



EIA Scoping Report

Proposed Red Bank Neighbourhood Infrastructure Works

Red Bank Neighbourhood, Manchester

November 2021

Contents

1.	Introduction.....	1
2.	Site Context.....	4
3.	Description of Development	9
4.	EIA Approach	10
5.	Alternatives	23
6.	Ecology and Trees.....	24
7.	Archaeology and Heritage	36
8.	Ground Conditions.....	45
9.	Water Environment.....	53
10.	Townscape and Visual.....	59
11.	Transport and Access.....	68
12.	Air Quality and Dust	73
13.	Noise and Vibration.....	79
14.	Waste	82
15.	Health and Wellbeing	89
16.	Socioeconomics.....	100
17.	Climate Change.....	110
18.	Non – Significant Issues	126
19.	Structure of Environmental Statement	139
20.	Summary and Conclusion	141

Appendices

Appendix I	Site Location Plan
Appendix II	Enabling Works Site Location Plan (Application 1)
Appendix III	Flood Defence Works Indicative Site Location Plan (Application 3)
Appendix IV	Red Bank Neighbourhood Indicative Site Location Plan (Application 4)
Appendix V	Northern Gateway SRF Site Area and Indicative Masterplan
Appendix VI	Accidents and Disasters: Risk Identification Screening Exercise

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For and on behalf of Avison Young

1. Introduction

- 1.1 Manchester City Council (MCC) (hereafter referred to as the 'Applicant') is seeking to obtain planning permission for infrastructure works for the Red Bank Neighbourhood project. This includes, but is not limited to, construction of new internal access roads including the new Plateau Road and new junctions including from the existing Red Bank Road, utility and services connections, remediation and earthworks, refurbishment of Dantzig Street, demolition of existing structures and the provision of green infrastructure including the creation of green links and first phase of the new City River Park (hereafter referred to as 'the proposed development'). The proposed development is located on an area of land to the north east of Victoria Station, to the south of Red Bank road; the site is immediately adjacent to Manchester City Centre, and is referred to as 'Red Bank Neighbourhood' (hereafter referred to as the 'site').
- 1.2 The site is located within the administrative authority of MCC with the majority being in the wards of both Cheetham and Harpurhey with some utility and service connections in Crumpsall, Miles Platting and Newton Heath wards.
- 1.3 The Applicant is in the process of undertaking a range of environmental surveys and technical assessments across the site to inform the design evolution of the proposed development. The information obtained to date has been used to inform the scope of the EIA as set out in this Scoping Report.

Requirement for Environmental Impact Assessment

- 1.4 The Town and Country Planning (Environmental Impact Assessment) (England) Regulations 2017 (hereafter referred to as the 'EIA Regulations') require that for certain planning applications, an Environmental Impact Assessment (EIA) must be undertaken. Schedule 1 of the EIA Regulations lists developments that always require EIA and Schedule 2 of the EIA Regulations list developments that may require EIA if it is considered that they could give rise to significant environmental impacts.
- 1.5 Regulation 6 of the EIA Regulations makes provision for a developer to request a 'Screening Opinion' from the Local Planning Authority (LPA) to ascertain whether an EIA is required if a development is classed as a Schedule 2 development. This decision is based on the likelihood of significant environmental effects arising in relation to the development proposals. It has been assumed for the purposes of the application that a statutory EIA will be required and therefore the Applicant will be undertaking an EIA in respect of the proposals. It is accepted that the development falls within Schedule 2 (10b) 'Urban Development Projects' for the purposes of the EIA Regulations.

EIA Scoping

- 1.6 Under Regulation 15 of the 2017 EIA Regulations, a person who is minded to make an EIA application may ask the relevant planning authority to state in writing their opinion as to the information to be provided and subsequently reported in an Environmental Statement (ES) (a 'Scoping Report'). The scoping process is an integral part of undertaking an EIA and its purpose is to provide relevant background information about the sites, the proposed development, key environmental issues and the approach for the assessment of potential effects.

1.7 This Scoping Report outlines the proposed development and identifies issues that will be assessed by the EIA and reported in the ES that will accompany the planning application. The objectives of the scoping process are to:

- Provide a detailed description of the development, including its physical characteristics and land use requirements;
- Identify key environmental topics that the EIA will consider;
- Define the extent to which environmental topics will be investigated;
- Allow consultation with the LPA, and Statutory and Non-Statutory consultees; and
- Provide a mechanism for agreeing the content and methodology of the EIA with stakeholders at an early stage in the process.

Structure of Report

1.8 The report is divided into the following sections:

- **Section 2: Site Context:** This section describes our understanding of the current conditions of the site and the surrounding area.
- **Section 3: Description of Development:** This section provides a description of the proposed development.
- **Section 4: EIA Approach:** This section provides the proposed approach to undertaking the EIA.
- **Section 5: Alternatives:** This section sets out the approach to the alternatives assessment.
- **Section 6 - 17: Environmental Assessment Topics:** These sections outline the proposed methodology for the ES and for each technical assessment expressed as chapters and/or appendices of the ES.
- **Section 18: Non-Significant Issues:** This section sets out those environmental issues deemed to be non-significant for the purposes of EIA and would not be included as a chapter in the ES.
- **Section 19: Structure of the Environmental Statement:** This section defines the proposed structure of the ES, chapters and document formats.
- **Section 20: Summary and Conclusions.**

1.9 It should be noted that the Scoping Report has been produced using currently available information in relation to the site and the proposed development. However, the design of the proposed development is still evolving and will continue to do so throughout the EIA process. This is important as it allows an iterative design process to be followed which takes account of environmental issues and allows for the incorporation of mitigation measures into the proposals. Therefore, changes to the proposals between the scoping of the EIA and the submission of the application should not necessarily require the EIA to be fully re-scoped. The assessment scopes presented here relate to the general principles of the proposals rather than the specifics; hence the scope can accommodate minor amendments to the site and the proposals. If the scheme changes materially or if the site expands significantly in area, further scoping may be required.

The Environmental Impact Assessment Team

- 1.10 The ES will be compiled using a wide range of sources and with inputs from competent experts. The organisations and their roles in the project team are listed in Table 1.1 below.

Table 1.1: The EIA Project Team

Discipline	Company
Ecology and Trees	TEP
Archaeology and Heritage	Arup
Ground Conditions	Arup
Drainage and Flood Risk	Arup
Townscape and Visual	Planit-IE
Transport and Access	Arup
Air Quality and Dust	Arup
Noise and Vibration	Arup
Waste	Arup
Socio-economics	Arup
Climate Change	Arup
Health	Arup
EIA Co-ordination	Avison Young

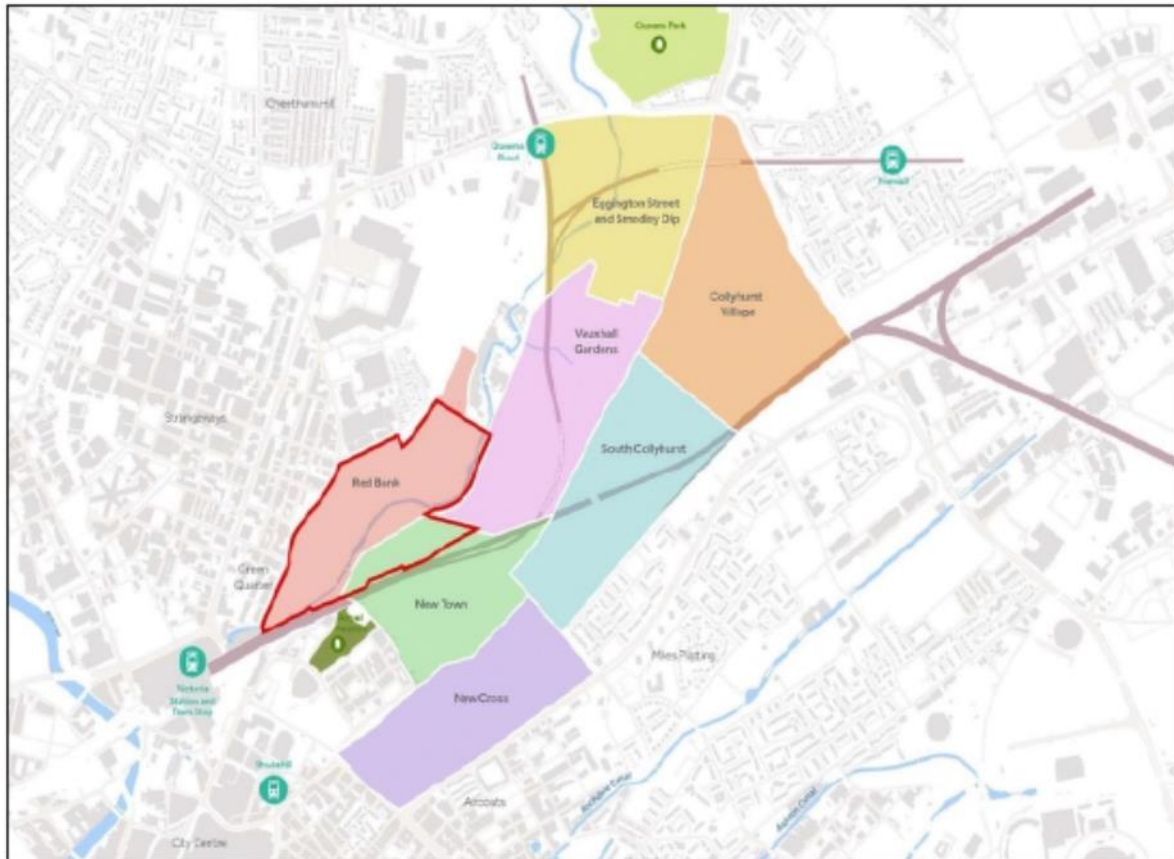
2. Site Context

- 2.1 This section sets out the geographical context of the site and summarises potential environmental constraints and sensitive receptors in their vicinity.

The Development Project and EIA Strategy

- 2.2 The Victoria North initiative (formerly referred to as 'Northern Gateway') is an area of approximately 155 hectares to the north of Manchester City Centre and Victoria Station offering an opportunity to deliver approximately 15,000 new homes over the next 15-20 years, along with a range of employment, social, community, cultural and ancillary uses. Victoria North will establish a series of new, sustainable and integrated residential neighbourhoods, with a balanced mix of housing types and tenures, making it a desirable place for a variety of new and existing Manchester residents. Victoria North is one of the largest regeneration projects in the UK as well as being the largest single opportunity for residential redevelopment in Manchester, effectively a new town within the heart of an established, popular and growing city.
- 2.3 In April 2017, MCC appointed Far East Consortium International Ltd (FEC) as its Joint Venture (JV) investment and delivery partner, to accelerate the delivery of the Victoria North opportunity. This appointment was the conclusion of an international marketing exercise that commenced in April 2016. Since making this appointment, MCC has endorsed the Northern Gateway Strategic Regeneration Framework (SRF), which provides an updated vision, core objectives and development framework to guide the regeneration of Northern Gateway (now known as Victoria North), with a focus on the provision of housing and supporting infrastructure investment. In February 2019, MCC Executive endorsed the Northern Gateway SRF as a material consideration in the determination of all future planning applications relevant to the area.
- 2.4 **Figure 2.1 (embedded)** presents the extent of area related to the Victoria North initiative, inclusive of the seven neighbourhoods identified within the SRF and an 'Initial Development Area'. This Initial Development Area (comprising land owned / controlled by MCC, FEC and third party landowners) has been identified by the JV as having the potential to deliver an estimated 5,500 residential units across 21 housing development plots. The Initial Development Area shown is inclusive of the infrastructure enabling works and the subsequent neighbourhood development. FEC and MCC have created a First Phase within the Initial Development Area and within this first phase it is intended to deliver approximately 4,000 dwellings on land controlled / owned by the JV. It is worth noting the Initial Development Area spans two of the Northern Gateway SRF neighbourhood areas, encompassing the majority of the Red Bank area, together with the northernmost part (north of the railway line) of the New Town area.

Figure 2.1: Indication of the Initial Development Area in the context of the Northern Gateway SRF initiative



- 2.5 The Initial Development Area comprises an area of approximately 20 hectares (ha). It is located within the Lower Irk Valley. Presently, the location is affected by the legacy of more than 150 years of industrial uses and Victorian / pre-Victorian infrastructure. As a result, a comprehensive programme of infrastructure investment is required to facilitate development where works cannot be taken forward on a piecemeal, site by site basis, and are not viable for the private sector to fund in isolation.
- 2.6 To unlock the full potential of the area, MCC has secured £51.6m of Government Funding through the Housing Infrastructure Fund (HIF) to deliver critical infrastructure and enabling works within the Initial Development Area. A key condition of the funding is that the spend availability period runs until March 2024 and, therefore, practical completion of the infrastructure and enabling works by this date is imperative.
- 2.7 Concurrent to the delivery of the infrastructure and enabling works, JV investment will focus on plot development and housing delivery, whilst also addressing challenges / opportunities in adjoining neighbourhoods to ensure the delivery of the wider Victoria North opportunity, in accordance with the aspirations and timescales of the SRF.
- 2.8 The infrastructure and enabling works, and the plot development on land controlled and owned by MCC and FEC at Red Bank constitutes the “development project”. Due to the HIF funding and programme requirements, it is necessary to approach the delivery of this development project by a number of separate planning applications. Four in total, are to be made, as follows:

- HIF Advance Enabling Works (referred to hereafter as 'Application 1'). This application has been submitted to MCC and is pending determination. This application was supported by an EIA.
- HIF Infrastructure Works (referred to hereafter as 'Application 2').
- HIF Flood Defence Works (referred to hereafter as 'Application 3').
- Red Bank Neighbourhood (referred to hereafter as 'Application 4').

2.9 It is noted that, although the applications are given numbered references, this does not depict the order in which the applications are to be submitted and does not denote a pre-determined sequencing.

2.10 The site that is the focus of this Scoping Report, relates to Application 2, and is shown on **Appendix I**.

Site Location and Description

2.11 The site is irregular in shape and occupies approximately 16.63 ha of land to the south of Red Bank road, Manchester. The Site Location Plan is presented at **Appendix I**. The majority of the site /site works is undertaken in Red Bank with the redline extended to cover the utility links to the substations.

2.12 The site is bound by existing commercial and industrial uses to the north, hardstanding car park, existing commercial units to the west and the former Red Bank viaduct, Dantzic Street and Collyhurst Road to the south, and existing commercial units to the east Including the HMG Paint complex.,

2.13 The site is characterised by the legacy of more than 150 years of industrial uses and Victorian / pre-Victorian infrastructure.

2.14 Historically the area was used as railway sidings, following the route of the former Prestwich Branch of the Lancashire and Yorkshire Railway which started at Victoria Station to the south west before heading north west. This is now disused and forms a plateau above the River Irk valley to the south east. Immediately south of the River Irk there is existing commercial use and an area of hardstanding.

2.15 Manchester Victoria Station is the nearest train station and is located approximately 420m southwest of the site. The station predominantly provides local and regional mainline services to the north of England.

2.16 There are no designated heritage assets (Scheduled Monuments, Grade I, II* and II Listed Buildings, Conservation Areas, Registered Parks and Gardens or Registered Battlefields) within the site boundary. There are 16 Grade II listed buildings and 1 Grade II* listed building within 500m of the site, the closest of which is the Grade II Listed Union Bridge, located on the south eastern boundary of the site.

2.17 There are no areas designated on account of their ecological value within the site. There is one internationally designated site for nature conservation within 10km of the development boundary: Rochdale Canal Special Area of Conservation (SAC) is 4.3km north east of the site. There is one nationally designated site within 5km of the site - Rochdale Canal Site of Special Scientific Interest. There are no statutory locally designated sites within 2km of the proposed development site, though four non-statutory locally designated sites lie within 2km, the closest of which is Rochdale Canal Stott's Lane – Ducie Street Basin SBI.

- 2.18 Much of the site lies in Flood Zone 1 so has a low risk of flooding from river or sea however there are areas of medium and high risk for surface water flooding. These are located in the western portion of the site around the River Irk and Travis Island and to the east of the site. The River Irk bisects the site.
- 2.19 Surface water flooding is assumed to occur due to localised low points. Although most of the site is greenfield, initial geotechnical investigation indicates that infiltration varies due to large areas of made ground beneath the site, which may also contribute to surface water flooding.
- 2.20 The site does not lie within the GMCA AQMA. This AQMA covers the city centre and its arterial routes. At its closest this is 150m west of the site adjacent to Cheetham Hill Road.
- 2.21 The site is not located in an Area of Outstanding Natural Beauty (AONB) or any other area designated for its landscape value.
- 2.22 According to British Geological Survey (BGS) maps the superficial deposits on site comprise Devensian Glacial Till, and the underlying bedrock is that of the Chester Formation (sandstone).
- 2.23 A review of the Coal Authority Mining Risk GIS System indicates the site is located within a coal mining reporting area though is not located within a Development High Risk zone.
- 2.24 The existing noise climate is dominated by road traffic noise emanating from the surrounding highway network within the City Centre and train lines associated with Victoria Station.
- 2.25 The site is located within the 'Red Bank' and 'New Town' neighbourhood of the Northern Gateway Strategic Regeneration Framework (SRF).

Environmental Constraints and Potentially Sensitive Receptors

- 2.26 Features of the sites and surrounding area may form a constraint to development or be identified as a sensitive receptor that may be affected by the site. Identifying such constraints and receptors early in the design process ensures that mitigation measures are designed into the proposals progressively from the outset and are fully integrated into the design where appropriate. Details on specific environmental constraints and opportunities found at and around the site are presented within the technical sections of this document (see sections 7 to 15).

Planning History

- 2.27 The site has been subject to six previous major planning applications. These are presented in Table 2.1.

Table 2.1: Planning history

Application Reference No.	Description	Date Approved
08/10/86	CITY COUNCIL DEVELOPMENT Landscaping of railway embankments involving tree and shrub planting, re-	02/23/0

	surfacing of a footpath and repairs to fences. Approved	
25/03/96	Redevelopment of former railway sidings for Light Industrial Purposes (class B1) with part of the site to be retained as open land, incorporating a linear pedestrian/cycle path. Not proceeded with	044486/OO/NORTH1/93
10/09/97	Construction depot for temporary use in connection with Manchester Victoria Railway infrastructure. Approved	052458/FO/NORTH1/97
19/03/02	Change of use of land from vehicle breakers to car park. Retention of pallisade boundary fencing. Approved	064544/FU/NORTH1/02
19/09/06	CITY COUNCIL DEVELOPMENT erection of temporary caravan park to provide alternative accommodation for existing caravan parks for an 18 month period. Approved	080765/VO/2006/N1
15/05/09	Application for temporary consent for up to 3 years for office accommodation associated storage containers and enabling works in association with Queens Road metrolink depot operations- Temporarily approved	088693/FO/2008/N1

3. Description of Development

3.1 The planning application will be submitted to MCC in detail and will propose:

- Demolition of selected existing structures.
- Remediation and earthworks across site.
- Construction of internal access roads and junctions.
- Works to existing adopted highway on Dantzic Street and Red Bank.
- Creation of SUDs.
- Utility and services connections and diversions. The redline extends Queens park sub station to cover the proposed service connections in the adopted highway.
- Provision of green infrastructure including (among others):
 - Creation of green links.
 - Creation of new City River Park.

3.2 The ES will include a detailed description of the proposed development at the site and the construction activities required for its delivery. This section of the ES will also include a summary of the general principles required to avoid or reduce impacts during the construction stage.

3.3 The description of the proposed development section will also include information on those mitigation measures that have been designed-in to the proposals, having been identified as necessary through the EIA process. These features of the proposals will be considered to be part of the development that is subject to the final assessment of impacts presented in the ES. Where mitigation measures are not of a nature that they can be designed into the scheme, they will be specified separately. Further detail relating to the approach to mitigation is presented in Section 4 of this Scoping Report.

3.4 The elements set out above are currently anticipated to form part of the proposals, the details will be informed and refined through the EIA process and the continuous process of consultation with the LPA and key stakeholders.

4. EIA Approach

- 4.1 This section details the proposed technical areas for assessment within the ES. It sets out the legislative framework, an outline of the intended approach to assessment and the potential effects that have been identified at this stage. Where appropriate and where sufficient information is known, it outlines potential mitigation measures.

Potentially Significant Issues

- 4.2 The scoping exercise has identified several study areas which have the potential to generate significant environmental effects. Accordingly, the following environmental issues have been 'scoped in' to the EIA for the proposed development:

- Ecology and Trees.
- Archaeology and Heritage.
- Ground Conditions.
- Drainage and Flood Risk.
- Townscape and Visual.
- Transport and Access.
- Air Quality and Dust.
- Noise and Vibration.
- Waste.
- Socio-economic.
- Health
- Climate Change.

- 4.3 Each of these technical assessment areas is discussed in greater detail in sections 7–18 of this report.

EIA Approach and Methodology

- 4.4 The ES will be prepared to fully comply with Schedule 4 (Part I and II) of the 2017 EIA Regulations: 'Information for Inclusion in Environmental Statements'; and in accordance with National Planning Practice Guidance ('NPPG').

- 4.5 The 2017 EIA Regulations state that:

"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.

5. A description of the likely significant effects of the development on the environment resulting from, inter alia:

- a) *the construction and existence of the development, including, where relevant, demolition works;*
- b) *the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;*
- c) *the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;*
- d) *the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);*
- 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;*
- 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;*
- g) *the technologies and the substances used.*

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 environmental protection objectives established at Union or Member State level which are relevant to the project, including in particular those established under Council Directive 92/43/EEC(a) and Directive 2009/147/EC(b)."

4.6 As such a consistent approach will be adopted throughout the EIA to ensure that likely significant effects are identified and evaluated in a transparent manner. Each environmental assessment topic will adopt the following approach:

- Baseline Assessment and Identification of the Study Area.
- Identification of Sensitive Receptors.
- Identification of Potential Impacts during Construction and Operation of the Proposed Development (including indirect, direct, adverse and beneficial)
- Assessment of Impact Significance.
- Identification of Potential Impacts Mitigation Measures.
- Assessment of Residual Impacts.
- Assessment of Cumulative Impacts.

Assessment Parameters

- 4.7 The EIA will be based on a series of information including:
- The site red line application boundary.
 - The written description of the proposed development including construction timescales and proposed construction methods and management protocols (ES Chapter 5: The Proposed Development).
 - The quantum of development and detailed plans submitted for approval as part of the application (ES Chapter 5: The Proposed Development).
- 4.8 Assessment on this basis allows the likely significant effects of the proposals to be fully assessed and appropriate mitigation measures to be secured.

EIA Strategy

- 4.9 Case law has established that EIA cannot be avoided by breaking down a large development project which is EIA development into a series of smaller phases or developments (so-called "salami slicing"). Another common pitfall in identifying "the project" for the purposes of the EIA Regulations is the existence of any 'functional link' between what might be (in planning terms) considered as two (or more) separate projects, but in EIA terms cannot be divorced as one project, could not exist or could not correctly function without the other.
- 4.10 A review of applicable case law has been undertaken to identify the appropriate EIA strategy in respect of the four applications related to the Initial Development Area, as identified in Chapter 1: Introduction. Specifically, the aim of this review has been to identify an approach that ensures a robust assessment approach is undertaken, whilst still allowing for applications to be made and approvals gained to enable the necessary infrastructure and enabling works to be carried out in accordance with the HIF funding timescale.
- 4.11 Provision of separate EIAs for each of the applications enables each application to proceed independently of another. At the same time, provision of an EIA for each application also allows for a full assessment to be presented of the potential impacts of the proposed development in focus for the relevant planning application, as well as an assessment of impacts associated with the wider development project, including for all of the associated planning applications. Each application will be accompanied by an Environmental Statement and as the details of the development in the associated applications emerge the Environmental Statements will deal with them in more detail. Therefore, whatever is granted planning permission as part of the overall development project will have been rigorously assessed through the EIA process.
- 4.12 This ES is prepared in respect of the HIF Infrastructure Works (the proposed development) (Application 2). Although the focus of this ES is to assess the proposed development, to ensure a robust worst case assessment, it includes for an In-Combination Assessment (ICA) of the other schemes related to the Red Bank Neighbourhood, as well as the wider SRF.
- 4.13 Separate EIAs will be undertaken and associated ESs will be submitted in respect of each of the other applications in due course.

Assessment Approach

- 4.14 The EIA Regulations, supported by UK case law, provide the legal framework for the process of EIA and contents of Environmental Statements. In this case, proposals are being made by way of a detailed application and, as such, full detail as to the quantum and extent of development is presented and assessed in this ES.
- 4.15 As set out above, in order for this application to proceed independently it is supported by an EIA. The EIA approach is made as robust as possible by the presentation of a series of assessment scenarios to enable absolute worst case to be identified and assessed. These assessment scenarios will be presented by way of an In-Combination Assessment (ICA) in the body of the ES technical assessment chapters. This ensures that:
- The impacts of the proposed development are identified in isolation.
 - The impacts of the proposed development within the wider development project (inclusive of all related applications) are identified.
 - The impacts of the wider SRF, inclusive of the proposed development and wider development project, are identified.
- 4.16 The assessment scenarios are presented in Table 4.1.

Table 4.1: In-Combination Assessment Scenarios

Assessment	Stage	Scenario
In-Combination Assessment (ICA)	Stage 1 – Demolition and Construction Phase	Scenario 1a - Assessment of the impacts relating to the proposed development only
		Scenario 1b - Assessment of the impacts relating to the proposed development, plus impacts associated with Application 1, 3 and 4
		Scenario 1c – Assessment of the impacts relating to the proposed development, Applications 1, 3 and 4, and the wider SRF
	Stage 2 – Completed Development and Operational Phase	Scenario 2a - Assessment of the impacts relating to the proposed development only
		Scenario 2b Assessment of the impacts relating to the proposed development, plus impacts associated with Application 1, 3 and 4
		Scenario 2c – Assessment of the impacts relating to the proposed development, Applications 1, 3 and 4, and the wider SRF

Assessment Assumptions

- 4.17 As outlined earlier, the application and ES for this proposed development is coming forward in advance of the two other associated applications linked to the wider development project. In order to present as robust assessment as possible, it is necessary to present information in relation to Applications, 1, 3 and 4, which acts as the assumptions for the presentation of the ICA and CIA. This scoping report is for the ES which will support the second application.
- 4.18 Wherever possible, definitive and fixed information relating to Applications 1, 3 and 4 is used. Where definitive information is not available, due to the design programmes for each of the applications, a maximum, upper quantum and / or worst-case position has been assumed, informed by relevant available information at the time the assessment is undertaken. This serves to ensure that the ICA and CIA presented assess the worst case and are as robust as possible. The details of application 1 (enabling works) is known as the planning application and EIA for these works has been submitted and is pending determination.
- 4.19 The SRF-wide Design and Development principles (Section 5 of the Northern Gateway SRF) provide a general overview of the whole framework area, and information with regards to urban form and scale, land use, movement and public realm, and these plans were used as the basis of the assessment. Where specific information is not known at this stage with regard to Applications 3 and 4, the assumptions for the purpose of working up the assessments has relied upon the detail within the SRF.
- 4.20 Table 4.2 details the assumptions used in this ES.

Table 4.2: Assumptions used as basis for In-Combination Assessment and Cumulative Impact Assessment

Application / Project	Applicant	Site Location Plan	Estimated Site Area (ha)	Indicative quantum of development
HIF Advanced Enabling Works Application. The application has been submitted to MCC and is pending determination	Manchester City Council	See Appendix II	2.88ha	▪ The demolition of Creamline dairies. ▪ Tree and shrub clearance to facilitate the construction of a temporary haul road. ▪ The construction of the temporary haul road.
HIF Flood Defence Works Application	Manchester City Council	See Appendix III (Indicative location plan only)	Circa 1 ha	▪ Flood mitigation and defence works along the River Irk to reduce the area of flood zone 3 ▪ Potential for new bridge to replace Union Bridge
Red Bank Neighbourhood Application	Far East Consortium	See Appendix IV (Indicative location plan only)	Circa 15.3 ha	• Approximately 4,000 no. residential dwellings • Indicative massing to align with the NG SRF, including a number of landmark buildings at height • Retail and commercial floorspace • Open and amenity space • Access and associated infrastructure
Northern Gateway Strategic Regeneration Framework (SRF)	n/a	See Appendix V	Circa 155 ha	• Residential-led regeneration scheme proposing approximately 15,000 dwellings over a 15-20 year period • Employment and commercial uses • Retail provision • Green and Blue infrastructure • Improved transport and access

Significance Criteria

4.21 The assessment of significance will be undertaken for all potential effects to determine their relative importance. The following criteria will be considered when assessing their significance:

- Magnitude (size of effect);
- Spatial extent (size of the area affected);
- Duration (short, medium or long term);
- Nature of the effect (direct or indirect, reversible or irreversible);
- Sensitivity of the surrounding environment and receptors;
- Inter-relationship between effects;
- International, national or local standards; and
- Relevant planning policy.

4.22 Where appropriate and not restricted by the requirements of specific guidance, the significance criteria in Table 4.3 will be used to categorise predicted effects. Where alternative classifications have been used in order to comply with specific guidance, they will be explained in the methodology sections within each technical assessment. The significance levels identified can be either adverse or beneficial.

Table 4.3: Significance Criteria

Significance	Criteria
Major	These impacts are likely to be important considerations at a regional or district scale but, if adverse, are potential concerns to the project, depending upon the relative importance attached to the issue during the decision making process. Mitigation measures and detailed design work are unlikely to remove all of the impact upon the receptor.
Moderate	These impacts, if adverse, while important at a local scale, are not likely to be key decision making issues. Nevertheless, the cumulative effect of such issues may lead to an increase in the overall effects on a particular area or a particular resource. They represent issues where impacts will be experienced but mitigation measures and detailed design work may ameliorate/enhance some of the consequences upon affected communities or interest. Some residual impact may still arise.
Minor	These effects may be raised as local issues but are unlikely to be of importance in the decision making process. Nevertheless, they are of relevance in the detailed design of the project and consideration of mitigation measures.
Negligible	Potential impact is beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.
No Impact	No Impact is predicted.

Mitigation

- 4.23 As set out within paragraph 7 of Schedule 4 of the 2017 EIA Regulations, the EIA will include:

"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".

- 4.24 Mitigation is defined as those measures that are required to avoid, remedy or offset the identified environmental impacts of a project. Those mitigation measures that are identified through the EIA process and which have been designed into the proposals such that they appear on the submitted plans for approval and are integral to the development will be considered to be part of the development for the final assessment as presented in the ES. Embedded mitigation will be described in full in Chapter 5: The Proposed Development under 'Embedded Mitigation' section. This 'embedded' mitigation will be described in each technical chapter prior to the assessment of potential impacts. It is placed in this order to enable an assessment of the impacts to be made which takes into account the mitigation measures which have been designed into the proposed development, i.e. embedded into the design.
- 4.25 Mitigation that is not embedded into the proposals and which requires a commitment from the applicants to carry out further actions will be specified in the Mitigation section of each technical chapter and summarised in Chapter 19: Summary of Mitigation and Residual Effects of the ES. These measures would then be secured through the application of conditions attached to the planning permission or through an appropriate legal framework, such as the Section 106 agreement.

Residual Effects

- 4.26 Each ES chapter will conclude with a summary of the residual effects of the developments once all related mitigation measures have been taken into account.

Cumulative Effects

- 4.27 The EIA Regulations also require the assessment of cumulative effects. Cumulative effects may be divided into two categories as follows:
1. Additional impacts arising from interrelationships within the same scheme; and
 2. Those arising from the scheme in combination with other proposed developments.
- 4.28 Most cumulative effects result when construction phases of more than one development overlap. However, the assessment will also assess operational effects of more than one development, where appropriate.
- 4.29 Cumulative effects will be discussed as a separate chapter, assessing the potential for cumulative effects for each technical assessment, thus ensuring that the LPA can evaluate the impacts of the development in isolation and in conjunction with other developments in the area.

- 4.30 A series of assessment scenarios are to be considered and presented in respect of cumulative effects. This accounts for the fact that the proposed development is part of a larger development project, and a robust assessment requires that multiple scenarios are considered as shown in Table 4.4.

Table 4.4: Cumulative Assessment Scenarios

Assessment	Stage	Scenario
Cumulative Impact Assessment (CIA)	Stage 3 – Cumulatives	Scenario 3a - Assessment of the cumulative impacts relating to the HIF Infrastructure Works plus impacts associated with agreed cumulative sites
		Scenario 3b - Assessment of the cumulative impacts relating to the HIF Infrastructure Works, plus impacts associated with Application 1 (HIF Advance Enabling Works), 3 (HIF Flood Defence Works) and 4 (Red Bank Neighbourhood), and the agreed cumulative sites
		Scenario 3c - Assessment of the cumulative impacts relating to the HIF Infrastructure Works, plus impacts associated with Application 1 (HIF Advance Enabling Works), 3 (HIF Flood Defence Works) and 4 (Red Bank Neighbourhood), the wider SRF, and the agreed cumulative sites

- 4.31 In Scenario 3a the cumulative sites include for those approved projects within 1km of the site considered as having potential for cumulative impacts with the proposed development. This is the typical approach to CIA undertaken for an EIA. The proposed sites have been identified by Avison Young from MCC's and SCC's planning portal, as applicable.
- 4.32 Scenario 3b considers the cumulative impacts of the proposed development, Application 1 (HIF Advance Enabling Works), 3 (HIF Flood Defence Works) and 4 (Red Bank Neighbourhood), and all of the cumulative sites. This ensures that all of the cumulative impacts associated with the wider development project are identified as part of this EIA.
- 4.33 Scenario 3c considers the cumulative impacts of the proposed development, Application 1 (HIF Advance Enabling Works), 3 (HIF Flood Defence Works) and 4 (Red Bank Neighbourhood), the wider SRF, and all of the cumulative sites. This ensures that all potential impacts of the Northern Gateway SRF are considered as part of this EIA.
- 4.34 Schemes for consideration in the cumulative effects assessment were identified through a planning application search of the MCC and Salford City Council (SCC) planning portals. This process identified a total of 20 projects to be included within the cumulative assessment.
- 4.35 Table 4.5 shows the potential cumulative sites that have been identified in the vicinity of the proposed development. The ES shall consider the potential cumulative effects in combination with the proposed development.

Table 4.5: Cumulative Sites

Site Ref.	Application No.	Proposal	Approx. Distance and Direction	Status
1	129393/VO/2021	City Council Development for the erection of 168, three and four storey dwellinghouses (Use Class C3a) and two, five and six storey apartment buildings to form 76 residential apartments (Use Class C3a) with associated ground floor flexible commercial unit (162 sqm) (Use Class E); and the creation of a new public park; all with associated car and parking, refuse storage, landscaping, public realm and other associated works and infrastructure following demolition of 29 existing residential dwellinghouses, the Collyhurst Village Store and associated car parking	650m north east	Approved Jun 2021
2	127971/FO/2020	Erection of a 6 storey building to form 90 residential apartments (Use Class C3a) following demolition of existing structures with associated access, car parking, amenity space, landscaping and other associated works	950m east	Approved May 2021
3	128248/FO/2020	Erection of 9 buildings ranging from 8 to 34 storeys in height to form 1202 residential apartments (Use Class C3a) and ground floor commercial uses (Use Class E) (192 sqm) together with associated car parking, new vehicular and pedestrian access, public realm, landscaping and other associated works following demolition of existing structures and buildings Land Bound By Gould Street, Williamson Street, Bromley Street And Bilbrook Street Manchester M4 4DD	150m south	Approved June 2021
4	116366/FO/2017	Erection of four residential buildings (22 storey building, 17 storey building, 40 storey building and part 12, part 9 storey building) to form 756 residential apartments (Use Class C3a) together with ground floor commercial uses (616 sqm) (Use Classes A1, A2, A3, A4, A5, D1 and B1) with associated car parking, landscaping, amenity areas, creation of new public realm following the closure of Aspin Lane, Mincing Street and Irk Street and other associated works following demolition of existing structures Land Bounded By Dantzic Street & Aspin Lane, Land Bounded By Gould Street & Angel Meadows And Land Bounded By Old Mount Street, School Street, Naples Street & Ludgate Street Manchester	150m south	Approved Aug 2017 Under construction
5	118120/FO/2017	Erection of a part 15, part 9, part 7 storey building to form 155 residential apartments together with ground floor commercial uses (Use Classes A1, A3 and B1) (288 sqm) with associated car parking, access arrangements and other associated works following the demolition of existing buildings and structure and the closure of Hatter Street Land Bounded By Thompson Street / Mason Street / Bendix Street And Rochdale Road Manchester	450m south	Approved May 2018 Under construction
6	127537/FO/2020	Erection of a 11 storey 229 bedroom hotel (Use Class C1) with ancillary ground floor bar/restaurant together associated public realm and other associated works 25 Rochdale Road Manchester M4 4HT	400m south	Approved Oct 2016

7	124973/FO/2019	Erection of an 11 storey building and a 12 storey building with plant rooms above to form a mixed use development comprising 39,184 sq.m (NIA) of Class B1a office use and commercial units of 1,286 sqm (NIA) (Use Classes A1, A2, A3, A4, B1a and D1) along with associated lower ground level car parking, hard and soft landscaping and associated works, including the creation of a new pedestrian route between Angel Street and Miller Street. Land Bounded By Co-op Headquarters Miller Street And Angel Street Manchester	350m south	Approved Feb 2016
8	111777/FO/2016/C1	Erection of two residential buildings of a maximum 21 and 26 storeys to accommodate 520 apartments (178 x 1 bed, 286 x 2 bed and 56 x 3 bed apartments) (Use Class C3). Erection of one office building of maximum eight storeys comprising up to 11,647 sq. m (GIA) of office accommodation. Ground floor commercial space (Use Class A1, A2, A3 and B1), lower ground level car parking, access and servicing arrangements, alterations to Corporation Street, new public realm and other associated works. New Victoria Land At Corporation Street Manchester M3 1NX	250m south east	Approved Sep 2016 Under construction
9	121375/FO/2018	Construction of a 22 storey building comprising 361 residential apartments (122 x 1 bed 2 person, 119 x 2 bed 3 person, 94 x 2 bed 4 person, 21 x 3 bed 5 person and 5 x 3 bed 6 person (34% 1 bed, 59% 2 bed and 7% 3 bed) ground floor commercial floorspace (Use Classes A1 (Shop), A3 (Restaurant and Cafe), A4 (Drinking Establishment) and A5 (Hot Food Take-away) associated landscaping, including new public realm and pedestrian route, together with servicing, cycle parking, access and other associated works following demolition of buildings at 20-22 and 24-26 High Street and 5 market stalls to Church Street.	840m south	Approved Oct 2020
10	18/71330/FUL	Erection of three residential blocks, comprising of a total of 156 apartments, together with car parking and landscaping	850m south west	Approved Oct 2018 Under construction
11	20/76134/FUL	Erection of 16-storey building plus plant comprising a hotel (Use Class C1) with ancillary bar and restaurant uses, access, servicing, landscaping and other associated works	1000m south west	Approved Feb 2020
12	17/70626/FUL	Erection of one 18 storey residential building (Block A, Use Class C3); one 16 storey residential building (Block B, Use Class C3); one 18 storey building providing a mix of residential and serviced apartment accommodation and amenity facilities including lounge, swimming pool and gym (Block C, Use Class Sui Generis); 536sqm of commercial floorspace (Use Classes A1, A2, A3, A4); new access from Greengate; car and cycle parking; public realm and landscaping; and other associated works.	840m south west	Approved Nov 2017 Under construction
13	19/74465/HYBEIA	Hybrid planning application for demolition of existing buildings on the site and comprehensive redevelopment to create between 1,407 and 1,521 dwellings, comprising of: (a) Phase 1 (submitted in full with no matters reserved) for development of a 50-storey residential building; commercial floor-space (Use Classes A1, A2, A3, A4, A5, B1, D1 and D2); new public park; highways and public realm improvements and other associated works; and, (b) Phases 2 and 3 (submitted in outline with all matters reserved) for the development of two residential buildings up to 42 storeys in height; commercial floor-space (Use Classes A1, A2, A3, A4, A5, B1, D1 and D2); new highways; a public	960m south west	Validated Nov 2019

		square; public realm improvements and other associated works. (EIA development, accompanied by Environmental Statement) Land Bound By Greengate, Collier Street, Queen And King Street And Gravel Lane M3 7BN		
14	126944/FO/2020	Erection of a residential-led mixed use development comprising 3 no. towers (37, 26 and 18 storeys) and podium levels (6 storey) to form 634 residential apartments and townhouse accommodation (Use Class C3) together with commercial accommodation (1222 sqm) (Use Classes A1,A2,A3,A4,A5,B1, D1 and D2)); with associated residential amenity areas, refuse storage, plant (including substation), car parking, cycle storage, landscaping and new public realm including the re-instatement of Bromley Street and other associated works	140m south east	Approved Sep 2020 Under Construction
15	114860/FO/2016	Erection of a part 6, part 10, part 15, part 24 storey building to form 415 residential apartments (Use Class C3a) together with commercial floor space (268 sqm) (Use Classes A1, A2, A3, A4, B1 and/or D2) with associated car parking, public realm, hard and soft landscaping, access from Dantzie Street and other associated works following demolition of existing buildings	145m south east	Approved October 2017
16	131708/FO/2021	Erection of a part 11, part 13 storey building to form residential apartments (Use Class C3a) together with the erection of two blocks of 3 storey townhouses (Use Class C3a) to form 237 residential homes in total with associated commercial floor (Use Class E) (132 sqm), basement car parking, landscaping and public realm, and associated engineering and infrastructure works following demolition of existing buildings and structures	450m south	Validated September 2021
17	118831/FO/2018	Erection of two buildings (a part 17, part 12 storey building and a part 26, part 23 storey building) to form 556 residential units (Use Class C3a) together with the creation of 3490 sqm of commercial floor space (Use Classes A1, A2, A3, B1 and D1) with associated landscaping, access and other associated works	635m south west	Approved June 2018
18	128997/FO/2020	Erection of a ground plus 9-storey building to form 118 no. residential apartments (Use Class C3), including amenity areas, ground floor food and beverage/ commercial units (Sui Generis/ Use Class E), public realm and landscaping, with supporting infrastructure and associated works following demolition of existing building	730m south	Approved September 2021
19	124888/FO/2019	Erection of a 6-9 storey residential building (Use Class C3) comprising 80 no. dwellings including 9 no. townhouses and 71 no. apartments with residents lounge, refuse, plant, new substation, cycle storage, an internal landscaped courtyard and improvements to the adjacent footways	665m south	Approved January 2020 Under Construction
20	125678/FO/2019	Erection of 8-storey residential building (Use Class C3) comprising 73 residential units, with ground floor commercial use (Classes A1, A2, A3, B1 and D1 (excluding Places of Worship)) (205 sqm); alterations to the retained perimeter wall and chimney including the introduction of a light box; disabled car parking, highways, landscaping and other associated works	640m south	Approved December 2020

- 4.36 We invite MCC to confirm whether there are any other existing, approved or committed developments in the area that should be included within the assessment of cumulative effects. The assessment of the cumulative sites will be based on the description of development, red line plans and any available masterplans/parameter plans for any identified sites.
- 4.37 Consideration will be given to the potential synergistic cumulative effects, arising from the interaction of two or more environmental effects associated with the proposed development on a given receptor or resource.

5. Alternatives

5.1 The 2017 EIA Regulations require that the ES provide:

"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."

5.2 Therefore, the ES will define the following types of alternatives considered by the applicants:

- The 'do nothing' alternative: Consideration of the impacts in the absence of the development; and
- Alternative layout and designs: A description of the design evolution based on environmental constraints, potential effects and other considerations, with a description and account of the main reasons why alternative layouts were dismissed and why the preferred design option was selected.

5.3 No alternative sites were considered for the development. The site is within the JV's control and is located within the Northern Gateway SRF.

6. Ecology and Trees

- 6.1 This section of the ES will present an assessment of the potential effects of the proposals on ecological receptors during both the construction and operational phases. These will be identified through the findings of a desk study, site surveys and published best practice guidelines. The ecology and trees assessment will be undertaken by TEP.

Site Context

- 6.2 The site is located in an urban setting and the wider landscape comprises mainly of commercial/industrial development. The site itself is a brownfield site that has been left to naturally regenerate. The site is dominated by self-seeded birch woodland and the River Irk flows through the south of the site from east to west. Given the urban location, the woodland is fragmented, the wooded corridor of the River Irk acts as the main green corridor connecting the site with the wider landscape.
- 6.3 The study area will reflect the 'zones of influence' of the proposed development relevant to the identified ecological receptors. To identify the zones of influence, consideration will be given to potential direct and indirect impacts that may occur during the lifespan of the project. Consideration will also be given to conservation objectives of designated sites. The study area for each ecological feature will be determined accordingly.

Planning Policy Context

National Planning Policy

- 6.4 The principal statutes relating to ecology and development are summarised as follows:
- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019¹.
 - The Wildlife & Countryside Act 1981 (as amended)².
 - The Countryside & Rights of Way Act 2000³.
 - The Natural Environment and Rural Communities (NERC) Act 2006⁴.
 - The Hedgerows Regulations 1997⁵.
 - The Protection of Badgers Act 1992⁶.
 - National Planning Policy Framework (NPPF) (2021)⁷, specifically Chapter 15: Conserving and Enhancing the Natural Environment (paragraphs 174 – 182).

¹ Conservation of Habitats and Species Regulations 2010 (as amended). London: The Stationery Office.

² Wildlife & Countryside Act 1981 (as amended). London: The Stationery Office.

³ Countryside & Rights of Way Act 2000. London: The Stationery Office.

⁴ Natural Environment and Rural Communities (NERC) Act 2006. London: The Stationery Office.

⁵ Hedgerows Regulations 1997. London: The Stationery Office.

⁶ Protection of Badgers Act 1992. London: The Stationery Office.

⁷ Department for Communities and Local Government (2021) National Planning Policy Framework, DCLG, London

6.5 Other national policy which supports the NPPF includes:

- Circular 06/2005: Biodiversity and Geological Conservation⁸.
- Making Space for Nature⁹.
- The Natural Environment White Paper (HM Government, 2011)¹⁰.

Local Planning Policy

6.6 Manchester's Local Development Framework Core Strategy Development Plan (adopted 11th July 2012) has been reviewed for relevant local planning policies relating to ecology and development.)

6.7 The following policies in the Local Development Framework Core Strategy Development Plan relate to biodiversity and nature conservation:

- Policy BM2 River Valley.
- Policy EN9 Green Infrastructure.
- Policy EN15 Biodiversity and Geological Conservation.

Strategic Regeneration Framework (SRF) Manchester Northern Gateway (February 2019)

6.8 Following endorsement, the SRF is a material consideration in the determination of all planning applications relevant to the study area. Whilst it does not form part of the Development Plan, it has been prepared to be consistent with the policies of the MCC's adopted Development Plan.

Other Relevant Policy, Standards and Guidance

6.9 The Greater Manchester Biodiversity Action Plan (GMBAP) is currently managed by Greater Manchester Ecology Unit (GMEU). This aim of the GMBAP is to conserve, protect and enhance biological diversity in Greater Manchester. The habitat and species action plans of key relevance to this proposal are:

- Native woodlands.
- Urban managed greenspace.
- Bats.

6.10 The Birds of Conservation Concern 4 (BoCC) report (RSPB, 2015) splits UK birds into three categories of conservation importance – Red, Amber and Green. Red is the highest conservation priority, and includes species that are globally threatened, or have experienced historical UK population decline, a rapid decline in UK breeding population, or a severe contraction of UK breeding range. Amber is the next most critical group, followed by Green, which includes birds whose populations are at least risk.

⁸ Office of the Deputy Prime Minister (Circular 06/2005): Biodiversity and Geological Conservation – Statutory Obligations and their Impacts. London: The Stationery Office.

⁹ Lawton, J. (2010). Making Space for Nature: A review of England's wildlife sites and ecological network. DEFRA, London.

¹⁰ HM Government (2011) The Natural Choice: Securing the Value of Nature. London: The Stationery Office.

Approach

- 6.11 The ES chapter will initially include an outline of the legislative framework in respect of nature conservation. It will then define the approach taken to the various desk-based and site surveys undertaken and set out the findings of these works.
- 6.12 Primary baseline data has been collected over the course of the 2021 survey season in accordance with standard best practice methodologies published by Natural England, Chartered Institute of Ecology and Environmental Management (CIEEM) and other recognised bodies, as appropriate.

Consultation

- 6.13 Table 6.1 outlines the pre-application consultation undertaken to date with the relevant stakeholders for the proposed development.

Table 6.1 Summary of Consultation

Consultee	Date and Time	Comments	Actions
Greater Manchester Ecology Unit – Derek Richardson	16/08/21 Initial email sent 12:34. GMEU response 20:56.	Bat Activity - <i>"We would accept that records of bat activity collected during nocturnal roost surveys of buildings could be used when assessing the site for commuting & foraging bat activity, but we would also give bats the benefit of the doubt and recommend that landscape plans for the site take bats fully into account (e.g. linear planting, sensitive lighting, planting of value to bats etc)"</i> .	GMEU agreed with approach that bat activity surveys unnecessary in light of the health and safety concerns on this site.
		Bat Roosting & Bridge Structures – <i>"We would accept that works to the bridges could be undertaken under Reasonable Avoidance Measures, supervised by a licenced ecologist during any proposed works"</i>	GMEU agreed with approach that nocturnal roost surveys of bridge structures unnecessary in the light of health and safety concerns and limited visibility from roadsides.
		Other Protected Species Surveys – <i>"We would accept that surveys for water voles, otters, amphibians and reptiles could be scoped out. We hold no records of these species/groups being recorded on or near the site. However, if there are plans to improve the watercourse for wildlife these plans should make provision for future colonisation by these species, in line with the aspirations of the Local Nature Recovery Strategy"</i>	GMEU agreed with approach that water voles, otters, amphibians and reptile surveys could be scoped out.
Greater Manchester Ecology Unit – Derek Richardson	02/11/21 14:00	Meeting to discuss the Biodiversity Net Gain (BNG) strategy for the combined four planning applications within the Red Bank Neighbourhood.	Combined BNG strategy agreed.

- 6.14 Following consultation with GMEU, detailed within Table 6.1, water voles, otters, amphibians and reptile surveys are proposed to be scoped out of the assessment due to the lack of suitable habitat within the site and lack of pre-existing data within the site and surrounding habitat.
- 6.15 Bat activity and static monitoring surveys and breeding bird surveys have not been undertaken at this site due to overriding health & safety concerns. It was agreed with GMEU that information regarding these species could be obtained using pre-existing historic data and collected incidentally during other surveys such as nocturnal bat roost surveys. Furthermore, a precautionary approach has been taken during the assessment of commuting/foraging bats and breeding birds.
- 6.16 Nocturnal roost surveys of existing bridge structures have not been undertaken at the site. Visibility of these structures from the roadside is limited to the extent that undertaking this survey method would not be valid to inform this assessment. Furthermore, it was not viable to undertake these surveys from within the River channel due to overriding health & safety issues. As such, a precautionary approach has been taken during the assessment of roosting bats in bridge structures.
- 6.17 After consultation with GMEU, a bespoke approach to the Biodiversity Net Gain (BNG) assessment was agreed, which considers associated planning applications (Application, 1, 2 & 4) for the wider Red Bank Neighbourhood site in-combination. This avoids a piecemeal approach to biodiversity impact and will ensure a measurable gain can be achieved. The river units will be calculated for Application 3 when additional details are available.

Baseline

Designated Wildlife Sites

- 6.18 A desk-based assessment has been undertaken for the site which involved a typical buffer of 2km from the site boundary for protected species records and local designations. Records were gathered from the local record centre, GMEU.
- 6.19 This search buffer was extended up to 5km for national and up to 10km for international designated sites. Results using Natural England's interactive, web-based MAGIC (Multi-Agency Geographic Information for the Countryside) database found that within the 10km search buffer there was one internationally designated site, Rochdale Canal SAC, located 4.3km north east at its closest point. The Rochdale Canal, which is also a nationally designated site, is the only Site of Special Scientific Interest (SSSI) within the search area, located 4.3km north east of the site. There are no statutory locally designated sites, Local Nature Reserves (LNR), within 2km of the site.
- 6.20 Four locally non-statutory designated Sites of Biological Interest (SBI) were found to be located within the 2km search area. Of these SBI, two SBI falls within 1km of the proposed site, Rochdale Canal; Scott's Lane to Ducie Street Basin SBI located 0.9km south of the site. Within 1-2km of the site, there are three SBI with the search area: Ashton Canal (west) SBI located 1.4km south, Reservoirs at Harpurhey SBI located 1.8km north east of the site and River Irwell SBI located 1.95km south west of the site.

Habitats

- 6.21 An extended Phase 1 Habitat survey was undertaken on 22nd and 29th March 2021. The survey was undertaken by an experienced botanist (qualified as Level 4 under the Field Identification Skills Certificate scheme). The

methods employed were in line with the Phase 1 habitat assessment methods (JNCC 2010)¹¹ and Guidelines for Preliminary Ecological Appraisal (CIEEM 2017)¹². The survey will include habitat assessments for protected and S41 priority species.

- 6.22 A UK Habitat Classification assessment of the site was carried out by an experienced botanist (qualified as Level 4 under the Field Identification Skills Certificate scheme) at the same time as the Phase 1 Habitat survey. The UK Hab. assessment was carried out in accordance with Butcher *et al.*, 2020¹³, to the relevant hierarchy for the metric.

Biodiversity Net Gain

- 6.23 A condition assessment was undertaken alongside the UK Hab. Assessment. The habitat condition assessment was originally undertaken using the guidance presented in Biodiversity Metric 2.0 - Technical Supplement¹⁴. Following release of Biodiversity Metric 3.0 in July 2021, a desk-based exercise using existing field notes and photographic evidence, was undertaken to update the condition assessment based on the updated criteria presented in the Biodiversity Metric 3.0 - Technical Supplement¹⁵. Due to the relatively simple nature of the habitats within the sites, there are not considered to be any limitations with this translation to the Biodiversity Metric 3.0 condition assessment.
- 6.24 The UKHAB survey and condition assessment information were inputted into the Defra 3.0 metric in line with the user guide¹⁶. Strategic significance was determined through a thorough desktop review of local planning policy and other relevant documentation. This metric serves as a tool to quantify the biodiversity value of the site pre and post development in the form of a biodiversity unit (BU) score.
- 6.25 A high-level landscape scheme has been produced for the combined site, which is considered to be a reasonable worst-case scenario. This high-level landscape scheme has been used to determine both the impact and the habitat creation and enhancement within the wider site. The combined biodiversity metric will be updated following the production of a more detailed landscape plan for Application 2.
- 6.26 In order to achieve 10% biodiversity net gain, compensation will be provided for on and offsite. Any off site compensation will be within the Northern Gateway SRF area or within 3 mile radius of the combined site area. This will ensure that the compensation habitat will be provided in close proximity to the site. Given the majority of habitat loss on site and the majority of deficit in the 'Trading summary' in the Metric is attributed to loss of woodland, compensation would seek to create or enhance areas of woodland.

¹¹ JNCC (2010). Handbook for Phase 1 habitat survey – a technique for environmental audit. Peterborough, JNCC.

¹² CIEEM (2017) Guidelines for Preliminary Ecological Appraisal. Chartered Institute of Ecology and Environmental Management

¹³ Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). The UK Habitat Classification Version 1.1 at <http://www.ukhab.org/>

¹⁴ Ian Crosher, Susannah Gold, Max Heaver, Matt Heydon, Lauren Moore, Stephen Panks, Sarah Scott, Dave Stone & Nick White. 2019. The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value: technical supplement (Beta version, July 2019). Natural England

¹⁵ Stephen Panks A, Nick White A, Amanda Newsome A, Jack Potter A, Matt Heydon A, Edward Mayhew A, Maria Alvarez A, Trudy Russell A, Sarah J. Scott B, Max Heaver C, Sarah H. Scott C, Jo Treweek D, Bill Butcher E and Dave Stone A 2021. Biodiversity metric 3.0: Auditing and accounting for biodiversity – Technical Supplement. Natural England.

¹⁶ Stephen Panks A, Nick White A, Amanda Newsome A, Jack Potter A, Matt Heydon A, Edward Mayhew A, Maria Alvarez A, Trudy Russell A, Sarah J. Scott B, Max Heaver C, Sarah H. Scott C, Jo Treweek D, Bill Butcher E and Dave Stone A 2021..Biodiversity metric 3.0: Auditing and accounting for biodiversity – User Guide. Natural England.

Arboriculture

- 6.27 An arboricultural survey was undertaken by an experienced Arborist on the 29th March 2021 in accordance with British Standard BS 5837:2012 Trees in Relation to Design, Demolition and Construction - Recommendations. A schedule of all trees and tree groups including data on species, condition, age, management recommendations and BS 5837:2012 quality categories were compiled during the survey. A summary of the quality criteria for each category is provided in Table 6.2.

Table 6.2 Summary of BS5837:2012 Tree Quality Categorisation Criteria

Tree category	Description
Category A	Trees of high value including those that are particularly good examples of their species and/or those that have visual importance or significant conservation or other value.
Category B	Trees of moderate value including those that do not qualify as Category A due to impaired condition and/or those that collectively have higher value than they would as individuals; also trees with material conservation or other value.
Category C	Trees of low value including those with very limited merit or impaired condition; trees offering transient or temporary landscape benefits.

- 6.28 The majority of trees are of low quality (Category C), with some trees with moderate quality features (category B) on site. No trees of high value (Category A) have been identified within the site.

Bats

- 6.29 A daytime ground-based assessment of trees to identify any features of potential value for roosting bats was undertaken on 22nd and 29th March 2021, by a licensed bat surveyor. This involved searching trees with close focusing binoculars to look for any evidence of use by bats, such as droppings, staining or scratch marks. Potential roost features, such as holes, cracks, crevices or loose bark were also identified and noted. Trees were categorised following the ground-based assessment according to the Bat Conservation Trust (BCT) Guidelines 2016¹⁷. Five trees (one with moderate and four with low suitability) with bat roost suitability were identified within the site.
- 6.30 A daytime external bat inspection of sixteen buildings present within the site boundary (B1-B16) and three bridge structures, was also undertaken by a licensed bat surveyor on the 22nd and 29th March 2021. The daytime assessment was carried out in accordance with the Bat Conservation Trust (BCT) Guidelines 2016. However, a precautionary approach to assessment was taken, as no internal access to the buildings was taken due to health and safety concerns surrounding COVID-19. Access to assess the bridge structures over the River Irk was limited. These structures were only viewed at a distance as there was limited views from the road side and access to River Irk was not safe. Of the sixteen buildings, thirteen were assessed as having negligible suitability, two as having low suitability and one as having high suitability for roosting bats. All three bridge structure were assessed as having low bat roost suitability.

¹⁷ Bat Conservation Trust (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). Bat Conservation Trust

- 6.31 Nocturnal dusk emergence surveys were undertaken on three buildings (B12, B14, B16) and one tree (T1) with roost suitability for bats, in accordance with their evaluation (low, moderate, high suitability receiving one, two or three survey, respectively). Dawn re-entry surveys were not used at this site due to over-riding health & safety concerns. Surveyors were stationed at fixed vantage points around the buildings and tree such that all potential roost features were in view. Dusk emergence surveys commenced 15 minutes before sunset and finished 1.5 hours after sunset. Observations such as bat species, the number of bats entering or leaving the building/ tree, the location of entry and exit points, commuting or passing bats and weather conditions were recorded. Common pipistrelle day roosts were identified in building B16 during the nocturnal roost surveys. No other roosts were identified.

Badgers

- 6.32 A badger survey of the site was undertaken on 22nd and 29th March 2021 by an experienced ecologist. The site was surveyed for evidence of badger setts or other badger activity such as paths, latrines or signs of foraging. Methodologies used and any setts recorded were classified according to published criteria (Harris, Cresswell & Jefferies, 1988)¹⁸. Where possible and accessible to do so, a 30m buffer zone around the proposed development boundary was also surveyed. No evidence of badgers was identified within the site or adjacent land during the survey.

Other Protected Species

- 6.33 Following a review of the desktop records, consultation exercise and our existing knowledge of the local area, no other protected species surveys are proposed to be undertaken.

Ecological Impact Assessment

- 6.34 The EcIA method will follow the current applicable guidance, including the Chartered Institute of Ecology and Environmental Management ('CIEEM') Guidelines for Ecological Impact Assessment (2018)¹⁹.

Sensitivity, Value or Importance

- 6.35 The CIEEM EcIA guidance confirms that detailed assessment of ecological features that are 'widespread, unthreatened and resilient to project impacts' is not necessary. It is therefore necessary to determine which ecological features are sufficiently important (and potentially affected by the Scheme). Decisions on relative importance will be outlined in the assessment and consider quality, extent, rarity (including local rarity) and threats or declines of a feature. Relevant statutory and non-statutory designations, legislation and policies will be taken account of, although not all populations of legally protected species show the same rarity, so contextual information is vital. Importance could also relate to the supportive function of the feature (i.e. providing a buffer, connections or opportunities for expansion / climate change resilience of a neighbouring feature).
- 6.36 The importance of a feature is identified within a defined geographical context, the scales relevant to the proposed development and its ecological features are presented in Table 6.3. These criteria provide a starting

¹⁸ Harris S., Cresswell P., & Jefferies, D J. (1988). Surveying Badgers. The Mammal Society.

¹⁹ CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester

point for the assessment but specific site conditions together with information on the local and wider context may result in different criteria being applied.

Table 6.3 Evaluation of Ecological Features

Level of Importance	Example
International and European	Designated or proposed/candidate Special Areas for Conservation (SAC), Special Protection Areas (SPA) and Ramsar Sites and their qualifying features, some of which may depend on land outside the designation boundaries. Candidate or proposed designations are treated as of equal value to fully designated sites. Under the NPPF, land that is set aside as compensation for adverse effects of development on European Sites should also be regarded as of European value. Species populations or habitat areas (such as those listed in Annex I, II or IV of the Habitats Directive or Annex I of the Birds Directive) of international importance due to relative size, rarity or quality of the feature.
National	Designated or proposed Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Marine Nature Reserves (MNR) and their qualifying features, some of which may depend on land outside the designation boundaries. A viable area of ancient woodland. Species populations or habitat areas of national importance (including legally protected or NERC Act S41 species or habitats) due to relative size, rarity or quality of the feature.
Regional	Designated or proposed Site of Biological Importance (SBI), Local Wildlife Sites (LWS), Sites of Nature Conservation Importance (SNCI) and their qualifying features where they occur within the designation boundaries. 'Important' hedgerows (as described under the Hedgerows Regulations 1997) where these occur as an extensive network. Species populations or habitat areas (including legally protected or NERC Act S41) or Nationally Scarce species or habitats of district or regional importance due to relative size, rarity or quality of the feature. Sites should comfortably exceed Site of Nature Conservation Importance (SNCI) criteria if these exist, but not meet SSSI selection criteria.
Local	Local Nature Reserves (LNR) unless also designated at a higher level, and other nature conservation designations (under local planning policies). Green infrastructure designations where these contribute to local landscape connectivity and/or buffer other ecological features valued at least this geographic scale. Species populations or habitat areas (including legally protected or NERC Act S41 species or habitats) of local importance due to relative size or quality. Features that appreciably enrich the local ecological resource, although these may themselves be common and widespread, such as long-established hedgerows, woodlands and ponds.
Negligible	Habitats of little or no ecological value or function e.g. densely urbanised environments, amenity grassland, hard standing etc.

Characterisation of Impact

6.37 Although not necessary, it is good practice to describe potential impacts without and with mitigation. The proposals may result in multiple potential impacts on an important ecological feature, the CIEEM approach requires that only those that are likely to occur and have significant impacts need be assessed, although a precautionary approach to scoping potential impacts is recommended. The following characteristics are used to describe impacts (not all may be relevant in all cases):

- Positive or negative.
- Extent.
- Magnitude.
- Duration.
- Timing.
- Frequency.
- Reversibility

Likelihood of Effect

6.38 The following four-point scale has been used to express the degree of confidence in the prediction of impact significance, for residual impacts this scale will also indicate the reliability of mitigation proposals.

- Certain/near certain
- Probable
- Possible
- Extremely unlikely

Significance Criteria

6.39 Once an impact has been described it is necessary to determine if the effect is 'significant'. In the context of CIEEM EclA guidance a significant effect is one that either supports or undermines biodiversity conservation objectives for 'important ecological features'. This can include impacts on the structure and function of sites and habitats or the conservation status of habitats and species (i.e. whether or not the impact alters the extent, distribution or abundance of the feature). The decision on significance is made irrespective of the geographical scale of importance of the feature; if an effect is found not to be significant at the level at which the receptor has been valued, it may be significant at a more local level. A significant negative effect is not necessarily one that would make the proposals unacceptable.

Conversion Matrix

6.40 CIEEM guidelines for EclA moves away from the traditional matrix assessment of significant effects. In these matrices, the significance of an adverse impact (or beneficial result) is calculated as the product of the magnitude of the impact and the value or sensitivity of the nature conservation resources affected. CIEEM guidelines propose an alternative approach which accommodates factors such as the size or conservation

status of a species population, habitat quality or the natural geographical range of a species/habitat, for example.

- 6.41 Although the significance of impacts on ecological features will be determined in accordance with CIEEM Guidelines, in order to allow consistent comparison of the significance of ecological effects with other Chapters, it is proposed to transpose any significant residual effects, derived after following CIEEM guidelines, into the more traditional levels of significance used in EIA based on the character of the remaining effects. Table 6.4 provides a framework for transposing the significance of residual ecological effects.

Table 6.4 Conversion Matrix

Characterisation of affects using CIEEM scale of significance	Classification of Impact: CIEEM	Classification of Impact: Traditional
- Loss of, permanent damage to or adverse impact on any part of a site of international or national importance; - Loss of a substantial part or key feature of a site of regional importance; - Loss of favourable conservation status (FCS) of a legally protected species; - Loss of or moderate damage to a population of nationally rare or scarce species.	Negative Significant Effect	Major Adverse
- Temporary disturbance to a site of international or national importance, but no permanent damage; - Loss of or permanent damage to any part of a site of regional importance; - Loss of a key feature of local importance; - A substantial reduction in the numbers of legally protected species such that there is no loss of FCS but the population is significantly more vulnerable; - Reduction in the amount of habitat available for a nationally rare or scarce species, or species that are notable at a regional or regional level.		Moderate Adverse
- Temporary disturbance to a site of regional value, but no permanent damage; - Loss of, or permanent damage to, a feature with some ecological value in a local context but that has no nature conservation designation; - A minor impact on legally protected species but no significant habitat loss or reduction in FCS; - A minor impact on populations of nationally rare or scarce species or species that are notable at a regional or regional level.		Minor Adverse
- No impacts on-sites of international, national or regional importance; - Temporary disturbance or damage to a small part of a feature of local importance; - Loss of or damage to land of negligible nature conservation value; - No reduction in the population of legally protected, nationally rare, nationally scarce or notable (regional level) species on the site or its immediate vicinity.	No Significant Effect	Negligible

Characterisation of affects using CIEEM scale of significance	Classification of Impact: CIEEM	Classification of Impact: Traditional
Beneficial and adverse impacts balance such that resulting impact has no overall affect upon receptor.		Neutral
A small but clear and measurable gain in general wildlife interest, e.g. small-scale new habitats of wildlife value created where none existed before or where the new habitats exceeds in area that habitats lost.	Positive Significant Effect	Minor Beneficial
Larger new scale habitats (e.g. net gains over 1 ha in area) created leading to significant measurable gains in relation to the objectives of biodiversity action plans.		Moderate Beneficial
Major gains in new habitats (net gains of at least 10 ha) of high significance for biodiversity being those habitats, or habitats supporting viable species populations, of national or international importance cited in Annexes I and II of the habitats Directive or Annex I of the Birds Directive.		Major Beneficial

Assumptions/Limitations

- 6.42 The assessment will be made on the best available data, based on the information that has been gathered from stakeholders, other data sources and the surveys undertaken in 2021. All surveys were completed within appropriate seasons over appropriate periods in accordance with industry standards for the specific survey. The surveys will only identify habitats present at the site at the time of surveys. Additionally, where the species investigated are mobile, they can move into and out of areas over time. For these reasons a precautionary approach will be taken in the prediction of impacts. Where there is any doubt, except where specifically noted, a species will be assumed present, and an impact will be given the higher level of significance.

Climate Change

- 6.43 European guidance requires that EclA considers the effects of projects on climate change and on biodiversity. The European Commission (EC) guidance indicates that impacts which are only likely to be experienced in the next 20 years should be based on current weather patterns or near-future projections if available and relevant. Beyond 20 years, identified potential impacts (associated with operation of the proposed development) may need to consider the projected climate. Climate change has therefore been accounted for in the assessment of operational effects.

Mitigation & Residual Effects

- 6.44 Recommendations will be made to mitigate any significant detrimental impacts associated with the construction and operation of the proposed development on any identified important ecological feature. Any other mitigation that is not related to an important ecological feature but is nonetheless considered necessary would also be set out. Once the appropriate mitigation measures and monitoring have been proposed, the residual impacts remaining once they are accounted for will be identified.

Cumulative Effects

- 6.45 A separate cumulative effects chapter will also be presented at Chapter 18 of the ES. This will assess the cumulative impacts of the proposed development in conjunction with any committed developments within the vicinity of the sites identified through the scoping process, as well as the wider development project (Applications 1, 3 and 4) and the wider SRF. The approach will be aligned with the assessment scenarios outlined in Section 4 of this Scoping Report.

7. Archaeology and Heritage

- 7.1 This section of the ES will present an assessment of the potential effects of the proposals on the archaeology of the proposed development site during both the construction and operational phases. The assessment will be undertaken by Arup.

Site Context

- 7.2 The site comprises an area of circa approximately 16.63 hectares within the Lower Irk Valley, within the Red Bank and New Town neighbourhoods, which form part of Northern Gateway SRF.
- 7.3 Existing background information for the study area will be sourced from:
- Arup (2021), Victoria North – River and Flood Alleviation Works: Historic Environment Baseline Assessment (HEBA), which includes sources from:
 - Greater Manchester Historic Environment Record (GMHER);
 - Manchester Library, Information and Archives;
 - And British Geological Survey (BGS).
 - Stephen Levrant Heritage Architecture (2018), Northern Gateway, Manchester. Heritage Significance Appraisal.
 - National Heritage List for England (NHLE).
 - Groundsure Historic Ordnance Survey Maps.
- 7.4 NHLE data for designated assets within the 350m study area is proposed. Current understanding of the cultural heritage assets within the study area include some 17 designated elements with:
- One Grade II* listed building.
 - Sixteen Grade II listed buildings.
- 7.5 One Grade II listed bridge, known as Union Bridge, is located along the southern boundary of the site. There is, therefore, an increased probability that the proposed works will indirectly impact upon this asset. The remaining designated assets are located more than approximately 120m from the site, though their setting(s) may still be subject to impact because of the proposed development.
- 7.6 There are no Conservation Areas, Registered Parks & Gardens, nor Scheduled Monuments within 350m of the indicative red line boundary.
- 7.7 A search of Heritage Gateway recorded a number of non-designated heritage assets in the vicinity of the site, primarily comprising residential, commercial, and industrial properties dating to the late 18th through 20th centuries. Also recorded were two historic findspots: coins thought to date to the Iron Age or Roman period as well as a coin and quern dating to the Roman period. A full analysis of the GMHER should be undertaken as part of a cultural heritage desk-based assessment in the future.

- 7.8 An HEBA conducted ahead of the river and flood mitigation phase of works, immediately to the southwest of this site area, identified archaeological potential for paleoenvironmental data and remains of riverside industries.
- 7.9 An HSA covering the site area was conducted in 2018. This report concluded that the area had overall low heritage significance, though did note that there was moderate to low archaeological value thereby requiring a proportionate investigation of below-ground archaeology. The HEBA and HSA both noted that Union Bridge, as a Grade II listed structure, was of high heritage significance but that its existing setting was very poor, such that it would need extensive redevelopment to reveal its heritage values. Thus, it was concluded that its sensitivity to new development was high.
- 7.10 The HSA was commissioned and undertaken at a point where full details of the proposed redevelopment of the site area had not been confirmed. Moreover, it was a very high-level appraisal covering a large study area, of which the site was only one small part. Therefore, while the conclusions of the HSA are considered to be reasonable, it does not fully nor specifically assess the potential impact(s) of the proposed works upon the historic environment of the site. However, the HAS does offer substantial background and contextual information, which can be used in the assessment of heritage significance, archaeological potential and potential impact going forward.

Planning Policy Context

National Planning Policy

- 7.11 This assessment recognises the requirements of the following legislation:
- Ancient Monuments and Archaeological Areas Act (1979).
 - Planning (Listed Buildings and Conservation Areas) Act (1990).
 - and Ministry of Housing Communities and Local Government (MHCLG) (2021), National Planning Policy Framework (NPPF) (2021).

Local Planning Policy

- 7.12 This assessment has been informed by the following national and local policy:
- Manchester City Council (2012), Manchester's Local Development Framework – Core Strategy, Development Plan Document.

Other Relevant Policy, Standards and Guidance

- 7.13 This assessment has been conducted in line with the following standards and guidance:
- Chartered Institute for Archaeologists (CIfA) (2020), Standard and Guidance for Historic Environment Desk-based Assessment.

- Historic England (2008), Conservation Principles²⁰ – Policies and Guidance for the Sustainable Management of the Historic Environment.
- Historic England (2015), Managing Significance in Decision-Taking in the Historic Environment – Historic Environment Good Practice Advice in Planning: 2.
- Historic England (2017), The Setting of Heritage Assets²¹ – Historic Environment Good Practice Advice in Planning: 3 (Second Edition).
- Standards for Highways (2020), Design Standards for Roads and Bridges (DSRB) – LA104 Environmental Assessment and Monitoring.
- Standards for Highways (2020), Design Standards for Roads and Bridges (DSRB) – LA106 Cultural Heritage Assessment.

Approach

- 7.14 The effects of the proposed development can be temporary or permanent and associated with the construction and/or operational periods.
- 7.15 Temporary construction effects include construction noise, visual intrusion, vibration and dust which cease on completion of construction. Permanent construction effects are those effects which arise from the physical presence of the infrastructural works (e.g. terraced landscaping, regrading of levels, etc), for example, changes to the setting of assets or negative impacts on buried archaeological assets. These permanent construction effects will be assessed as operational effects.
- 7.16 Operational effects include effects which arise from the use of the site, such as increases in vehicle movement. These effects are not expected to result in impacts to the heritage significance of assets and have therefore been scoped out of the assessment.
- 7.17 The effects of the proposed development will be assessed in the below sequence:
- Identify the baseline heritage assets (including their setting) and archaeological potential.
 - Assess the significance of the baseline assets and the contribution of their settings to this significance.
 - Identify and define the magnitude of impact and the severity of the effects taking into account mitigation embedded into the design.
 - If possible, identify further mitigation required and its methodology in terms of spatial extent and techniques to be deployed.
 - Assess residual effects after the application of further mitigation.

²⁰ Hereafter referred to as 'Conservation Principles'.

²¹ Hereafter referred to as 'The Setting of Heritage Assets'.

Significance Criteria

- 7.18 The NPPF states that the heritage significance of an asset is derived from its heritage interest. This may be archaeological, architectural, artistic or historic. Historic England, meanwhile, state in Conservation Principles that the heritage significance of an asset is derived from its heritage value. This may be evidential, historical, aesthetic or communal. Conservation Principles also define heritage significance and heritage values as being a holistic term for the sum of all heritage values attached to a place; be it a building, an archaeological site, or a larger historic area such as a village or landscape. Historic England's guidance on The Setting of Heritage Assets also states how the setting of an asset can contribute to (or detract from) its heritage significance.
- 7.19 It is accepted that when establishing a set of criteria for assessing heritage significance, the criteria can be derived from one or more parts of an asset's heritage interest (under NPPF) and/or its heritage value (under Conservation Principles), alongside the contribution made by its setting. All identified assets (including the contribution made by their setting) will be assigned a heritage significance based on the criteria present in Table 7.1, below.

Table 7.1 Heritage significance

Heritage significance	Criteria
Very High	World Heritage Sites (including nominated sites) Assets of acknowledged international importance Assets that can contribute significantly to acknowledged international research objectives
High	Scheduled Monuments Grade I and II* listed buildings Grade I and II* registered park and gardens Grade I and II* conservation areas Grade II listed buildings Non-designated assets (archaeological sites, buildings, monuments, parks, gardens or landscapes) that have heritage interest or value that would warrant consideration for designation Assets with the potential to contribute to national research objectives and/or of a schedulable quality and importance
Medium	Grade II registered parks and gardens Grade II conservation areas Non-designated assets (archaeological sites, buildings, monuments, parks, gardens or landscapes) that have heritage interest or value but whose heritage interest and/or heritage values are compromised by reduced preservation or survival or contextual association to justify a great heritage significance Assets of regional importance with the potential to contribute to regional research objectives Sites of high archaeological potential as identified through consultation and/or research
Low	Assets of limited heritage value and/or heritage interest but with the potential to contribute to local research objectives and/or benefit the community Non-designated assets entered onto a locally listed buildings register Assets compromised by poor preservation and/or poor survival of contextual associations which prevent it from being considered at a higher category
Not significant	Assets and archaeological sites compromised by poor preservation and/or poor survival of contextual associations

Heritage significance	Criteria
	Assets and archaeological sites that have very little or no surviving heritage interest, heritage value or archaeological potential

7.20 While organisations such as MCHLG, Historic England and ClfA set out good practice guidance for assessing heritage significance, they do not provide specific guidance on how to determine the overall significance of effect that an asset may receive. The Standards for Highways DSRB – LA104 does, however, provide such a mechanism. According to DSRB – LA104, the overall significance of an effect can be determined by assessing the magnitude of an impact brought about by the proposed development, against the heritage significance of an asset. This mechanism has been adapted as described below.

7.21 Table 7.2 sets out the criteria that will be used for assessing the magnitude of an impact (the degree of change experienced by an asset (including its setting) and archaeological potential). It should be noted that impacts upon the heritage significance of an asset (including its setting) and archaeological potential can be direct or indirect. They can be characterised in terms of timing, scale, duration, reversibility and the likelihood of occurrence. They can also be permanent or temporary and contribute to or detract from heritage significance, particularly in terms of impact upon setting.

Table 7.2 Magnitude of impact

Magnitude	Criteria
High	Change such that the heritage significance of an asset or archaeological site is totally altered or destroyed Comprehensive change to the setting, effecting heritage significance and resulting in a total change in our ability to understand and appreciate the resource and its context
Medium	Change such that the heritage significance of an asset or archaeological site is affected Changes such that the setting is noticeably different, effecting heritage significance and resulting in changes in our ability to understand and appreciate the resource and its context
Low	Change such that the heritage significance of an asset or archaeological site is slightly affected Change to the setting that is not obviously different, has a minor effect on heritage significance resulting in the possible confusion of our ability to understand and appreciate the resource and its context
Minimal	Changes to an asset or archaeological site that hardly affect heritage significance Changes to the setting that have little effect on heritage significance and do not affect our ability to understand and appreciate the resource and its context
No change	The proposed development does not affect the heritage significance of an asset or archaeological site Changes to the setting that do not affect the heritage significance or our appreciation of it

7.22 As previously stated, determination of the overall significance of effect brought about by the proposed development is established by cross-referencing the heritage significance of an asset (including the contribution made by its setting) or archaeological potential, against the magnitude of the impact that it may receive. This cross-referencing is undertaken once any actions, design changes, or strategies for the mitigation of impacts have been agreed.

7.23 Table 7.327.3, below, has been adapted from DSRB – LA104 and provides a matrix through which the overall significance of an effect, following mitigation, can be determined.

Table 7.32 Overall significance of effect

X		Magnitude				
		No change	Minimal	Low	Medium	High
Heritage Significance	Very High	Neutral	Moderate	Major	Major	Major
	High	Neutral	Minor	Moderate	Major	Major
	Moderate	Neutral	Minor	Minor	Moderate	Major
	Low	Neutral	Negligible	Minor	Minor	Moderate
	Not significant	Neutral	Negligible	Negligible	Negligible	Negligible

7.24 Once determined, the significance of the overall effect will be assessed as being either:

- Neutral – the heritage asset (including its setting) or archaeological potential will not experience any change(s).
- Beneficial – any change(s) experienced by the heritage asset (including its setting) or archaeological potential will enhance its heritage significance by contributing to its heritage interest and/or heritage value.
- Adverse – any change(s) experienced by the heritage asset (including its setting) or archaeological potential will detract from its heritage significance by damaging or destroying its heritage interest and/or heritage value.

7.25 It should be noted that profession judgement, which is defined as being informed, reasonable and balanced with respect to outcomes, will be used in assessing the overall significance of effects.

7.26 Adverse effects of moderate magnitude or above are considered 'significant' in EIA terms. In these instances, possible mitigation measures will be discussed and agreed with Greater Manchester Archaeological Advisory Service (GMAAS). These measures could include, but are not limited to:

- Design review and/or design changes – which may, for example, require changes in the construction method structures or changes in landscaping plans;
- Preservation by record – which may, for example, comprise a programme of archaeological strip, map and sample or an archaeological watching brief; and/or
- The provision of interpretation and/or public engagement opportunities.

7.27 The archaeological potential of the site is likely to be physically impacted by the proposed development. Alongside potential archaeological remains from the Industrial period, it is possible that paleoenvironmental

deposits and earlier material culture deposits could survive in deep, undisturbed below-ground environments along the riverside. These impacts are considered likely to occur during the construction phase of the proposed development and may be significant.

- 7.28 The Grade II listed Union Bridge is likely to be indirectly impacted as a result of the proposed works.
- 7.29 The majority of the designated assets in the study area are not currently anticipated to be impacted physically. Setting impacts may be experienced during the construction and/or operational phases of the proposed development. It is anticipated that such impacts will be associated with visual changes to views from individual heritage assets rather than impacts associated with, for example, changes in traffic volume, construction noise or hours of operation and expansion of operational tasks etc. The construction and operation of new covered storage areas and warehouses, and the operational stacking of transport/cargo containers are predicted to be the most likely cause of setting impacts and may be significant.
- 7.30 A number of non-designated heritage assets have been identified within the red line boundary or close to the site edge. Further consideration of impacts both direct and setting will be defined in the CHDBA.
- 7.31 This scope remains as stated for all ICA Assessment Scenarios.
- 7.32 Table 7.4 summarises each of the cultural heritage sub-topics and whether they should be scoped in or scoped out of the construction and/or operation phases of the proposed development. This scope remains as stated for all ICA Assessment Scenarios.

Table 7.4 Summary table

Assessment scope – Cultural heritage			
Sub-topic	Construction	Operation	Rationale for scoping sub-topics in or out
Designated assets outside site area: Listed buildings	Scoped in	Scoped in	This potential impact will require further assessment within the cultural heritage chapter of the EIA.
Non-designated assets inside study area	Scoped in	Scoped in	Any non-designated assets within the study area will likely be directly affected by the proposed works. The extent of assets present within this area will be further assessed in the Cultural Heritage Desk Based Assessment. A strategy for the mitigation of direct physical impacts – which may include changes in design, preservation in situ and/or preservation by record – will be assessed within the cultural heritage chapter of the EIA and in discussion with GMAAS.
Non-designated assets outside study area	Scoped in	Scoped out	Non-designated assets located outside of the study area may have contextual relationships with the assets located within. The loss of the internal non-designated assets during construction may result in a loss of context and a disconnection in relationships. This translates to possible setting affects. The extent of assets present outside the study area will be further assessed by way of cultural heritage desk based assessment This potential impact will require further assessment within the cultural heritage chapter of the EIA.
Archaeological potential (& below-	Scoped in	Scoped out	The demolition of extant structures, regrading of the ground level, and terracing alongside other

Assessment scope – Cultural heritage			
Sub-topic	Construction	Operation	Rationale for scoping sub-topics in or out
ground environments) inside site area			landscape works may disturb and/or destroy below-ground palaeoenvironmental deposits. These same construction elements may also disturb or destroy archaeological remains and/or deposits located in the sub-soil. As such, these elements of construction would directly impact upon the archaeological potential of the site area. This potential impact will require further assessment within the cultural heritage chapter of the EIA.

Cumulative Effects

- 7.33 A separate cumulative effects chapter will also be presented at Chapter 18 of the ES. This will assess the cumulative impacts of the proposed development in conjunction with any committed developments within the vicinity of the sites identified through the scoping process, as well as the wider development project (Applications 1, 3 and 4) and the wider SRF. The approach will be aligned with the assessment scenarios outlined in Section 4 of this Scoping Report.

8. Ground Conditions

- 8.1 The purpose of this assessment is to identify the existing soil conditions in relation to the potential for contamination, the geological conditions in relation to land stability, development constraints, and to assess the potential effects on land contamination and stability during both the construction and operational phases. The Scope has been prepared by Arup.

Site Context

- 8.2 The land within and adjacent to the Site has been used for a variety of industrial land uses since the 1800s, including the manufacture of textile dyes, metal plating, chemicals, iron, timber, glass and leather tanning. In the late 1800s large scale earthworks were carried out within the Site boundary to create a plateau for railway sidings to the north of Victoria Station, known as Red Bank sidings. As a result, made ground up to c. 10m thick is present in this area. Two gasometers were present adjacent to the site within Travis Island associated with the nearby Rochdale Road gasworks. A smaller gasworks was also present on Red Bank sidings within the Site boundary. There is potential for contamination of the soil and groundwater beneath the site, and the River Irk which forms the south eastern site boundary, as a result of these past land uses.
- 8.3 Land further beyond the Site boundary has also been used for a variety of industrial uses including the Rochdale Road gasworks, the former Queens Road landfill site to the immediate north, Sand Street landfill and Fitzgeorge Street landfills to the east. There is a potential for mobile contamination and landfill gas to migrate onto the Site from these areas.
- 8.4 The Site is within an area affected by past coal mining at depth, where worked coal seams are present between approximately 300 and 700m below ground level. There are no recorded mine entries within the Site boundary. Historical coal mining can cause land instability, although the depth of coal mining beneath the Site means that the likelihood of this is low.
- 8.5 As the site is formerly an industrial area in close proximity to Victoria railway station, it is likely to have been a target for aerial bombing during WWII. Detailed Unexploded Ordnance (UXO) reports for the Site have determined the area to be at low risk of UXO.
- 8.6 Following a preliminary ground investigation (GI) undertaken in 2019, a more detailed GI was undertaken in January 2021 within the proposed Site boundary, together with an extended period of groundwater level and ground gas monitoring.
- 8.7 Samples of soil and groundwater were taken during both phases of ground investigation, which have identified the presence of contaminants above human health or environmental quality standard values. Further risk assessment is currently being undertaken before any appropriate treatment and mitigation measures can be identified.
- 8.8 The results of the ground gas monitoring are still being assessed. It is possible that any future development within the site will need to address ground gas risk through the implementation of gas protection systems in new buildings.

Planning Policy Context

National Planning Policy

- 8.9 Land contamination is regulated under several regimes, including environmental protection, pollution prevention and control, waste management, planning and development control and health & safety.
- 8.10 The legislative framework for contaminated land is principally set out in Part 2A of the Environmental Protection Act (EPA) 1990. The legislation endorses the principle of a 'suitable for use' approach for contaminated land, where remedial action is only required if there are unacceptable risks to health or the environment, taking into account the use of the land and its environmental setting.
- 8.11 The statutory guidance²² describes a risk assessment methodology in terms of 'significant pollutants' and 'significant pollutant linkages' within the framework of a source-pathway-receptor model for the site. The model seeks to establish:
- The principal pollutant hazards associated with the site (the sources).
 - The principal receptors at risk from the identified hazards.
 - The existence, or absence, of plausible pathways which may exist between the identified hazards and receptors.
- 8.12 For land to be determined as 'contaminated' in a regulatory sense, and thereby require remediation (or a change to a less sensitive use), all three elements (source-pathway-receptor) of a significant pollutant linkage must be present.
- 8.13 The National Planning Policy Framework requires Local Planning Authorities (LPAs) to ensure that the condition of land is appropriate for the proposed new development, in order to prevent unacceptable risks from pollution and ground instability. The responsibility for demonstrating that the land is safe for the proposed scheme rests with the developer and/or landowner. The presence of contamination can present risks to human health and the environment, which may adversely affect or restrict the beneficial use of land. However, development presents an opportunity to deal with these risks successfully via the planning system, without recourse to Part 2A legislation.

Local Planning Policy

- 8.14 At a local level, Manchester's Local Development Framework²³ Policy EN 18 states that the Council will give priority to the remediation of contaminated land to strategic locations. Manchester City Council's target is for 90% of new development to be on previously developed land. Any proposal for development of contaminated land must be accompanied by a health risk assessment.
- 8.15 All new development within former mining areas shall undertake an assessment of any associated risk to the proposed development and if necessary, incorporate appropriate mitigation measures to address them.

²² Defra (2012) Environmental Protection Act 1990: Part 2A. Contaminated Land Statutory Guidance. April 2012.

²³ Manchester City Council (2012) Manchester's Local Development Framework. Core Strategy Development Plan Document. Adopted 11th July 2012

- 8.16 Policy EN15 states that the Council will seek to maintain or enhance sites of geological value throughout the City. There are no registered geological SSSI or sites of geological importance within the Site boundary, but developers are expected to seek to maintain, enhance or restore existing geology.
- 8.17 Mineral resources within the Site are detailed within the Greater Manchester Joint Minerals Development Plan²⁴. The Site lies in an area of shallow coal resource (50 to 1200m below ground level) which may have potential for Coal Bed Methane and other unconventional gas resource.

Other Relevant Policy, Standards and Guidance

- 8.18 Other guidance documents and standards that will be used to prepare the assessments in the ES are as follows:
- Environment Agency, Land Contamination: risk management.
 - Environment Agency (2009) Updated technical background to the CLEA model. Science Report SC050021.
 - Environment Agency (2006) Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination.
 - HSE (2012) The Control of Asbestos Regulations.
 - CIRIA (2014) Asbestos in soil and made ground: a guide to understanding and managing risks. Publication C733.
 - British Standards Institute (2019) BS8485:2015+A1:2019: Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings (+A1:2019).
 - Building Research Establishment (2005) Special Digest 1: Concrete in aggressive ground, third edition.
 - Building Research Establishment (2003) Report 456: Control of dust from construction and demolition activities.
 - Environment Agency (2001) Piling and penetrative ground improvement methods on land affected by contamination: Guidance on pollution prevention. NC/99/73.

Approach

- 8.19 The assessment of baseline Ground Conditions proposed for the EIA will include the findings of previous desk studies and ground investigations which have been carried out within the site.
- 8.20 The baseline will consider the historical development of the site and its surroundings using historical mapping, aerial photography and other historical records. The geology and ground conditions will be determined through a review of British Geological Survey (BGS) mapping and borehole records, and environmental data obtained from a third party data supplier and the MAGIC database. GIS is being used to create a geo-spatial database including historical mapping, previous investigation locations and key constraining features and this will be continually developed as the scheme progresses.

²⁴ Manchester City Council (2013) Greater Manchester Joint Minerals Development Plan Documents

- 8.21 The assessment of constraints associated with existing contamination will be risk-based and will consider sources, receptors and pathways to assess plausible pollutant linkages in accordance with government guidance and the UK framework for the assessments of risk arising from contaminated land. The assessment will be in accordance with the principles set out in the Environment Agency's "Land Contamination Risk Management" guidance²⁵.
- 8.22 The following receptors have been identified as having the potential to be subject to likely significant effects: human health; controlled waters (groundwater and the River Irk); flora, fauna and ecological systems; property (buildings and services).
- 8.23 The potential effects relevant to each receptor will be considered in turn, during both construction and operational phases, by developing a Conceptual Site Model, and where appropriate Generic Quantitative Risk Assessment (GQRA) and Detailed Quantitative Risk Assessment (DQRA).
- 8.24 The assessment of land stability and other geotechnical constraints will be based on consideration of the geotechnical properties of the various soil and rock types present within and underlying the site together with assessments of both the existing and proposed ground profiles. In order to undertake these assessments, engineering properties of the various soil and rock types present will be established and a number of techniques including slope stability assessment will be used to identify areas of potentially unsuitable or unstable ground.
- 8.25 The scope of the assessment will be the same for all In-Combination Assessment Scenarios.
- 8.26 The assessment will identify the requirements for any mitigation measures during construction and for any remediation or particular protection measures for future development of the site that may require incorporation into the design of the development. The construction methodology will be reviewed and considered in relation to potential impacts of the remediation works and the interaction of future developments with the ground. Particular focus will be given to ground works aspects of the proposed development. At the time of writing, proposed site levels and hence requirements for cut and fill activities have not yet been established. As part of the assessment, comment will be made on the potential viability of re-use of materials and any conditions likely to preclude retention of materials on the site. Subject to discussions with the relevant regulatory authorities (principally the Environment Agency) it is proposed that materials re-use within the development, will use the CL:AIRE DoWCoP²⁶ methodology, thus aiming to minimise off-site disposal of earthworks materials and other potential waste.
- 8.27 During the construction phase, mitigation is likely to comprise appropriate construction management measures and controls. Mitigation measures required to ensure appropriate protection during the operational phase could comprise soil remediation and validation of soil quality, clean cover systems and ground gas protection measures.
- 8.28 The need for mitigation will be defined through the contaminated land risk assessment process and the required mitigation measures will be defined in the remediation strategy. This will be presented in the ES.

²⁵ <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>

²⁶ CL:AIRE Definition of Waste: Development Industry Code of Practice Version 2 March 2011

- 8.29 Potential residual effects and the likelihood of occurrence of these effects, and residual uncertainties will be considered following mitigation. These will be presented in terms of significance and magnitude.

Significance Criteria

- 8.30 The significance of effects will be determined with reference to the magnitude of the potential change, the value or sensitivity of the receiving environment or receptor, the likelihood of the effect occurring, its duration and the extent to which it is reversible.
- 8.31 The sensitivity of a receptor will be based on the relative importance of the receptor using the scale set out in Table 8.1 below. Receptors and/or the receiving environment likely to be impacted by the proposed development will be those identified within 250m of the site boundary.

Table 8.1: Sensitivity/value of resources and receptors

Sensitivity/ Value	Sensitive Receptors and Resource Examples
High	Human health: Residential areas, hospitals, schools and playing fields. Controlled waters: Catchment or surface water bodies of high quality; and/or Principal aquifers with high to minor vulnerability. Likely to be groundwater protection zone SPZ1 (inner or outer source protection zone), with short travel times to sources or sensitive watercourses with a WFD classification (e.g. Main River, significant Ordinary Watercourse and Canal). Mineral: Major strategic or non-strategic mining or mineral resource area currently being worked or specific sites/preferred area for mining mineral works within a mineral planning authority's local plan. Geological: International/national e.g. UNESCO World Heritage Sites and Global Geoparks, Sites of Special Scientific Interest (SSSI). Ecological: International/national designated areas e.g. SSSI, National Nature Reserve (NNR), Special Protection Area (SPA), Special Area of Conservation (SACs) or RAMSAR site. Property: Buildings, services and essential infrastructure e.g. strategic underground storage space. Soil: Soils supporting EU/UK designated sites (eg SPA, Ramsar, SSSI).
Medium	Human health: Retail and business parks (public and work places), allotments and market gardens. Controlled waters: Catchment or surface water bodies of moderate quality (Ordinary watercourse), and/or Secondary A aquifers with moderate to low vulnerability. Likely to be SPZ2 and 3 for potable water supplies. Mineral: Regionally or locally important mineral resource areas (including Mineral Safeguard Area (MSA) or Mineral Preferred Area (MPA), Petroleum Exploration and Development Licences (PEDL) & potential future reserve designated sites). Geological: Regionally designated areas e.g. RIGS/LGS. Ecological: Regionally designated areas e.g. local nature reserves (LNR). Property: Buildings, structures and infrastructure susceptible to potential gas accumulation. Soil: Soils supporting non-statutory designated sites (e.g. LNR, LGS).
Low	Human Health: Construction workers, commercial or industrial development. Controlled waters: Surface water bodies of poor quality. Secondary B and undifferentiated aquifers with low vulnerability. Likely to be SPZ3 (Total catchment source protection total zone). Unproductive strata with no apparent abstraction use. Mineral: Mineral Areas of Search/ Mineral Consultation Areas (MCA). Geological: Other local geological conservation resource e.g. non-designated geological exposures, former quarries/mining sites. Ecological: Other local ecological conservation resource. Property: Buildings, structures and infrastructure susceptible to potential gas accumulation. Soil: Soil on previously developed or industrial land.

8.32 To determine the importance of potential environmental effects with respect to Ground Conditions, the following significance criteria framework, presented in Table 8.2, is proposed. The magnitude is based on the level of alteration from baseline and can be considered in terms of either positive or negative impacts.

Table 8.2: Methodology for assessing magnitude of impact

Classification	Example of Impact
Major adverse	Human health: Long-term, irreversible damage to human health. Controlled waters: Pollution of a Principal aquifer within a source protection zone (inner and outer) or potable supply characterised by a breach of drinking water standards. Pollution of a surface watercourse characterised by a breach of an Environmental Quality Standard (EQS) at a statutory monitoring location or resulting in a change in General Quality Assessment (GQA) grade. Mineral: Complete loss of major resource. Geological: Permanent detrimental effect to nationally important geological feature (e.g. loss of geological feature / designation and/or quality and integrity, severe damage to key characteristics, features or elements). Ecological: Designated sites-SSSI, NNR, SPA (and potential sites), SAC or Ramsar where irreversible adverse change in the functioning of the ecological system or any species of special interest that forms part of that system. Property: Complete failure of a building or structure including the services infrastructure. Soil: Physical removal or permanent sealing of soil resource.
Moderate adverse	Human health: Medium-term damage to human health. Controlled waters: Pollution of a Principal aquifer outside a source protection zone (SPZ) (inner and outer) or a Secondary A aquifer characterised by a breach of drinking water standards. Pollution of an industrial groundwater abstraction or irrigation supply that impairs its function. Substantial pollution but insufficient to result in a change in the GQA grade. Mineral: Partial loss of regionally/locally important feature/resource or a significant impact on its accessibility. Geological: Medium-term, reversible detrimental effect or temporary exposure to nationally important geological feature. Permanent exposures providing opportunity to collect limited scientific information or creation of new local scientific feature. Ecological: For sites with designations as follows – SSSI, NNR, SPA (and potential sites), SAC or Ramsar. Substantial adverse change in the functioning of the ecological system or any species of special interest that forms part of that system. Property: Significant damage to a building or structure including the services infrastructure impairing their function Soil: Permanent loss/reduction of one or more soil function(s) and restriction to current or approved future use (e.g. through degradation, compaction, erosion of soil resource).
Minor adverse	Human health: Short-term, reversible effects on human health. Controlled waters: Low levels of pollution of a Principal aquifer outside a SPZ or an industrial abstraction, or pollution of a Secondary A or B aquifer. Low levels of pollution insufficient to result in a change in the WFD classification. Mineral: Slight loss/ resource, or a slight impact on its accessibility. Geological: Short-term, reversible effect to nationally important geological feature. Ecological: Harm to ecosystems of a low sensitivity such as sites of local importance. No appreciable harm to ecosystems with statutory designations. Property: Damage to buildings/structures, foundations and services but not sufficient to impair their function or unsafe for occupation. Soil: Temporary loss/reduction of one or more soil function(s) and restriction to current or approved future use (e.g. through degradation, compaction, erosion of soil resource.)
Negligible	Human health: No appreciable impact on human health receptor.

Classification	Example of Impact
	Controlled waters: No appreciable pollution, or pollution of a low sensitivity receptor such as a secondary (undifferentiated) aquifer or a surface watercourse without a quality classification. Mineral: No discernible change, to and off accessibility of resource. Geological: No appreciable impact on geological feature of importance. Ecological: Limited harm to ecosystems of low sensitivity such as sites of local importance. Property: No appreciable damage to buildings/structures, foundations and services. Soils: No discernible loss/reduction of soil function(s) that restrict current or approved future use.
Minor beneficial	Human health: A slight reduction in contamination risk e.g. land that has a moderate/low contamination risk in the baseline becomes a low risk. Controlled waters: Local-scale, or low wide-scale, improvement to the quality of groundwater or surface water resources. Slight improvement to water quality of a Principal aquifer outside a SPZ or an industrial abstraction, or moderate improvement to a Secondary A or B aquifer. Slight improvement of water quality but insufficient to result in a change in WFD classification, slight improvement of water quality of a surface watercourse without a quality classification. Mineral: Project allows slight definition/exploration/sustainable working of resource (e.g. improved accessibility or unsealing), thereby reducing impact (e.g. traffic) Geological: Creation of a new feature/resource (e.g short-term accessible geological exposure) or a new geological understanding (e.g. through ground investigation). Ecological: Permanent addition of, improvement to, or restoration of a biodiversity resource and does not affect the integrity or key characteristics of the resource. Property: A slight improvement to land quality and reduction in contamination risk to property receptors. Soil: A slight improvement to land quality and soil receptors.
Moderate beneficial (significant)	Human health: A reduction in contamination risk e.g. land that has a moderate contamination risk in the baseline becomes a low risk. Controlled waters: Local-scale, or moderate wide-scale, improvement to the quality of groundwater or surface water resources. Improvement of water quality of a Principal aquifer outside a SPZ (inner and outer) or a Secondary A aquifer. Improvement of water quality of an industrial groundwater abstraction or irrigation supply. Improvement of water quality but insufficient to result in a change of WFD classification. Mineral: Project allows moderate definition/exploration/sustainable working of resource (e.g. improved accessibility or unsealing), thereby reducing impact (e.g. traffic) Geological: Creation of a new feature (e.g. a new permanently accessible geological exposure) or a new geological understanding (e.g. through ground investigation) Ecological: Temporary addition of, improvement to, or restoration of a biodiversity resource and positively affects the integrity or key characteristics of the resource. Property: Improvement to land quality and reduction in contamination risk to property receptors. Soil: Improvement to land quality and soil receptors.
Major beneficial (significant)	Human health: A considerable reduction in contamination risk to human health receptors e.g. land that has a high contamination risk in the baseline becomes a low risk and greatly reduces the risk to human health. Controlled waters: Considerable local-scale/ moderate to significant wide-scale improvement to the quality of groundwater or surface water resources. Improvement of water quality of a Principal aquifer within a SPZ (inner and outer) or potable supply. Removal of existing pollution discharge to an aquifer.

Classification	Example of Impact
	Improvement of waterbody WFD classification. Mineral: Project allows considerable definition/exploration/sustainable working of resource (e.g. improved accessibility or unsealing). Geological: Creation of a new feature (e.g. a new permanently accessible geological exposure of national importance) or a new geological understanding (e.g. through ground investigation). Ecological: Permanent addition of, improvement to, or restoration of a biodiversity resource and positively affects the integrity or key characteristics of the resource. Property: Considerable improvement to land quality and significant reduction in contamination risk to property receptors. Soil: Considerable improvement to land quality and soil receptors..

8.33 The determination of the overall significance of effects is based on the magnitude of the impact (Table 8.2) and the value/sensitivity of the receptors (Table 8.1) defined above. By establishing these factors, the following matrix, presented in Table 8.3, will aid in the determination of the overall significance of effects.

8.34 Professional judgement has been used to determine the overall significance of effect. An effect of moderate adverse/beneficial significance or greater is considered to be significant for the purpose of this assessment. Effects can be either adverse or beneficial significant effects.

Table 8.3: Significance of the Effect

		Sensitivity		
Magnitude of Impact		High	Medium	Low
	Major	Major Adverse/Beneficial	Major – Moderate Adverse/Beneficial	Moderate - Minor Adverse/Beneficial
	Moderate	Major – Moderate Adverse/Beneficial	Moderate – Minor Adverse/Beneficial	Minor Adverse/Beneficial
	Minor	Moderate - Minor Adverse/Beneficial	Minor Adverse/Beneficial	Minor - Negligible
	Negligible	Negligible	Negligible	Negligible

Cumulative Effects

8.35 A separate cumulative effects chapter will also be presented at Chapter 18 of the ES. This will assess the cumulative impacts of the proposed development in conjunction with any committed developments within the vicinity of the sites identified through the scoping process, as well as the wider development project (Applications 1, 3 and 4) and the wider SRF. The approach will be aligned with the assessment scenarios outlined in Section 4 of this Scoping Report.

9. Water Environment

- 9.1 The purpose of this assessment will be to assess the likely effects on the water environment as a result of the proposed development during both the construction and operational phases. It will also provide an assessment of flood risk and a Flood Risk Assessment (FRA) will form an appendix to the ES. The FRA and ES Chapter will be completed by Arup.

Site Context

- 9.2 The Initial Development Area is located within the Lower Irk Valley. The location is characterised by the legacy of more than 150 years of industrial uses and Victorian / pre-Victorian infrastructure. The River Irk flows through the site and is designated as a Heavily Modified Water Body (HMWB) in the River Basin Management Plan according to WFD legislation due to physical modifications and the resulting change in watercourse character. The water body (Irk – Wince to Irwell) currently has an Overall Status of 'Moderate' with an Ecological Potential of 'Moderate' and Chemical Status of 'Fail'.
- 9.3 Surface water within brownfield areas of the site currently discharges to a combined sewer network with several Combined Sewer Overflows (CSO's) to the River Irk. The risk is located within the Conurbation Core Critical Drainage Area²⁷ (CDA).
- 9.4 Most of the site lies within Flood Zone 1 and has a low fluvial flood risk (0.1% or less annual exceedance probability, AEP). Within the site there are localised areas of medium (0.1% to 1% AEP) and high fluvial flood risk (greater than 1% AEP). These localised areas of higher flood risk are in proximity to the River Irk, with the topography rising steeply to the north of the river corridor. Within the site there are small, localised areas at risk of surface water flooding.

Planning Policy Context

National Planning Policy

- 9.5 The National Planning Policy Framework (NPPF) requires that a sequential, risk-based approach is taken to direct development to areas of lowest risk of flooding from any source. Where this is not possible, the exception test should be applied to demonstrate that the development will be safe for its lifetime without increasing flood risk elsewhere, whilst also providing wider sustainability benefits to the community. The NPPF requires Local Plans to seek opportunities for new development to reduce flood risk where possible.
- 9.6 Local authorities must ensure that new development does not increase flood risk elsewhere when determining planning applications. Major developments should incorporate sustainable drainage systems unless there is clear evidence that this would be inappropriate.
- 9.7 The NPPF outlines the requirement for planning policies and decisions to prevent development from contributing to, being put at unacceptable risk from, or being adversely affected by unacceptable levels of

²⁷ Manchester City Council (2010) Strategic Flood Risk Assessment (SFRA)

water pollution. Development should, where possible, improve water quality and taken into account the information presented in river basin management plans.

Local Planning Policy

- 9.8 Manchester's Local Development Framework Policy reflects the sequential approach outlined in the NPPF in Policy EN 14 Flood Risk, and states that all sources of flood risk identified in the Manchester-Salford-Trafford Strategic Flood Risk Assessment (SFRA) should be taken into account. Surface water runoff from new developments should be minimised through use of SuDS and green infrastructure. Within CDAs, developers are required to provide evidence to justify the surface water runoff rates.
- 9.9 EN 8 Adaptation to Climate Change states that developers should aim to minimise flood risk by appropriate siting, drainage and treatment of surface areas. Policy EN 9 encourages developers to enhance the quality, quantity and performance of green infrastructure and highlights the multiple function of existing green infrastructure corridors including along the River Irk.
- 9.10 Policy EN 17 Water Quality requires that adverse impacts on water quality arising from new development are avoided and that opportunities should be sought to improve water quality wherever possible. Surface water runoff from development, including roads, including through the use of SuDS, to avoid increasing pollution of watercourses.

Other Relevant Policy, Standards and Guidance

- 9.11 The assessment will follow the principles, where relevant, set out within LA 113 Road drainage and the water environment²⁸. This guidance provides the methodology and criteria for identifying likely impacts of a proposed road project on the water environment and predicting their magnitude and significance of the resulting effects. There is no standard guidance for the methodology of water EIA, therefore in the absence of any sector guidance, the DMRB methodology outlined within LA 113 is recognised as a robust approach. Some of the methodology is specific to road-related impacts on the water environment and therefore sections of it (e.g. HEWRAT) are not applicable to this development.
- 9.12 The assessment will draw on other guidance as appropriate, including but not limited to:
- Planning Practice Guidance on flood risk²⁹;
 - Planning Inspectorate Advice Note 18 (Water Framework Directive); and
 - Construction Industry Research and Information Association (CIRIA) guidance including:
 - Control of Water Pollution from Construction sites – Guide to Good Practice (SP156)
 - Control of Water Pollution from Construction sites – Guidance for Consultants and Contractors (C532); and
 - Environmental good practice on-site (C692).

²⁸ DMRB LA 113 – Road drainage and the water environment, March 2020

²⁹ Accessed at <https://www.gov.uk/guidance/flood-risk-and-coastal-change>, last updated 20 August 2021

Approach

- 9.13 Baseline conditions of identified surface water receptors, including flood risk, will be established through a combination of review of desk-based data sources and mapping, walkover survey and review of assessments undertaken for other elements of the proposed development. A fluvial geomorphology survey of the River Irk has been undertaken for the Victoria North River Works project and the findings will be used to support the assessment of the existing hydromorphological condition of the watercourse.
- 9.14 The assessment of potential effects during both the construction and operational phases will consider potential impacts on surface water quality, hydromorphology, the existing local drainage pattern and flood risk. A qualitative approach to the assessment will be taken. Impacts on water dependent habitats, if relevant, and aquatic ecology will be assessed in Chapter 6 Ecology and Trees. Impacts on groundwater quality will be assessed in Chapter 9 Ground Conditions.
- 9.15 A flood risk assessment (FRA) will be prepared for the proposed development. The FRA will incorporate results from initial hydraulic modelling undertaken for the Victoria North River Works project to establish baseline fluvial flood risk. The FRA will consider flood risk from all sources and will outline appropriate flood risk management measures for the proposed development. Outcomes from the FRA will be used to inform the assessment of baseline flood risk and potential impacts within the ES Chapter. The FRA will form an appendix to the ES Chapter.
- 9.16 A Water Framework Directive (WFD) Compliance Assessment will be prepared for the proposed development. At this stage it is considered likely that this will comprise of a standard screening and scoping assessment. The WFD Compliance Assessment will inform the baseline assessment within the ES Chapter in relation to WFD Status and the assessment of potential significant effects on the hydromorphology and WFD Status of the River Irk and other relevant WFD water bodies. The WFD Compliance Assessment will form an appendix to the ES Chapter.
- 9.17 Appropriate mitigation measures for the construction and operational phases will be identified as required and the residual significance of effects on the surface water environment assessed.

Significance Criteria

- 9.18 The baseline assessment will describe the existing condition of surface water receptors and flood risk within the study area. The importance or sensitivity to change will be considered and the attributes and indicators of quality defined in LA 113 used to inform the value assigned to each receptor (Table).

Table 9.1: Proposed criteria for estimating the importance of receptors (adapted from DMRB LA 113: Table 3.70)

Importance	Quality	Description
Very high	Attribute has a high quality and rarity on regional or national scale.	Surface water: Watercourses having a WFD classification shown in a RBMP and typically having $Q_{95} \geq 1.0 \text{ m}^3/\text{s}$. Site protected / designated under EC or UK legislation (Special Area of Conservation, Special Protection Area, SSSI, Ramsar site, salmonid water). Species protected by EC legislation.

		Flood risk: Essential infrastructure or highly vulnerable development.
High	Attribute has a high quality and rarity on a local scale.	Surface water: Watercourses having a WFD classification shown in a RBMP and typically having $Q_{95} < 1.0 \text{ m}^3/\text{s}$. Species protected by EC or UK legislation. Flood risk: More vulnerable development.
Medium	Attribute has a medium quality and rarity on a local scale.	Surface water: Watercourses not having a WFD classification shown in a RBMP and typically having $Q_{95} > 0.001 \text{ m}^3/\text{s}$. Flood risk: Less vulnerable development.
Low	Attribute has a low quality and rarity on a local scale.	Surface water: Watercourses not having a WFD classification shown in a RBMP and typically having $Q_{95} \leq 0.001 \text{ m}^3/\text{s}$. Flood risk: Water compatible development.

9.19 Table 9.2 will be used to assign a magnitude of change resulting from the proposed development and the significance of effect will be determined using the matrix in Table 9.3.

Table 9.2: Criteria for assessing impact magnitude (adapted from DMRB LA 113: Table 3.71)

Magnitude of impact	Typical criteria descriptors
Major adverse	Results in loss of attribute and / or quality and integrity of the attribute.
Moderate adverse	Results in effect on integrity of attribute, or loss of part of attribute.
Minor adverse	Results in some measurable change in attributes, quality or vulnerability.
Negligible	Results in effect on attribute but of insufficient magnitude to affect the use or integrity.
Minor beneficial	Results in some beneficial effect on attribute or a reduced risk of negative effect occurring.
Moderate beneficial	Results in moderate improvement of attribute quality.
Major beneficial	Results in major improvement of attribute quality.

Table 9.3: Significance of effects matrix (significant effects in bold)

Importance / value of receptor	Magnitude of impact			
	Negligible	Minor	Moderate	Major
Low	Negligible	Negligible	Minor	Minor / Moderate
Medium	Negligible	Minor	Moderate	Major
High	Negligible	Minor / Moderate	Moderate / Major	Major
Very high	No Impact	Moderate / Major	Major	Major

Cumulative Effects

- 9.20 A separate cumulative effects chapter will also be presented at Chapter 18 of the ES. This will assess the cumulative impacts of the proposed development in conjunction with any committed developments within the vicinity of the sites identified through the scoping process, as well as the wider development project (Applications 1, 3 and 4) and the wider SRF. The approach will be aligned with the assessment scenarios outlined in Section 4 of this Scoping Report.

10. Townscape and Visual

- 10.1 Townscape and visual effects are independent but related issues. Townscape effects are changes in the townscape as a resource, including its constituent elements, the aesthetic and perceptual aspects of the townscape, and its distinctive character; visual effects relate to the effects of change upon the views available to people and their visual amenity. The Townscape and Visual Impact Assessment (TVIA) is to be undertaken by a Chartered Member of the Landscape Institute (CMLI) within Planit-IE. Planit-IE is a registered practice of the Landscape Institute with considerable experience in townscape and visual assessment.

Site Context

- 10.2 The study area will extend approximately 500m from the centre of the site. Within this urban location this distance is considered sufficient to produce a thorough and relevant understanding of the surrounding townscape context and character. Taking into consideration the nature and parameters of the proposed development and its context, and based on professional judgement, it is considered that beyond this distance any effects on townscape character would diminish to non-significant levels.
- 10.3 The site itself comprises a mixture of scrub woodland, derelict land, old railway viaducts, surface parking and surrounding minor streets. The surrounding townscape includes the strong linear street pattern of the Cheetham Hill industrial employment area, to the East the HMG Paint complex and River Irk Valley, to the south, a number of poor quality industrial sites and development plots. To the west of the site the edge of the City Centre is strongly defined by the railway viaducts leading to Victoria Station, and the contemporary Angel Gardens and NOMA developments.
- 10.4 Whilst densely wooded in places the character of the site and surroundings is urban, with a strong sense of enclosure created by the valley landform and the impressive elevated railway viaduct structures. The generally poor condition of much of the area, gives an impression of 'being left over', derelict and at the edge of the City, and gives few people a reason to venture through the streets and green spaces within it.

Planning Policy Context

National Planning Policy

- 10.5 The revised National Planning Policy Framework (NPPF) was updated on 19 February 2019 and sets out the government's planning policies for England and how these are expected to be applied. This revised Framework replaces the previous NPPF published in March 2012 and revised in July 2018.
- 10.6 The purpose of the planning system is to contribute to the achievement of sustainable development through three overarching objectives. The environmental objective is of particular relevance to the purposes of TVIA.
- An environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

10.7 Section 12 of the NPPF deals with the requirements of good design. The overarching principle is set out in paragraph 124, which states:

- 'The creation of high quality buildings and places is fundamental to what the planning and development process should achieve. Good design is a key aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities.'

10.8 Paragraph 127 of the NPPF also sets out a number of principles of good design.

10.9 Whilst the site is not located in a Conservation Area and does not contain listed buildings, heritage is an intrinsic part of townscape assessment and potential views from Conservation Areas and the context around listed buildings will be considered as part of the assessment. There is also an overarching desirability set out within the NPPF for new development to contribute positively to local character and distinctiveness.

National Planning Practice Guidance

10.10 The National Planning Practice Guidance (NPPG) (DCLG, 2014) (Ref. 15-3) provides a web-based resource in support of the NPPF.

10.11 NPPG: Design – Section 1: The Importance of Good Design, states that: "*As a core planning principle, planmakers and decision takers should always seek to secure high quality design*". Section 3 focuses on the qualities that define well designed places and spaces, stating that: "*A well designed space has a distinctive character*". It lists the physical aspects that contribute to distinctiveness, including the local pattern of street blocks and blocks, building forms, details, materials, style and vernacular. It further adds that: "*Distinctiveness is not solely about the built environment*" – it also reflects an area's function, history, culture and its potential need for change.

Local Planning Policy

10.12 Manchester City Council Core Strategy (2012)

Policy EN1 – Design Principles and Strategic Character Areas

- 'All development in Manchester will be expected to follow the seven principles of urban design, as identified in national planning guidance and listed above and have regard to the strategic character area in which the development is located. Opportunities for good design to enhance the overall image of the City should be fully realised, particularly on major radial and orbital road and rail routes.

Policy EN9 - Green Infrastructure

- "New Development will be expected to maintain existing green infrastructure in terms of its quantity, quality and multiple function. Where the opportunity arises and in accordance with current Green Infrastructure Strategies the Council will encourage developers to enhance the quality and quantity of green infrastructure, improve the performance of its functions and create and improve linkages to and between areas of green infrastructure. Where the benefits of a proposed development are considered to outweigh the loss of an existing element of green

infrastructure, the developer will be required to demonstrate how this loss will be mitigated in terms of quantity, quality, function and future management.

10.13 Local Development Frameworks

10.14 The Northern Gateway Strategic Regeneration Framework (SRF) (February 2019) was approved by MCC's Executive on 13th February 2019. The proposed development comprises the entirety of the Red Bank neighbourhood of the Northern Gateway SRF and a small section of the adjacent New Town neighbourhood. The document provides relevant information on the existing character of the area as well as setting a framework for the scale, type and quality of development that is likely to be appropriate there, including immediately around the site.

Other Relevant Policy, Standards and Guidance

10.15 The European Landscape Convention (ELC) (2000) provides a foundation for closer co-operation on landscape issues across Europe and was ratified in the UK on 21st November 2006 and became binding on 1 March 2007. The convention identifies the need to recognise landscape in law, to develop and promote landscape policies dedicated to the protection, management and creation of landscapes, and to establish procedures for the participation of the general public and other stakeholders in the evolution and implementation of landscape policies. It also encourages the integration of landscape into all relevant areas of policy, including cultural, economic and social policies.

10.16 The ELC defines landscape as '*an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*'. This definition covers '*natural, rural, urban and peri-urban areas*'. It recognises that landscape has important cultural, ecological, environmental and social dimensions and is a key element of achieving sustainable development. In this urban context, the use of the word 'landscape' is more appropriately termed 'townscape' though the constituent factors remain consistent.

Approach

10.17 The Townscape and Visual Impact Assessment will be carried out with reference to the Guidelines for Landscape & Visual Impact Assessment. The methodology is drawn from the GLVIA, 3rd Edition³¹.

10.18 The scope of the assessment proposed to remain as stated for each of the ICA Assessment Scenarios.

10.19 A three-stage assessment process has been adopted. Firstly, the nature of receptors (sensitivity) will be assessed, and secondly, the nature of effects (magnitude) likely to result from the proposed development will be assessed. From this, the overall significance of the identified effects on receptors will be determined.

10.20 Desk-based studies will be carried out to collate and map baseline townscape information, and a review of relevant policy and guidance will be used to inform the assessment.

10.21 A Principal Viewpoints plan has been produced as part of this Scoping Report (see **Figure 10.1 (embedded)**). The viewpoints were selected through a process of desktop survey and assessment. A total of 7 viewpoints have been selected, and are considered representative viewpoints from key visual receptors. Viewpoints were excluded where there is likely to be no significant impact. Due to the site topography and intervening tree cover and built form, mid and long distance views are proposed to be scoped out of the assessment. This is

due to the nature of the proposals and generally small scale features, that would be completely screened from surrounding areas. Views have been selected close to the site edges where the proposed changes would be highly visible.

- 10.22 It is proposed that fully rendered photomontages would be prepared for all indicated views. The photography and preparation of any visually verified photomontages will be prepared in accordance with the Landscape Institutes Advice Note 06/1932.
- 10.23 To produce the most comprehensive, rounded and objective view of the townscape and visual impacts, any significant effects will be agreed following round-table review by the team of qualified assessors.

Identification of Effects which are Not Significant

- 10.24 The following effects have been identified and are not considered significant. They will not be considered further with the EIA or reported in the ES. A factual evidence base has been provided below to support this.

Townscape Effects on Topography during Construction and Operational Phases

- 10.25 The topography within the Site has been historically remodelled to accommodate previous development. The topography is therefore not considered to be a sensitive townscape receptor. The Proposed Scheme will work with the existing site levels, and it is anticipated that much of the demolition waste arisings will be reused on the site and that a broad cut/fill balance will be achieved. The magnitude of change is therefore predicted to be low.
- 10.26 Therefore, effects on topography is/are unlikely to be considered significant and will not be considered further within the EIA or reported in the ES.

Identification of Likely Significant Effects and Receptors

- 10.27 The following effects shown in Table 10.1 below have been identified and will be assessed within the EIA and reported in the ES.
- 10.28 See **Figure 10.1 (embedded)** that accompanies this report for the locations of the identified viewpoints.

Table 10.1: Townscape and Visual Likely Significant Effects and Receptors

Effect	Receptor	Applicable Development Phase (Construction or/and Operational)
Changes to townscape character within the Site and study area around the Site. (The study is defined as approximately 500m from the centre of the Site and in accordance with the Landscape Institute	The Site (direct effect) and local site context (potential indirect effect). Surrounding context of Manchester City Centre, as the aspirations of the wider Northern Gateway SRF.	C / O

Guidelines, 'includes the site and the wider townscape around it which the proposed development may influence in a significant manner')		
Changes to urban grain within the Site and surrounding study area. (The pattern and scale of streets, blocks and plots.)	The site (direct effect) and surrounding local context (indirect effect). The underlying topography and changing uses, has led to a very loose and ill-defined urban grain, and left over spaces.	C / O
Changes to land use within the Site and surrounding study area.	The Site (direct effect) and local site context (potential indirect effect). The land use has changed significantly in the past, although it is now dominated by poor quality industrial uses, car parks and derelict green spaces.	C / O
Changes to public open space and woodland.	Direct effects on the public open space network – particularly St Catherine's Wood.	C / O
Changes to movement and linkages within the surrounding study area.	Direct effects on pedestrian and cycle movement along the River Irk corridor and across the Irk Valley. And Direct effects on vehicular movement within the site.	C / O
Changes to site character.	Direct effects on site character. The existing character is poor due to the degraded nature of the site.	C / O
Changes to the character and amenity of views.	The following viewpoint locations are being considered: View 1- View from Listed Union Bridge/ Dantzic Street looking north across site. To highlight effects to views of the listed structure and potential changes to the appearance of the river edge. View 2 - View from footway of Dalton Street looking across bridge into St Catherine's Wood. To highlight potential effects on views into the existing green space and existing bridge entrance point. View 3 – View from Collyhurst Road footway looking across River Irk and into St Catherine's Wood. To highlight potential effects on views into the existing green space and appearance of proposed new bridge entrance into the park.	C / O

	View 4 – Elevated view from Barney Steps bridge and public footpath looking south west over site. To highlight potential effects to elevated views from footpath and changing site character/ appearance to central areas. View 5 - Elevated View from footway at corner of St Chads Street/ Stanley Street looking east. To highlight potential effects to views along Redbank Road and the street character around new site entrance point. View 6 – View from viaduct gateway on Roger Street looking south east across the site. To highlight potential effects to views into the site from existing entrance gateway/ arrival point, and changing townscape character of lower internal site areas. View 7 - Elevated view from Sand Street Park pathway looking west over site. To Highlight effects to views from elevated public open space and pathway.	
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Figure 10.1: Proposed Viewpoint Location Plan



Limitations and Assumptions

10.29 To ensure transparency within the EIA process, the following limitations and assumptions have been identified.

- The assessment relies on available data, and best endeavours have been made to ensure that the data are accurate and up to date. It is assumed that OS mapping information, topographic and 3D data and Historic England heritage mapping information are all up to date.
- The GLVIA methodology provides a robust and transparent process for assessment of townscape and visual effects, and is used alongside visually verified photomontages which provide a high level of detail and technical accuracy. Significant effects will be determined through professional judgment, carried out by a team of assessors to provide scrutiny where this is relied upon.

Significance Criteria

10.30 The scale shown in Table 10.2 is used to guide the assessment of the significance of both townscape and visual effects, from a combination of the assessment of receptor sensitivity and the magnitude of effects:

Table 10.2: Assessment of Townscape or Visual Significance

		Magnitude of Effect				
Sensitivity of Receptor		Major Effect	Moderate Effect	Minor Effect	Negligible Effect	No Change
	High	Major	Moderate	Moderate	Minor	Negligible
	Medium	Moderately	Moderately	Minor	Negligible	Negligible
	Low	Moderately	Minor	Negligible	Negligible	Negligible

10.31 The table has regard to guidance in the GLVIA at paragraph 5.56, page 92 (significance of landscape effects) and paragraph 6.44, page 116 (significance of visual effects). This matrix is used as a guide to determine significance, along with professional judgement.

10.32 The TVIA categorises the significance of effects as Major, Moderate, Minor or Negligible, consistent with other chapters of the ES. Effects can be beneficial, neutral or adverse. All proposed development effects are considered to be permanent.

Confidence

10.33 The predicted effect is assessed against the criteria set out below in order to attribute a level of confidence to the visual assessment:

- High – The predicted effect is either certain, or very likely to occur, based on reliable information or previous experience;
- Medium – The predicted effect and its level are best estimates, based on on-site and desktop study; and

- Low – The predicted effect and its level are best estimates, based on given knowledge and experience. More information may be needed to improve the level of confidence.

Cumulative Effects

- 10.34 A separate cumulative effects chapter will also be presented at Chapter 18 of the ES. This will assess the cumulative impacts of the proposed development in conjunction with any committed developments within the vicinity of the sites identified through the scoping process, as well as the wider development project (Applications 1, 3 and 4) and the wider SRF. The approach will be aligned with the assessment scenarios outlined in Section 4 of this Scoping Report.

11. Transport and Access

- 11.1 This section of the ES will assess the potential impacts of the development on the local road network in the surrounding area to the site during the demolition and construction phase only. The assessment of transport and access will be undertaken by Arup.

Site Context

- 11.2 Immediate road surrounding the site, including but not limited to Red Bank road and Honey Street, are minor roads that currently serve a range of industrial uses. The roads are currently used for on-street parking, potentially associated with these industrial uses as well as city centre commuters.
- 11.3 Beyond these streets, the A665 Cheetham Hill Road and A664 Rochdale Road provide major radial routes to and from the city centre and carry a mix of road users including buses. Bus stops are located on these routes providing public transport access to the site.
- 11.4 Victoria Station is located approximately 420m to the south-west of the proposed development and is one of the main transport interchanges within Manchester City Centre with heavy and light rail services, buses and taxis. Shudehill interchange, one of the main bus stations within the City Centre is located approximately 600m south of the proposed development.
- 11.5 The Inner Relief Route separates the proposed development from the City Centre (A665 Cheetham Hill Road). This forms a potential barrier to pedestrian movements though signal-controlled crossings are provided.
- 11.6 The proposed geographic scope of assessment is bound by the following road:
- A664 Rochdale Road.
 - A665 Cheetham Hill Road.
 - Inner Relief Route.
 - A6010 Queens Road.

Planning Policy Context

National Planning Policy and Legislation

- 11.7 The following national planning policy documents will be considered in the definition of baseline conditions and the completion of assessment work:
- National Planning Policy Framework (NPPF).

Local Planning Policy

11.8 The following local planning policy documents will be considered in the definition of baseline conditions and the completion of assessment work:

- Greater Manchester's 4th Local Transport Plan.
- Manchester City Council (MCC) Core Strategy.

Other Relevant Policy, Standards and Guidance

11.9 The assessment will be based upon the Institute of Environmental Management & Assessment's 'Guidelines for the Environmental Assessment of Road Traffic' (the IEMA Guidelines). The IEMA Guidelines suggest in paragraph 3.15 that two broad rules-of-thumb be used as a screening process to delimit the scale and extent of the assessment. These are:

- Rule 1: include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%).
- Rule 2: include any other specifically sensitive areas where traffic flows have increased by 10% or more.

11.10 These rules-of-thumb form the starting point for the scoping of the assessment of effects. Specifically, sensitive areas under Rule 2 include accident 'black-spots', conservation areas, hospitals and links with high pedestrian flows.

Approach

11.11 During demolition and construction, the proposed development has the potential to adversely affect traffic conditions through delays to all road users either as a direct result of the development or due to increases in traffic during construction. These potential effects will be assessed.

11.12 During operation, the proposed development will not generate traffic movements and will not adversely affect traffic conditions. As such, it is proposed to scope operational assessments out.

11.13 As such, in respect of the ICA, Assessment Scenarios 1a, 1b and 1c will be assessed. Assessment Scenarios 2a, 2b and 2c are scoped out of the assessment.

11.14 A separate Transport Assessment (TA) will be prepared to accompany the planning application for the proposed development. The ES will be informed by the predicted transport impacts provided within the TA. The TA will include predicted trip generation, mode share and distribution of vehicle trips on the highway network arising from the Proposed Development. Assessment of the highway impact of the Proposed Development will be undertaken for future years to be agreed with Manchester City Council (MCC).

11.15 Consultation will be undertaken with MCC as the Highway Authority and TfGM.

Significance Criteria

11.16 The significance of the effects of the Proposed Development will be considered in respect of the following subject areas, based on the IEMA Guidelines:

- Severance.
- Driver delay.
- Pedestrian delay.
- Pedestrian amenity.
- Fear and intimidation.
- Accidents and safety.
- Hazardous Loads have not been included because the transport of hazardous loads is not expected to be associated with the proposed development.

Magnitude of Impact

11.17 To assess the likely significant effects of the proposed development in transportation terms, the scale in Table 11.3 has been used. This is informed by the IEMA Guidelines.

Table 11.3: Magnitude of Impact

Subject	Magnitude of Impact			
	High	Moderate	Low	Negligible
Severance	Change in highway link traffic flow of over 60%	Change in highway link traffic flow of 30% to less than 60%	Change in highway link traffic flow of 10% to less than 30%	Change in highway link traffic flow of less than 10%
Driver Delay	Change in traffic flow through junction of over 30%	Change in traffic flow through junction of 10% to less than 30%	Change in traffic flow through junction of 5% to less than 10%	Change in traffic flow through junction of less than 5%
Pedestrian Delay	Change in highway link traffic flow of over 60%	Change in highway link traffic flow of 30% to less than 60%	Change in highway link traffic flow of 10% to less than 30%	Change in highway link traffic flow of less than 10%
Pedestrian Amenity	Change in highway link traffic flow of over 60%	Change in highway link traffic flow of 30% to less than 60%	Change in highway link traffic flow of 10% to less than 30%	Change in highway link traffic flow of less than 10%
Fear and Intimidation	Change in highway link traffic flow of over 60%	Change in highway link traffic flow of 30% to less than 60%	Change in highway link traffic flow of 10% to less than 30%	Change in highway link traffic flow of less than 10%

Accidents and Safety	Personal injury accident rate changed and above national average	Personal injury accident rate changed but below national average	Slight change to personal injury accident rate	No change to personal injury accident rate
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Sensitivity of Receptor

- 11.18 The definitions for the sensitivity of receptors are presented in Table 11.4 and have been based upon the UK Government's Design Manual for Roads and Bridges (DMRB) 11.2.5, Table 2.1.

Table 11.4: Defining Sensitivity of Receptor

Sensitivity	Definition
Very High	Very high importance and rarity, international scale and very limited potential for substitution.
High	High importance and rarity, national scale, and limited potential for substitution.
Moderate	High or moderate importance and rarity, regional scale, limited potential for substitution.
Low	Low or medium importance and rarity, local scale.
Negligible	Very low importance and rarity, local scale.

Duration of Effect

- 11.19 The duration of the effect will be taken into consideration for each assessment scenario. The duration of effect considered for each scenario are presented in Table 11.5.

Table 11.5: Duration of Effect

Time Scale	Duration
Short Term	0 to 5 years including the construction period and on completion
Medium Term	5 to 15 years including mitigation establishment
Long Term	15+ years including operation of the development

Significance of Effect

- 11.20 To assess the likely significant effects of the Proposed Development in transportation terms, the Significance Scale in Table 11.6 has been used:

Table 11.6: Significance Scale for transport assessment

Significance Scale	Description
Major beneficial	the Proposed Development would have a very significant positive impact on the transport network
Moderate beneficial	the Proposed Development would have a noticeable positive impact on the transport network
Minor beneficial	the Proposed Development would have a small positive impact on the transport network
Negligible	no discernible impact is expected as a result of the Proposed Development

Minor adverse	the Proposed Development would have a small negative impact on the transport network
Moderate adverse	the Proposed Development would have a noticeable negative impact on the transport network
Major adverse	the Proposed Development would have a very significant negative impact on the transport network.

- 11.21 The Significance Scale is derived from the interaction of receptor sensitivity and magnitude of change of effect. A matrix of Magnitude of Change and Sensitivity of Receptor is set out in Table 11.7. Moderate or significant effects are considered significant for the purposes of the EIA regulations.

Table 11.7: Magnitude of Change

Magnitude of Change	Sensitivity of Receptor				
	Very High	High	Moderate	Low	Negligible
High	Major	Major	Major	Moderate	Negligible
Moderate	Major	Major	Moderate	Minor to Moderate	Negligible
Low	Major	Moderate	Minor to Moderate	Minor	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible	Negligible

Cumulative Effects

- 11.22 A separate cumulative effects chapter will also be presented at Chapter 18 of the ES. This will assess the cumulative impacts of the proposed development in conjunction with any committed developments within the vicinity of the sites identified through the scoping process, as well as the wider development project (Applications 1, 3 and 4) and the wider SRF. The approach will be aligned with the assessment scenarios outlined in Section 4 of this Scoping Report.

12. Air Quality and Dust

- 12.1 The planning process is a key means of managing and improving air quality, particularly in the long term, through the strategic location and design of new developments. Any air quality consideration that relates to land use and its development can be a material planning consideration in the determination of planning applications, dependent upon the details of the proposed development. The Air Quality and Dust assessment in relation to the demolition and construction phase of the infrastructure works will be undertaken by Arup.

Site Context

- 12.2 This report reviews the existing air quality conditions in the vicinity of the proposed development, including identifying local sources of air pollution, and any potentially significant air quality impacts resulting from the proposed development. The site is not within an Air Quality Management Area (AQMA); however, it is adjacent to an AQMA. The wider context is largely light industrial and commercial in nature.
- 12.3 The proposed development has the potential to cause air quality impacts at sensitive locations during the infrastructure works. These may include fugitive dust emissions from construction works and road vehicle exhaust emissions generated by the construction.
- 12.4 The potential effects have been assessed in the context of relevant air quality policies and recommendations have been provided where necessary to mitigate any potential risks to air quality.

Planning Policy Context

National Planning Policy

- 12.5 The following national planning policies have been taken into account:

- National Planning Policy Framework (2021)³⁰.
- Planning Practice Guidance (2014)³¹.
- Clean Air Strategy³².
- Environment Bill (currently not law)³³.

Regional and Local Planning Policy

- 12.6 The following regional and local planning policies have been taken into account:

- Greater Manchester Air Quality Action Plan 2016-2021³⁴.

³⁰ Department for Communities and Local Government (2021) National Planning Policy Framework

³¹ Department for Communities and Local Government (2014) Planning Practice Guidance: Air Quality

³² Defra (2019). Clean Air Strategy 2019.

³³ UK Parliament. Available at: <https://bills.parliament.uk/bills/2593> [Accessed 26/10/2021].

³⁴ Greater Manchester Combined Authority and Transport for Greater Manchester (2016) Greater Manchester Air Quality Action Plan 2016-2021

- Greater Manchester Low-Emission Strategy³⁵.
- Greater Manchester Transport Strategy 2040³⁶.

Other Relevant Policy, Standards and Guidance

12.7 The following policy, standards and guidance have been taken into consideration where relevant:

- Local Air Quality Management Policy Guidance and Technical Guidance^{37 38}.
- Institute of Air Quality Management Dust Guidance³⁹.
- EPUK/IAQM Land-Use Planning & Development Control⁴⁰.

Approach

12.8 It is proposed that air pollutant concentrations in the area will be assessed to identify current baseline levels and determine any constraints or impacts associated with the development during the construction phases. It is therefore proposed that the following scope of works will be carried out:

- Consultation will be undertaken with the Environmental Health Officer (EHO) at MCC to agree the methodology of the assessment prior to commencement. This will include the guidance documents to be followed, the scope of works and the choice of assessed receptors.
- A baseline assessment will be undertaken to determine existing air quality conditions in the area around the proposed development. Data will be obtained from the council's local air quality management reports and Defra's local air quality management website⁴¹.
- An assessment of dust emissions during the construction phase of the proposed development will be undertaken. The Institute of Air Quality Management (IAQM) guidance³⁹ for the assessment of dust from demolition and construction will be followed.
- Changes to traffic flows during the infrastructure works will be screened using the thresholds set out by Environmental Protection UK (EPUK) and the IAQM⁴⁰. It is not expected that the traffic volumes for the infrastructure works will exceed the thresholds, however if they do a detailed assessment will be carried out.
- A qualitative assessment to indicate risks, identify likely assessment required and inform design for the following planning applications will be carried out.
- The air quality assessment will be detailed in a technical report, which will include the results of the assessment and any mitigation measures required for the infrastructure works, where necessary.

³⁵ Greater Manchester Combined Authority and Transport for Greater Manchester (2016) Greater Manchester Low-Emission Strategy

³⁶ Transport for Greater Manchester (2016) Greater Manchester Transport strategy 2040. Available at: <http://www.tfgm.com/2040/Pages/default.aspx> [Accessed 26/10/2021]

³⁷ Defra (2016) Local Air Quality Management Policy Guidance. PG(16)

³⁸ Defra (2016) Local Air Quality Management Technical Guidance.TG16

³⁹ IAQM (2016) Guidance on the Assessment of Dust from Demolition and Construction (v1.1)

⁴⁰ EPUK/IAQM, (2017) Land-Use Planning & Development Control: Planning for Air Quality

⁴¹ <https://laqm.defra.gov.uk/>

- 12.9 In respect of the ICA, Assessment Scenarios 1a, 1b and 1c will be assessed in respect of demolition and construction phase. Assessment Scenarios 2a, 2b and 2c relating to the completed development and operational phase are scoped out of the assessment.

Baseline

Sources of Air Pollution

Industrial Processes

- 12.10 The 2015 Pollution Inventory (PI)⁴² shows there is one Part A process, which releases to the air within 2km of the proposed development. None of the pollutants that have been identified from the facility are close to exceeding their relevant objectives in Manchester.

Road Traffic

- 12.11 In recent decades, atmospheric emissions from transport on a national basis have grown to match or exceed other sources in respect of many pollutants, particularly in urban areas. Vehicle emissions are likely to be one of the more dominant sources of air pollutants in the vicinity of the proposed development.
- 12.12 The main sources of traffic emissions within 2km of the development site are the A665, A6010, A665 and the A62. These major roads carry significant volumes of traffic. Local air quality monitoring discussed further below has indicated roadside concentrations are likely to be above the air quality objectives for annual mean NO₂ pre-2020 and there would be elevated levels of fine particulate matter.

Local Air Quality

- 12.13 The development site is not within an AQMA; however, it is adjacent to an AQMA to the southwest. MCC declared the Manchester AQMA in 2001 due to exceedances of the nitrogen dioxide (NO₂) annual mean objective and particulate matter (PM₁₀) 24-hour mean objective⁴³. The Manchester AQMA was amended in 2007, to refer only to the exceedances of the annual mean NO₂ objective of 40 µg/m³. Since this declaration the Greater Manchester Combined Authority (GMCA) has been formed, the title of the AQMA has been amended to the GMCA AQMA. The GMCA AQMA is described as the area covering Manchester city centre, around Manchester Airport and the main arterial traffic routes in the city.
- 12.14 Based on the GMCA's latest Air Quality Status Report (ASR) 2021, MCC undertook passive air quality monitoring of NO₂ using diffusion tubes at 40 sites during 2020. Table 12.1 provides the historical monitoring results at the closest monitoring locations to the Site for the years 2016 – 2020. All the monitoring sites below are in the AQMA; six of these sites were recording exceedances of the annual mean NO₂ objective in 2016, this had fallen to four sites in 2019 and zero in 2020. However, it is important to note that 2020 concentrations will have been heavily influenced by the marked drop in traffic as a result of the national lockdowns, and therefore, will likely be an outlier. The development site is not within an AQMA and is set back from major roads, therefore, it is

⁴³ Defra. Available at: <https://uk-air.defra.gov.uk/aqma/list> [Accessed 26/10/21]

expected that concentrations across the site will fall towards background levels and as a result, will be in compliance of all relevant objectives.

Table 12.1 Air Quality Monitoring Results

Site ID	Site Name	Site Type	Distance from Site	Grid Reference		NO ₂ Annual Mean Concentration (µg/m ³)				
				X	Y	2016	2017	2018	2019	2020*
MA36NO	Rochdale Road	Roadside	380m (E)	385203	399750	40.1	34.0	33.1	31.7	24.3
MA88NO	Hyde Rd/Clowes St	Kerbside	501m (S)	384469	398981	57.8	57.9	46.8	45.2	30.1
MA26ANO	Chethams School	Urban Background	720m (SW)	383973	398874	37.1	35.5	33.4	33.0	22.9
MA104NO	Cheetwood Primary School	Roadside	998m (S)	383511	399906	-	-	-	-	30.6
MA103NO	Queens Rd, Harpurhey	Roadside	1.3km (NE)	385431	400653	-	-	-	-	35.5
MA9ANO	Newton Street	Kerbside	1.3km (S)	384601	398303	51.9	51.1	45.8	44.9	32.5
MA61NO	Piccadilly Gardens	Urban Background	1.3km (S)	384310	398337	40.8	35.7	31.6	33.1	22.3
MA71NO	Great Ancoats Street	Roadside	1.4km (SE)	385161	398290	51.2	50.4	46.1	45.3	31.4
MA24NO	Princess Street	Kerbside	1.6km (SW)	383968	398070	45.3	44.7	40.3	40.8	26.8
Note: Bold indicates an exceedance of the NO₂ annual mean objective of 40µg/m³ Asterisk denotes all data during 2020 – this should be treated with caution as this will have been heavily influenced by the marked drop in traffic as a consequence of the national lockdowns.										

12.15 Defra also provides estimated background air quality data in the form of background pollutant concentration maps based on the latest 2018 monitoring results across the UK. Background concentrations of NO₂, PM₁₀ and PM_{2.5} are provided for each 1x1 km grid for each local authority area. The values representative of the site in 2019, 2020, 2021, 2024 and 2025 are summarised in Table 12.2 below.

Table 12.2 Air Quality Background Concentrations from Defra

Site ID	Grid Reference		Annual Mean Concentration ($\mu\text{g}/\text{m}^3$)					Annual Mean Air Quality Objective ($\mu\text{g}/\text{m}^3$)
	X	Y	2019	2020	2021	2024	2025	
NO ₂	384500	399500	22.2	21.1	20.3	18.4	17.8	40
PM ₁₀			12.5	12.2	12.1	11.8	11.7	40
PM _{2.5}			8.2	8.0	7.9	7.7	7.6	20

Summary of Receptors and Potential Impacts

Receptors

- 12.16 An assessment of impacts on sensitive human and ecological receptors will be undertaken. The key potential receptors have been identified as follows:
- R1 - Collyhurst Nursery School & Children's Centre.
 - R2 - St Malachy's Primary School.
 - R3 - Saviour Primary School.
 - R4 – Residential properties on Dalton Street.
- 12.17 A further review will be carried out to consider all receptor types noted in the Institute of Air Quality Management Dust Guidance⁴⁴.
- 12.18 There are no designated ecological sites within 500m of the site, as such no assessment of impacts related to dust risk is included and if required, they can be considered in the qualitative assessment for the future phases.

Construction

- 12.19 During the infrastructure works, the potential may exist for fugitive emissions to occur from:
- The demolition of existing buildings on site.
 - The handling and size reduction of resultant materials.
 - Earthworks and enabling works.
 - Construction of internal access roads and junctions along with footbridge.
 - 'Trackout' of materials from site on to the local road networks.

⁴⁴ IAQM (2016) Guidance on the Assessment of Dust from Demolition and Construction (v1.1)

- 12.20 If the significance of effect is moderate adverse or greater, then mitigation will be required. The required mitigation measures will be identified based on the assessed potential air quality impacts for the infrastructure works mitigation can be fed into a scheme code of construction practice (CoCP). For the operational phase qualitative review any mitigation will be identified at a high level.

Significance Criteria

- 12.21 The IAQM guidance for the assessment of dust impacts will be used to determine dust risk and significance following any required mitigation.
- 12.22 For the qualitative review of future works the potential significance of effect on sensitive receptors will be assessed as per the guidance provided by Environmental Protection UK & Institute of Air Quality Management (Development Control: Planning for Air Quality guidance)¹³.

Cumulative Effects

- 12.23 A separate cumulative effects chapter will also be presented at Chapter 18 of the ES. This will assess the cumulative impacts of the proposed development in conjunction with any committed developments within the vicinity of the sites identified through the scoping process, as well as the wider development project (Applications 1, 3 and 4) and the wider SRF. The approach will be aligned with the assessment scenarios outlined in Section 4 of this Scoping Report.

13. Noise and Vibration

- 13.1 The noise and vibration assessment will assess the impacts of the proposed development on existing local noise and vibration sensitive receptors. The assessment will consider the potential impacts during the demolition and construction phase of the proposed development and where necessary, mitigation will be recommended to meet appropriate noise requirements for the scheme. The noise and vibration assessment will be undertaken by Arup.

Site Context

- 13.2 The site is bound by existing commercial and industrial uses to the north, hardstanding car park and existing commercial units to the west, Dantzic Street and Collyhurst Road to the south, and existing commercial units to the east.
- 13.3 The existing noise climate is dominated by road traffic noise emanating from the surrounding highway network within the City Centre and train lines associated with Victoria Station.

Planning Policy Context

National Planning Policy

- 13.4 Paragraph 174 of the National Planning Policy Framework⁴⁵ (NPPF) requires planning policies and decisions to *"contribute to and enhance the natural and local environment by ... Preventing both new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by unacceptable levels of ... noise pollution"*.
- 13.5 Paragraph 123 of the NPPF states that *"... planning policies and decisions should ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:*
- *mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*
 - *identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason."*
- 13.6 In the case of environmental noise, the NPPF planning objectives are addressed through the Noise Policy Statement for England⁴⁶ (NPSE). The NPSE states the following aims: *"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:*

⁴⁵ Ministry of Housing, Communities & Local Government (2021); *National Planning Policy Framework*

⁴⁶ Department for Environment, Food & Rural Affairs (2010); *Noise Policy Statement for England*

- Avoid significant adverse health impacts on health and quality of life;
- Mitigate and minimise adverse impacts on health and quality of life; and
- Where possible, contribute to the improvement of health and quality of life."

13.7 Within these aims, the NPSE uses the key phrases "significant adverse" and "adverse". In clarifying what these mean the policy notes that "...there are two established concepts from toxicology that are currently being applied to noise effects, for example, by the WHO". These concepts are:

- NOEL - no observed effect level, the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise; and
- LOAEL - lowest observed adverse effect level, the level above which adverse effects on health and quality of life can be detected.

13.8 The policy extends these concepts to include:

- SOAEL - significant observed adverse effect level, the level above which significant adverse effects on health and quality of life occur.

Local Planning Policy

13.9 The key local planning policies for consideration within the noise and vibration assessment are set out in Manchester City Council's Planning & Noise: Technical Guidance dated December 2015.

Other Relevant Policy, Standards and Guidance

13.10 The assessment will be undertaken in line with best practice guidance documents to inform the approach and impact assessment. Those documents which will be used to inform the assessment are listed below:

- ProPG: Planning and Noise (2017).
- Planning Practice Guidance - Noise (2019).
- British Standard 8233: 2014 Guidance on sound insulation and noise reduction for buildings.
- British Standard 4142: 2014 +A1: 2019 Method for rating and assessing industrial and commercial sound.
- British Standard 7445-1: 2003 Description and measurement of environmental noise. Guide to quantities and procedures.
- British Standard 5228: 2009+A1: 2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites Parts 1 and 2.
- Design Manual for Roads and Bridges LA111 – Noise and vibration (Formerly HD213/11).
- Calculation of Road Traffic Noise (1988).

Approach

13.11 The work to be undertaken will include the following elements:

- Assessment of demolition and construction noise impact on existing and proposed local noise and vibration sensitive receptors in the vicinity of the site;
 - Assessment of demolition and construction vibration impact on existing and proposed local noise and vibration sensitive receptors in the vicinity of the site;
 - Assessment of demolition and construction traffic noise impact on existing and proposed local noise and vibration sensitive receptors in the vicinity of the site;
- 13.12 In respect of the ICA, Assessment Scenarios 1a, 1b and 1c will be assessed in respect of demolition and construction phase. Assessment Scenarios 2a, 2b and 2c relating to the completed development and operational phase are scoped out of the assessment as there are not predicted to be significant effects associated with this phase of development.
- 13.13 For the purposes of this assessment, it is assumed that demolition and construction work will take place only during the hours of 0700-1900 on weekdays and 0700-1300 on Saturdays.
- 13.14 A review of existing survey information and online noise mapping shows that ambient noise levels in the vicinity of the site during these periods are generally below $65\text{dBL}_{\text{Aeq,T}}$, which is the threshold value for application of the lowest construction noise limits (Category A) as detailed in Table E.1 of BS 5228-1:2009+A1:2014.
- 13.15 Due to the significant number of noise-receptors in the vicinity of the site, it is considered impractical to obtain detailed noise survey information for each receptor to allow individual thresholds to be set. Therefore, it is proposed to apply the lower $65\text{dBL}_{\text{Aeq,T}}$ (Category A) threshold to all noise-sensitive receptors as a worst-case assessment.
- 13.16 The assessment will also include a summary of available noise and vibration mitigation measures and details of how compliance with Best Practice Means (BPM), stated construction working hours and derived construction noise limits could be ensured through the use of appropriately worded planning conditions.

Significance Criteria

- 13.17 For each assessment that is undertaken, the significance of impact will be determined drawing upon clearly defined significance criteria. These criteria will account for both the impact magnitude and the sensitivity of the receptor to that impact magnitude. Individual impact scales will be generated for each assessment that is undertaken, drawing upon applicable best practice guidance for that assessment.

Cumulative Effects

- 13.18 A separate cumulative effects chapter will also be presented at Chapter 18 of the ES. This will assess the cumulative impacts of the proposed development in conjunction with any committed developments within the vicinity of the sites identified through the scoping process, as well as the wider development project (Applications 1, 3 and 4) and the wider SRF. The approach will be aligned with the assessment scenarios outlined in Section 4 of this Scoping Report.

14. Waste

- 14.1 The purpose of this chapter is to identify and evaluate the potential for significant effects associated with the management of wastes arising from the proposed development, in the context of the site and surrounding region.
- 14.2 The chapter describes the current baseline conditions at the site and surroundings, the potential receptors and effects arising from the need to dispose of waste arisings, and the methods used to assess the likely significant effects.
- 14.3 The waste assessment will be carried out by Arup.

Site Context

- 14.4 The proposed development site is predominantly occupied by redundant infrastructure and open land with little potential for ongoing waste generation. Limited information is currently available about the structures and buildings within the red-line boundary.
- 14.5 The proposed development site is situated within the Manchester City Metropolitan District Council area, who comprise of the Waste Collection Authority for the site. The designated Waste Disposal Authority for the site, is the Greater Manchester Combined Authority (GMCA), which is England's largest Waste Disposal Authority, responsible for the management and disposal of municipal waste from the Greater Manchester area. The GMCA manages 1.1 million tonnes of waste each year, from the metropolitan districts of Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside and Trafford. Though Wigan is also part of Greater Manchester, it administers its own waste disposal operations.
- 14.6 The Greater Manchester Joint Waste Development Plan estimates that between 2012 and 2027 a total of 5.9 million tonnes of waste disposal capacity will be required. The plan estimates there will be sufficient non-hazardous landfill capacity up to 2027 and beyond. As of 2020 there was 4,442,145 tonnes of void space, at one remaining landfill site, reported in the Waste Plan monitoring report. In the same period, a total of 272,000 tonnes of hazardous waste disposal capacity will be required, this will be accommodated at a specially engineered cell within one of these landfill facilities. According to Environment Agency data, within the wider North West region there is approximately 7.8 million tonnes of inert, 23 million tonnes non-hazardous and 9.5 million tonnes of hazardous landfill void capacity⁴⁷.

Planning and Policy Context

National Planning Policy

- 14.7 The following national planning policy documents will be considered in the definition of baseline conditions and the completion of assessment work:

⁴⁷ Environment Agency (2021) 2020 Waste Data Interrogator, Available online at: <https://data.gov.uk/dataset/bb40d091-a346-4b75-aa54-df7d347bed93/2020-waste-data-interrogator>

- 14.8 Our Waste, Our Resources: a Strategy for England (2018)⁴⁸ - The Resources and Waste Strategy for England 2018 focuses on the importance of driving waste management up the waste hierarchy and states the importance of considering the Government's ambition of promoting resource efficiency and moving towards a circular economy. There is a focus on producer responsibility, minimising plastic wastes and improving recycling rates, though the collection of a consistent set of dry recyclable materials from all households and businesses, weekly separate food waste collection for every household and appropriate businesses and eliminating the disposal of food waste to landfill by 2030. New recycling targets will be adopted in line with the EU Circular Economy Package which include: 55% by 2025; 60% by 2030; and 65% by 2035. In addition, there is an ambition for reviewing and consulting on extended producer responsibility for some construction materials. The Green Construction Board has begun developing guidance for increasing resource efficiency and reducing waste in the construction sector through the adoption of circular economy principles and establishing a definition for net zero avoidable waste.
- 14.9 The Waste Management Plan for England (2021)⁴⁹ fulfils the requirements of the Waste (England and Wales) Regulations 2011 for waste management plans to be reviewed every six years. While the Resources and Waste Strategy sets out a vision and associated policies to move to a more circular economy, the Waste Management Plan for England focuses on waste arisings and their management. It provides a high-level analysis of the current waste management situation in England and evaluates how implementation of the objectives of the Waste (England and Wales) Regulations 2011 will be supported.
- 14.10 National Planning Policy for Waste 2014 (Department for Communities and Local Government)⁵⁰- The National Planning Policy for Waste is the formal replacement for Planning Policy Statement 10 (PPS10). It still follows the principles set out in PPS10, which states that waste should be managed in line with the principles of the waste hierarchy. It is important to ensure that, where possible, waste arisings are minimised to reduce environmental impacts
- 14.11 Waste Planning Practice Guidance 2015 (Department for Communities and Local Government)⁵¹- The Planning Practice Guidance 2015 details how to adhere to the National Planning Policy for Waste 2014. The guidance should be followed to satisfy the local planning authority that impacts introduced by a proposed development on the existing waste management facilities are acceptable and do not prejudice the implementation of the waste hierarchy.

Local Planning Policy

- 14.12 Greater Manchester Joint Waste Development Plan⁵² - The Joint Waste Development Plan sets out the strategic spatial planning policy for the provision of waste management infrastructure across the unitary

⁴⁸ DEFRA (2018) *Our waste, our resource*, Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf

⁴⁹ Department for Environment Food and Rural Affairs (2021), *Waste Management Plan for England*. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/955897/waste-management-plan-for-england-2021.pdf

⁵⁰ Department for Communities and Local Government (2014). *National Planning Policy for Waste*, Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/364759/141015_National_Planning_Policy_for_Waste.pdf

⁵¹ Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2015) *Waste Planning Practice Guidance 2015*. Available online at: <https://www.gov.uk/guidance/waste>

⁵² Association of Greater Manchester Authorities (AGMA) (2012) *Greater Manchester Joint Waste Development Plan*. Available online at: https://secure.manchester.gov.uk/downloads/download/4804/greater_manchester_joint_waste_development_plan_documents

authorities of Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan (which administers its own waste disposal options). This also includes the authorities' aspirations for all levels of waste management until 2027: prevention; reuse; recycling; recovery; and disposal.

- 14.13 The Manchester City Council Local Development Framework Core Strategy outlines the Council's vision for Manchester in 2027 along with the planning policies used to support it. Policy EN 19 of the strategy sets out the planning measure that the council will employ to enable waste management in the area to meet their ambitions for development. Of relevance to the proposed development is the requirement for all developers to submit a waste management plan that demonstrates how construction and demolition waste will be minimised and recycled on site wherever possible and how the sustainable waste management needs of the end user will be met. Furthermore, the policy requires that all developers, demonstrate that their proposals are consistent with the principles of the waste hierarchy.

Other Relevant Policy, Standards and Guidance

- 14.14 IEMA Guide To: Materials and Waste in Environmental Impact Assessment⁵³- This document offers guidance and recommendations for EIA practitioners and stakeholders concerned with the impacts and effects of materials and waste on the environment. The guidance provides considerations for screening, scoping, consultation, assessment, and subsequent reporting and monitoring. The aim of this document is to provide initial guidance on the key terms, concepts, and considerations for assessing the environmental impacts and effects of materials and waste, as part of the EIA process. This includes providing practitioners with a process and checklist applicable to each stage of the EIA process.

Approach

Overview

- 14.15 The assessment of Waste will be undertaken in accordance with the assessment methodologies described within the Institute of Environmental Management and Assessment (IEMA) Guide To: Materials and Waste in Environmental Impact Assessment (EIA) (hereafter referred to as the 'IEMA Guidance')⁵³.
- 14.16 With respect to the types of waste likely to be generated by the proposed development, and the regime under which their management is regulated, under the IEMA guidance the waste topic can either be scoped out of the EIA based on embedded mitigation, or on reasonable professional consideration that the development does not have the potential to result in significant adverse environmental effects.
- 14.17 The current available design information pertaining to the proposed development, indicates that the scheme does not intrinsically mitigate waste impacts through core design decisions. The proposed development comprises of substantial demolition, excavation, and construction works, all of which have the potential to generate significant quantities of waste which are unlikely to be reusable within the site, and which may require off-site disposal to landfill. It is therefore not possible to scope the waste topic out of the EIA on the basis of primary mitigation.
- 14.18 Furthermore, detailed design information that would facilitate forecasts of the quantities of waste likely to be generated by the proposed development are not available at this stage. It is therefore not possible to estimate

⁵³ IEMA (2020) *IEMA guide to: Materials and Waste in Environmental Impact Assessment*.

the magnitude of the impact of these wastes on the available waste infrastructure or verify that effects will be sufficiently slight to comprise of a non-significant effect. It is therefore necessary to scope the waste topic into the EIA.

- 14.19 It is considered unlikely that the proposed HIF Infrastructure Works, would be viable without the works proposed in the associated application linked to the Red Bank Neighbourhood project, set out in Section 2.1 and 2 of this EIA Scoping Report. The in-combination effects of the four schemes will be assessed. Furthermore, the in-combination effects of the development proposed in the wider SRF will be considered.

Receptors

- 14.20 The IEMA guidance **Error! Bookmark not defined.** considers that for the waste topic, the sensitive receptor is landfill capacity. Consented landfill void is at any one point in time a finite resource and through the ongoing disposal of waste, there is a continued need to expand existing and develop new facilities or find alternative means of disposal or recovery. The impacts and effects of waste are set out in Table 14.1. Landfill void capacity has been considered as the sensitive receptor rather than waste management infrastructure capacity for the following reasons:

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

Table 14.1: Waste impacts and effects

Element	Direct Impacts	Adverse effects	Indirect impacts
Waste	Generation and disposal of waste	Reduction in landfill capacity Unsustainable use or loss of resources to landfill that results in the temporary or permanent degradation of the natural environment	Release of greenhouse gas emissions (through transportation and management) Ecological impacts (e.g. offshore disposal of dredged arisings) Visual impacts, noise, vibration, disruption to traffic and other potential causes of nuisance

Study area

- 14.21 Whilst the site is situated in Manchester, it is expected that primary management of wastes will be dealt with within a wider area. According to the Greater Manchester Joint Waste Development Plan⁵⁴, there is only one operational waste landfill site in Greater Manchester, which is anticipated to have exhausted the available

void space by 2023. However, the plan sets out that extensions to existing sites are brought forward by industry and landowners as these have capacity and are deliverable and realistic options. Available. The Local Waste Plan states that If no new sites can be provided within Greater Manchester, wastes will need to be transported to landfill facilities outside Greater Manchester.

14.22 Waste generated within Greater Manchester is generally managed in the wider North Western region due to the shortage of suitable facilities within the area. 2020 Waste Data Interrogator data⁵⁵, published by the Environment Agency, shows that CDEW generated in Greater Manchester is primarily exported throughout the North West, and small quantities (approximately 10%) further throughout England for management. Therefore, the North West Region is considered to comprise of the baseline area with respect to management of inert and non-hazardous waste from the site.

14.23 Given the high cost of disposal and the relatively low availability of capacity, hazardous waste is typically transported greater distances for treatment and disposal. 2020 Waste Data Interrogator data shows that hazardous waste generated in Greater Manchester is transported throughout England for disposal. It is therefore proposed that the baseline area with respect to hazardous waste generated by the proposed development is England.

Baseline

14.24 The environmental effects, and the associated significance, will be assessed as a function of the sensitivity of the identified receptors (inert, non-hazardous, and hazardous landfill capacity), and the magnitude of impact on those receptors.

14.25 The sensitivity of waste receptors relates to the availability of regional (and where appropriate, national) landfill void capacity; this is assessed by virtue of the rate at which the available capacity is anticipated to change in the absence of the proposed development. The sensitivity thresholds are identified in Table 14.2.

Table 14.2: Thresholds for considering the sensitivity of landfill capacity

Sensitivity	Negligible	Low	Medium	High	Very High
Inert and non-hazardous The baseline/future baseline of inert and non-hazardous landfill void capacity is expected to...	Remain unchanged or is expected to increase through a committed change in capacity.	Reduce minimally: by <1% as a result of wastes forecast.	Reduce noticeably: by 1-5% as a result of wastes forecast.	Reduce considerably: by 6-10% as a result of wastes forecast.	Reduce very considerably (by >10%); end during construction or operation; is already known to be unavailable; or, would require new capacity or infrastructure to be put in place to meet forecast demand.
Hazardous	Remain unchanged or is	reduce minimally: by	Reduce noticeably: by	Reduce considerably:	Reduce very considerably

⁵⁵ Environment Agency (2020), 2019 Waste Data Interrogator. Available online at: <https://data.gov.uk/dataset/d409b2ba-796c-4436-82c7-eb1831a9ef25/2019-waste-data-interrogator>

The baseline/future of hazardous landfill void capacity is expected to...	expected to increase through a committed change in capacity.	<0.1% as a result of wastes forecast.	0.1- 0.5% as a result of wastes forecast.	by 0.5-1% as a result of wastes forecast.	(by >1%); end during construction or operation; is already known to be unavailable; or would require new capacity or infrastructure to be put in place to meet forecast demand.
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- 14.26 The sensitivity of landfill capacity in the respective baseline area, will be determined through the sourcing and use of data relating to the inert, non-hazardous and hazardous landfill void capacity data in the North West region, and across England.

Potential impacts

- 14.27 Various types and quantities of waste are expected to be generated during construction, and potentially during operation, of the proposed development. Demolition, excavation, construction and operational waste quantities anticipated to be produced will be forecast, using a combination of available design information, and applicable industry benchmarks. The proportion of the forecast wastes likely to require disposal to landfill will then be estimated.
- 14.28 The forecast waste quantities will account for mitigation embedded in the design; further mitigation measures will then be applied where relevant, on which the residual environmental effects will be assessed.
- 14.29 The magnitude of impacts from waste will assessed by determining the percentage of the remaining landfill void capacity that will be depleted by waste produced during the construction and/or operation phases of the development. The magnitude thresholds to be used, are shown in Table 14.14.3.

Table 14.3: Thresholds for considering the magnitude of impacts

Magnitude	No change	Negligible	Minor	Moderate	Major
Inert and non-hazardous	Zero waste generation and disposal from the development.	Waste generated by the development will reduce regional* landfill void capacity baseline# by <1%.	Waste generated by the development will reduce regional* landfill void capacity baseline# by 1-5%.	Waste generated by the development will reduce regional* landfill void capacity baseline# by 6-10%	Waste generated by the development will reduce regional* landfill void capacity baseline# by >10%.
Hazardous	Zero waste generation and disposal from development	Waste generated by the development will reduce national landfill void capacity	Waste generated by the development will reduce national landfill void capacity	Waste generated by the development will reduce national landfill void capacity	Waste generated by the development will reduce national landfill void capacity

		baseline #by <0.1%	baseline #by <0.1-0.5%	baseline #by <0.5-1%	baseline #by >1%
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Significance criteria

- 14.30 The significance of environmental effects associated with waste, will be determined by considering the scale and nature of impacts within the context of the sensitivity of receptors affected, Table 14.4.

Table 14.4: Significance matrix (IEMA, 2020)

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

- 14.31 Any effect identified to be moderate or greater, will be considered to comprise of a significant environmental effect.

Cumulative Effects

- 14.32 A separate cumulative effects chapter will also be presented at Chapter 18 of the ES. This will assess the cumulative impacts of the proposed development in conjunction with any committed developments within the vicinity of the sites identified through the scoping process, as well as the wider development project (Applications 1, 3 and 4) and the wider SRF. The approach will be aligned with the assessment scenarios outlined in Section 4 of this Scoping Report.
- 14.33 The proposed study area with respect to the identified receptors (landfill capacity) comprises of the former North West planning region (for inert and non-hazardous waste) and England (for hazardous waste). Given the complexity of identifying and quantifying potential waste generation from all committed developments in these regions, it is proposed that a primarily qualitative assessment will be undertaken. Searches will be made to identify specific committed developments of a sufficient scale to disrupt long-term trends in landfill capacity; searches will focus on the following planning databases:

- National Significant Infrastructure Projects.
- Transport & Works Act Application.

15. Health and Wellbeing

- 15.1 The purpose of this assessment will be to identify and assess the likely significant health and wellbeing effects. The assessment is concerned with the health and wellbeing effects of the proposals relating specifically to changes in health determinants (i.e. the social, economic and environmental factors that can influence the health and wellbeing of the population) and the subsequent changes in health outcomes that these may bring to the study population. The assessment will draw on conclusions from other EIA topic assessments, in particular air quality, noise, transport, and socio-economic chapters. The health and wellbeing assessment will be carried out by Arup.
- 15.2 In the context of the HIF application itself, it is considered that health and wellbeing could be scoped out of the assessment as it is unlikely that the proposals for the infrastructure works would result in any significant health and wellbeing impacts. However, in the wider context of the Red Bank Neighbourhood which includes three other planning applications (see Section 2.8) and also within the Northern Gateway SRF context, there are likely to be significant health and wellbeing impacts. It is therefore considered necessary to include health and wellbeing within the EIA produced for HIF, in order that in-combination effects are captured within the assessment.

Site Context

- 15.3 The site boundary falls across the wards of Cheetham and Harpurhey and these are the wards that would be considered in the context of the infrastructure works. However, as the site sits within the wider context of the Northern Gateway SRF, potential health and wellbeing impacts should be considered across the neighbourhoods of four Manchester wards which touch the site boundary of the SRF, as shown in **Figure 15.1**:
- Piccadilly (E05011356).
 - Cheetham (E05011356).
 - Miles Platting and Newton Heath (E05011371).
 - Harpurhey (E05011366).

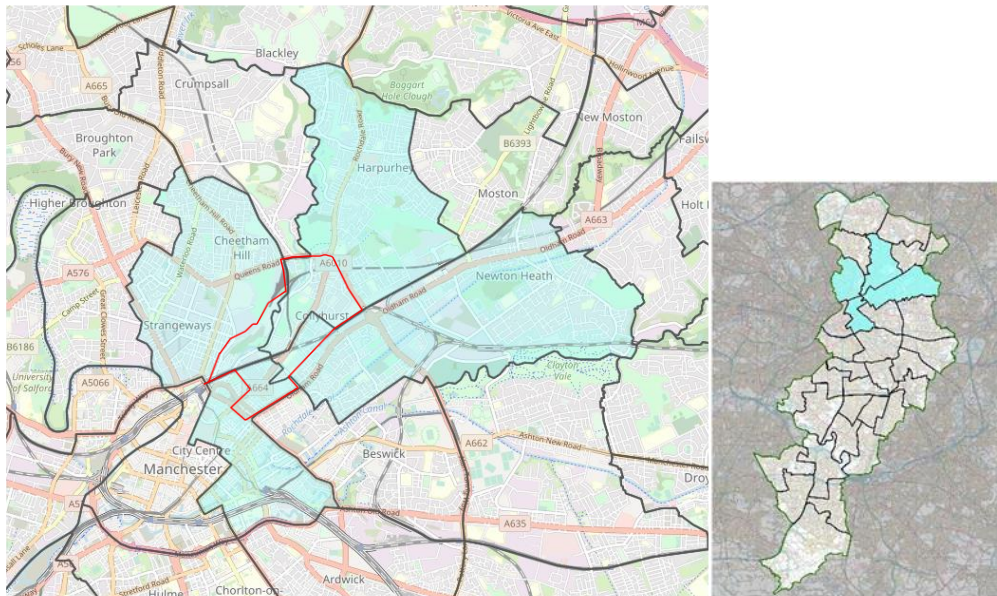


Figure 15.1: Wards affected by the site development

15.4 Except for Piccadilly ward, all wards experience higher than national average health deprivation which results in lower life expectancy. **Figure 15.2** illustrates life expectancy across the study wards.

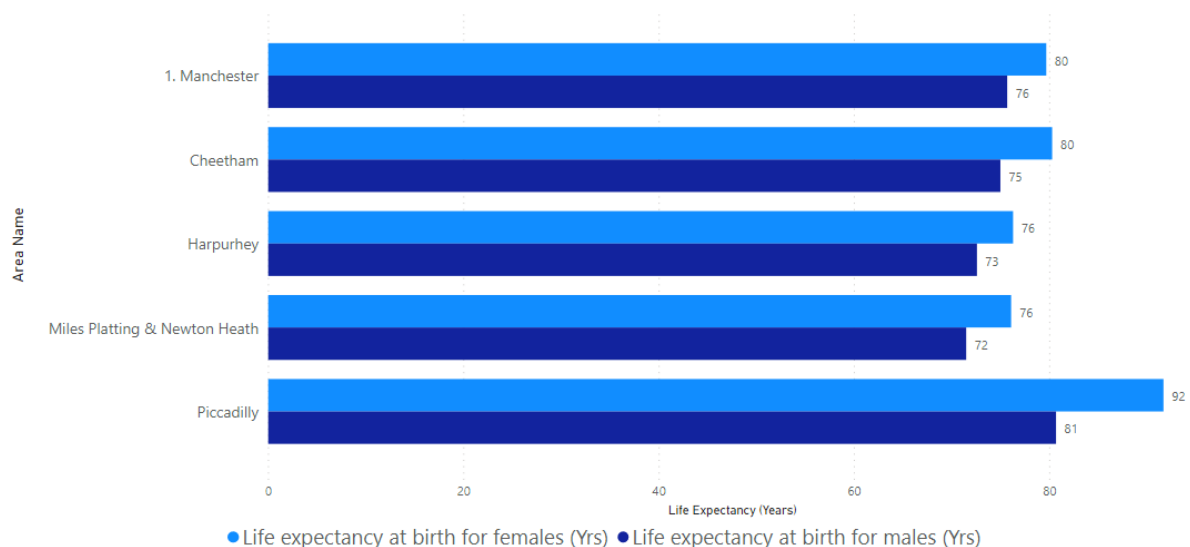


Figure 15.2 Life expectancy in each ward within the study area

15.5 A total of 9% of people in Miles Platting ward rated their own health as "Bad", which is twice the national reported level (4.25%). All the wards, apart from Piccadilly, perform worse than the England and GM position in terms of people rating their health as 'Bad' or 'Very Bad', as illustrated below in **Figure 15.3**.

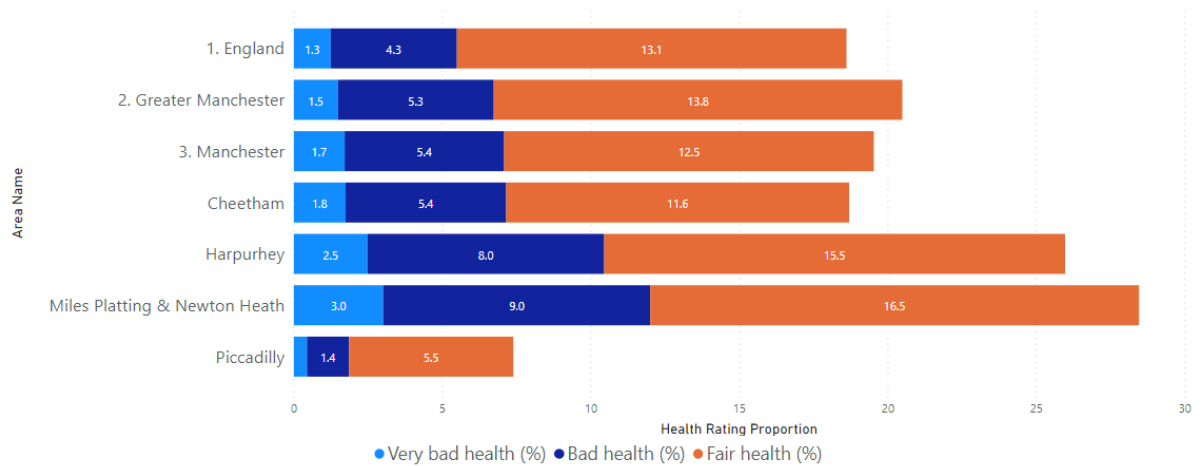


Figure 15.3 Self-reported health rating in study wards

15.6 The communities' perception of poor health is mirrored by hospital admission data in relation to heart disease and COPD, as shown in **Figure 15.4**. In Harpurhey and Miles Platting, Chronic obstructive pulmonary disease (COPD) admissions are over 180% greater than the expected admissions levels.

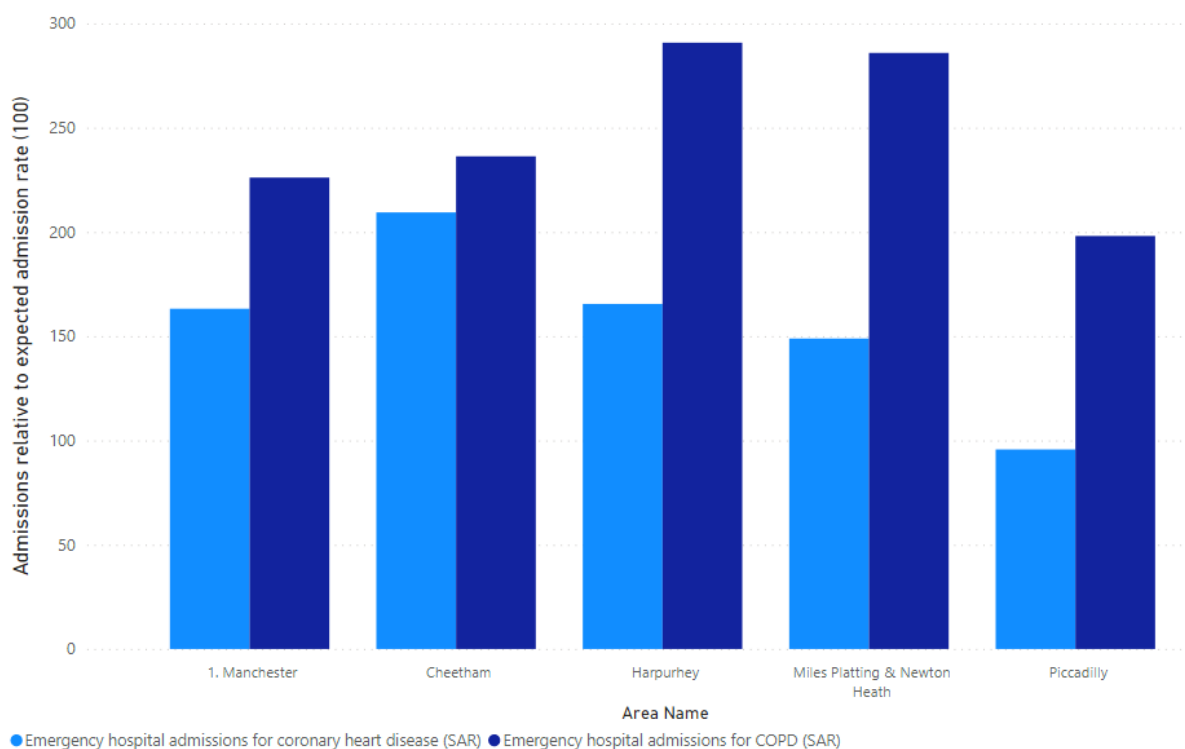


Figure 15.4 Hospital admission for heart disease, COPD and alcohol related harm

15.7 Three of the wards in the Northern Gateway SRF area have a significantly higher population of under-16s at 25% – 27% compared to the England average of 19%. Piccadilly has only 2% under-16s, reflecting city centre living.

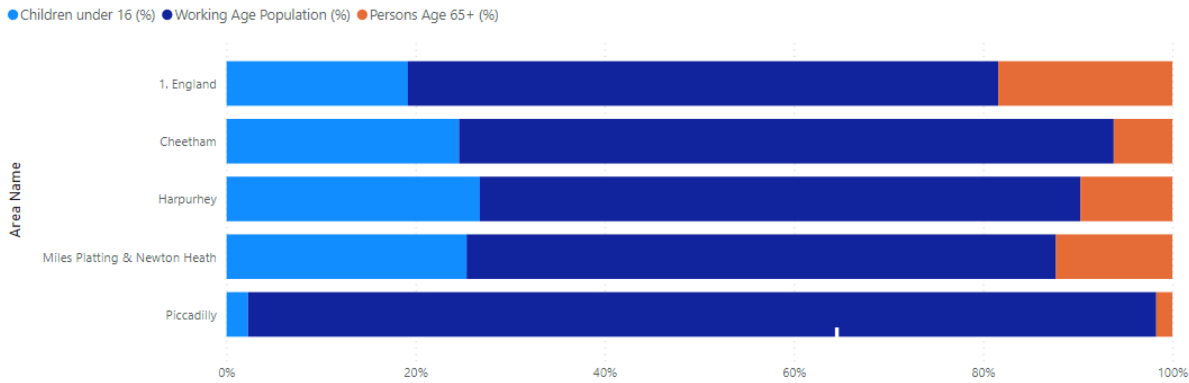


Figure 15.5 Children under 16 (%), working age population (%) and persons age 65+ (%) by ward

Planning Policy Context

National Planning Policy

15.8 Chapter 8 of the National Planning Policy Framework (2021) covers objectives for promoting healthy and safe communities which includes provision for open space and recreation. Planning policies and decisions should aim to achieve healthy, inclusive, and safe places which promote:

- Social interaction.
- Being safe and accessible.
- Enabling and supporting healthy lifestyles.

Local Planning Policy

15.9 Manchester Joint Health and Wellbeing Strategy (2016) is the city's overarching 10-year plan for reducing health inequalities and improving health outcomes for Manchester residents. The strategic priorities centre around:

- Getting the youngest people in our communities off to the best start.
- Improving people's mental health and wellbeing.
- Bringing people into employment and ensuring good work for all.
- Enabling people to keep well and live independently as they grow older.
- Turning round the lives of troubled families as part of the Confident and Achieving Manchester programme.
- One health and care system – right care, right place, right time.
- Self-care.

- 15.10 Manchester Core Strategy features the provision of interventions for improved health outcomes in Manchester in all six of its spatial objectives. The strategy also includes health in its core strategy vision for 2027: *"a City with an increased and sustainable healthy population and a community which both benefits from and drives the City's productivity upwards."*
- 15.11 The Manchester Strategy 2025 features improving health and wellbeing outcomes in Manchester as one of its key aims to achieve by 2025. Closing health inequality gaps in Manchester is part of the *"... progressive and equitable city" theme, as well as improving physical activity levels in "A connected city"*.
- 15.12 The Greater Manchester Strategy lists *"A place where people live healthy lives and older people are valued"* as one of its visions. This is incorporated into the strategy's priorities, including Priority 9: Healthy lives, with quality care available for those that need it.

Other Relevant Policy, Standards and Guidance

- 15.13 Relevant guidance that would be followed for the assessment include:
- Rapid Health Impact Assessment Tool, National Health Service (NHS) London Healthy Urban Development Unit (HUDU) (2017)⁵⁶.
 - IMPACT Urban Health Impact Assessment methodology (UrHIA), Liverpool University (2015)⁵⁷.
 - Wales Health Impact Assessment Support Unit (WHIASU) Health Impact Assessment – A practical guide (2011)⁵⁸.

Approach

- 15.14 A health and wellbeing baseline will be developed for the study area (to include the aforementioned wards) and will cover consideration of the health profile of the local population as well as wider information relating to health. The baseline will be developed using publicly available data to provide an overview of the demographic, social and health status of the population within the study area. Commentary will be provided on the general resilience of the population to potential health effects and the presence and distribution of vulnerable groups within the population.
- 15.15 Where available, local authority, ward and Lower Super Output Area (LSOA) level data will be reviewed with a focus on the groups of people who are likely to be more vulnerable to changes in health determinants. The principal sources of data will include:
- ONS annual small area population estimates (ward and local authority level data).
 - ONS Census data, 2011 (ward and local authority level data).

⁵⁶ NHS, 2019. Health Impact Assessment Tool, Healthy Urban Design Unit (HUDU). Available online at: <https://www.healthyurbandevelopment.nhs.uk/our-services/delivering-healthy-urban-development/health-impact-assessment/>

⁵⁷ Liverpool University, 2015. Urban Health Impact Assessment Methodology. Available online at: <https://livrepository.liverpool.ac.uk/2018902/>

⁵⁸ Wales Health Impact Assessment Support Unit, 2011. Health Impact Assessment, a Practical Guide. Available online at: https://whiasu.publichealthnetwork.cymru/files/1415/0710/5107/HIA_Tool_Kit_V2_WEB.pdf

- Index of Multiple Deprivation 2015 (lower layer super output areas).
- Public Health England Health Profiles for Manchester.
- Annual Public Health Reports for Manchester.
- Local policy and strategy documents such as Joint Strategic Needs Assessments.
- Ward level data on key health indicators such as life expectancy and limiting long-term illness or disability, obtained through consultation with local authority public health teams.

15.16 Community resources (e.g. services, schools, etc) will also be identified in the study area along with details of who uses these resources (i.e. the receptors). Receptors considered will include occupiers of residential properties and users and beneficiaries of community resources including local residents, organised (community) groups, pupils, patients, congregations, etc.

15.17 The following resources will be described in the Community baseline:

- Residential property, including specialist homes (e.g. retirement housing, student accommodation or mobile homes).
- Community infrastructure for example:
 - Health and social care facilities;
 - Educational facilities for all age groups and skill levels;
 - Facilities used for local community meetings and activities;
 - Government, local authority and emergency services which are open to the public e.g. police stations;
 - Local high streets and centres; and
 - Places of worship.
- Formal and informal publicly accessible open space and play space, including:
 - Parks, accessible natural green space, and amenity green space;
 - Accessible routes for recreation – includes river and canal banks, recreational (off road) cycle route and promoted recreational walking routes or bridleways;
 - Outdoor sports facilities;
 - Allotments, community gardens and urban farms; and
 - Outdoor play spaces including provision for children and teenagers.

- Public and private recreational infrastructure (not covered under open space and play space), such as:
 - Sports centres and facilities;
 - Stadia, arena and professional sports clubs which host games and events open to the public;
 - Indoor children's play facilities;
 - Cultural centres e.g. museums, theatres, historic buildings open to the public;
 - Food venues, cafes and restaurants.
 - Music venues, bars, pubs, social clubs; and
 - Other recreational facilities, for example animal sanctuaries, zoos or aquariums; paintball venues, fisheries or sailing clubs, visitor centres etc.

Significance Criteria

- 15.18 A qualitative assessment of the likely significant health effects will be carried out, based on the level of exposure of the population to changes in health determinants. The assessment will identify potential impacts related to the different stages of development (i.e. construction and operation) and will identify whether these would result in changes to health determinants that would be beneficial or adverse, direct or indirect and long-term or temporary. It will also take into account any mitigation measures embedded into the design of the proposed development. The approach for defining significance considers:
- The magnitude of the impact on a health determinant.
 - The size and sensitivity of the population exposed to the impact.
- 15.19 Most potential health effects cannot be reliably quantified because there are currently no robust or scientifically widely agreed upon methods for quantifying them, or because the types of data required cannot realistically be obtained. It is possible in theory to quantify health effects from increased exposure of a large population to noise and air emissions. However, given the relatively short duration of the study, it would not be possible to identify a statistically significant effect. Therefore, a quantitative assessment of health effects has been scoped out.
- 15.20 Health determinants are factors that can influence health outcomes and include social, environmental and economic factors. The health determinants most commonly considered within assessments, and recommended by the various guidance available, are listed in **Table 15.1** below, along with an indication of whether they are scoped into the health assessment.

Table 15.1: Health determinants and scope of the assessment

Health determinant	Scoped in for HIF?	Scoped in for in-combination assessment?
Housing design and affordability	X	✓
Access to health and social care services and other social infrastructure	X	✓
Access to open space and nature	✓	✓
Air quality	✓	✓
Noise	✓	✓
Neighbourhood amenity	✓	✓
Accessibility and active travel	X	✓
Crime reduction and community safety	✓	✓
Access to healthy food	X	✓
Social cohesion and inclusive design	X	✓
Climate change	X	✓

- 15.21 Potential health effects considered likely relate to changes in health determinants caused by the proposed development either during construction or operation and the subsequent effects on health outcomes for the population within the study area.

Health literature review

- 15.22 A literature review will be undertaken, using publicly available information, to establish the evidence for links between the health determinants identified at the scoping stage and potential health outcomes.

Magnitude of impact

- 15.23 The magnitude of an impact relates to its severity and/or scale. Magnitude is determined by professional judgement, based on defined assessment criteria (**Table 15.2**). The characteristics of an impact (i.e. whether direct or indirect, secondary or cumulative, short, medium or long-term, permanent or temporary, reversible or irreversible) is assessed and the magnitude classified as high, medium, low or very low. The assessment of magnitude also considers the nature of potential health outcomes associated with the change, e.g. effects on physical or mental health conditions, quality of life, or comfort.

Table 15: 8 Methodology for assessing magnitude of health impact

Magnitude	Guidelines
High	A substantial change to a health determinant, with two or more of the following characteristics: assessed as 'major' by relevant environmental topics (where applicable⁵⁹); likely to be perceived by the population as a major change; has the potential to affect the occurrence of acute or chronic mental or physical illness; long term duration or permanent.
Medium	A moderate change to a health determinant, with two or more of the following characteristics: assessed as 'moderate' by relevant environmental topics (where applicable⁵⁹); likely to be perceived by the population as a moderate change; has the potential to improve / reduce mental wellbeing or quality of life, exacerbate / alleviate symptoms of existing illness, or cause nuisance impacts; medium to long-term duration.
Low	A minor change to a health determinant, with two or more of the following characteristics: assessed as 'minor' by relevant environmental topics (where applicable⁵⁹); likely to be perceived by the population as a minor change; has the potential to lower or raise wellbeing in terms of levels of comfort and contentment (for example in relation to noise, odour, or visual amenity); short to medium term duration.
Negligible	A 'negligible' magnitude of impact is likely to be perceptible and localised. It may have the potential to lower or raise wellbeing in terms of levels of comfort and contentment.

Population exposure

- 15.24 The level of population exposure is defined by a combination of two factors: the size of the population exposed to an impact and its vulnerability to health effects. The size of the exposed population is judged on a scale of high, medium, low and very low, dependent on geographical area and number of people exposed. The vulnerability of the population is also judged on a scale of high, medium, low and very low based on indicators of the health and social status of the population (**Table 15.3**). More vulnerable populations include those with higher levels of social deprivation or relatively poor health status.

⁵⁹ Other EIA topics' assessment results are not always relevant to the health assessment. For example, a 'major' effect on an individual receptor would not necessarily constitute a major change to a health determinant that would affect the population as a whole. Professional judgement is required when using information from other topics in the health assessment.

Table 15.9: Guidelines for the assessment of population exposure and vulnerability

Rating	Guidelines	
	Population exposure	Population vulnerability
High	A high level of exposure would occur over a wide geographical area and/or be likely to affect a large number of people (e.g. over 500).	Affected population includes a higher than national average proportion of vulnerable or disadvantaged groups (such as children or older people) who are more likely to experience adverse health effects as a result of the impact in question.
Medium	A medium level of exposure would occur over a relatively localised area and/or be likely to affect a moderate-large number of people (e.g. 100-500).	Affected population includes an average or close to average proportion of vulnerable or disadvantaged groups who are more likely to experience adverse health effects as a result of the impact in question.
Low	A low level of exposure would occur over a small, local area and/or affect a small number of people (e.g. fewer than 100).	Affected population includes a below average proportion of vulnerable or disadvantaged groups who are more likely to experience adverse health effects as a result of the impact in question.
Very low	A very low level of exposure would affect a small number of individuals.	Not applicable (no population is considered)

- 15.25 Population exposure and population vulnerability are combined to give an overall judgement on population sensitivity, on a scale of high, medium, low or very low (Table 15.10).

Table 15.10: Population sensitivity matrix

Population exposure	Population vulnerability			
	High	Medium	Low	Very low
High	High	High	Medium	Low
Medium	High	Medium	Low	Low
Low	Medium	Low	Low	Very low
Very low	Low	Low	Very low	Very low

- 15.26 To determine overall significance of a health impact, the assessment matrix provided in **Table 15.5** will be used. This classifies significance of health impacts as major, moderate, minor or negligible. For the purpose of the EIA, a significant impact is defined as any health impacts identified as moderate and above.

Table 15.11: Significance of impact

Magnitude of impact	Population sensitivity			
	High	Medium	Low	Very low
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Minor
Low	Moderate	Minor	Minor	Minor
Negligible	Minor	Minor	Negligible	Negligible

Mitigation

- 15.27 If required, a description of further measures to be incorporated to reduce the adverse and/or enhance the beneficial effects of the proposed development on health determinants will be described.

Cumulative Effects

- 15.28 A separate cumulative effects chapter will also be presented at Chapter 18 of the ES. This will assess the cumulative impacts of the proposed development in conjunction with any committed developments within the vicinity of the sites identified through the scoping process, as well as the wider development project (Applications 1, 3 and 4) and the wider SRF. The approach will be aligned with the assessment scenarios outlined in Section 4 of this Scoping Report.

16. Socioeconomics

- 16.1 The purpose of this chapter is to identify and assess the likely significant socio-economic effects of the proposed development. The assessment is concerned with the socioeconomic effects of the proposals relating specifically to job creation, labour supply, implications of the demand for public services, and the effects of housing provision in respect of adopted policy. The socio-economic assessment will be carried out by Arup.

Planning Policy Context

National Planning Policy

- 16.2 Planning policies relevant to the Proposed Development will be considered and referred to within the socio-economics ES chapter to outline relevant planning requirements, guidance and objectives in terms of housing, economic development and the provision of social infrastructure. This information will be drawn upon to help identify the extent to which the Proposed Development supports these policy objectives.
- 16.3 A revised National Planning Policy Framework (NPPF) was published in July 2021. Those policies of relevance will be considered and reviewed in light of the proposed development. A summary of relevant policies within the NPPF is provided below:
- Chapter 2: Achieving Sustainable Development.
 - Chapter 5: Delivering a sufficient supply of homes.
 - Chapter 6: Building a strong, competitive economy.
 - Chapter 8: Promoting healthy and safe communities.
 - Chapter 9: Promoting sustainable transport.
 - Chapter 11: Making effective use of land.
 - Chapter 12: Achieving well-designed places.
 - Chapter 15: Conserving and enhancing the natural environment.

Other Relevant National Planning or Development Strategies

- 16.4 MHCLG Planning for the Future White Paper August 2020⁶⁰ (*Consultation version*).

⁶⁰

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/958420/MHCLG-Planning-Consultation.pdf

- 16.5 HM Government A Green Future: Our 25 Year Plan to Improve the Environment Chapter 3: Connecting People with the environment to improve health and wellbeing.

Local Planning Policy

- 16.6 Manchester's Local Development Framework Core Strategy Development Plan Document (Adopted 11th July 2012). The site is identified as an 'Inner Area' in the Core Strategy. Relevant Policies include:

- Policy SP1: Spatial principles (guiding the strategic development of Manchester to 2027).
- Policy EC1: Employment and Economic Growth in Manchester. Includes: "Demonstrating that employment-generating development has fully considered opportunities to provide jobs for local people, through construction or use" and ensuring development proposals are focused on "enhancing the sense of place of the wider area and minimising detrimental impacts on adjacent uses".
- Policy CC1: Primary Economic Development Focus: City Centre and Fringe.
- Policy EC4 North Manchester.
- Policy H1: Overall Housing Provision.
- Policy H2: Strategic Housing Location.
- Policy H3: North Manchester.
- Policy H8: Affordable Housing.
- Policy H9: Accommodation for Gypsies and Travellers and Travelling Showpeople.
- Policy H10: Housing for people with additional support needs.
- Policy H11: Houses in Multiple Occupation.
- Policy H12: Purpose Built Student Accommodation.
- Policy C3: North Manchester District Centres- Cheetham Hill and Harpurhey "There could be small increases in retail provision in Cheetham Hill, but development for other uses which promote vitality during the daytime will be supported".
- Policy EN1: Design Principles and Strategic Character Areas (particular reference to 5. Irk Valley Character Area).
- Policy EN9 – Green Infrastructure.
- Policy EN10 – Safeguarding Open Space, Sport and Recreation Facilities.
- Policy EN 11 – Quantity of Open Space, Sport and Recreation.

- Policy EN 12 - Area priorities for Open Space, Sport and Recreation

Development Policies

- 16.7 Providing for Housing Choice Supplementary Planning Document and Planning Guidance – Manchester City Council (adopted September 2008): The document sets out requirements for affordable housing in Manchester, applying to all residential developments on sites of 0.3 ha and above or where 15 or more units are proposed.

Site Specific Policies

- 16.8 Victoria North (Northern Gateway) Strategic Regeneration Framework (2019): This document is a 'route map' to the regeneration of the Victoria North (previously Northern Gateway), a 155 ha area north of Manchester City Centre.

Other Relevant Policy, Standards and Guidance

- 16.9 Other relevant policy, standards and guidance includes:
- Our People Our Place (The Greater Manchester Strategy)⁶¹. Key priorities include: Priority 3: Good jobs, with opportunities for people to progress and develop; Priority 6: Safe, decent and affordable housing; Priority 7: A green city region and a high quality culture and leisure offer for all.
 - Greater Manchester Economic Vision (Greater Manchester LEP, 2020)⁶².
 - Developing a More Inclusive Economy- Our Manchester Industrial Strategy⁶³ (complementary to the Greater Manchester Local Industrial Strategy).
 - Greater Manchester Local Industrial Strategy⁶⁴ (Particular reference to 'Place' as a foundation of productivity).
 - Greater Manchester Resilience Strategy 2020 - 2030⁶⁵.
 - Greater Manchester Work and Skills Strategy and Priorities (WSSP) 2016-2019.

Approach

- 16.10 This section describes the proposed scope of assessment for addressing the potential impact of the proposed development on the socio-economic baseline of the local area. The assessment will consider the measures required to capture the positive economic, regeneration and social effects of the proposed development. It

⁶¹ https://www.greatermanchester-ca.gov.uk/media/1084/greater_manchester_summary_full_version.pdf

⁶² <http://gmlep.com/wp-content/uploads/2020/11/GM-LEP-Economic-Vision.pdf>

⁶³ https://www.manchester.gov.uk/downloads/download/7156/our_manchester_industrial_strategy

⁶⁴ <https://www.greatermanchester-ca.gov.uk/media/2132/gm-local-industrial-strategy-web.pdf>

⁶⁵ <https://www.greatermanchester-ca.gov.uk/media/4542/greater-manchester-resilience-strategy-2020-2030.pdf>

will also consider the measures that will be required to mitigate any of the potential adverse effects of the proposed development during construction.

16.11 An overview of methodology for assessing socio-economic impacts includes the following:

- Review of baseline conditions for the relevant geographical areas.
- Assessment of likely scale, scope, permanence and significance of effects.
- Consideration of cumulative impacts alongside the SRF and other developments in the locality.
- Recommendation of mitigation measures, where appropriate.
- Assessment of residual impacts following implementation of mitigation measures.

Potential impacts

Assessment Scenarios 1a and 2a

Construction impacts

16.12 Construction impacts are defined in the ES as those temporary effects that arise during enabling works and construction which cease after the completion of construction. Construction impacts arising from the Proposed Development will consider:

- Temporary direct, indirect and induced employment during the construction phase.
- It is likely the construction of the proposed development will result in some economic uplift in Greater Manchester. The assessment will consider the Full Time Equivalent direct jobs created onsite during the construction phase and indirect jobs created through supply chain linkages in firms that will provide supporting services during construction. Analysis of construction jobs will be derived from forecasts of construction expenditure. Wage expenditure per construction worker will also be analysed.
- Where information on capital expenditure is available, an estimate of gross FTE workers will be calculated from Gross Value Added (GVA) per construction worker across Greater Manchester, and the capital cost of relevant elements of the Proposed Development. The gross figure will then be used to calculate the net employment generation figure by accounting for additionality. Additionality factors are used help understand the net employment generation. They consist of: leakage which accounts for the proportion of the benefit felt elsewhere; economic multipliers which account for the further activity/employment beyond the project (indirect supply chain effects, or induced effects from employees direct spending); displacement/substitution which show how much benefit is being offset by reductions of benefit (e.g. employment) elsewhere; and deadweight, which accounts for that which would have occurred anyway (without the project). To generate an understanding of the significance of job creation, total employment and unemployment figures for the construction sector within Greater Manchester will be collected as a benchmark.

16.13 The construction of the proposed development results in no loss of existing amenity or services used by current residents. It is assumed that the Construction Environmental Management Plan (CEMP) would be in place to ensure continued access for the existing local population, as well as to mitigate any residual adverse effects

(including noise, vibration, air quality, and construction traffic movements) experienced by them. As such, impacts of construction on the local community, including potential disruption, access issues and severance, will be scoped out of the constructions impact assessment.

Operational impacts

16.14 Operational impacts arising from the proposed development will consider:

- Changes in provision of open spaces.
- The assessment will provide a qualitative assessment of the wider socio-economic impacts of the new open space delivered as part of the Proposed Scheme, considering the potential benefits for existing residents in terms of new social infrastructure compared to current provision. The assessment is limited to open space provision as no other social infrastructure is planned for as part of the Proposed Development.

16.15 No on-site employment will be created once the proposed development is operational and so no operational economic assessment will be undertaken.

Assessment Scenarios 1b, 1c, 2b and 2c

16.16 The consideration of other Assessment Scenarios will then be presented. This will be a qualitative assessment based on publicly available document given the unavailability of detailed design as this stage in the process.

Demolitions and Construction

16.17 The in-combination assessment for demolition and construction first sets out effects of Assessment Scenario 1b – Proposed Development plus impacts associated with Applications 1, 3 and 4, and secondly the impacts of the Proposed Development play impacts with Applications 1, 3 and 4 and the wider SRF. For each scenario, the assessment considers the following:

- Temporary direct, indirect and induced employment during the construction phase.
- The assessment will consider the likely uplift in jobs created onsite during the construction phase and indirect jobs created through supply chain linkages in firms that will provide supporting services during construction. Wage expenditure per construction worker will also be considered.
- Impacts of construction on the local community, including potential disruption, access issues and severance.

16.18 While it is assumed that the CEMP would be in place to ensure continued access for the existing local population, as well as to mitigate any residual adverse effects (including noise, vibration, air quality, and construction traffic movements) experienced by them, given the scale of development expected to take place, an assessment of the likely impacts of construction on the local community will be considered.

The Completed and Operational Development

16.19 The in-combination assessment for the completed and operational development first sets out effects of Assessment Scenario 2b – Proposed Development plus impacts associated with Applications 1, 3 and 4, and secondly impacts associated with Assessment Scenario 2c – Proposed Development plus impacts associated with Applications 1, 3 and 4 and wider SRF. For each scenario, the assessment considers the following:

- Direct, indirect and induced employment generated during the operational phase of the proposed development;
- Given the residential nature of the proposed development, a quantitative approach to estimating operational jobs is not required.
- The new residents moving into the Proposed Development are likely to increase local expenditure.
- Change in housing and affordable housing provision:
 - The contribution of new housing provisions will be considered against an assessment of housing need in Greater Manchester and the wider region. This will also consider the level of affordable housing provision against deprivation levels and local need to ascertain the ability to access affordable and suitable homes.
- Change in access to primary and secondary education, primary healthcare, open spaces, and play spaces:
 - The impacts on local communities during the operation of the site will be qualitatively assessed, including access to social infrastructure. It will consider the wider socio-economic impacts of the Proposed Development, providing a qualitative assessment which considers the potential benefits for residents in terms of new community facilities, notably open space, schools, and health care facilities.

16.20 On the basis of the potential impacts the assessment of the construction and operational socio-economic impacts arising from the proposed development has been scoped into the EIA.

Identification of the Study Area

16.21 The socio-economic assessment will identify the geographical areas within which socio-economic impacts are likely to occur. The appropriate study area / the geographical extent of assessment will vary depending on the socio-economic baseline information being collected or socio-economic impact assessed. The general approach will be to consider neighbourhood level effects (including Cheetham Ward and neighbouring wards also deemed to be impacted), local effects on a borough-wide basis (Manchester City Council area), and any strategic effects that are likely to be generated across the Greater Manchester region (all ten Council areas). For the assessment of some socio-economic measures or impacts, it may be appropriate to consider a more bespoke study area. For example, in the case of assessing the impact of the City Park, the study boundary may be the area within 30-minutes walking distance of the park. In some cases, the study area will also be subject to the geographical level of which the data is available.

Methods of Baseline Data Collection

- 16.22 Prior to considering the socio-economic impacts it is necessary to establish a clear understanding of baseline socio-economic conditions within the geographical areas relevant to the site.
- 16.23 The socio-economic assessment will detail local socio-economic conditions, including analysis of the following issues:
- A detailed breakdown of employment and unemployment data (including workforce data, breakdown of employment by broad industry groups, construction employment) – borough level;
 - A profile of the local community (including resident population demography, working-age population, employment and qualifications, employment rates and average qualification rates) – borough level;
 - Housing profile, deprivation and housing needs (level of housing provision, tenure of households within the study area, housing need, indices of deprivation) – borough level;
 - An assessment of existing community facilities and capacity levels, including primary and secondary school provision, primary healthcare facilities and publicly accessible open space and provision of child and young people play space – neighbourhood level.
- 16.24 The socio-economic baselining exercise will primarily involve the collation and analysis of the following datasets: Census 2011 (unless the 2021 data has been released), Office of National Statistics datasets (such as the Business Register and Employment Survey, Annual Population Survey and Census data), Index of Multiple Deprivation and HM Land Registry, Local Plan policy maps and observations from site visits.
- 16.25 The geographical level of the baseline analysis will be tailored to reflect the impact area relevant to each topic. Where relevant, local indicators will be compared to regional and national averages.

Consultation

- 16.26 No consultation is considered necessary for this stage of the assessment.

Significance Criteria

- 16.27 For socioeconomics, there is no accepted definition of what constitutes a significant (or not significant) socio-economic effect, and so policy and professional experience will be used to assess the significant of the effects of the Proposed Development against baseline conditions.
- 16.28 The assessment uses a three-stage process, first, following a review of the baseline data local receptors are identified and assigned a sensitivity. Secondly following a review of the potential construction and methods and programme and operational affects, impacts upon socio-economic and population receptors are identified with a magnitude of change assigned. Thirdly an assessment is then made on the significance of the overall effect on the assessment topic (i.e. negligible, minor, moderate and major, adverse or beneficial) in order to identify any potentially significant effects.

Receptors

- 16.29 Receptors include economic entities, the local workforce, existing and future residents, and community resources including community facilities (e.g. schools, healthcare facilities), public open space and play space.
- 16.30 The specific receptors referred to in this assessment reflect the socio-economic impacts being considered. The assessment types and the receptors referred to are as follows: Greater Manchester's workforce by sector for employment impacts; current and future population including in terms of tenure profile and deprivation for housing; schools and school-age children for education infrastructure; registered patients, GP practices, dental practices for health.

Sensitivity

- 16.31 The sensitivity of the receptors is defined as high, medium, low or negligible. In the context of socio-economics, the level of sensitivity depends upon the baseline conditions (i.e. the extent to which unemployment, skills deficit, or social infrastructure issues etc. are present in an area and thus how much employment or social infrastructure are needed in that area). Sensitivity criteria is likely to be as followed:

Sensitivity	Definition
High	Many receptors on which many employers, businesses and/or people depend and generally where no substitutes are available.
Medium	Some receptors on which many employers, businesses and/or people depend, and for which some local substitutes are available.
Low	Very few local receptors on which employers, businesses and/or people depend.
Very low	Negligible or no receptors on which businesses and/or people depend.

Magnitude

- 16.32 The significance of the effect reflects the relationships between the scale of effect (magnitude, spatial extent, duration, nature of the effect) on people and businesses and the sensitivity of the affected receptor, as described in Table 16.1.

Table 16.1: Definition of Magnitude

Magnitude	Definition
High	An impact that will be very adverse/beneficial, and very likely to affect large numbers of employees, businesses and/or people (with number depending on the

	local context and nature of the impact). The impact will usually continue and effectively constitute a permanent, long-term impact on the baseline conditions
Medium	An impact that is likely to affect a moderate number of employers, businesses and/or people (with number depending on the local context and nature of the impact).
Low	An impact that is likely or may affect a small number of employers, businesses and/or people (with number depending on the local context and nature of the impact). The impact usually does not extend beyond the life of the project so that the baseline is not affected beyond a short or moderate-term duration.
Very low	An impact that is temporary in nature and/or is anticipated to have a slight or no effect on the well-being of businesses, people, or economic activity.

Significance

- 16.33 The significance of the effect reflects the relationships between the scale of effect (magnitude, spatial extent, duration, nature of the effect) on people and businesses and the sensitivity of the affected receptor, as described in the matrix below.
- 16.34 Effects are described as adverse or beneficial. Moderate and major adverse or beneficial effects are 'significant' for the purposes of the assessment.

Table 16.2: Significance Matrix

Magnitude of Impact	Sensitivity of Receptor			
	High	Medium	Low	Very Low
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Very Low	Minor	Negligible	Negligible	Negligible

Additional Mitigation

- 16.35 The socio-economics ES chapter will outline the facilities and proposals that could mitigate the identified effects. Mitigation measures, both temporary and permanent, will be identified as necessary to avoid or reduce any potential adverse effects and to maximise or enhance the beneficial effects of the proposed development. Measures will be identified to ensure the impact on the local community is minimised and that appropriate social infrastructure is provided as part of the proposed development and/or wider cumulative schemes. Mitigation measures will include all socio-economic elements of the proposed development, such as community facility proposals, education facility expansions, open space proposals, etc. and the phase in which this mitigation is required.

Residual effects

- 16.36 Residual effects refer to significant effects that are likely to remain as a result of the construction or operation or the proposed development, after mitigation. This could also include beneficial effects including the creation of employment opportunities and the provision of new homes.

Cumulative Effects

- 16.37 A separate cumulative effects chapter will also be presented at Chapter 18 of the ES. This will assess the cumulative impacts of the proposed development in conjunction with any committed developments within the vicinity of the sites identified through the scoping process, as well as the wider development project (Applications 1, 3 and 4) and the wider SRF. The approach will be aligned with the assessment scenarios outlined in Section 4 of this Scoping Report.

17. Climate Change

- 17.1 The EIA Regulations 2017 have introduced the requirement to consider climate as part of the EIA process, and require a consideration of “the impact of the project on climate” and “the vulnerability of the project to climate change” (Schedule 4, paragraph 5(f)).
- 17.2 The purpose of this chapter is to identify and assess the potential significant effects of the proposed development in terms of climate change in the context of the site and surrounding, and wider environment, recognising that climate change is a global issue.
- 17.3 The climate change assessment will identify and assess the likely significant effects of the proposed development on climate change mitigation (i.e. greenhouse gas/carbon emissions), and how to minimise these. The assessment also considers how the proposed development adapts to a changing climate, how other EIA topics / receptors could be affected, and how resilience can be designed into this.
- 17.4 The climate change assessment will be carried out by Arup.

Site Context

- 17.5 The site is located in an urban setting and the wider landscape comprises mainly of commercial/industrial development. The site is bound by existing commercial and industrial uses to the north, hardstanding car park and existing commercial units to the west, Dantzig Street and Collyhurst Road to the south, and existing commercial units to the east. The site is affected by the legacy of more than 150 years of industrial uses and Victorian / pre-Victorian infrastructure. The site lies in Flood Zone 1 so has a low risk of flooding from river or sea (0.1% or less per year). Within the site there are localised areas of low, medium and high risk for surface water flooding.

Planning Policy Context

National Planning Policy

National Planning Policy Framework (2021) (NPPF)

- 17.6 The NPPF sets out the government’s planning policies for England and how these are expected to be applied. It also provides a high-level framework within which development should come forward.
- 17.7 Paragraph 153 of the NPPF states that “Plans should take a proactive approach to mitigating and adapting to climate change”. The NPPF states that new development should be planned for in ways that avoid increased vulnerability to the range of impacts arising from climate change and help to reduce greenhouse gas emissions.

Town and Country Planning (Environmental Impact Assessment) Regulations 2017

- 17.8 The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations) places a requirement upon projects which have the potential for significant effects on the surrounding environment and communities to make a formal assessment of these effects. The EIA Regulations identify the role that the EIA process can play in assessing climate change impacts. It states that EIAs shall identify, describe and assess the direct and indirect significant effects of climate change relevant to the proposed development.

Local Planning Policy

Manchester Core Strategy (Adopted March 2012)⁶⁶

- 17.9 Manchester's Core Strategy is the key Development Plan document in Manchester's Local Development Framework (LDF). It replaced significant elements of the existing Unitary Development Plan (UDP) as the document that sets out the long-term strategic policies for Manchester's future development and forms the framework that planning applications are assessed against.
- 17.10 As part of the Core Strategy Vision, "by 2027 Manchester will be [...] meeting the challenge of climate change at the forefront of environmental initiatives and improvements and continuing to deliver sustainable development and a more effective Green Infrastructure."
- 17.11 Spatial objective S06. Environment of the Manchester Core Strategy aims to "Protect and enhance both the natural and built environment of the City and ensure the sustainable use of natural resources, in order to mitigate and adapt to climate change".
- 17.12 The development of networks of green infrastructure across the City and City Region, together with protecting and enhancing townscape character and securing a high standard of design in all development proposals, will promote healthy, low-carbon lifestyles, contribute to a sense of wellbeing, and help to facilitate the sustainable and inclusive growth of the City."

Unitary Development Plan for the City of Manchester (1995)

- 17.13 The Unitary Development Plan for the City of Manchester (the UDP) was adopted by the Council on 21 July 1995 as the statutory document which set out guidelines for all development in Manchester and provided a framework from which to base decisions about planning applications.
- 17.14 Manchester's Core Strategy now supersedes significant elements of the UDP as the document that sets out the long-term strategic policies for Manchester's future development.

Other Relevant Policy, Standards and Guidance

⁶⁶ Manchester City Council (2018) Manchester's Core Strategy.
Available from: https://secure.manchester.gov.uk/downloads/download/4964/core_strategy_development_plan
[Accessed 19 October 2021]

Climate Change Act 2008

- 17.15 The Climate Change Act 2008⁶⁷ committed the UK to its first statutory carbon reduction target to reduce carbon emissions by at least 80% from 1990 levels by 2050.
- 17.16 In June 2019, following the recommendation made by the UK Committee on Climate Change (UK CCC), the Climate Change Act 2008 (2050 Target Amendment) Order 2019 amended the legislated target to reduce GHG emissions by 'at least 100% below the 1990 baseline year' (net zero Greenhouse Gas emissions) by 2050.
- 17.17 The Act requires that five-yearly Carbon Budgets are set and not exceeded. It also established a requirement to undertake a Climate Change Risk assessment every five years and development of a programme for adaptation action in response to the risks identified. In December 2020, the UK CCC released its advice to the UK Government on setting the Sixth Carbon Budget, for the period 2033-2037. Table below presents the six Carbon Budgets.

Table 17.1: Carbon Budget Summary

Carbon budget	Years	5-year Carbon Budget (MtCO ₂ e)
First	2008-2012	3,018
Second	2013-2017	2,782
Third	2018-2022	2,544
Fourth	2023-2027	1,950
Fifth	2028-2032	1,725
Sixth	2033-2037	965

UK Nationally Determined Contribution (NDC) (2020)⁶⁸

- 17.18 As a signatory of the Paris Agreement the UK submits a *Nationally Determined Contribution* (NDC) to the UNFCCC. The Paris Agreement provides for the international community to keep the increase in global average temperature to well below 2°C above pre-industrial levels, and to pursue efforts to limit the temperature increase to 1.5°C.
- 17.19 An NDC communicates how a nation aims to pursue this effort. In its NDC, the UK is committing to reduce economy-wide greenhouse gas emissions by at least 68% by 2030, compared to 1990 levels.

Climate Change: second national adaptation programme (2018 – 2023) (NAP)

- 17.20 The National Adaptation Programme (NAP) sets the actions that government and others will take to adapt to the challenges of climate change in the UK. It sets out key actions for the next 5 years.

⁶⁷ UK Government (2008) Climate Change Act 2008. Available from: <https://www.legislation.gov.uk/ukpga/2008/27/contents> [Accessed 14 October 2021]

⁶⁸ UK Government (2020) United Kingdom of Great Britain and Northern Ireland's Nationally Determined Contribution. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/943618/uk-2030-ndc.pdf [Accessed 19 October 2021]

UK Climate Change Risk Assessment (2017 & 2021)

The Adaptation Committee's UK Climate Change Risk Assessment Evidence Report sets out the priority climate change risks and opportunities for the UK.

UK Clean Growth Strategy

17.21 The UK Clean Growth Strategy sets out the UK Government's proposals for decarbonising all sectors of the UK economy through the 2020s.

17.22 In addition to the aforementioned policy and guidelines, this assessment has been compiled in accordance with professional standards and guidance. The following standards and guidance which relate to the assessment are:

- Manchester Climate Change Strategy 2017-2050.
- Manchester Climate Change Implementation Plan 2017-2022.
- Manchester Climate Change Framework 2020-2025.
- MCC Climate Change Action Plan 2020-2025.
- IEMA's EIA Guide to: Climate Change Resilience and Adaptation (2020).
- IEMA's 2017 Guidance on 'Assessing Greenhouse Gas Emissions and Evaluating their Significance'.
- The European Commission (EC) guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (2013).
- PAS 2080 Guidance Document (2016) on Carbon Management in Infrastructure.
- IEMA's Principles on Climate Change Mitigation and EIA.
- RICS (2017) Whole Life Carbon Assessment for the built environment (1st edition).

Approach

Overview

17.23 The assessment will be carried out with due consideration of the following guidance documents:

- IEMA Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance⁶⁹.
- IEMA Environmental Impact Assessment Guide to: Climate Change Resilience and Adaptation⁷⁰.

17.24 In alignment with this guidance the chapter presents the assessment under the following two headings:

⁶⁹IEMA (2017), Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance. Available at <https://www.iema.net/preview-document/assessing-greenhouse-gas-emissions-and-evaluating-their-significance> (Accessed January 2021)

⁷⁰IEMA (2020), Environmental Impact Assessment Guide to: Climate Change Resilience and Adaptation. Available at <https://www.iema.net/resources/reading-room/2020/06/26/iema-eia-guide-to-climate-change-resilience-and-adaptation-2020> (Accessed January 2021)

- **Impact of the project on climate (Greenhouse Gas (GHG) emissions assessment)** – these sections cover the potential additional and avoided GHG emissions associated with demolition, construction and operation, in comparison with current and future baseline GHG emissions. It will also identify mitigation measures to reduce the GHG emissions.
- **Vulnerability of the project to climate change (Climate Change Risk (CCR) assessment)** – these sections cover how climate change is anticipated to manifest itself in the future and the vulnerability of the project to such climate change.

Assessment Methodology

17.25 As set out in Section 4, the EIA approach is made as robust as possible by the presentation of a series of assessment scenarios, enabling the absolute worst case to be identified and assessed. The assessment scenarios in respect of the EIA for the proposed development are as follows:

- Assessment Stage 1 - Demolition and Construction Phase:
 - Scenario 1a - Assessment of the impacts relating to the proposed development only
 - Scenario 1b - Assessment of the impacts relating to the proposed development, plus impacts associated with Application 1, 3 and 4
 - Scenario 1c - Scenario 1c – Assessment of the impacts relating to the proposed development, Applications 1, 3 and 4, and the wider SRF
- Assessment Stage 2 - Completed Development and Operational Phase:
 - Scenario 2a - Assessment of the impacts relating to the proposed development only
 - Scenario 2b - Assessment of the impacts relating to the proposed development, plus impacts associated with Application 1, 3 and 4
 - Scenario 2c - Assessment of the impacts relating to the proposed development, Applications 1, 3 and 4, and the wider SRF

17.26 Table 17.12 and Table 17.13 present the proposed scope and approach of the climate assessment for each scenario.

Table 17.12: Proposed scope of assessment (GHG emissions)

Assessment scope: Impact of the development on climate (GHG emissions)				
Stage	Assessment Scenario	Scoped in/out	Rationale for scoping	Approach to assessment
Stage 1 – Demolition and Construction Phase	1a	Scoped in	The proposed development could give rise to significant effects on GHG emissions due to the impact of demolition and construction activities. Emissions arising during assessment scenario 1a	The GHG assessment, for assessment scenario 1a will quantify and report the GHG emissions anticipated to be generated or avoided by the Proposed Development in the form of a 'carbon footprint'. The carbon footprint will be reported

			will be assessed through a GHG emissions assessment.	in tonnes of carbon dioxide equivalent (tCO ₂ e). Error! Reference source not found. identifies the key contributing GHG sources or activities from the Proposed Development, with a justification for those excluded from GHG emissions assessment. Emissions from the 'scoped in' sources will be compared to the baseline 'do minimum' scenario to quantify the net impact (carbon footprint) of the proposed development.
	1b	Scoped in - Qualitative assessment	Demolition and construction activities required for the delivery of Applications 1,3 and 4 could give rise to significant effects on GHG emissions.	As detailed demolition and construction information will not be available for Applications 1,3 and 4 at the time of the assessment a qualitative assessment will be undertaken for scenario 1b based on high level understanding of the applications.
	1c	Scoped in - Qualitative assessment	Demolition and construction activities required for the delivery of Applications 1,3 and 4 and the wider SRF could give rise to significant effects on GHG emissions.	As detailed demolition and construction information will not be available for Applications 1,3 and 4 and the wider SRF at the time of the assessment a qualitative assessment will be undertaken for scenario 1c based on high level understanding of the applications and wider SRF.
Stage 2 – Completed Development and Operational Phase	2a	Scoped out	Due to the nature of scenario 1a it is considered that there will be no energy consumption, maintenance and refurbishment requirements or increases in traffic during operation and therefore no change in GHG emissions, as such it is proposed that this scenario is scoped out.	N/A
	2b	Scoped in - Qualitative assessment	Operational activities associated with Applications 1,3 and 4 could give rise to significant effects on GHG emissions.	As detailed operational information will not be available for Applications 1,3 and 4 at the time of the assessment a qualitative GHG assessment will be undertaken for scenario 2b based on high level understanding of the applications.
	2c	Scoped in -	Operational activities associated with Applications 1,3 and 4	As detailed operational information will not be available for Applications 1,3 and 4 at the

		Qualitative assessment	and the wider SRF could give rise to significant effects on GHG emissions.	time of the assessment a qualitative GHG assessment will be undertaken for scenario 2c based on high level understanding of the applications and the wider SRF.
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Table 17.3: Key contributing GHG sources or activities from the proposed development

Lifecycle stage and source of GHG emissions	Scoped in	Scoped out	Justification where scoped out or additional important information where scoped in
Pre-construction phase			
GHG emissions associated with the planning and consenting phases	✓		n/a
Construction phase			
Material supply including primary extraction and manufacturing	✓		n/a
Transport of materials to site	✓		n/a
Construction process and site works associated with the development, including for any demolitions required	✓		n/a
Transport of workers to and from site	✓		n/a
Transport and treatment of waste materials arising during construction (e.g. demolition waste)	✓		n/a
Emissions associated with land use change. For example, immediate loss or planting of additional vegetation (a carbon sink).	✓		n/a
Operation and use phase			
Maintenance and refurbishment of infrastructure during operation		✓	Due to the nature of scenario 1a it is considered that there will be no operational maintenance or refurbishment requirements
Operational energy consumption of the physical development (new infrastructure). This may include buildings, cranes, transport of cargo within the site boundary, forklift trucks, telescopic handlers, use of any on site combustion plant etc.		✓	Due to the nature of scenario 1a it is considered that there will be no operational energy consumption
Carbon emissions arising from changes in road traffic movements		✓	Due to the nature of scenario 1a it is considered that there will be no increase in traffic during operation and therefore no change in GHG emissions associated with road users.
Decommissioning phase			
End of life emissions, including those associated with demolition, transportation and treatment of waste	✓		n/a

Table 17.13: Proposed scope of assessment (CCR)

Assessment scope: Vulnerability of the development to climate change				
Stage	Assessment Scenario	Scoped in/out	Rationale for scoping	Approach to assessment
Stage 1 – Demolition and Construction Phase	1a	Scoped out	It is proposed that an assessment of the vulnerability of the development to climate change is scoped out for assessment scenarios 1a, 1b and 1c as the construction programme is not expected to be long enough to experience any notable changes in the climate.	N/A
	1b	Scoped out		
	1c	Scoped out	Key issues related to adaptation to climate change e.g. flood risk will be considered within other chapters e.g. Drainage and Flood Risk.	
Stage 2 – Completed Development and Operational Phase	2a	Scoped out	The operational programme, prior to future development is not expected to be long enough to experience any notable changes in the climate, as such it is proposed that this scenario is scoped out.	N/A
	2b	Scoped in - Qualitative assessment	Operational activities associated with Applications 1,3 and 4 could give rise to significant effects on climate change resilience.	As detailed operational information will not be available for Applications 1,3 and 4 at the time of the assessment a qualitative CCR assessment will be undertaken for scenario 2b based on high level understanding of the applications.
	2c	Scoped in - Qualitative assessment	Operational activities associated with Applications 1,3 and 4 and the wider SRF could give rise to significant effects on climate change resilience.	As detailed operational information will not be available for Applications 1,3 and 4 and the wider SRF at the time of the assessment a qualitative CCR assessment will be undertaken for scenario 2c based on high level understanding of the applications and the wider SRF.

Assumptions and limitation

Impact of the development on climate (GHG emissions assessment)

- 17.27 The assessment of GHG emissions requires the collation of activity data from a range of sources within the design teams, e.g. construction material quantities, transport and plant emissions, etc. It is assumed that such data will be available, in sufficient detail to inform the fullest assessment possible. Where there are gaps, professional judgement will be used to adopt appropriate benchmark data.

Vulnerability of the development to climate change (CCR assessment)

- 17.28 Climate projections are simulations of potential future climate scenarios, under a range of hypothetical emissions scenarios and assumptions, and should not be viewed as predictions or forecasts. Subsequently, the projections used for the assessment should not be viewed as exact or factual, but as probable scenarios.

Study area

Impact of the development on climate (GHG emissions assessment)

Demolition and Construction Phase

- 17.29 For Assessment Scenario 1a the study area for the GHG emissions assessment will be the site red line boundary for the proposed development (Application 2 HIF Infrastructure Works, see **Appendix I**). The assessment will cover all direct GHG emissions arising from activities and land use change where demolition and construction works take place within the boundary. It also includes indirect emissions embedded within any construction materials arising as a result of the energy used for their production as well as emissions arising from the transportation of materials and waste to and from the site.
- 17.30 For Assessment Scenarios 1b and 1c the study area will be the (indicative) site location areas and the wider SRF boundary (See **Appendices II to IV**).

Completed Development and Operational Phase

- 17.31 For Assessment Scenarios 2b and 2c the study area for operational GHG emissions arising from maintenance and refurbishment activities will be the application boundaries. For emissions associated with vehicles using the highways infrastructure the study area will be the application boundaries, with consideration given to their setting within the wider transport network.

Vulnerability of the development to climate change (CCR assessment)

Completed Development and Operational Phase

- 17.32 For Assessment Scenarios 2b and 2c the study area for the climate change resilience (CCR) assessment will be the (indicative) site location areas (See **Appendices II to IV**).

Baseline

Impact of the development on climate (GHG emissions assessment)

- 17.33 The baseline (do-minimum scenario) is the reference point against which the impact of the proposed development can be compared and assessed. The do-minimum scenario for the proposed development comprises the cumulative GHG emissions within the study area but without implementation of the proposed development.
- 17.34 The GHG emissions without implementing the proposed development represent the current and future baseline (do minimum scenario). In this scenario it is assumed that no construction activity would take place and the area would continue to operate in its current configuration.

Vulnerability of the development to climate change (CCR assessment)

- 17.35 The baseline environment for the CCR assessment will include consideration of the following:
- Current climate conditions – established for a range of relevant climate variables, based on the long-term average of historical weather data.
 - Future climate conditions – predicted on a range of future emissions scenarios and probability ranges.

Current climate baseline

- 17.36 The Meteorological Office (Met Office) generates climatologies for different areas of the UK, known as climate districts, including historical regional climate information. The proposed development is located within the North-West and North Wales climate district⁷¹.
- 17.37 **Table 17.14** describes the baseline climate data for the North West England & Isle of Man region⁷².

Table 17.14: UK regional historical climate characteristics for the NW England region of the UK, representing the current climate conditions in the study area.

Parameter	North England Regional Climate Observations
Temperature	Mean annual temperatures over the region depend very much on altitude and, to some extent, proximity to the coast.
Rainfall	The exposure of NW England to westerly maritime air masses and the presence of extensive areas of high ground mean that the region has some of the wettest places in the UK. Manchester averages 830mm. Whilst rainfall is generally well distributed

⁷¹ UK climate districts map. Available online: <https://www.metoffice.gov.uk/research/climate/maps-and-data/about/districts-map>

⁷² UK regional climates. Available online: [north-west-england--isle-of-man_-climate---met-office.pdf](https://www.metoffice.gov.uk/research/climate/maps-and-data/about/districts-map) (metoffice.gov.uk)

	through the year, there is a seasonal pattern. The driest season is spring whilst there is an autumn/winter maximum, when the Atlantic depressions are at their most vigorous.
Wind	NW England is among the most exposed parts of the UK as it is close to the Atlantic and contains large upland areas. The region experiences 5-10 gales per year, defined as days that the wind reaches a mean speed greater than 34 knots over ten consecutive minutes.
Sunshine	Sunshine duration is controlled by the length of day and cloudiness. It decreases with increasing altitude, latitude and distance from the coast. Average annual sunshine hours over NW England range from 1200 hours to 1500 hours.
Ground frost	Ground frost refers to a temperature below 0°C measured on a grass surface. In NW England ground frost occurs on average between 75 and 150 days per year.
Snowfall	The occurrence of snow is closely linked to temperature. Over most of the area, snowfall is normally confined to the months from November to April, but upland areas may have occasional falls in October and May. On average, the number of days with snow falling is about 20 days in lower-lying parts of the mainland but as much as 50 days over the highest ground.

Future climate baseline

- 17.38 Future changes to the climate baseline will be identified for the operational life cycle stage, and will be used to provide a high-level, qualitative assessment of the proposed developments vulnerability to future climate change.
- 17.39 In accordance with IEMA Guidance, the climate projections will be taken from the UK Climate Projections 18 (UKCP18) high emissions scenario RCP8.5 (50% probability) 25km probabilistic projections.
- 17.40 All projections (probabilistic, global, regional and local) demonstrate an increased chance of warmer, wetter winters and hotter, drier summers in addition to an increase in the frequency and intensity of extremes of

weather. Under the high emissions scenario, the average warming experienced in the UK could be as high as 5.4 °C in summer by 2070, with winters experiencing an increase of 4.2 °C.

- 17.41 Precipitation is expected to become more seasonally polarised with wetter winters and drier summers. Under the high emissions scenario, the UK, on average, could experience a 35% increase in winter precipitation levels and a 47% decrease in summer precipitation levels. However, despite the decrease in overall precipitation volumes, projections indicate an increase in the intensity of heavy summer rainfall events. High or heavy rainfall events are linked to increased surface water on roads and an increased risk of flooding.

Potential impacts

Impact of the development on climate (GHG emissions assessment)

- 17.42 The assessment will consider impact on the climate in terms of the contribution of emissions to the local and national carbon budget allocations (as proxies for the global climate) and the impact on the UK meeting its carbon reduction targets.
- 17.43 Potential sources of greenhouse gas emissions applicable to the construction and operational phases of the proposed development are presented below in

- 17.44 **Table 17.15.**

Table 17.15: Potential sources of GHG emissions

Lifecycle stage	Activity	Primary emission sources
Pre-construction stage (including demolition)	Land clearance	GHG emissions from loss of carbon stock
	On-site construction activity i.e. enabling works, demolition of existing structures, etc	GHG emissions from fuel consumption from construction plant and vehicles, generators on-site, and worker commuting
	Disposal and transportation of earthworks/ waste	GHG emissions from disposal and transportation of earthworks/ construction waste
Product stage (A1-A3)	Raw material extraction and manufacturing of products/ materials	Embodied GHG emissions
	Transport of products/ materials to site	GHG emissions from fuel consumption from vehicles
Construction stage (A4-A5)	On-site construction activity	Energy (electricity, fuel, etc.) consumption from plant and vehicles, generators on site, and worker commuting
	Transport of construction workers	GHG emissions from fuel consumption from worker commuting
	Disposal and transportation of construction waste	GHG emissions from disposal of waste GHG emissions from fuel consumption of transportation of waste
Operational stage (B1-B7)	Building operations of Proposed Development	GHG emissions from energy, provision of potable water, and treatment of waste-water

	Disposal and transportation of operational waste	GHG emissions from disposal of waste GHG emissions from fuel consumption of transportation of waste
	Maintenance activities	GHG emissions from energy and embodied GHG emissions from raw materials, used in maintenance activities

Vulnerability of the development to climate change (CCR assessment)

- 17.45 Potential impacts to the proposed development include damage to assets caused by climate change and the associated costs in terms of loss of time, loss of function, repairs, etc. **Error! Reference source not found.** summarises the potential impacts resulting from climate risk during operation.

Table 17.16: Potential impacts resulting from climate risk during operation

Climate Effect	Receptor	Potential Impacts
Increased precipitation (especially in winter), including intense periods of rainfall	Infrastructure (drainage assets)	Wetter winters and increased frequency of intense rainfall events could result in the overwhelming of drainage assets. This could result in secondary impacts such as localised flooding. Change in ground water level affecting earth pressures and foundation settlement causing possible large ground movement. Wetter winters and increased frequency of intense rainfall events and extreme weather events could result in coastal flooding. This could result in impacts such as flooding.
	Infrastructure	Wetter winters and increased frequency of intense rainfall events could result in damage to road surfaces and pavements due to scour. Water ingress to signalling, lighting and other operational electrical equipment. Increase stripping rate of the road surfaces. Increased likelihood of potholing, rutting and cracking from moisture entering and remaining in road surfaces.
	Human health (road users)	Wetter winters and increased frequency of intense rainfall events could result in localised surface water flooding, which could lead to hydroplaning and unsafe driving conditions. Increased ground water level may lead to flooding of pedestrian walkways.
Increased frequency of dry periods	Environmental (soft landscape)	Increasing frequency of dry summer periods could lead to vegetation failure.
	Infrastructure	Potential risk of soil shrinkage impacting foundations, including signal gantries, lighting pylons, bridges, other structures. Possible ground movement. Earthing and thermal/electrical conductivity issues for high voltage or dynamically loaded cables - in typical ground

		conditions (i.e. near surface geology and subsoil), ground resistance and electrical and thermal conductivity of earthing arrays and high voltage cables are controlled by a range of factors including the presence of moisture (% water saturation) and temperature. As ground moisture decreases, conductivity also decreases and ground 'resistance' therefore increases. Reduced slope stability and potential earthworks failure during or immediately after summer storm events falling on desiccated soils.
Increased frequency of extreme weather and extreme winds	Infrastructure	Failure of or damage to assets as a result of changes in extreme winds.
	Human health	Increased risk of wind-blown debris on the road, affecting road safety.
Increased temperatures, including prolonged periods of hot weather	Infrastructure (bridges)	Increased likelihood of greater thermal loading overstressed bearings that could eventually compromise the structural stability of the asset.
	Infrastructure (pavements)	Stress on road surfaces (i.e. degradation of macrotexture and reduction of texture depth, wearing away of asphalt compromising support layers).
	Infrastructure (pavement)	Freeze-thaw during cold snaps and extreme high temperatures can cause damage to road surfaces including road and pavement cracking and deformation resulting in a reduction of road service life.
	Infrastructure (earthworks)	Shrink swell processes resulting in desiccation cracking and embankment and earthwork instability.
	Environmental (soft landscape)	Increased frequency and severity of extreme heat events (i.e. heat waves) could result in the soft landscape design (trees and shrubs) being compromised (e.g. plant failures).

Mitigation Measures

- 17.46 Embedded mitigation will be described within the climate chapter in order to enable an assessment of the impacts to be made which takes into account the mitigation measures which have been designed into the proposed development, i.e. embedded into the design.
- 17.47 The climate chapter will also identify recommended mitigation that is not embedded into the proposals.

Significance Criteria

Impact of the development on climate (GHG emissions assessment)

- 17.48 The IEMA guide to assessing the significance of GHG emissions ⁷³ publishes the over-arching principle:

⁷³ IEMA (2017) Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance

"The GHG emissions from all projects will contribute to climate change; ...as such any GHG emissions or reductions from a project might be considered to be significant..."

- 17.49 In accordance with this guidance, any carbon emissions associated with the proposed development can be deemed significant. The guidance however does not provide significance criteria to assess potential effects against a scale of significance in the context of the EIA Regulations. The GHG assessment will be evaluated with reference to the national carbon budgets, and local and sector emissions profiles and targets (where relevant), in order to contextualise the emissions and develop appropriate mitigation measures.

Vulnerability of the development to climate change (CCR assessment)

- 17.50 The significance of the risks identified in the CCR assessment is based on the likelihood of a hazard having an impact on the proposed development and the consequence of the impact. The potential likelihood and consequence of impacts on the proposed development will be scored using a qualitative five-point scale, as set out in Table 17.8 and Table 17.9.

Table 17.17: Qualitative five-point scale of likelihood of hazard impact

Descriptor	Description
Very unlikely	Event only occurs in exceptional circumstances and would not be expected to occur in the lifetime of the development
Unlikely	Based on the current design, engineering and maintenance standards, the event is not expected to occur more than once during the lifetime of the development
As likely as not	Event may occur at least once during the lifetime of the development
Likely	Event is expected to occur several times during the lifetime of the development
Very likely	Event is expected to occur many times during the lifetime of the development

Table 17.18: Qualitative five-point scale of consequences of hazard impact

Descriptor	Description
Negligible	Minor cuts/abrasions requiring minimal treatment; Causing minimal work interruption; No financial loss or costs; No environmental consequence.
Slight	Injury requiring first aid treatment; Causing interruption of work for 3 days or less; Slight financial loss or cost; Slight environmental consequence.
Moderate	4 - 14 day lost-time injury(s). Medical treatment required; Substantial work interruption;

	Considerable financial loss; Moderate environmental implications.
Major	Major injuries, including permanent disabling injuries of over 14 days; Major work interruption; Serious financial loss; Severe environmental implications.
Catastrophic	Single or multiple deaths involving any person; Disastrous work interruption; Huge financial loss; Devastating environmental implications.

- 17.51 The evaluation of significance is a product of the likelihood and consequence of each impact as set out in **Table**. Significant effects are generally defined as those that are of medium, high or very high significance. Significance conclusions for each impact will incorporate confirmed design and mitigation measures.

Table 17.9: Significance matrix

		Measure of consequence				
		Negligible	Slight	Moderate	Major	Catastrophic
Measure of likelihood	Very likely	Medium	Medium	High	Very high	Very high
	Likely	Low	Medium	Medium	Very high	Very high
	As likely as not	Low	Low	Medium	High	High
	Unlikely	Very low	Very low	Low	Medium	Medium
	Very unlikely	Very low	Very low	Low	Low	Medium

Consultation

- 17.52 In general, there are no specific statutory or non-statutory consultation bodies on climate change within the EIA process. However, with the growing importance of climate change on political and public agendas, this EIA Scoping Report opens up consultation with the local authority (Manchester City Council) within which the development is located, providing the opportunity to comment on the scope and methodology of assessment.

Cumulative Effects

- 17.53 A separate cumulative effects chapter will also be presented at Chapter 18 of the ES. This will assess the cumulative impacts of the proposed development in conjunction with any committed developments within the vicinity of the sites identified through the scoping process, as well as the wider development project (Applications 1, 3 and 4) and the wider SRF. The approach will be aligned with the assessment scenarios outlined in Section 4 of this Scoping Report.

18. Non – Significant Issues

- 18.1 This section sets out those environmental issues deemed to be insignificant for the purposes of EIA, and as such have been 'scoped out' of the EIA process.

Wind Microclimate

- 18.2 There is no built element of the proposed development, meaning that there will be no change to the existing massing. There is therefore no potential for significant effects to arise to the local wind environment as a result of changes to massing. As such, wind microclimate effects are proposed to be scoped out of the ES.

Daylight, Sunlight and Overshadowing

- 18.3 There is no built element of the proposed development, meaning that there will be no change to the existing daylight and sunlight regime. There is therefore no potential for significant effects to arise to receptors within the local environment. As such, daylight, sunlight and overshadowing effects are proposed to be scoped out of the ES.

Materials

- 18.4 The assessment of Materials has been undertaken in accordance with the assessment methodologies described within the IEMA guide to: Materials and Waste in Environmental Impact Assessment (EIA) (hereafter referred to as the 'IEMA Guidance')⁵³
- 18.5 As outlined in the IEMA guidance^{Error! Bookmark not defined.}, materials should be scoped into an EIA if there is insufficient evidence to verify that the potential for significant adverse environmental effects related to materials consumption, will be precluded.
- 18.6 In the case of the proposed Victoria North HIF Infrastructure Works, it is considered that according to the assessment methodology prescribed in the IEMA guidance, the potential for significant effects can be ascertained to be negligible. The site does not occupy a safeguarded minerals site allocation in the local minerals plan⁷⁴.
- 18.7 Two study areas are defined for materials:
- The development study area – defined as the red-line boundary of the proposed development

⁷⁴ AGMA (2013) *Minerals Plan Map 22* Available online at:
https://secure.manchester.gov.uk/downloads/download/5550/greater_manchester_joint_minerals_development_plan_documents

- The expansive study area – defined as the availability of construction materials, within a defined region. The expansive study area for materials is the national and international supply of construction resources

- 18.8 The types of works anticipated for the Proposed Development include demolition of other existing structures, remediation and earthworks across site, construction of internal access roads and junctions, utility and services connections and diversion, provision of green infrastructure. Therefore, the types of materials expected to be consumed include aggregate, cement, steel and asphalt. It is not anticipated that meaningful quantities of materials on the European Commission, Critical Raw Materials list to be used.
- 18.9 Baseline information on national and global availability for material resources has been collected for the key raw materials likely to be used in the proposed works, these include: aggregates, asphalt, cement, and steel. National availability has been used as the baseline for aggregate, asphalt and cement, rather than regional, as although demand is satisfied by UK supply, resources are not always distributed evenly and some inter-regional movement is necessary⁷⁵. Global steel availability has been used as the baseline for Steel as the UK imports more than it produces⁷⁶. These key materials are nationally and globally traded commodities with no known issue regarding UK supply and stock. Therefore, the sensitivity of these receptors i.e. material availability, is defined as 'Low'.
- 18.10 As such, material effects are proposed to be scoped out of the ES.

Lighting

- 18.11 The proposed works will be undertaken during conventional working hours, resulting in little disruption to nearby receptors from any artificial lighting used. This will ensure that lighting is appropriate in terms of the potential effects on public realm and surroundings of the site. Lighting will also be proposed as part of the completed development and operational phase.
- 18.12 As this can be 'designed-in' to the proposals and secured through appropriate planning controls, it is considered that a detailed assessment of lighting is not required as part of the EIA. As such, lighting effects are proposed to be scoped out of the ES.

Transport and Access (Completed Development)

- 18.13 As there is no built development aspect of the proposed scheme, there will be no increases in transport and access demands upon completion of the works. As there are no anticipated increases in demands to transport and access upon completion, there is no possibility of significant effects arising. As such, transport and access effects from the completed development are proposed to be scoped out of the ES.

⁷⁵ Mineral Products Association (2020) Profile of the UK Mineral Products Industry. Available online at: https://www.mineralproducts.org/MPA/media/root/Publications/2021/Profile_of_the_UK_Mineral_Products_Industry_2020_Spread.pdf

⁷⁶ House of Commons (2021). UK Steel Industry: Statistics. Available online at: and policy <https://researchbriefings.files.parliament.uk/documents/CBP-7317/CBP-7317.pdf>

Air Quality and Dust (Completed Development)

- 18.14 Given that there is no built development aspect of the proposed scheme, there are therefore no expected increases in traffic associated with the completed development. As such, there will be no additional emission produced upon completion of the proposed development, and therefore no significant effects will arise. As such, air quality and dust effects from the completed development are proposed to be scoped out of the ES.

Noise and Vibration (Completed Development)

- 18.15 Given that there is no built development aspect of the proposed scheme, no increases in noise and vibration are expected upon completion of the works, whether that be in relation to traffic generated or ambient noise from activities associated with the site. There is therefore no potential for significant effects to arise and as such, noise and vibration effects from the completed development are proposed to be scoped out of the ES.

Major Accidents and Disasters

- 18.16 The EIA Regulations 2017 Schedule 4 Section 5 requires the developer to assess *"the expected significant effects (on the environment) arising from the vulnerability of the proposed development to "major accidents or disasters" that are relevant to that development"*.
- 18.17 At the time of undertaking this EIA Scoping Report, there is no universally adopted definition of the term 'major accident and/or disaster'. For the purpose of this EIA Scoping Report, the following definitions from the Institute of Environmental Management and Assessment (IEMA) Major Accidents and Disasters in EIA: A Primer⁷⁷ (hereafter referred to as the 'IEMA Primer') have been adopted:

- Accident – something that happens by chance or without expectation.
- Disaster – *"a natural hazard (e.g. earthquake) or a man-made/external hazard (e.g. act of terrorism) with the potential to cause an event or situation that meets the definition of a major accident."*
- Major Accident – *"events that threaten immediate or delayed serious environmental effects to human health, welfare and/or the environment and require the use of resources beyond those of the client or its appointed representatives to manage."*
- Risk – *"the likelihood of an impact occurring, combined with the effect or consequence(s) of the impact on a receptor if it does occur."*
- Risk event – *"an identified, unplanned event, which is considered relevant to the proposed development and has the potential to result in a major accident and/or disaster, subject to its potential to result in a significant adverse effect on an environmental receptor."*

⁷⁷ IEMA, (2020) Major Accidents and Disasters in EIA: A Primer. Online. Available from: <https://www.iema.net/resources/reading-room/2020/09/28/major-accidents-and-disasters-in-eia-an-iema-primer>.

- Vulnerability – “describes the potential for harm as a result of an event, for example due to sensitivity or value of receptors. In the context of the” EIA Regulations, vulnerability “refers to “exposure and resilience” of the proposed development to the risk of a major accident and/or disaster. Vulnerability is influenced by sensitivity, adaptive capacity and magnitude of impact.”
- Significant environmental effect (in relation to a major accident and/or disaster assessment) – “includes the loss of life, permanent injury and temporary or permanent destruction of an environmental receptor which cannot be restored through minor clean-up and restoration.”

- 18.18 The aim of the scoping stage, as described by the IEMA Primer, is “to determine in more detail whether there is potential for significant effects as a result of major accidents and/or disasters associated with a development, and the resulting scope of and approach to the assessment if required.”
- 18.19 A risk identification screening exercise has been undertaken (see **Appendix VII**) and the outcome provides justification to support the proposal that the topic of Accidents and Disasters can be scoped out of further assessment. The following sections present further detail as to the work undertaking in respect of considering the potential for significant effect in respect of Accidents and Disasters.

Site Context

- 18.20 The site is located in Manchester, to the north east of Manchester Victoria Station. It has a history of 150 years of industrial use which has left a legacy of ground contamination, modified waterways, potential coal mine workings and some utilities infrastructure. It is surrounded by modern industrial and commercial facilities.
- 18.21 There are no ecological designations within the site. Rochdale Canal SAC and SSSI is located 4.3km north east of the site and four local non-statutory designated Sites of Biological Importance (SBI) are within 2km of the site. The site is in Flood Zone 1, meaning it has a 0.1% chance of flooding in any given year, though there are localised areas of low, medium and high risk of surface water flooding. The River Irk is located within the site boundary. The closest AQMA is the Greater Manchester Combined Authority AQMA which is 150m west of the site.
- 18.22 There are two Control of Major Accident Hazards (COMAH) sites within 4.8km of the site: Evonik Chemicals Ltd. and Tennants Distribution Ltd.

Planning Policy Context

National Planning Policy

National Planning Policy Framework

- 18.23 The NPPF 2021 states at paragraph 45 that “local planning authorities should consult the appropriate bodies when considering applications for the siting of, or changes to, major hazard sites, installations or pipelines, or for development around them.”
- 18.24 It goes on to outline at paragraph 97 how “planning policies and decisions should promote public safety and take into account wider security and defence requirements by...anticipating and addressing possible

malicious threats and natural hazards, especially in locations where large numbers of people are expected to congregate.

- 18.25 *Policies for relevant areas (such as town centre and regeneration frameworks), and the layout and design of developments, should be informed by the most up-to-date information available from the police and other agencies about the nature of potential threats and their implications. This includes appropriate and proportionate steps that can be taken to reduce vulnerability, increase resilience and ensure public safety and security."*

Other Relevant National Planning or Development Strategies

- 18.26 The UK is no longer a member of the European Union. EU legislation as it applied to the UK on 31st December 2020 is now a part of UK domestic legislation, under the control of the UK's Parliaments and Assemblies.
- 18.27 The European Union (Withdrawal) Act 2018 introduced "retained EU law" which provides that EU-derived domestic legislation continues to have effect after exit day.
- 18.28 A summary of the legislation which is relevant to this chapter is summarised below:

Health and Safety at Work etc. Act 1974 (the HSW Act)

- 18.29 The HSW Act places general duties on e.g. employers, people concerned with premises, manufacturers and employees. Health and safety regulations made under this Act contain more detailed provisions. The HSW Act provides the framework for the regulation of industrial health and safety in the UK. The overriding principle is that foreseeable risks to persons in workplaces shall be reduced so far as is reasonably practicable and that adequate evidence shall be produced to demonstrate that this has been done.

Construction (Design and Management) Regulations 2015 (the CDM Regulations)

- 18.30 The CDM Regulations place specific duties on clients, designers and contractors so that health and safety is taken into account throughout the life of a construction project from its inception to its subsequent final demolition and removal. Under the CDM Regulations, designers are required to take account of the general principles of prevention and any pre-construction information. This is to eliminate, so far as is reasonably practicable, foreseeable risks to the health or safety of any person carrying out or liable to be affected by construction work; maintaining or cleaning a structure; or using a structure designed as a workplace.

The Management of Health and Safety at Work Regulations 1999 (the MHSW Regulations)

- 18.31 The MHSW Regulations add further to the HSW Act in order to detail what employers are required to do to manage health and safety. This includes carrying out risk assessments and appropriate training for employees.

The Workplace (Health, Safety and Welfare) Regulations 1992 (the WHSW Regulations)

- 18.32 The WHSW Regulations cover a wide range of basic health, safety and welfare issues and they apply to most workplaces (except those involving construction work on construction sites, those in or on a ship, or those

below ground at a mine). It includes provisions on workplace elements such as ventilation, lighting, cleanliness, floor conditions and traffic routes.

The Electricity at Work Regulations 1989 (the EW Regulations)

- 18.33 The EW Regulations sets out precautions to be taken by employers, self-employers and employees against the risk of death or personal injury from electricity in work activities.

Control of Major Accidents and Hazards Regulations 2015 (the COMAH Regulations)

- 18.34 The COMAH Regulations aim "to prevent and mitigate the effects of major accidents involving dangerous substances which can cause serious damage/harm to people and/or the environment" (which are treated equally seriously). The COMAH Regulations ensure that businesses "take all necessary measures to prevent major accidents involving dangerous substances [and] limit the consequences to people and the environment of any major accidents which do occur." The COMAH Regulations are administered jointly by the Health and Safety Executive (HSE) and the Environment Agency (EA) and implement the majority of the Seveso III Directive (Council Directive 2012/18/EU)⁷⁸.

Local Planning Policy

Greater Manchester Prepared

The Greater Manchester Prepared website⁷⁹ details the risks most likely to be experienced by the Greater Manchester area and how to prepare for or avoid them.

Approach

- 18.35 At present, there is no recognised standard methodology for the assessment of major accidents and disasters within EIA. In September 2020, the Institute of Environmental Management and Assessment (IEMA), in partnership with Arup, published 'Major Accidents and Disasters in EIA: A Primer' which is a risk assessment (using a source-pathway-receptor) based approach. Therefore, the assessment of Major Accidents and Disasters in relation to the proposed development has been based on a combination of the IEMA Primer and professional judgement.
- 18.36 The Cabinet Office National Risk Register (NRR) (2020 Edition)⁸⁰ (the NRR 2020) has been used to inform the identification of potential major accidents and natural disasters. The NRR 2020 details the Government's assessment of the "likelihood and potential impact of a range of different civil emergency risks (including naturally and accidentally occurring hazards and malicious threats) that may directly affect the UK over the next 5 years." These events include topics like terrorist attacks, flooding, earthquakes and fires and are accompanied by suggestions for how to prepare responses for them, such as emergency plans.

⁷⁸ European Union. Annex VI of the Seveso III Directive. Online. Available from: [Annex VI to Consolidated Version of Directive 67/548/EEC \(europa.eu\)](https://eur-lex.europa.eu/eli/dir/2012/18/eu/annex6).

⁷⁹ Greater Manchester Agencies Partnership, (2020) Greater Manchester Emergency Plan. Online. Available from: <https://www.gmemergencyplanning.org.uk/>.

⁸⁰ Cabinet Office, (2020). National Risk Register. Online. Available from: <https://www.gov.uk/government/publications/national-risk-register-2020>.

- 18.37 The study area has been determined on the basis of a worst-case impact area, in the event of a major accident or disaster, informed by the maximum extent of all other topic assessments study areas, and includes the full extents of the proposed development.
- 18.38 The IEMA Primer states that the major accidents and disasters topic can be scoped out of the EIA if it can be demonstrated that:
- There is no source-pathway-receptor linkage of a hazard that could trigger a major accident and/or disaster or potential for the proposed development to lead to a significant environmental effect.
 - All possible major accidents and/or disasters are adequately covered elsewhere in the assessment or covered by existing design measures or compliance with legislation and best practice.
- 18.39 If the above cannot be demonstrated the topic must be scoped in for further assessment.
- 18.40 In order to demonstrate the above, a risk identification exercise has been undertaken. The risk identification considers the current risk profile identified in the NRR 2020 with respect to natural disasters, transport incidents, construction incidents, disease, system failures and security and to what extent these risks, if present, are addressed by embedded mitigation. The risk identification also includes a review of any nearby sites listed by the HSE under COMAH.
- 18.41 The risk identification considers the source-pathway-receptor model in terms of risks to environmental receptors such as designated environmental sites, residents local to the proposed development, users of the proposed development and workers on and in close proximity to the site, during construction and operation of the proposed development.

Sensitivity

- 18.42 The measure of sensitivity of a receptor in relation to Major Accidents and Disasters is defined by the IEMA Primer as *"a function of its value, and capacity to accommodate change reflecting its ability to recover if it is affected. It is typically defined by the following factors:*
- *Adaptability – the degree to which a receptor can avoid, adapt to or recover from an effect.*
 - *Tolerance – the ability of a receptor to accommodate temporary or permanent change.*
 - *Recoverability – the temporal scale over and extent to which a receptor will recover following an effect."*

Significance Criteria

- 18.43 To determine the risk of a significant effect the likelihood of an event is taken into consideration, followed by the potential consequence should the event occur. In examining the consequence, the following is considered:
- The geographic extent of the effects of the risks. Effects beyond the boundary of the proposed development are more likely to be considered significant.

- The duration of the effects from the risks. Effects which are permanent (i.e. irreversible) or long-lasting are more likely to be considered significant.
- The severity of the effects in terms of number, degree of harm to those impacted and the response effort required. Effects which trigger the mobilisation of substantial civil emergency response effort are more likely to be considered significant.
- The sensitivity of the identified receptors.
- The effort required to restore the environment. Effects requiring substantial clean-up or restoration efforts are more likely to be considered significant.

18.44 In addition, any embedded mitigation measures within the proposed development will be taken into consideration to determine if, through them, the risk is adequately mitigated.

18.45 The IEMA Primer also identifies significance, based on criteria adopted from Annex VI of the Seveso III Directive, which details the general classifications and labelling requirements of dangerous substances and preparations.

18.46 Using this reference, the significance threshold for the proposed development is set at anything which causes loss of life or permanent injury and/or long-lasting damage to an environmental receptor.

18.47 The following assumptions have been made when undertaking this screening exercise:

- Those risks which are identified as to be assessed by various chapters in the Environmental Statement (ES) have been assumed to be adequately covered and therefore scoped out of further Major Accidents and Disasters assessment.
- A Construction Environment Management Plan (CEMP) will be produced and will be adhered to by the Contractor. This will detail best practice measures, including for pollution prevention.
- Any mitigation recommended to prevent ground contamination issues will also cover hydrological linkages with nearby watercourses, thereby also preventing surface and groundwater pollution.
- Damage to property has been excluded as a receptor and/or potential consequence as it is assumed that this would be covered under other risk assessments and health and safety risk registers.
- Emergency plans will be written by the Contractor, covering, as a minimum: fire, gas leaks, damage to electricity cables and security during construction. These will be agreed with Local Authorities, utilities and blue light authorities and applied during a relevant event.
- The Contractor will be responsible for all security measures during construction, including the securing of the construction compound and the site.
- Any potential issues with local power supply failing to meet the demand required for the construction phase of the development will be explored during design development and engagement with the local network operator. On-site generator use will be explored where necessary to meet high power loads that would not be supported from the local electricity network.

- A Construction Traffic Management Plan (CTMP) will be produced and will be adhered to by the Contractor.
- A Materials Management Plan (MMP) will be produced and will be adhered to by the Contractor. This will include guidance on how to test materials to check they are suitable for reuse.
- SuDS will be sufficient to mitigate the risk of flooding during operation of the site.
- Emergency Plans will be written by the Site Operator and cover, as a minimum, fire and attacks during operation of the site. These will be agreed with Local Authorities, utilities and blue light authorities and applied during a relevant event.
- Following construction of the site, security fencing and guards will be present in those areas of the site to be developed as part of future applications. The Site Operator will be responsible for the security of the operational site.

18.48 Baseline information for the assessment has been taken from the following scoping chapters and reports as relevant:

- Ecology and Trees.
- Ground Conditions.
- Drainage and Flood Risk.
- Transport and Access.
- Climate Change.
- Flood Risk Assessment (FRA).
- Preliminary Unexploded Ordnance (UXO) Threat Assessment.
- UXO Desk Study and Risk Assessment.

18.49 A summary of the construction and operational risks are outlined in **Error! Reference source not found.** and **Error! Reference source not found.** respectively. See also the risk identification screening exercise presented as **Appendix VI.**

18.50 The outcome of this process provides justification to support the proposal that the topic of Major Accidents and Disasters can be scoped out of further assessment and is not proposed to be scoped into the ES.

Table 18.1: Summary of construction risks

Risk Event ^{Error!} Bookmark not defined.	Source	Pathway	Receptor	Reasonable worst consequence if event did occur	Could this lead to a major accident and/or natural disaster with standard, embedded mitigation in place?
Flooding	Extreme weather event Flash flooding	Pollution event in hydrologically connected watercourse caused by flooding Failure/inundation of drainage structure	Environmental designations Local community	Damage to habitats and injury/fatality of species individuals Injury to public	No
Severe weather	Localised flooding Heatwaves Drought Storms Low temperatures and heavy snow	Pollution event in hydrologically connected watercourse caused by flooding Wildfire caused by drought, heatwave or lightning strike and spreading to construction machinery, fuel storage and the surrounding environment	Environmental designations Local community	Fatality/injury to public Damage to infrastructure Damage to habitats and injury/fatality of species individuals	No
Earthquakes and Ground Instability	Earthquake tremors Landslips	Earthquake tremors and/or ground instability leading to damage to construction equipment and infrastructure causing a pollution event and/or direct damage to species on site	Environmental designations Local community	Fatality/Injury to public Damage to infrastructure Damage to habitats and injury/fatality of species individuals	No
Fire	Wildfire Fire caused by construction machinery incident or arson	Wildfire caused by drought, heatwave or lightning strike and spread to construction machinery and fuel storage	Environmental designations Local community	Fatality/Injury to public Damage to infrastructure	No

Risk Event Error! Bookmark not defined.	Source	Pathway	Receptor	Reasonable worst consequence if event did occur	Could this lead to a major accident and/or natural disaster with standard, embedded mitigation in place?
		Fire from construction machinery spreading to other buildings and machinery and the surrounding environment		Damage to habitats and injury/fatality of species individuals	
System failures	Connection with live service connection by construction machinery	Pollution event caused by damage to sewerage or gas mains Fire risk due to gas leak Electrocution	Local community Environmental designations	Fatality/Injury to public Damage to infrastructure Damage to habitats and injury/fatality of species individuals	No
Widespread electricity failure	Construction work damaging electricity cables Electricity failure causing construction machinery to fail Network outage	Disruption or prevention of supply to site and surrounding area Exposure and damage of live wires	Local community and businesses	Injury to public	No
Industrial accidents	Construction incident leading to knock-on effect on nearby COMAH sites	Construction machinery fire spreading to nearby COMAH sites and causing an explosion and release of chemicals	Environmental designations Local community Other industrial sites, infrastructure and property	Damage to designated sites Damage to habitats and injury/fatality of species individuals Injury/fatality to public Damage to industrial sites, infrastructure and property	No

Risk Event Error! Bookmark not defined.	Source	Pathway	Receptor	Reasonable worst consequence if event did occur	Could this lead to a major accident and/or natural disaster with standard, embedded mitigation in place?
Pollution Incidents	Ground contamination Water pollution Release of ground gases/vapours	Pollution of a watercourse, groundwater and surface water receptors from construction fuel spillage or disturbance of existing contaminated land on site Breathing issues from ground gas release	Environmental designations Local community	Damage to designated sites Damage to habitats and injury/fatality of species individuals Injury to the public	No
Unexploded Ordnance (UXO)	Explosions	Explosion of UXO caused by disturbance during construction works	Environmental designations Local community Infrastructure and property	Injury/fatality to public Damage to infrastructure and property Damage to habitats and injury/fatality of species individuals	No
Terrorism, vandalism or other attacks	Attacks on infrastructure and property	Explosion at or around the site	Environmental designations Local community Infrastructure and property	Fatality/Injury to public Damage to infrastructure and property Damage to habitats and injury/fatality of species individuals	No

Table 18.2: Summary of operational risks

Risk Event ^{Error!} Bookmark not defined.	Source	Pathway	Receptor	Reasonable worst consequence if event did occur	Could this lead to a major accident and/or natural disaster with existing mitigation in place?
Flooding	Extreme weather event Flash flooding	Increased flooding risk for surrounding area due to increase in impermeable surfaces within site	Environmental designations Local community	Injury to public Damage to infrastructure and property Damage to habitats and injury/fatality of species individuals	No
Severe weather	Localised flooding Heatwaves Drought Storms Low temperatures and heavy snow	Pollution event in hydrologically connected watercourse caused by flooding Wildfire caused by drought, heatwave or lightning strike and spreading to site and the surrounding environment	Environmental designations Local Community	Injury/fatality to public Damage to infrastructure and property Damage to habitats and injury/fatality of species individuals	No
Terrorism, vandalism or other attacks	Attacks on infrastructure and property	Explosion at or around the site	Environmental designations Local community Infrastructure and property	Fatality/Injury to public Damage to infrastructure and property Damage to habitats and injury/fatality of species individuals	No

19. Structure of Environmental Statement

Volume 1: The Non-Technical Summary

- 19.1 A Non-Technical Summary is required under the 2017 EIA Regulations and presents the findings of the ES in a manner suitable for use by non-experts.

Volume 2: Environmental Statement

- 19.2 This Volume will contain the main text of the ES. The proposed topics for consideration and their respective chapter headings are set out below:

1. Introduction
2. Approach
3. Site Description
4. Alternatives
5. The Proposed Development
6. Ecology and Trees
7. Archaeology and Heritage
8. Ground Conditions
9. Drainage and Flood Risk
10. Townscape and Visual
11. Transport and Access (Demolition and Construction)
12. Air Quality (Demolition and Construction)
13. Noise and Vibration (Demolition and Construction)
14. Waste
15. Health
16. Socioeconomics
17. Climate Change
18. Cumulative Impacts

19. Summary of Mitigation and Residual Effects

Volume 3: Appendices

- 19.3 This volume will contain supporting information and a collection of technical reports upon which the conclusions of the ES are based.

20. Summary and Conclusion

- 20.1 The Scoping Report has been prepared to support a formal request to MCC for a Scoping Opinion under the 2017 EIA Regulations regarding the scope of the EIA and the likely content of the ES which will accompany the Planning Application for the HIF Infrastructure works (Application 2).
- 20.2 The Scoping Report provides:
- An overview of the baseline environmental conditions;
 - Details of the proposed development;
 - An overview of the likely environmental issues associated with the development; and
 - Methodologies proposed to undertake the specialist assessments.
- 20.3 We would welcome feedback on the proposed approach to the EIA and would be grateful if MCC would respond by way of a formal Scoping Opinion within the requisite 5 weeks in accordance with Regulation 15(4) of the 2017 EIA Regulations. If the Local Planning Authority require any additional information in order to make a decision, please do not hesitate to contact Avison Young.

Appendix I

Site Location Plan

Appendix II

Enabling Works Site Location Plan (Application 1)

Appendix III

Flood Defence Works Indicative Site Location Plan (Application 3)

Appendix IV

Red Bank Neighbourhood Indicative Site Location Plan (Application 4)

Appendix V

Northern Gateway SRF Site Area and Indicative Masterplan

Appendix VI

Accidents and Disasters: Risk Identification Screening Exercise

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