders.
- Identification and mapping of receptors and determining their sensitivity.

Policy review

Key relevant national, regional and local policies will be reviewed to identify where the proposed development or mitigation associated with it needs to align with existing adopted policy guidelines. Policy documents to be considered will include:

- National Planning Policy Framework;
- Saved Liverpool Unitary Development Plan: A Plan for Liverpool (2002);
- Liverpool Local Plan (currently in draft format);
- Liverpool City Centre Strategic Regeneration Framework;
- Liverpool City Region Long Term Rail Strategy;



Scoped In Topics

- Merseyside Local Transport Plan 3;
- Ensuring a Choice of Travel SPD;
- Merseyside Active Travel Strategy; and
- Other policy or guidance documents identified as being relevant from discussions with stakeholders.

Assessment of the significance of effects

In accordance with guidelines produced by the Institute of Environmental Management and Assessment [18], within the context of EIA, consideration of transport impacts should be given to the following, all of which are as a result of increases or changes in the pattern of flows associated with the proposed development on the local highway network:

- Severance;
- Driver delay;
- Pedestrian delay;
- Pedestrian amenity;
- Fear and intimidation;
- Accidents and safety;
- Hazardous loads; and
- Dust and dirt.

Given the nature of the proposals, hazardous loads would not be anticipated and; therefore, impacts related to this factor will not be considered within the EIA. Effects related to dust and dirt will be assessed within the air quality assessment and, as such, will not be discussed within the transportation ES chapter or supporting reports.

Assessment of the key issues will be undertaken subject to the following thresholds for identified peak periods within each scenario of assessment:

- Highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles increase by more than 30%); and
- Any sensitive areas where there is a 10% or more increase in traffic flows.

Where increases in traffic are found to be lower than the noted assessment thresholds, the guidelines suggest that the significance of the effect can be noted as negligible and therefore does not warrant further assessment.

Where changes in traffic flows are found to exceed these thresholds, further assessment will be undertaken in relation to the significance of the effect.

Assessment Criteria

For the Transport ES chapter, the following criteria will be applied in regards to the impact magnitude, receptor sensitivity and significance of effects, using guidelines provided by DMRB and IEMA.

The following scale of impacts magnitude (beneficial or adverse) will be used:

- Major Magnitude - Total loss or major/substantial alteration to key elements and features of the baseline (pre-development) conditions such that the post development character or composition will be fundamentally changed.
- Moderate Magnitude - Loss or alteration to one or more key elements/features of the baseline conditions such that post development character or composition of the baseline will be materially changed.

Scoped In Topics

- Minor Magnitude - A minor shift away from baseline conditions. Change arising from the loss/alteration will be detectable but not material. The underlying character or composition of the baseline condition will be very similar to the pre-development situation.
- Negligible Magnitude - Very little change from baseline conditions. Change barely distinguishable, approximating to a 'no change' situation.

The impact magnitude would be considered taking into account the following elements as well as through the application of professional judgement with quantitative thresholds identified where possible (e.g. split by seconds of delay or absolute change in flows):

- Relevant and applicable legislation, policy or guidelines;
- The degree to which the environment is potentially affected e.g. is the environment improved or impaired;
- If the effect is beneficial or adverse to sensitive receptors;
- The scale or degree of change from baseline conditions as a result of the proposed development;
- The duration of the effect e.g. if it is temporary or permanent in nature with temporary effects considered less significant than permanent ones; and
- The reversibility of the effect.

In terms of sensitivity, the following scale will be applied:

- Very High Sensitivity – the receptor has little or no ability to absorb change without fundamentally altering its present character, is of very high environmental value, or of international importance.

- High Sensitivity – The receptor has low ability to absorb change without fundamentally altering its present character, is of high environmental value, or of national importance.
- Medium Sensitivity – The receptor has moderate capacity to absorb change without significantly altering its present character, has some environmental value, or is of regional importance.
- Low Sensitivity – The receptor is tolerant of change without detriment to its character, is of low environmental value, or local importance; and
- Negligible Sensitivity – The receptor is resistant to change or is of little environmental value.

When determining the significance of the effect, the relationship between the receptor sensitivity and magnitude of the effect is considered, and the following matrix will be applied:

Scoped In Topics

Table 6.1

Matrix used to establish the significance of effects

Sensitivity of Receptor	Magnitude of Impact			
	Negligible	Minor	Moderate	Major
	Very High	Slight	Moderate or Large	Large or Very Large
	High	Slight	Slight or Moderate	Moderate or Large
	Medium	Neutral or slight	Slight	Moderate or Large
	Low	Neutral or slight	Neutral or Slight	Slight or Moderate
	Negligible	Neutral	Neutral or Slight	Slight

The significance is determined as:

- Very Large (adverse only)
- Large (beneficial or adverse)
- Moderate (beneficial or adverse)
- Slight (beneficial or adverse)
- Neutral

Cumulative development assessment

The cumulative development noted in Section 3.4 will be considered in relation to what impact they will have upon changes to traffic flows in the

study area, and their contribution to any of the affects assessed. Consideration would be given to these cumulative developments in the context of transport and how they would alter demand upon the highway network or change/enhance existing infrastructure in the area as part of their proposals.

Identification of mitigation

Any off-site highway infrastructure such as junction improvements would be identified as part of assessments undertaken in the TA and would be designated as Associated Development. Any such off-site works are yet to be confirmed in terms of their scope or location but will be further discussed with the appropriate consultees to ensure that they have been adequately assessed within the EIA.

Assessment of residual effects

Following consideration of any proposed mitigation, the previously assigned significance ratings will be re-assessed for each effect to determine the extent to which the significance reduces and hence the remaining significance of residual effects.

6.8 AIR QUALITY

Context

The proposed development has the potential to change traffic flows on the surrounding road network, leading to a change in pollutant concentration at sensitive receptors due to traffic exhaust emissions. Construction activities also have the potential to produce fugitive dust emissions, which have the potential to impact on amenity and human health. Furthermore, should CHP plant be included within the proposals, this would also

Scoped In Topics

represent an air pollutant source that could affect air quality at local sensitive receptors.

Baseline Conditions

LCC has declared their entire administrative area an Air Quality Management Area (AQMA), which includes the application site. The Liverpool City AQMA has been declared for the exceedance of the nitrogen dioxide annual mean national Air Quality Objective (AQO) values.

The existing air quality monitoring network comprises of two automatic, and 73 non-automatic diffusion tubes across the City of Liverpool.

The most recent air quality assessment report prepared by the City of Liverpool was issued in January 2016. The following was stated in the report:

"this report indicates that Nitrogen Dioxide (NO₂) concentrations will exceed the annual mean NO₂ air quality objective of 40 at 85% of the locations where passive diffusion tube monitoring was undertaken in 2014. This is a similar situation to 2012 and 2013 where passive diffusion tube data was presented in a series of progress reports."

Defra has published background pollutant concentrations for all 1km x 1km grid squares within the UK. The current version of these background pollutant maps have been linked to 2013 concentrations. The background concentrations for the grid square in which the application site is located are shown in **Table 6.2**.

Table 6.2

Matrix used to establish the significance of effects

Background Grid Square Coordinates		Pollutant		
X	Y	NO ₂ (µg/m ³)	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)
335500	393500	22.5	14.8	10.5

Sensitive receptors in the vicinity of the application site include:

- Residential properties located along Goodison Road, Spellow Lane, Oxtan Street, Winslow Street, Eton Street, Neston Street, Andrew Street, Nimrod Street, Gwladys Street, Leta Street, Bullens Road, Muriel Street and Diana Street;
- Gwladys Street Community Primary and Nursery School and Everton Free School; and
- Church of St Luke the Evangelist, Salop Chapel Free Presbyterian Church and Spellow Lane Church.

Key Issues and Requirements for Assessment

During the construction phase, the primary source of air quality impacts will be construction traffic, and fugitive dust emissions from construction activities. These activities include the demolition of existing structures, earthworks, construction and trackout of material onto the local road network. These impacts will be short term and temporary, and can likely be mitigated through the use of best practice measures. Guidance on mitigation methods has been published by the Institute of Air Quality Management (IAQM) [19].

Scoped In Topics

During the operational phase, the primary source of air quality impacts will be due to changes to the traffic flow on the local road network due to vehicles accessing the site. Should CHP or other such plant be included within the proposals, this would also represent an additional air pollutant source at the site.

Assessment Methodology

Reporting

An air quality impact assessment will be undertaken and reported in the Air Quality chapter within the main volume of the ES. The assessment will consider potential impacts during both the construction phase and the operational phase of the scheme.

Construction Phase Assessment

A semi-quantitative assessment of the air quality effects of the construction phase of the development would be undertaken in accordance with the Institute of Air Quality Managements (IAQM) 'Guidance on the Assessment of the Impacts of Dust from Demolition and Construction' document. Appropriate site specific mitigation would be recommended in accordance with the IAQM document. The mitigation measures will be detailed in the Air Quality chapter and the draft CEMP within the main volume of the ES and will ultimately be included within the finalised CEMP in due course.

Operational Phase

Computer based modelling of the predicted changes of traffic emissions within the study area would be undertaken using an approved atmospheric dispersion modelling package (ADMS Roads). The model would provide predicted annual average concentrations of nitrogen dioxide (NO₂) and PM₁₀ at receptors within the study area for the year of opening. Specifically

the model would assess air quality within the study area with reference to the UK Air Quality Standards, and would describe the significance of the air quality changes within the development with reference to non-statutory guidance issued by EPUK, IAQM, issued in January 2017, and guidance within the NPPF.

A baseline air quality dispersion model would be developed for the study area and it would be verified using the latest LAQM Progress Report for Liverpool City Council. The verification would be undertaken in general accordance with DEFRA issued guidance (LAQM Technical Guidance TG(16)). The baseline and assessment year models would include traffic data for the local road network, representative local meteorological data and background pollution data from the national air quality archive. Should CHP or other such pollutant emitting energy sources be included within the proposals, the impact of these sources would also be modelled and fully assessed.

6.9 NOISE & VIBRATION

Context

The proposed development has the potential to result in noise impacts at receptors within and in the vicinity of the application site during the demolition and construction phase (noise associated with construction traffic, plant and machinery), and during the operational phase (noise associated with the road traffic, plant and the activity of site users etc.).

Baseline Conditions

Given the site's setting, the main sources of noise at the site are likely to be crowd noise, local roads – particularly Walton Lane to the south – and general urban noise.



Scoped In Topics

Sensitive receptors identified in proximity to the application site include:

- Residential properties located along Goodison Road, Spellow Lane, Oxton Street, Winslow Street, Eton Street, Neston Street, Andrew Street, Nimrod Street, Gwladys Street, Leta Street, Bullens Road, Muriel Street and Diana Street;
- Gwladys Street Community Primary and Nursery School and Everton Free School; and
- Church of St Luke the Evangelist, Salop Chapel Free Presbyterian Church and Spellow Lane Church.

Key Issues and Requirements for Assessment

Noise will be generated during the demolition and construction phase as a result of construction traffic, plant and machinery.

As the proposed development includes residential units, and potentially other sensitive uses, it will be necessary to establish if internal and external noise levels will meet relevant guideline values (e.g. World Health Organisation (WHO) Guidelines for Community Noise and BCC guidance).

Operational plant included within the proposals would have the potential to generate noise, which could adversely impact upon existing and proposed sensitive receptors.

Vibration will be generated during the construction phase. However these impacts will be intermittent, temporary and short term. Sources of vibration in the area surrounding the application site are considered to be limited and. On this basis, it is proposed to scope out consideration of vibration from the EIA.

Assessment Methodology

Given the proximity of the site to surrounding residential receptors, it is considered that construction of the proposals would have the potential to result in significant noise impacts at these receptors. As such, it is proposed that a Noise chapter is included within the main volume of the ES.

The assessment will be carried out in accordance with acknowledged best practice. The spatial scope of the assessment will be established based on the likely sources of noise. The complete list of sensitive receptors will be identified based on the agreed spatial scope.

Noise Survey

The baseline position for the existing noise environment in and around the application site will be established through a noise survey utilising a combination of short-term attended measurements and long-term unattended measurements covering both weekday and weekend periods.

Recorded parameters will include the L_{A90} , an indicator of the underlying background noise, L_{Aeq} , the equivalent continuous noise level and an indicator of total ambient noise, the L_{Amax} , the maximum noise level recorded, and the L_{A10} , index conventionally used to assess road traffic noise in the UK. Measurement practice will be in accordance with the principles of the relevant British and International standards.

Construction Noise Assessment

Construction noise will be assessed using British Standards Institution 'British Standard (BS) BS 5228-1:2009+A1:2014: Noise and Vibration Control on Construction and Open Sites'. Suitable controls, including site boundary limits and operating hours, will be recommended where necessary. Mitigation measures will be included within the Noise ES chapter and in the draft CEMP.

Scoped In Topics

Transport Noise Assessment

In order to account for the effects of distance and screening (for example from the proposed development itself) of sources on the noise levels across the site, a noise prediction model will be constructed using the Cadna-A software package. The model will also be used to predict any changes in road traffic noise levels as a result of any predicted changes in road traffic flows as a result of the scheme and if these changes will have any significant effects of existing sensitive receptors.

The extent of the study area associated with the road traffic noise assessment will be determined by the spatial extent and results of the traffic assessment, with all roads expected to experience changes on traffic volumes of 25% or greater included within the assessment.

The study will assess the significance of the effects of these sources on the proposed receptors, and identify appropriate levels of mitigation in accordance with appropriate guidance.

Cross-references to the issues considered in the transportation chapter of the ES will be made where necessary and relevant.

Operational Plant Noise Assessment

Operational noise sources will be assessed against BS 8233:2014, BS 4142:2014, WHO Guidelines on Community Noise (1999) and IEMA Guidelines on Environmental Impact Assessment (2014).

Where required, stationary or fixed plant associated with commercial premises will be designed to achieve a rating noise level below or equal to background, in accordance with BS4142.

6.10 DAYLIGHT, SUNLIGHT & OVERSHADOWING

Context

Residents of the existing surrounding residential buildings may experience changes in the amount of daylight and sunlight they receive and the amount of overshadowing that will occur in gardens and amenity areas as a result of the massing of the proposed buildings at the site. There is also the potential for existing buildings in the immediate surrounding area to affect sunlight, daylight and overshadowing conditions within the site under the proposals.

Baseline Conditions

The site is bounded by terraced residential properties to the west, north and east. Bounding the site to the north-west is St. Luke the Evangelist Church. Gwladys Street Community Primary School is present to the east of the site. To the south is an open car park and beyond this Stanley Park. Many of these receptors in immediate proximity of the site are likely to currently experience some level of daylight, sunlight or overshadowing effects associated with the existing stadium.

Key Issues and Requirements for Assessment

The demolition and construction phases of the proposed development are not relevant for the assessment of daylight, sunlight and overshadowing because the full effects will only occur once the proposed development is completed and occupied. Nevertheless, a qualitative summary of the short term effects of demolition and construction phase will be carried out for the potential impacts upon daylight, sunlight and overshadowing of the adjacent residential buildings.

Scoped In Topics

To identify the residential receptors around the site, council tax research has been undertaken for properties as well as a site inspection on 4th May 2017. Through this research, the following properties have been identified, which could potentially be affected by the proposed scheme:

- 5 to 43 Goodison Road, Liverpool, L4;
- St. Luke the Evangelist Church;
- 13 – 61 Gwladys Street;
- Gwladys Street Community Primary and Nursery School;
- 1 – 4 Diana Street and 1a – 5a Diana Street, Liverpool, L4;
- 2 – 4 Muriel Street, Liverpool, L4; and
- Salop Chapel, 62 Spellow Lane, Liverpool, L4 4DF.

The high density nature of the surrounding buildings mean that low lying sun will be obstructed by the neighbouring properties before it can strike the Proposed Development. Therefore it is not considered necessary to carry out a solar glare assessment as there are not likely to be any sensitive receptors that would be affected.

Assessment Methodology

To assess daylight, sunlight and overshadowing, the BRE guidelines (BRE) report 2011 “Site layout planning for daylight and sunlight – A guide to good practice” will be used. This is the guidance used nationwide by local planning authorities and light practitioners as a means of evaluating daylight, sunlight and overshadowing effects. The guidelines at paragraph 2.2 state:

“The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, store rooms, circulation areas

and garages need not be analysed. The guidelines may also be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight; this would normally include schools, hospitals, hotels, hostels, small workshops and some offices”.

Using this guidance, the sensitive receptors that will be assessed are habitable rooms to residential dwellings, religious worship areas and school classrooms, as the occupants of these properties have an expectation of light.

The detailed daylight, sunlight and overshadowing tests that will be undertaken are as follows:

- Vertical Sky Component (VSC), Daylight Distribution (DD – ‘No sky-line test’) and Annual Probable Sunlight Hours (APSH) to all existing neighbouring buildings in the vicinity of the site;
- Average Daylight Factor (ADF) tests will be carried out to the proposed residential units; and
- The two hour sun on ground contour assessment on all existing and proposed neighbouring gardens and amenity spaces.

As the scheme designs continue to develop, assessments progress and consultations continue with LCC and other consultees, the proposed approach to the consideration of this topic within the ES will be established. Should significant impacts be considered unlikely, then a Daylight, Sunlight and Overshadowing Impact Assessment Report would be included within the ES appendices but a technical ES chapter would not be provided. Alternatively, Should significant impacts be considered likely, a Daylight, Sunlight and Overshadowing chapter would be included within the main volume of the ES.

Scoped In Topics

6.11 WIND

Context

Assessments of wind microclimate focus on pedestrian comfort and safety and are typically undertaken with reference to the Lawson Comfort Criteria [20]. Significant effects on wind microclimate are principally associated with tall buildings or developments in highly urbanised/developed environments including existing tall buildings.

Baseline Conditions

The site is located within a relatively dense urban area. The existing maximum height of the stadium is approximately 26mAOD. Surrounding properties are generally two to three storeys in height. With the exception of Walton Lane, the roads surrounding the site are generally narrow.

Key Issues and Requirements for Assessment

The proposed development will change the wind microclimate in the local built environment.

Significant effects on wind microclimate are principally associated with proposals which include tall buildings or where proposals relate to an environment where tall buildings are already present.

Given that the surrounding buildings are generally low rise and the existing stadium has a maximum height of approximately 26mAOD, it is considered that, should the new development at the site not exceed around 12 storeys in height (circa 37.6mAOD), significant wind impacts on the pedestrian environment would be unlikely.

Currently, development up to a maximum height of 61.5mAOD is proposed at the site (circa 19 storeys). However the designs are still being

developed and the maximum building heights could be reduced. Should building heights under the finalised designs exceed 37.6mAOD, it is proposed that a pedestrian environment wind micro-climate assessment would be undertaken and reported within a chapter in the main body of the ES. Taking into account that all of the proposed development buildings will be in outline only, and the building massing and façade articulation will be unknown, it is proposed that the wind micro-climate assessment be based on a Computational Fluid Dynamic (CFD) Analysis.

Alternatively, should building heights under the finalised proposals not exceed 37.6mAOD in height, significant impacts related to wind would be considered unlikely.

Assessment Methodology

As described above, should the maximum building heights under the final proposals exceed 37.6mAOD in height, a Pedestrian Environment Wind Microclimate Assessment will be undertaken, incorporating CFD analyses.

Temporal Scope

During the construction phase, plant, hoardings, temporary site buildings etc. are presumed to typically be below 10m with the exception of cranes. These are likely to be of negligible impact to bulk airflow across the application site.

The effects of the proposed development's building massing on local wind conditions are likely to be most substantial the closer the construction of the building is to completion (i.e. the greater the height and massing of the building). As such, it is considered that an assessment of the final building massing will represent a 'worst case' scenario for the operational phase.

Scoped In Topics

On this basis – and taking into account that construction phase effects will be short-term and temporary – mid-construction effects will not be assessed.

Assessment Scenarios

The assessment would cover the following scenarios:

- Existing application site, with existing surrounding buildings;
- Proposed development, with existing surrounding buildings; and
- Proposed development, with consented and submitted but not yet approved surrounding buildings – which will address the assessment of cumulative effects.

Lawson Criteria

It is proposed to assess effects based on UK industry standards, assessing the pedestrian level wind microclimate against the Lawson pedestrian comfort and safety criteria. The Lawson criteria define acceptable windiness for different activities such as sitting, walking and standing.

Weather Data

The assessment requires knowledge of the frequency distribution of winds at the application site.

Wind speed data collected from a nearby weather station will be used. The surface roughness in the area surrounding the weather station will also be examined, and the reference wind speeds will be adjusted accordingly.

Surface roughnesses in the area surrounding the application site will also be examined, and the adjusted weather station wind data will be further adjusted to account for the drag caused by these different roughnesses, using the methods set out in EN 1991.1.4.2005. This method provides a

logarithmic velocity profile, as well as associated turbulent intensity and length scale profiles.

Geometry Methodology

Detailed data, describing the existing built environment and ground topography, will be sourced from third parties in the form of LiDAR survey data from the Environment Agency, and Ordnance Survey Master Map.

Computational Fluid Dynamic (CFD) Analysis

The assessment of wind effects will be undertaken using CFD analysis to quantitatively determine whether the pedestrian level wind microclimate meets the Lawson Comfort Criteria for the uses for which it is intended.

As an outline application is proposed, the maximum parameters of the proposed development geometries will be used. 3D models will be constructed of the built environment representing the assessment scenarios listed.

The models will include existing surrounding buildings, including ground topography to a sufficient radius such that local wind effects are represented. Minor geometrical details (such as street furniture, foliage, rooftop plant, etc.) will not be included in the CFD models. The models produced will enable a quantitative analysis of flow characteristics in the microclimate around the buildings.

Boundary conditions will be applied to represent atmospheric wind and surface roughness. Simulations will be performed of wind at a representative high velocity from multiple wind directions around the compass.

The results of the CFD simulations will be interrogated to compare with metrics of user comfort criteria. This is a quantitative assessment that will

Scoped In Topics

provide indicative wind velocities around the site. Pedestrian comfort levels will be based on the Lawson Criteria.

This assessment will consider wind pedestrian comfort for general patterns of use (i.e. sitting, standing, pedestrian walking, and business walking). The assessment will not consider more specialised wind design requirements (e.g. sailing, sports, particle transport, fire safety, etc.)

The CFD results will be analysed including a brief discussion of possible causes of undesirable flow features and possible measures to counteract these. The document will include appropriate conclusions and recommendations.

Scope for Mitigation

The analysis will be used to inform the design of possible mitigation measures if required, particularly with regard to public spaces intended for recreational use. Examples of good design include the use of trees and other landscaping to provide shelter as well as refinements the architectural design to divert higher wind speeds from key area. The assessment will discuss the effectiveness of mitigation measures and the residual effects of the proposed development on the local wind environment with mitigation measures in place.

Reporting

The Pedestrian Level Wind Microclimate Assessment report will be included in the technical appendices to the ES, while its findings will inform the Wind chapter in the main volume of the ES.



7 Summary and Conclusions

7.1 REQUEST FOR A SCOPING OPINION

This report is a request for a scoping opinion under Regulation 13(1) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (as amended).

In accordance Regulation 13(3), should LCC consider that they have not been provided with sufficient information to adopt a scoping opinion, they should notify the person making the request of the points on which they require additional information.

7.2 LIST OF CONSULTEES

Copies of this scoping report are to be circulated to the following:

- LCC - Planning;
- LCC - Environmental Health;
- LCC - Highways;
- LCC - Lead Local Flood Authority;
- The Environment Agency;
- United Utilities;
- Civil Aviation Authority – Liverpool John Lennon Airport (LJLA);
- Natural England;
- Historic England;
- Merseytravel;
- Sport England;
- Merseyside Police; and
- Merseyside Environmental Advisory Service (MEAS).

7.3 HOW TO COMMENT

Comments on this scoping report should be sent to:

Peter Jones

City Centre Development Management Team Leader

Liverpool City Council

Municipal Buildings

Dale Street

Liverpool

L2 2DH

Alternatively, comments may also be made via LCC's planning website. Information on the closing date for comments is also available on LCC's website.

<https://liverpool.gov.uk/planning-and-building-control/search-and-track-current-applications/>

7.4 PERIOD FOR ADOPTING SCOPING

As per Regulation 13(4), the local authority shall now consult with the applicant and the consultation bodies and adopt their scoping opinion within 5 weeks of receiving this request.

8 Works Cited

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APPENDICES



APPENDIX 1: FIGURES



Figure 1: Site Location Plan





2017-05-08 CLA - Site location plan - scale 1:1250