



The Town and Country Planning (EIA) Regulations 2017

MANCHESTER OXFORD ROAD STATION REMODELLING SCHEME

Environmental Impact Assessment – Screening and Scoping Report

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Report for:

Network Rail
Square One
4 Travis Street
Manchester
M1 2NY

Authored by:

AECOM
100 Embankment
Cathedral Approach
Salford
M3 7FD

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EXECUTIVE SUMMARY

This Environmental Impact Assessment (EIA) Combined Screening and Scoping Report has been prepared on behalf of Network Rail to request a combined Screening and Scoping Opinion from Manchester City Council with respect to the Manchester Oxford Road Remodelling Scheme (the Proposed Development), which involves remodelling of the Station's configuration to improve its capacity, performance flexibility, accessibility, and is aimed to act as a catalyst for wider investment in the Oxford Road and Whitworth Street areas, supporting local businesses and communities.

At the time of writing this Report, no Screening Opinion has been confirmed by Manchester City Council. Given the nature of the works involved, the Proposed Development is considered, under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, as a Schedule 2 development described under 13 (a) (i), which states that *"any change to or extension of development of a description listed in Schedule 1 where that development is already authorised, executed or in the process of being executed"*. It is also deemed that the Proposed Development may have significant effects on the environment and could be deemed as an EIA development. This submission is therefore prepared to seek a combined Screening and Scoping Opinion from MCC.

The EIA will consider the direct, indirect and secondary effects of the construction and operation of the Proposed Development on the environmental topics identified in **Table E1** below. Topics that have been scoped in will be assessed in the EIA and those that are scoped out are considered not experiencing significant effect due to the Proposed Development and are excluded from the EIA.

Table E1: Summary of Scoping Results

Topic	Element	Scoped in/out	
		Construction	Operation
Air Quality	Site equipment and plant emissions during Construction	Out	Out
	Dust	In	Out
	Road traffic emissions	In	Out
	Rail Emissions	Out	Out
Noise and Vibration	Vibration – People & Buildings	In	Out
	Airborne Noise	In	In
	Ground-borne Noise	Out	Out
	Traffic Noise	In	Out
	Industrial noise	Out	In
	Tranquil areas	Out	Out

Topic	Element	Scoped in/out	
Material and Waste	Materials	Out	Out
	Waste	Out	Out
Cultural Heritage	Archaeological Remains	In	Out
	Historic Buildings	In	In
	Historic Landscape	Out	Out
Townscape and Visual	Townscape/ Landscape character - National Character Area (NCA)	Out	Out
	Townscape/ Landscape character - Strategic Character Areas	In	In
	Townscape/ Landscape character - National Cycle Network	In	In
	Visual amenity – Residents, Employees, Students, Vehicle travellers, Rail travellers, Users of local Public Right of Ways, Identified visual receptors at viewpoint, Theatre goers, Tourists experiencing elevated views from hotel accommodation.	In	In
	Users of Public Open Space	In	Out
	Users of the Rochdale Canal & Towpath	In	Out
Transport and Access	Construction / Operational Traffic	In	In
	Severance	In	In
	NMU Amenity	In	Out
	Driver Delay	In	In
	Fear and Intimidation	In	In
	Road Safety	In	In
Water – Hydrology and Surface Water	Water quality – surface water features	Out	Out
	Water quality – groundwater features	Out	Out
	Flood Risk – Fluvial	In	Out
	Flood Risk – Surface Water	In	In
	Flood Risk - Groundwater	In	Out
	Flood Risk – Canal Breach	Out	Out

Topic	Element	Scoped in/out	
	Flood Risk – Reservoirs	Out	Out
	Flood Risk - sewers	In	In
Ecology, Nature Conservation and Biodiversity	Statutory and non-statutory designated sites	Out	Out
	Habitats	In	Out
	Badger	Out	Out
	Bats	In	Out
	Breeding Birds	In	Out
	Black redstart	In	Out
	Great crested newt and other notable amphibians	Out	Out
	Fish	In	Out
	Otter	In	Out
	Water vole	Out	Out
	INNSP	In	Out
Climate Change	Lifecycle Green House Gas	Out	Out
	Climate Change Impact	Out	Out
Socio-Economic	Generation of employment, training and apprenticeship opportunities	In	In
	Land use and displacement	In	Out
	Amenity impacts	In	In
	Severance impacts	In	Out
Human Health	Access to healthcare and other social infrastructure services.	In	In
	Access to open space, PRow, recreational facilities and opportunities for physical activity and active travel.	In	Out
	Road and route safety.	In	Out
	Provision of economic opportunities and resources that protect and promote good health.	In	In

Topic	Element	Scoped in/out	
	Air Quality	In	Out
	Noise and vibration	In	In
	Townscape and visual amenity	In	In
	Flood risk, drainage, and surface water	In	In
	Community identity and social participation	In	Out
Major Accidents and Disasters	Transport accidents	Out	Out
	Human error/management failure	Out	Out
	Utility failures	Out	Out
	Engineering accidents and failures	Out	Out
	Pollution accidents	Out	Out
	Climatological and Meteorological	Out	Out
	Biological	Out	Out
Cumulative and Combined Effects	Cumulative Effects	In	In
	Combined Effects	In	In

1. INTRODUCTION

1.1 Purpose of this Combined Screening and Scoping Report

- 1.1.1 This Combined Environmental Impact Assessment (EIA) Screening and Scoping Report for the remodelling of the Manchester Oxford Road Station (hereafter referred to as the 'Proposed Development'), has been prepared on behalf of Network Rail (hereafter referred to as the 'Applicant') to request a combined Screening and Scoping Opinion from Manchester City Council (hereafter referred to as 'MCC') to support future consent applications under Town and Country Planning legislation. The Proposed Development will include a reduction in the number of platforms, a new pedestrian footbridge, new lifts, new platform canopies and new railway infrastructure e.g. tracks, signalling and overhead line equipment (OLE).

1.2 The Consenting Regime

- 1.2.1 The Applicant will be seeking consent via an application to MCC for 'prior Approval' under Part 18 Class A, Schedule 2 of the General Permitted Development Order 2015 (the 'GPDO') for the footbridge and canopy elements of the Proposed Development. Platform, track, signalling and overhead line works will be permitted development under the GPDO Part 18 with no prior approval required.
- 1.2.2 In addition, temporary construction land that is adjacent to Network Rail operational land may benefit from permitted development under Part 4, Class A (temporary buildings and structures) of the GPDO and full planning permission may be required for other off-site construction compound works.
- 1.2.3 Further, a Transport and Works Act Order ('TWAo') is likely to be required to secure the temporary use of land outside the ownership of Network Rail and for access to the Station Site for construction.

Other Consenting Regimes

- 1.2.4 The Station, its curtilage structures including pedestrian footbridge, canopies, platforms, and the viaducts are Listed structures. A Listed Buildings Consent will be required for the works to or demolition of any of these structures.

1.3 Legislative Requirements

- 1.3.1 The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations') (Ref 1.1) came into force on 16th May 2017. The findings of the EIA undertaken on the EIA Development will be reported in an Environmental Statement ('ES') prepared in accordance with Regulation 18 and Schedule 4 of the EIA Regulations.

- 1.3.2 The EIA Regulations define development that falls under Schedule 1 or Schedule 2. Development that falls within Schedule 1 of the EIA Regulations always requires an EIA and is referred to as ‘Schedule 1 development’. Development listed in Schedule 2 that is located within a ‘sensitive area’ (Regulation 2(2)) or which exceeds one of the applicable thresholds and criteria given in Schedule 2, is referred to as ‘Schedule 2 development’. Development projects that require an EIA are referred to as ‘EIA development’.
- 1.3.3 Schedule 3 of the EIA Regulations provides selection criteria for screening Schedule 2 development to determine whether or not it constitutes EIA development. Schedule 3 provides that in screening a development, consideration should be given to the characteristics of the development, location of the development and the types and characteristics of potential impacts. Not all Schedule 2 development will require an EIA, as only developments that are likely to result in significant environmental effects will require an EIA to be undertaken. Further details regarding screening are provided in Section 3.2 of this Report.

1.4 The EIA Screening and Scoping

- 1.4.1 At the time of this Report, no Screening Opinion has been confirmed by MCC. The Applicant considers that the development falls under Schedule 2 of the EIA Regulations and therefore could be deemed to be EIA development. This submission seeks a screening opinion from MCC.
- 1.4.2 Due to programme constraints, at the same time as seeking a screening decision from MCC the Applicant is seeking a Scoping Opinion from MCC. In accordance with Regulations 6 and 15 of the EIA Regulations, this submission contains sufficient information to satisfy the requirements of Regulation 6(2) for the adoption of a Screening Opinion and Regulation 15(1) for a Scoping Opinion by MCC as to the scope of the level of detail of the information to be provided in the environmental statement.
- 1.4.3 **Table 1-1** outlines the information required to be included in this combined EIA Screening and Scoping Opinion Report in accordance with Regulation 6(2) and 15(2) of the EIA Regulations, and with consideration of the criteria set out in Schedule 3 and the results of any relevant EU environmental assessment which are reasonably available, as required under Regulation 6(4) of the EIA Regulations.

Table 1-1: Information required by Regulation 15 of the EIA Regulations

Information required	Location in this Report
A plan sufficient to identify the land	Appendix A – Figure 1 - Location Plan Appendix A – Figure 2 - Site Plan

A description of the development, including: • A description of the physical characteristics of the development and, where relevant, of demolition works; • A description of the location of the development, with particular regard to the environmental sensitivity of geographical areas likely to be affected; • A description of the nature and purpose of the proposed development including its location and technical capacity.	Chapter 2: Description of Proposed Development
A description of the aspects of the environment likely to be significantly affected by the development;	Chapters 6 – 17
To the extent the information is available, an explanation of the likely significant effects of the proposed development on the environment.	Chapters 6 – 17

- 1.4.4 When detailing the topics to be ‘Scoped In’ to the EIA, information has been provided regarding any key legislative, guidance, planning policy or background information that has informed the methodology proposed. The report also details the baseline and methodology of the assessments considered necessary to assess the environmental impact of the Proposed Development.

The Structure of this combined EIA Screening and Scoping Report

- 1.4.5 The first section covers the introduction to the Proposed Development, the description of the Proposed Development and the alternatives considered, the wider EIA methodology, Planning Policy Framework, and Consultation.
- 1.4.6 Chapters 6 – 17 describe the approach to the assessment by topic. Each of the topic sections is subdivided into introduction; legal and policy framework; baseline conditions; potential impacts; proposed assessment methodology and assumptions and limitations, and the summary elements that are scoped in and out of the EIA with justification.
- 1.4.7 This combined EIA Screening and Scoping Report also covers potential major accidents and cumulative effects (Chapter 18).

2. DESCRIPTION OF PROPOSED DEVELOPMENT

2.1 Proposed Development Summary

- 2.1.1 The Proposed Development is a Network Rail enhancement scheme funded by the Department for Transport (DfT) as part of the Investment Decision Framework and Rail Network Enhancements Pipeline process. The Proposed Development is part of the Manchester and North West Transformation Programme, a package of proposed measures in the Manchester area to boost rail capacity and resilience.
- 2.1.2 Manchester Oxford Road Station (hereafter referred to as the 'Station') sits in a strategically important position at the centre of the Castlefield Corridor. The Castlefield Corridor runs through central Manchester, and links routes north and west of Manchester to Manchester Piccadilly Station, Manchester Airport and the West Coast Main Line. It also facilitates connections from Sheffield and the East Midlands to Liverpool and the North West.

2.2 Need for the Proposed Development

- 2.2.1 The current capacity along the Castlefield Corridor is constrained by the signalling interlocking at the Station, which restricts the throughput of trains. Congestion delay data gathered by Network Rail for the period December 2018 to July 2019 (Ref 2.1) showed that congestion delays at the Station and Deansgate (totalled 73,000 delay minutes). This was the highest level of congestion delay for any location in the North of England, representing approximately 26% of the congestion delays seen in the Manchester area and 7% of congestion delays across the whole North of England, leading to the Castlefield Corridor being formally declared as 'congested infrastructure' in February 2021 and to the revised train service structure which sees train services along the corridor limited to 12 train per off peak hour being implemented in May 2022.
- 2.2.2 Latest Office of Rail and Road passenger numbers for Manchester show a 10% year on year increase from 2022-2023, showing strong post-covid growth, with crowding remaining an issue and 2,437 passengers standing during peak times (Ref 2.2). The Station itself saw 4.66 million passengers in 2022-23 (Ref 2.3). Therefore, there is a clear imperative to improve both performance and capacity of trains and at the station.
- 2.2.3 The current configuration of the Station presents a series of challenges which needs to be addressed through extensively remodelling the Station:
- Accommodation of future trains service – The platform length of the Station is only capable of accommodating 6-car trains and is insufficient to accommodate future service specifications, which introduce 8-car trains. To accommodate the longer trains, platform extensions will be required.

- Signalling constraints on operational performance – The current capacity along the Castlefield Corridor is constrained by the signalling interlocking at the Station, which restricts the throughput of trains. Performance improvements are necessary to alleviate this bottleneck, increasing its resilience and minimising the spread of delays across the network.
- Limited passenger circulation space – There is an increase in passenger demand, but limited circulation space around the ticket office and automatic ticket gates, resulting in overcrowding at the Station.
- Constraints on track layout – The track layout is constrained by the viaduct, Gloucester St Bridge (COL/62A) to the west of the Station and Oxford Road Bridge (COL/48A) to the east of the Station. At each of these locations the current four station through lines converge into two. The viaduct, the two bridges and the Station building (including the pedestrian footbridge and canopies) are Grade II listed.
- Diversity and inclusion – There is currently no step free access to Platform 1, meaning it cannot be used by many customers with disabilities, families with pushchairs or those with heavy luggage who may struggle to use the stairs.

2.3 Proposed Development Objectives

2.3.1 The Proposed Development objectives are to:

- re-configure platforms to accommodate 8 car trains travelling through the Station and 6 car trains to terminate in the Station;
- re-configure track and signalling to allow more frequent train services;
- greater station passenger capacity, to allow more people safely on and off trains and through the station; and
- support wider redevelopment – act as a catalyst for wider investment in the Oxford Road and Whitworth Street areas, supporting local businesses and communities.

2.4 The Solution

2.4.1 The proposed solution involves the remodelling of the Station, including the following main elements:

- The platforms are to be remodelled to provide a Station with two bi-directional through platforms, each capable of accommodating 8-car trains up to 192 metre (m) in length in either direction. Additionally, a centre bay platform capable of accommodating trains up to 6-car, 144 m in length is to be provided. The additional two carriages will translate to approximately 120 additional seats. The remodelled station will see a change from the existing five-platform station (four through platforms and one turnback) to a three-platform station, and will support an increase in train numbers from 12 to 14 per hour in off-peak periods (two

through platforms and a turnback) reducing congestion by having fewer conflicting moves.

- Station platforms are to be remodelled to accommodate new permanent way (track) alignment and new and longer canopies over the island platforms.
- Providing an additional closing up signal between Deansgate and Oxford Road and bi-directional signalling between Deansgate and Trafford Park, allowing trains to run closer together thus increasing capacity on the Castlefield corridor.
- A new Station footbridge, with step free access to all platforms (via a lift) and new island platform. The existing footbridge and stairs will be removed and replaced with larger structures for greater pedestrian flow capacity.
- Creating new, wider, and longer canopies over all platforms.
- Track, signalling and OLE alterations for the new layout.

2.5 The Site

- 2.5.1 The indicative Site of the Proposed Development consist of the Station, temporary construction compounds and Station access routes (hereafter referred to as the 'Site') (**Figure 2, 2a, 2c, Appendix A**). At the time of writing this Report, the design and construction methodology for the Proposed Development was still evolving. Therefore, the boundary of the Site may be subject to change once the design and construction methodology is finalised.
- 2.5.2 The main Site is currently occupied by the existing Station, on top of the Grade II listed masonry Victoria viaduct. The Site area is approximately one hectare (ha) and is illustrated on **Figure 2** (page 1) of **Appendix A**. The OS Grid Reference for the approximate centre of the Site is National Grid Reference SJ 840974.
- 2.5.3 The area within a 1 kilometre (km) buffer of the Proposed Development, as shown on **Figure 2, Appendix A** is characterised as urban. The Station is surrounded by a mix of modern high-rise buildings and contrasting Victorian and Edwardian style buildings with residential, commercial and industrial uses. Notable buildings include the O2 Ritz, 30 m north of the Site; the Palace Theatre, 80 m north-east of the Site; The Bridgewater Hall, 200 m north-west of the Site; and Manchester Metropolitan University, 320 m south of the Site.
- 2.5.4 The Station is primarily accessed via Station Approach from the B6469 Whitworth Street West, and a secondary access via stairs from Wakefield Street. National Cycle Route 6, which passes from Watford to Windermere via Manchester, passes beneath the Gloucester St Bridge to the west of the Station. There are no public rights of way within 1 km of the Site.

2.6 Description of the Proposed Development

- 2.6.1 The main elements of the Proposed Development are detailed below:

- Platform reconfiguration (**Plate 2.1**):
 - The existing platform 1 (through platform) and 5 (turnback) will be decommissioned and demolished.
 - The existing platform 2 (through platform) will be demolished and rebuilt at a greater length of approximately 195 m (160 m currently). This platform will remain as a through platform, accessed via the island platform, and renamed as platform 3. The new platform will be capable of accommodating 8-car trains.
 - The existing platform 3 (through platform) will be demolished and rebuilt as a turnback platform to a similar length as the existing platform, accessed via the island platform, and renamed as platform 2. The new platform will be capable of accommodating 6-car trains.
 - The existing platform 4 will remain as a through platform but will be lengthened by approximately 40 m to a total length of 200 m. Platform 4 will be renamed as platform 1. The new platform will be capable of accommodating 8-car trains.
 - All platforms will be resurfaced, and tactile paving will be installed near the platform edge.

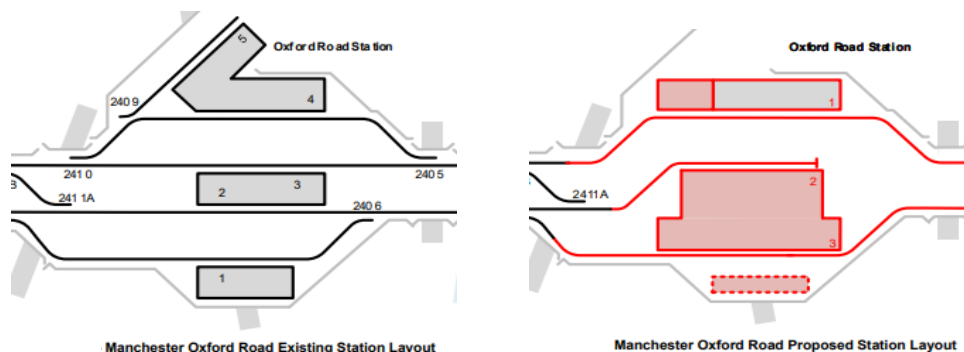


Plate 2-1 Layout of the existing and proposed Station

- Platform canopies:
 - The canopies on the new platform 1 will be increased from approximately 34 m to 125 m as a result of the increased platform length.
 - New canopies will be installed along the new platforms 2 and 3, which will be approximately 125 m and 130 m respectively.
 - The new canopies would be approximately 4.5 m in height and would provide shelter across the width of the platforms. The canopies would be of a similar design to the existing canopies and would utilise cross laminated timber to ensure the new canopies are in keeping with the Stations' Grade II listed status.

- Pedestrian footbridge and lifts:
 - The existing pedestrian footbridge would be removed, and its associated foundations would be demolished. New foundations would be installed for the new pedestrian footbridge and accompanying lift shafts. The new footbridge would be approximately 6.4 m wide and each set of stairs would be approximately 1.8 m wide. The new footbridge would comprise a steel structure with glass façade.
 - Step free access to each platform will be available via four lifts. Two would provide access to the footbridge and two to the existing underpass. The underpass is currently closed but would be reinstated as part of the Proposed Development providing a secondary means of access to the platforms. It will also be used as a fire escape.
 - Communication rooms, electrical switch rooms, LEER, storage and staff rooms will be located beneath the footbridge staircases.
- Track, signalling and OLE:
 - 1.1 km of new track will be installed.
 - New signalling units will be installed. This would include an additional 'closing up' signal which will mean that trains waiting to depart the Station can be run beyond Deansgate Station and will arrive into the platforms at the Station earlier, improving the flow of services.
 - OLE will be altered and replaced.

2.7 Construction of the Proposed Development

Enabling works

2.7.1 The physical enabling works will include:

- strengthening of the viaduct arches and bridges. The brick viaduct arches between the West of Oxford Road overbridge to the west of Gloucester Street overbridge will be strengthened due to an increase in new and substantial loads. The cast bridges over Oxford Road (48A) and Gloucester Road (62A) will also be strengthened.
- mobilisation of the Site will commence, including demolition of Screen One, the erection of two tower cranes, and establishment of a laydown area on the B6469 Whitworth Street West and construction compounds.
- removal of redundant cables across all platforms.

Main works

2.7.2 The main construction works would comprise three main stages as described below:

- Phase A – Offline work (which would likely overlap with some of the enabling works):
 - Closure of the B6469 Whitworth Street West southern footpath to install a scaffold tunnel.
 - Relocation of the existing taxi rank and two bus stops serving the 101 – Manchester to Wythenshawe; 101 – Piccadilly Gardens to Chorlton Southern Cemetery; and 103 – Piccadilly Gardens to Manchester Airport routes on the B6469 Whitworth Street West will be temporarily relocated further west.
 - Installation of traffic management and hoardings along the existing platform 4 boundary.
 - Demolition of the existing platform 5, its platform structure, buildings, OLE, signalling and cabling.
- Phase B – Construction of the new platform 1 and island platform enabling works:
 - Extension of hoardings around Station Approach and the closure of the Station.
 - Closure of platforms 2 and 4, platforms 1 and 3 will operate for non-stopping services.
 - Installation of tower crane 2 on Station Approach.
 - Removal of redundant structures and equipment on the existing platform 4 and island platform (existing platforms 2 and 3) including the canopies and waiting rooms.
 - Construction of the foundations for the northern footbridge enclosure and installation of control rooms and lifts.
 - Demolition of existing platform 4 and construction of the new platform 1, including canopies, OLE and signalling.
 - Demolition of existing platform 2.
 - Installation of hoardings in Macintosh Village to facilitate site access.
- Phase C has been condensed into a Christmas blockade to shorten the Station closure and the main construction phases:
 - Completion of the new platform 1 and 2, including OLE.
 - Preparations to remove the existing footbridge.
 - Removal of line of route and signalling cabling and assets on the existing platform 2 and 3.
 - Phase D – Construct new platform 3, footbridge and lifts:
 - The southern worksite would be extended.

- Construction of the new platform 3.
 - Demolition of the existing footbridge and its foundations, construction of the new foundations for the southern footbridge enclosure and installation of control rooms and lifts. Installation and fit out of the new footbridge.
 - Completion of the island platform (new platforms 2 and 3) and canopies.
- Phase D – Construct new platform 3, footbridge and lifts
 - The southern worksite would be extended.
 - Construction of the new platform 3.
 - Demolition of the existing footbridge and its foundations, construction of the new foundations for the southern footbridge enclosure and installation of control rooms and lifts. Installation and fit out of the new footbridge.
 - Completion of the island platform (new platforms 2 and 3) and canopies.
- Phase E has been condensed into a Christmas blockade to shorten the Station closure and overall main construction phases:
 - Installation of remaining signalling and OLE structures.
 - Platform surfacing.
 - Testing and commissioning of the final alignment.
 - Dismantling and removal of tower cranes.
 - Full Station reopening.

Tower Cranes

- 2.7.3 The current proposed position of tower crane 1 is located on the site of the Screen One building, which would need to be demolished to accommodate the crane. It would lift material to and from the B6469 Whitworth Street West. This crane will be erected and dismantled via a mobile crane on the B6469 Whitworth Street West. However, other locations for tower crane 1 are currently being considered in an area shown in Plate 2-2.

Plate 2-2 Area under consideration for the location of tower crane 1



- 2.7.4 Tower crane 2 would be located on Station Approach and would lift material to and from Wakefield Street to the southern side of the Station.

Road Closures

- 2.7.5 It is anticipated that full road closures would be required to erect tower crane 1, this could impact the B6469 Whitworth Street West, Gloucester Street or Wakefield Street. Road closures will be finalised once the location of tower crane 1 is confirmed. Further partial road closures may also be required throughout the duration of the construction period for the tower crane location and for laydown areas. Scaffold pedestrian tunnels will likely be required where materials would be lifted over pavements (see **Figure 2a**).
- 2.7.6 New Wakefield Street would be closed due to the presence of the southern worksite; a loading bay will also be located on New Wakefield Street to support the southern worksite (see **Figure 2a**).
- 2.7.7 Macintosh Village will also be temporarily closed during construction. A Haki staircase will be installed in Macintosh Village to allow construction worker access to the viaduct (see **Figure 2a**).
- 2.7.8 As the design development is still evolving, further requirements of road closure, including the surrounding roads and pedestrian walkways under the arches and viaducts where enabling works may be required, will be identified and assessed during the detailed impact assessment

Construction Access Routes

- 2.7.9 It is currently proposed that a vehicle holding area will be located on New Elm Road, approximately 980 m west of the Site (see **Figure 2a**). Construction vehicles would

take the following route from the vehicle holding area to the Site: Egerton Street, the A57(M) Mancunian Way/Ring Road, Princess Street and the B6469 Whitworth Street West. However, alternative locations for the vehicle holding area are currently under review.

- 2.7.10 Access to the main compound and parking area by construction workers would be gained from Cambridge Street, north of the A57(M) Mancunian Way/Ring Road Cambridge Street Junction.

Construction Compounds

- 2.7.11 There will be three off-site construction compounds, as shown on **Figure 2** and described below:

- The main construction compound will be accessed off Cambridge Street, approximately 100 m south-west of the Station. This compound would likely comprise a triple story office and welfare unit. This compound will also be used for equipment and material storage.
- An existing car park, located 170 m south-west of the Station, accessed via Hulme Street will be used for staff parking.
- A secondary car park located on York Street, 140 m east of the Station, has been identified for staff parking if required.
- Vacant viaduct arches would be used for storage and/or welfare areas.
- Small satellite compounds to facilitate signalling and OLE structure works would be used.
- Small welfare and parking compounds would be set up at the Throstles Nest Road rail-road access point (RRAP) and the Mayfield RRAP during possessions.

Proposed Construction Programme (High-level)

- 2.7.12 The commencement of each stage of construction and operation (i.e. entry-into-service) is shown below. It should be noted that this is only indicative at the time of writing this Report and the construction programme may be subject to change when the Principal Contractor for the Proposed Development is appointed:

- Site mobilisation – Q4 2028.
- Enabling works – Q2 2029.
- Main works – Q4 2029.
- Entry into service – Q4 2033.

2.8 Operation of the Proposed Development

- 2.8.1 It is currently assumed that all permanent works will be wholly contained within the existing railway boundary with no additional land required permanently (see **Figure**

2b). As the design development is still on-going, changes to permanent land requirement for maintenance of new apparatus may be identified. This will be confirmed during the detailed impact assessment.

3. EIA METHODOLOGY

3.1 EIA Process

3.1.1 Regulation 4 of the EIA Regulations sets out that the EIA is a process consisting of:

'(1) (a) the preparation of an environmental report by the developer...[which]

(2) ...must identify, describe and assess in an appropriate manner, in light of the circumstances relating to the proposed development, the direct and indirect significant effects of proposed development on the factors specified in paragraph (3) and the interaction between those factors.

(3) The factors are—

(a) population and human health;

(b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC(1) and Directive 2009/147/EC(2);

(c) land, soil, water, air and climate;

(d) material assets, cultural heritage and the landscape.'

3.1.2 The EIA process consists of three stages, Screening, Scoping and ES. The approach at each stage is described in the following sections.

3.2 Screening

3.2.1 Screening is the process of determining whether a project falls under the descriptions or thresholds in Schedule 1 and 2 of the EIA Regulations and if there is a potential for significant effects on the environment.

3.2.2 Schedule 1 development principally relates to large infrastructure which will, by their nature, likely result in significant environmental effects. A rail project listed in Schedule 1 under paragraph 7 (1) is described as the construction of lines for long-distance railway traffic with the area of the works exceeds 1 hectare. The Proposed Development is not of the type, size or scale of operation and therefore does not fall within the definition of a Schedule 1 rail project.

3.2.3 Schedule 2 development means development, other than exempt development, of a description mentioned in Column 1 of the table in Schedule 2 of the Regulations where:

- Any part of that development is to be carried out in a sensitive area; or
- Any applicable threshold or criteria in the corresponding part of Column 2 of that table is respectively exceeded or met in relation to that development.

- 3.2.4 Given the nature of the works involved, the Proposed Development is considered a Schedule 2 development described under 13 (a) (i), which states that “any change to or extension of development of a description listed in Schedule 1 where that development is already authorised, executed or in the process of being executed” and since “the development as changed or extended may have significant effects on the environment”, the Proposed Development could be deemed as an EIA Development.
- 3.2.5 Schedule 3 of the EIA Regulations detail the selection criteria for screening Schedule 2 development to determine whether an EIA is, or is not, required to support the development proposals. The associated selection criteria are as detailed within the sections below, whilst the relevant information for the consideration of these selection criteria is contained throughout this Combined Screening and Scoping Report. The Schedule 3 selection criteria, which have been duly considered within the various sections of this Report as part of the formal Scoping exercise, are as follows:

The **Characteristics of Development**, considering:

The size and design of the whole development;	Chapter 2
Cumulation with other existing development and/or approved development;	Chapter 18
The use of natural resources, in particular land, soil, water and biodiversity;	Chapter 13
The production of waste;	Chapter 8
Pollution and nuisances;	All chapters
The risk of major accidents and/or disasters relevant to the development concerned, including those caused by climate change, in accordance with scientific knowledge; and	Chapters 14, 17
The risks to human health (for example, due to water contamination or air pollution).	Chapters 6, 7, 10, 11, 12, 16

The **Location of Development**, establishing the environmental sensitivity of any geographic areas likely to be affected by the development, considering:

The existing and approved land use;	All Chapters
The relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground;	
The absorption capacity of the natural environment, paying particular attention to the following areas:	
Densely populated areas; and	
Landscapes and sites of historical, cultural or archaeological significance.	
The Types and Characteristics of the Potential Impact on the environment, considering:	
The magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected);	
The nature of the impact;	
The transboundary nature of the impact	
The intensity and complexity of the impact;	
The probability of the impact;	
The expected onset, duration, frequency and reversibility of the impact;	
The cumulation of the impact with the impact of other existing and/or approved development; and	
The possibility of effectively reducing the impact.	

3.3 Scoping

- 3.3.1 EIA Scoping is the process of determining the environmental issues which should be considered as part of the scope of the EIA to be undertaken. Each of the topics listed in the EIA Regulations will be considered and the potential significant environmental impacts associated with the Proposed Development and the assessment methodologies to be applied will be identified. The scope of an EIA and, therefore an ES, should include all environmental issues that are likely to be significantly affected by the Proposed Development.
- 3.3.2 There are some environmental topics where there will be no significant impacts or effects from the development and hence where there is no need for further investigation to be undertaken – these topics are then ‘scoped out’.

3.3.3 Although a formal Scoping Opinion request is not a legal requirement, the request can facilitate the local planning authority, Statutory Environmental Bodies, and other public authorities with environmental responsibilities, as well as key stakeholders, to clarify what the main effects of the development are likely to be and, therefore, the aspects on which the applicant's Environmental Statement should focus.

3.3.4 The scoping process aims to:

- provide information to the Local Planning Authority (LPA) to assist them in providing a Scoping Opinion under Regulation 15 of the EIA Regulations.
- identify areas of potential environmental significance and highlight the key issues.
- highlight any topics and issues not requiring further consideration (i.e. those that are not likely to lead to significant effects) and which will therefore not be considered further in the EIA.
- define the technical, spatial and temporal scope of the study for each of the topics and issues to be considered.
- define the approach and methodologies for conducting baseline studies.
- define the approach and methodologies for predicting environmental impacts and effects and for evaluating the severity and significance of environmental effects.
- identify the methods to be adopted for incorporating mitigation and other environmentally driven modifications into the design.
- invite statutory and non-statutory consultees and stakeholders to identify the issues they consider require assessment, to comment on the proposed methodology and to provide and receive information for the Proposed Development.

3.4 General Assumptions and Limitations

3.4.1 As stated in Section 3.2 that the Proposed Development is considered a Schedule 2 development described under EIA Regulations Section 13 (a) (i), which states that "any change to or extension of development of a description listed in Schedule 1 where that development is already authorised, executed or in the process of being executed". It is also deemed that the Proposed Development may have significant effects on the environment. In accordance with Regulation 6 of the EIA Regulation, the Proposed Development could be deemed as an EIA development. As such, EIA Scoping is carried out in accordance with Regulation 15 of the EIA Regulations.

3.4.2 In undertaking this scoping exercise, the following assumptions have been made:

- The combined EIA Screening and Scoping Report has been prepared based on the environmental baseline information available at the time of writing. Further information will become available as the iterative design and

assessment process proceeds and the scope of assessment will be kept under review considering this.

- Some elements of the design and mitigation are yet to be confirmed during the design development. Assessment of these elements will be undertaken in the ES.
- All information required or reasonably required to identify the significant environmental effects of the development, as defined by Schedule 4 of the Regulations, will be provided as part of the ES.

3.4.3 In the event of Proposed Development decommissioning, this would be part of the relevant statutory process at that time, including EIA as appropriate. It is proposed that decommissioning of the Proposed Development is scoped out of the EIA because the completed works will form part of the national railway network, which is unlikely to be closed in the foreseeable future.

3.4.4 The Study Area of the assessment will be defined within the ES. The minimum extent of the Study Area will be the extent of any permanent land required for the operation for the Proposed Development, and any temporary land take required for its construction. Areas beyond this boundary covered by the assessments of individual topics will be defined within their respective sections. These Study Areas will include any area where anticipated environmental impacts will occur.

3.5 Assessment of Environmental Effects

3.5.1 Each individual topic section (**Chapters 6 – 17**) presents details of data collection and survey work (where applicable) that has been used to inform this Report. This information is used to describe the environmental and social characteristics of the Study Area at the present time.

3.5.2 The EIA will identify all potential impacts that will arise due to the construction and operation of the Proposed Development. Significance of effects will be determined by considering the value/sensitivity of a receptor and assessing this against the magnitude of the predicted change. Criteria for determining significance varies across topics but gives regards to whether impacts will be beneficial or adverse; direct or indirect; secondary or cumulative; temporary or permanent; or short, medium or long term.

3.5.3 Significance of the effects arising from the Proposed Development has been categorised for each environmental topic and is presented in each topic section (i.e. **Chapters 6 – 17**). The process of determining significance varies across topics; a full description of the method used is presented in each topic section.

3.5.4 Effects considered to be a likely significant effect and anticipated to be material in the decision-making process are shaded in red in **Error! Reference source not found.** below.

Table 3-1: General approach to determining significance

Magnitude	Sensitivity		
	Low	Medium	High
High	Moderate	Moderate/Major	Major
Medium	Minor	Moderate	Moderate/Major
Low	Negligible	Minor	Moderate
Negligible	Negligible	Negligible	Minor

3.6 Assessment of Cumulative Effects

- 3.6.1 The EIA Regulations requires assessment of cumulative effects. It is important to consider how the effects identified within the technical topic sections may be combined with one another and with those of other proposed developments in the surrounding area of the Proposed Development. Details of the assessment of cumulative effects are described in **Chapter 18**.

3.7 Approach to Development of Mitigation

- 3.7.1 When the potential environmental impacts are identified, options for mitigation will be developed and agreed with Network Rail, and the residual effects of the mitigated Proposed Development will be evaluated. The proposals will follow the mitigation hierarchy of avoid, reduce, remedy, and compensate/ offset.

3.8 The Structure of the Environmental Statement

- 3.8.1 The results of the EIA will be presented in an ES, which will be submitted to MCC. The contents of the ES will be compliant with Schedule 4 of the EIA Regulations and best practice guidance published by the Government departments and professional organisations. The ES will be prepared in four volumes:

- Volume 1: Non-technical Summary.
- Volume 2: The Main Report, containing the individual ES Chapters, including:
 - Chapter 1: Introduction.
 - Chapter 2: EIA Process and Methodology.
 - Chapter 3: Description of Site and Surroundings.
 - Chapter 4: Description of the Proposed Development.
 - Chapter 5: Consideration of Alternatives.
 - Chapter 6: Scoping and Consultation.
 - Chapter 7: Planning Policy Context.

- Chapter 8: Description of Committed Developments.
- Chapter 9: Air Quality.
- Chapter 10: Noise and Vibration.
- Chapter 11: Materials and Waste.
- Chapter 12: Cultural Heritage.
- Chapter 13: Townscape and Visual.
- Chapter 14: Transport and Access.
- Chapter 15: Water – Hydrology and Surface Water.
- Chapter 16: Ecology, Nature Conservation and Biodiversity.
- Chapter 17: Climate Change.
- Chapter 18: Social Economic.
- Chapter 19: Human Health.
- Chapter 20: Other Environmental Issues.
- Chapter 21: Assessment of Cumulative Effects.
- Chapter 22: Summary of Mitigation and Monitoring.
- Chapter 23: Summary of Residual Effects and Conclusion.
- Volume 3: Figures.
- Volume 4: Appendices.

3.8.2 A glossary and list of acronyms and abbreviations used within the EIA will be provided within Volume 2 (Technical Appendices).

4. PLANNING POLICY FRAMEWORK

4.1 Introduction

4.1.1 The following planning policies have been considered as part of identifying the assessment methodology, receptor selection/sensitivity, potential significant effects and mitigation. The Proposed Development would be progressed under the Town and Country Planning Act 1990 (as amended) (Ref 4.1) and therefore relevant national planning policy and guidance is that contained within the National Planning Policy Framework (NPPF) (Ref 4.2) and the Planning Practice Guidance (PPG) (Ref 4.3).

4.1.2 These policies identify that the Proposed Development should seek to avoid significant harm to nature conservation, including through mitigation, compensation and consideration of reasonable alternatives.

4.2 National Planning Policy Framework

4.2.1 The Proposed Development would take into account the requirements set out in the NPPF within the following sections:

- 2: Achieving sustainable development.
- 9: Promoting sustainable transport.
- 12: Achieving well-designed and beautiful places.
- 16: Conserving and enhancing the historic environment.

4.2.2 The PPG would be considered as required for additional guidance on the policies contained within the NPPF.

4.2.3 Other specific national planning policy and guidance would also be considered, including the Noise Policy Statement for England (NPSE) (Ref 4.4), the Planning Practice Guidance – Noise (PPG-N) (Ref 4.5), and the National Planning Policy for Waste (Ref 4.6).

4.3 Regional and Local Planning Framework

4.3.1 Each topic has considered planning policy laid out by the regional authority MCC and the Greater Manchester Combined Authority (GMCA).

4.3.2 The following regional and local planning frameworks are applicable for the Proposed Development:

- Manchester's Local Development Framework Core Strategy Development Plan document, 2012 to 2027, adopted 11th July 2012 (Ref 4.7).

- Places for Everyone Joint Development Plan Document for Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan: 2022 to 2039, Adopted 21 March 2024 (Ref 4.8).
- The Greater Manchester Strategy 2021-2031, Greater Manchester Combined Authority (Ref 4.9).

5. CONSULTATION

5.1 Consultation to Date

- 5.1.1 An Engagement Strategy has been developed for the Proposed Development and consultation is being undertaken with both statutory and non-statutory organisations, as well as the general public, in-line with the strategy. An Approach to Community Consultation has also been developed and shared with MCC for its agreement, ensuring a robust consultation approach. This engagement will inform the decision making for the EIA process.
- 5.1.2 Ongoing engagement is taking place between the project team and stakeholders, including local landowners, MCC, the University of Manchester and statutory consultees.
- 5.1.3 The Project has engaged or is planning to engage the following key stakeholders, prior to formal consultation, including as part of developing this EIA Scoping Report:
- Environment Agency;
 - Historic England;
 - MCC; and
 - University of Manchester.

5.2 Statutory Consultation

- 5.2.1 Consultation is being undertaken with statutory stakeholders as part of the EIA process, to allow those with an interest in the Proposed Development to participate in the decision-making process and to obtain relevant baseline information.
- 5.2.2 A technical consultation pack will be shared with all statutory consultees, as outlined in Schedule 5 and Schedule 6 of the Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006 (Ref 5.1), as part of the first stage of consultation between January and February 2025. The technical pack includes information on the topics included within the EIA, alongside additional information about the Proposed Development, the option selection process, Proposed Development design, and next steps. This will be accompanied by less detailed summary information, also shared with all stakeholders..
- 5.2.3 A second phase of consultation will also take place, currently anticipated in September and October 2025, which will focus on the environmental assessment information available and provide consultees with further details about the construction of the Scheme.

5.3 Public Consultation

5.3.1 There will be two rounds of public consultation on the Proposed Development, the first round is due to take place for six weeks between January and February 2025. This consultation will focus on the principles of the Proposed Development and the design of the preferred option being developed.

5.3.2 A second round of consultation will be conducted between September and October 2025 for six weeks. This consultation will focus on the environmental assessment information available and provide further details about construction of the Proposed Development.

6. AIR QUALITY

6.1 Introduction

6.1.1 This section addresses the scope of the EIA with respect to air quality. It includes a summary of baseline conditions and the approach to the assessment of the possible construction and operational effects. Aspects that are to be scoped in and out of the assessment are identified.

6.1.2 The implications of air quality on human health are addressed in **Chapter 16: Human Health**. This chapter should also be read in conjunction with **Chapter 11: Transport and Access**.

Study Area

6.1.3 The Study Area for the assessment of dust emissions during the construction phase is within 250 m of the Site and within 50 m of any routes to be used by construction vehicles on the local road network up to 250 m from the Site entrance(s), in accordance with Institute of Air Quality Management (IAQM) dust guidance (Ref 6.1).

6.1.4 The Study Area for the assessment of road traffic emissions, both during construction and operational phases, will be determined based on the presence of representative sensitive human and ecological receptors within 200 m of affected roads. Affected roads are identified using the screening criteria for undertaking an air quality assessment as set out in Environmental Protection UK (EPUK) and IAQM guidance (Ref 6.2):

- A change in Light-Duty Vehicle (LDV) flow of greater than 100 annual average daily traffic (AADT) within or adjacent to an Air Quality Management Area (AQMA), or greater than 500 AADT elsewhere;
- A change in Heavy Duty Vehicle flow of greater than 25 AADT within or adjacent to an AQMA or greater than 100 AADT elsewhere; and
- A change in alignment or width of a road of 5 m or more where the road is within an AQMA.

6.1.5 At the time of writing this Report, temporary road closures at the B6469 Whitworth Street West and New Wakefield Street at various stages will be anticipated during the construction phase. The road closures will be confirmed when the construction methodology is finalised. The road closures will result in access restrictions and traffic diversions, including changes to bus routes and taxi rank positions. The impact of these road closures will be quantitatively assessed during EIA if any of the screening criteria listed above are triggered.

6.1.6 The Proposed Development is not expected to create additional vehicle movements during the operational phase and therefore operational traffic emissions impacts are

expected to be scoped out from further consideration, however, this will be confirmed within the ES chapter.

Receptors

- 6.1.7 The area surrounding the Proposed Development is mixed in use. This includes commercial buildings such as shops and restaurants, office spaces, apartment blocks, hotels, and student accommodation. There are multiple residential properties and education facilities, considered high sensitivity receptors, near the Site. Unite Students – Bridgewater Heights student accommodation and Bright Horizons Manchester Day Nursery are located adjacent to the Site on its south side.
- 6.1.8 Sensitive ecological designations are collated in Defra’s MAGIC map application (Ref 6.3). No ecological receptors are present within the vicinity of the Proposed Development or across the centre of Manchester. Therefore, ecological habitats are not expected to be of concern with regards to air quality.

6.2 Legal and Policy Framework

- 6.2.1 Legislation, planning policy and guidance relating to air quality, an pertinent to the Proposed Development, comprises:
- Environmental Protection Act 1990 (Ref 6.4);
 - Environment Act 2021, Part 4 (Ref 6.5);
 - The Air Quality (England) Regulations 2000 (Ref 6.6);
 - The Air Quality Standards Regulations 2010 (Ref 6.7);
 - The Air Quality Standards (Amendment) Regulations 2016 (Ref 6.8);
 - The Conservation of Habitats and Species Regulations 2017 (Ref 6.9).
 - The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 (Ref 6.10).
 - The National Planning Policy Framework (NPPF) (Ref 6.11);
 - Core Strategy Development Plan (Manchester City Council 2012) (Ref 6.12);
 - Addendum to Manchester Core Strategy (Manchester City Council 2024) (Ref 6.13);
 - Manchester City Council Air Quality & Planning Technical Guidance (Manchester City Council 2022) (Ref 6.14); and
 - Transport Strategy for Manchester City Centre (Manchester City Council, 2021) (Ref 6.15).

6.3 Baseline Conditions

Air Quality Monitoring

- 6.3.1 A review of existing baseline air quality around the Site has been undertaken (Ref. 6.17). Greater Manchester Authorities undertook monitoring of air quality at a network of 24 automatic (continuous) sites and 356 non automatic (passive) diffusion tube sites.
- 6.3.2 The data recorded at continuous monitoring locations and the diffusion tube monitoring locations that are closest to the Site shows that NO₂ concentrations are above the Air Quality Strategy (AQS) objective for annual mean NO₂ (40 µg/m³) in 2019, 2021, 2022, and 2023 (**Appendix B**).
- 6.3.3 In 2023 there were no exceedances of the 1 hour mean NO₂ (200 µg/m³) at the Manchester Oxford Road automatic monitor location. Overall, a decreasing trend in recorded annual mean NO₂ concentrations can be seen between 2019 and 2023, but there are remaining hotspots of high NO₂ concentrations in the vicinity of the Site (**Appendix B**).
- 6.3.4 Annual mean PM₁₀ concentrations at Manchester Oxford Road and Manchester Piccadilly automatic monitoring sites were below the AQS objective for PM₁₀ (40 µg/m³) in all years between 2019 and 2023 with a slight decreasing trend (**Appendix B**).
- 6.3.5 Although there were daily exceedances of the short-term PM₁₀ standard of 50 µg/m³ recorded at the automatic monitoring sites at both Manchester Oxford Road and Manchester Piccadilly (**Appendix B**), the number of exceedances were within the 35 permitted days per year for compliance with the short-term objective. In 2023, the 24-hour PM₁₀ standard (50 µg/m³) was exceeded on eight days at Manchester Oxford Road and four days at Manchester Piccadilly.
- 6.3.6 As was noted for NO₂ concentrations in 2020 and PM₁₀ concentrations in 2020 and 2021 were likely influenced by COVID lockdowns, with concentrations lower in these years than would have otherwise been expected. However, as activity progressively returned to pre-COVID level, both NO₂ and PM₁₀ concentrations also returned to expected levels in 2022 and 2023.
- 6.3.7 Annual mean PM_{2.5} concentrations at Manchester Oxford Road and Manchester Piccadilly automatic monitoring sites have been consistently low between 2019 and 2023, falling well below the annual mean PM_{2.5} AQS objective of 20 µg/m³ (**Appendix B**). The data capture rate is above the 85% recommended by Defra for quality purposes for Manchester Oxford Road, but not at Manchester Piccadilly (Ref 6.16).
- 6.3.8 Compared against the more stringent annual mean PM_{2.5} objective of 10 µg/m³ set out in The Environmental Targets (Fine Particulate Matter) (England) Regulations

(2023) (Ref 6.10), annual mean PM_{2.5} were higher than the objective level in 2019, but below the objective level in 2020 to 2023, inclusive.

- 6.3.9 Concentrations of PM_{2.5} in 2020 and 2021 were likely influenced by COVID lockdowns, with concentrations lower in these years than would have otherwise been expected. However, as activity returned to normal post-COVID, PM_{2.5} concentrations also returned to expected levels in 2022 and 2023.

Background Pollutant Concentrations

- 6.3.10 A review of the Defra's background concentration map data (Ref 6.17) indicates that background pollutant concentrations around the Site are below the relevant AQS objectives for NO₂, PM₁₀, PM_{2.5} (**Appendix B**).

Air Quality Management Areas

- 6.3.11 A review of available MCC air quality annual status reports (Ref 6.18) together with GIS information published by Defra (Ref 6.19), shows that the Proposed Development is completely within the Greater Manchester AQMA. The details of the AQMA are shown in **Table 6-1**. The extents of the AQMA are also depicted in the Environmental Constraints **Figure 3, Appendix A**.
- 6.3.12 The most recent information indicates that there remain areas within the Greater Manchester AQMA where the annual mean NO₂ objective of 40 µg/m³ is still exceeded.

Table 6-1: The Greater Manchester AQMA

Year of declaration	Brief description	Pollutant	Level of Exceedance (µg/m ³)	
			At declaration (2016)	Now (2022)
2016	Greater Manchester Combined Authority AQMA An area covering the 10 districts of Greater Manchester, including arterial routes district centres, and airport.	NO ₂ (annual mean)	58.7	46.2

6.4 Potential Impacts

Construction

- 6.4.1 The operation of construction equipment, vehicles and machinery will result in emissions of exhaust gases to atmosphere. IAQM guidance (Ref 6.1) states that

emissions from these sources “...are unlikely to make a significant impact on air quality, and in the vast majority of cases will not need to be quantitatively assessed”. As such, the relatively low number and size of that emissions from construction equipment, vehicles and machinery to be operating simultaneously indicates that a quantitative assessment would not be required, and good practice measures will be sufficient to control emissions from plant and machinery, which would be set out in the EIA. There are no likely significant effects during construction from construction equipment and plant emissions. Assessment of emissions from the operation of construction equipment is therefore scoped out of the further assessment.

- 6.4.2 Fugitive dust emissions arising from construction activities will be variable in nature and will depend upon the type and extent of the activity, soil type and moisture, road surface conditions and weather conditions. Dust arising from construction activities generally has a particle size greater than the PM₁₀ fraction. Unmitigated dust impacts have the potential to be harmful to human receptors and cause nuisance. There will be a level of standard mitigation that may control dust emissions during Construction. Further dust risk assessment (DRA) will be undertaken to determine the risk of dust emissions during Construction, which in turn informs the mitigation measures required. The assessment of fugitive dust emissions during construction is scoped in for further assessment.
- 6.4.3 The construction activities are likely to create additional road vehicle movements as a result of deliveries to the Site, potential removal of waste and material from the Site, and workers trips to and from the Site. There is a potential to result in temporary increases in emissions to air from road traffic during the construction phase, and consequently potential effects from changes to local road traffic emissions within the AQMA during construction. Assessment of emissions from construction traffic is scoped in for further assessment.
- 6.4.4 It should be noted that construction phase traffic flows are not currently available. Once available, the data will be screened against the relevant criteria as stated in Section 6.1 to determine whether a quantitative assessment of traffic emission will be required. There is likely to be a need to establish a vehicle holding area remote from the Site and an approved access route. The EIA assessment will give appropriate consideration to the effects arising from the vehicle holding area, access routing and road closures.

Operation

- 6.4.5 It is unlikely that there will be any potential impacts from the operational phase of the Proposed Development, as the Proposed Development is unlikely to generate a large increase in traffic flow. The Station will mostly serve residents and businesses within a close proximity of the Station, meaning that there is unlikely to be a large increase in vehicle trips to the Station, and consequently impacts on air quality are likely to be negligible.

6.4.6 The Proposed Development's objectives for increased train service capacity and journey time improvements may lead to additional trips to and from the rail station due to modal shift (from road to rail). Given the proposed changes, which lead to enhanced walking and cycling access, the additional trips are anticipated to be undertaken using active travel modes and also via public transport. On this basis, changes in road traffic emissions due to operation of the Proposed Development are anticipated to be negligible and are scoped out of further assessment.

6.4.7 Emissions from trains are scoped out of further assessment as they are likely to have a negligible effect on air quality.

Design and Best Practice Measures

6.4.8 It is expected that good practice air quality management during construction and operation will be incorporated into the design. These measures will be discussed within the air quality assessment in the EIA and also detailed in the Construction Environmental Management Plan (CEMP).

6.5 Proposed Assessment Methodology

Guidance and Best Practice

6.5.1 The air quality assessment will be informed by the following guidance and best practice documents:

- IAQM (2024) Guidance on the assessment of dust from demolition and construction, v2.2 (Ref 6.1)
- EPUK & IAQM (2017) Land-Use Planning and Development Control: Planning for Air Quality, v1.2 (Ref 6.2)
- Manchester City Council (2022). Air Quality and Planning Technical Guidance. (Ref 6.14)
- Defra (2022) Local Air Quality Management – Technical Guidance (TG22) (Ref 6.16).
- Highways England (2019) DMRB Volume 11 Section 3 Part 1 LA 105 Air Quality (Ref.6.17)

Assessment of Impacts

6.5.2 The construction phase dust assessment will be undertaken following IAQM guidance (Ref 6.1). The assessment will consider the proximity of sensitive receptors to construction activities, and the scale and duration of those activities, to assign dust risk category to the site, which in turn will determine the mitigation measures that are appropriate.

- 6.5.3 The IAQM guidance (Ref 6.1) states that *“the aim should be to prevent significant effects on receptors through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be ‘not significant’ ”*.
- 6.5.4 To ensure mitigation measures are effective and adverse impacts are avoided as far as practicable, it is important that the mitigation measures are secured through planning conditions or legal obligations within a section 106 agreement, and are defined in a Dust Management Plan, a more general Code of Construction Practice or Construction Environmental Management Plan.
- 6.5.5 The construction phase traffic flows, when available, will be compared against the screening criteria set out in EPUK & IAQM guidance (Ref 6.2). Should the traffic flows exceed any of these criteria, a quantitative assessment using best practice methods will be undertaken. Should dispersion modelling of construction traffic be necessary, air quality impacts will be assessed in accordance with EPUK & IAQM guidance (Ref 6.2). Where deemed necessary, the assessment will also consider the DMRB LA105 guidance (Ref 6.20). Possible significant effects at sensitive receptors adjacent to the affected road network will be predicted using dispersion modelling (e.g. ADMS-Roads dispersion modelling software).

6.6 Assumptions and Limitations

- 6.6.1 The baseline information used in this scoping assessment is the most recently available at the time of writing. However, conditions may have changed since the publication of this data.

6.7 Summary

- 6.7.1 There is a potential for air quality impacts for sensitive receptors near the Proposed Development during the construction phase. It is anticipated that standard good practice mitigation will be required for some elements (e.g. dust, plant and machinery emissions) of the works to ensure notable effects do not occur. A construction dust assessment will be carried out and construction traffic data will be considered against suitable screening criteria in order to determine the scope of assessment that will be required. Assessment of construction phase impacts is scoped into the assessment.
- 6.7.2 **Table 6-2** provides a summary of the scope for the air quality ES chapter for the Proposed Development.

Table 6-2: Summary of the scope of the EIA for Air Quality

Element	Likely significant effect	Justification	Scoped in/out	
			Construction	Operation
Site equipment and plant emissions during Construction	Not anticipated	With good practice management, plant and machinery emissions not expected to be of a scale to affect air quality.	Out	Out
Dust	Potential (Construction)	Dust-generating activities expected throughout the construction phase. Dust-sensitive receptors in close proximity. A dust risk assessment (DRA) is required to determine the risk of dust emissions during construction. No anticipated increase in road traffic during operation as increased trips to the station likely to be by active travel modes and public transport.	In	Out
Road traffic emissions	Potential (Construction)	Additional road traffic and alterations to existing road traffic flows from construction traffic and road closures.	In	Out
Rail Emissions	Not anticipated	Emissions from diesel locomotives not expected to be of a scale to affect air quality	Out	Out

7. NOISE AND VIBRATION

7.1 Introduction

7.1.1 This section addresses the scope of the EIA with respect to noise and vibration. It includes a summary of likely baseline conditions and the approach to the assessment of the potential construction and operational effects. Aspects that are to be scoped in and out are identified.

7.1.2 The implications of noise and vibration on human health are addressed in **Chapter 16: Human Health**. This chapter should also be read in conjunction with **Chapter 11: Transport and Access**.

Study Area

7.1.3 The Study Area for this Report is shown on **Figure 4** in Appendix A.

7.1.4 The Study Area will focus on sensitive receptors where notable noise and vibration effects are anticipated. For potential airborne noise during construction, consideration will be given to sensitive receptors within 300 m of construction activities based on the criteria detailed in Method 2 of BS 5228-1:2009+A1:2014 (Ref 7.1).

7.1.5 For potential vibration impacts during construction, consideration will be given to those properties most at risk of likely significant effects within up to 75 m of construction activities and based on guidance set out in Ref 7.1. This will be dependent on the type of construction activities taking place, their duration and the distance between sensitive receptors and the location of construction works.

7.1.6 For operational airborne noise consideration will be given to sensitive receptors within 300 m of the Site. This distance is consistent with eligibility for insulation under The Noise Insulation Regulations 1996 (Railways and Other Guided Transport Systems) (Ref 7.2).

7.1.7 There is no national standards or guidance on the appropriate study area for operational ground-borne sound and vibration. Based on the scrutinised High Speed Two project (Ref 7.3), a Study Area of 85 m has been used.

7.2 Legal and Policy Framework

7.2.1 Legislation, planning policy and guidance relating to noise and vibration, and pertinent to the Proposed Development, comprises:

- Control of Pollution Act 1974 (CoPA) (Ref 7.4);
- Environmental Protection Act 1990 (Ref 7.5);
- The Noise Insulation Regulations 1975, as amended 1988 (NIR) (Ref 7.6);

- The Noise Insulation (Railways and Other Guided Transport Systems Regulations 1996 (NIRR) (Ref 7.2); and
- Environmental Noise (England) Regulations 2006 (Ref 7.7).
- Noise Policy Statement for England (NPSE) (Defra, 2010) (Ref 7.8);
- National Planning Policy Framework (NPPF) (Ref 7.9).
- This EIA Scoping Report also takes into account relevant guidance from Manchester's Core Strategy and Adoption Statement (2012 – 2027) (Ref 7.10) set out by Manchester City Council.

7.3 Baseline Conditions

- 7.3.1 The noise baseline has been established using the 2022 Strategic Noise Mapping by Defra (Ref 7.11).
- 7.3.2 The existing noise environment in the local area is dominated by traffic noise from the A34 Oxford Street/Oxford Road from the east, A57(M) Mancunian Way from the south, and A5103 Medlock Street from west; rail noise from train movements at the Station; and road noise from the local road network surrounding the Station. As illustrated in **Figure 5**, around the Station, noise levels exceed 60 dB (LAeq, 16h) during the day and 55 dB at night (LAeq,8h). Railway noise levels exceed 60 dB during the day and 55 dB at night.
- 7.3.3 Monitoring surveys will be undertaken as part of the EIA process to accurately determine the existing noise baseline conditions in the Study Area and identify other notable sources of noise.
- 7.3.4 Baseline noise conditions based on data from Defra are shown on the following attached figures in in **Appendix A**:
- **Figure 5** – Rail Noise;
 - **Figure 6**– Rail Noise at Night;
 - **Figure 7**– Road Noise; and
 - **Figure 8**– Road Noise at Night.

Sensitive receptors

- 7.3.5 Several properties and sensitive receptors have been identified through a desktop study.
- Residential buildings located on the B6469 Whitworth Street West, Cambridge Street, Great Marlborough St., including:
 - Bridgewater Bank South Apartment building;
 - Unite Students - Bridgewater Heights accommodation; and

- The Assembly apartment building on Cambridge Street.
- Sensitive commercial buildings could include:
 - Several hotels on the A34 Oxford Road/Oxford Street;
 - Bright Horizons Manchester Day Nursery and Preschool;
 - 6 Great Marlborough Street, Manchester Metropolitan University;
 - Kimpton Clocktower Hotel; and
 - Art Centres, venues and theatres such as BIMM Manchester, MMU Arts Centre, Ritz and Palace Theatres.

Noise Important Areas

7.3.6 Defra has identified Noise Important Areas (NIAs) as part of the production of strategic noise maps and action plans which are legal requirements set out in the Environmental Noise (England) Regulations 2006 (as amended) (Ref 7.7). The NIAs highlight “hotspot” locations where the highest 1% of noise levels at residential locations can be found. In accordance with the noise action plans, the NIAs provide a framework for further investigation.

7.3.7 There are several NIAs within 300 m of the Site and are illustrated on **Figure 4**:

- ID – 10964 (Road NIA): located on the Site. It includes Oxford Road and a section of Portland Street. It comprises of many commercial properties such as shops, hotels, theatres, and university buildings.
- ID – 1690 (Road NIA): located on the Site. The area comprises of a commercial office building located at the intersection of A5103 and Little Peter Street.
- ID – 1691 (Road NIA): approximately 55 m to the north of the Site at Bridgewater Viaduct. It comprises of a main road section of Deansgate and includes few commercial buildings such as Hilton Manchester Deansgate and ODEON cinema.
- ID – 1689 (Road NIA): approximately 115 m to the south of Site at Cambridge Street. It includes the A57(M) Mancunian Way/Ring Road. The surrounding area comprises of Unity Students Parkway Gate campus, residential housing on Medlock Street Junction, and Loxford Court.
- ID – 10966 (Road NIA): approximately 300 m to the south of the Site at the proposed vehicle holding area off New Elm Road. It is approximately 150 m long comprising of a section on Egerton Street next to A57(M) Deansgate Interchange and includes several commercial properties.
- ID – 1697 (Road NIA): approximately 300 m to the south of the Site at Altrincham Street. It is a small street section called Macroft Walk and is approximately 115 m long comprising of residential properties.

7.4 Potential Impacts

- 7.4.1 The need to consider ‘tranquil areas’, defined as areas which are relatively undisturbed from human sources of noise and landscape disturbance, is set out in the NPPF (Ref 7.9). Due to the presence of existing transport infrastructure, no part of the Study Area is expected to be considered a ‘tranquil area’. Consideration of these areas have been scoped out of the EIA.

Construction

- 7.4.2 Temporary noise and vibration effects are anticipated to occur during the construction phase, due to activities such as piling, the movement of construction plant across the Site and construction traffic. Potential impacts are anticipated to arise from airborne noise during construction especially where works at night are required.
- 7.4.3 There is also the potential for vibration impacts from demolition and any vibratory compaction or impact/vibratory piling that may be required for Construction. This has the potential to cause disturbance to the occupants of local sensitive receptors and in rare cases to cause damage to nearby structures.
- 7.4.4 To reduce disruption to the operation of the railway network during the works, aspects of the work will be required to be completed during possessions of the railway (when no trains run). These typically occur outside of standard weekday working hours at night; weekends; and bank holidays when there is greater sensitivity to disturbance for residential receptors.
- 7.4.5 Potential significant adverse noise and vibration effects during Construction of the Proposed Development is anticipated and therefore scoped in for further assessment.

Operation

- 7.4.6 The platform layout of the existing Station will be changed although the platforms will remain in the same area as the current configuration. The new track layout will be within the boundaries of the existing rails and therefore an assessment of operational noise as experienced by the local sensitive receptors under the Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996 (Ref 7.2) is not required.
- 7.4.7 If there are significant changes in train speed; frequency of services; and/or train type resulting from the Proposed Development, the noise and vibration from the operation of the trains as experienced by the local sensitive receptors may alter. Operational changes such as these are not required to be assessed within the Noise Insulation Regulations and, if triggered, mitigation is not obligatory. However, as part of the EIA the changes in operational noise is scoped in for further assessment.

- 7.4.8 There is potential for replacement or additional fixed plant to be required as part of the reconfiguration of the existing Station. Impacts of noise from any items of fixed plant is scoped in for further assessment to determine if there are any significant adverse noise and vibration effects as experienced by the local sensitive receptors during the operation of this equipment.

Design and Best Practice Measures

- 7.4.9 It is anticipated that best practicable measures will be incorporated into the design and screening of the Site or sensitive receivers will be considered within the impact assessment.

7.5 Proposed Assessment Methodology

Noise and vibration guidance

- 7.5.1 The methods for the assessment of noise and vibration effects will be informed by relevant guidance listed below;
- Guidelines for Community Noise (WHO, 2018) (Ref 7.12);
 - Night Noise Guidelines for Europe (WHO, 2009) (Ref 7.13);
 - Environmental Noise Guidelines for the European Region (WHO, 2018) (Ref 7.14);
 - Guidelines for Environmental Noise Impact Assessment (Institute of Environmental Management and Assessment (IEMA), 2014) (Ref 7.15);
 - British Standard 5228:2009+A1:2014: Code of practice for noise and vibration control on construction and open sites. Part 1: Noise (British Standards Institution, 2014) and Part 2: Vibration (British Standards Institution, 2014) (Ref 7.1);
 - Calculation of Road Traffic Noise (Department for Transport and the Welsh Office, 1988) (Ref 7.16);
 - Design Manual for Roads and Bridges (DMRB), Vol. 11 EIA, Section 3, Part 7 Noise and Vibration LA 111 (Highways England, 2019) (Ref 7.17);
 - Calculation of Railway Noise (CRN) (Department for Transport, 1995) (Ref 7.18); and
 - Planning Practice Guidance (PPG): Noise (Ministry of Housing, Communities and Local Government, 2019) (Ref 7.19).

Construction Impact: Airborne Noise

- 7.5.2 BS 5228-1:2009+A1:2014 (Ref 7.1) provides information on construction noise prediction methods and typical noise levels from different types and sizes of construction equipment. It contains a database on typical noise levels from individual

items of equipment, activities and routines to predict noise from demolition and construction activities. The standard also provides recommendations on practical ways to mitigate excessive noise. This will be used to predict anticipated airborne noise levels resulting from the Proposed Development.

- 7.5.3 This standard advises that construction activities have the potential for adverse effects if the total predicted noise (i.e. the pre-construction ambient noise and the construction noise) exceeds the pre-construction ambient noise by 5 decibels (dB) or more. This is subject to lower cut-off values of 65 dB, 55 dB and 45 dB LAeq,T from construction noise alone, for the daytime, evening and night-time periods respectively.
- 7.5.4 The significance criteria (**Table 7-1**) will be applied for the duration of one month or more, unless works for a shorter duration are anticipated to result in a likely significant effect. The evaluation criteria are generally applicable to residential housing, hotels and hostels, buildings in religious use, schools and health or community facilities.

Table 7-1: Construction noise magnitude of impact

Magnitude of impact	Noise level LAeq,T dB (façade)
High	Exceedance of ABC Threshold Value by $\geq +5$ dB
Medium	Exceedance of ABC Threshold Value by up to +5 dB
Low	Equal to or below the ABC Threshold Value by up to -5 dB
Very Low	Below the ABC Threshold Value by ≥ -5 dB

- 7.5.5 Construction noise levels at sensitive receptors will be calculated using a commercial noise modelling package, which incorporates the methodology contained in International Organisation for Standardization (ISO) 9613: Acoustics – Attenuation of Sound during Propagation Outdoors, Part 1: 1993 (Ref 7.20) and Part 2: 2024 (Ref 7.21). Predicted noise levels are anticipated will be indicative being based on early guidance on the anticipated plant and equipment that will be used during construction.

Construction Impact: Vibration

- 7.5.6 Vibration from construction activities has the potential to have an adverse effect on nearby sensitive receptors. The guidance which will be used for assessing vibration is BS 5228-2:2009+A1:2014 (Ref 7.1) which describes a prediction methodology for mechanised construction works such as piling.
- 7.5.7 This potential effects from vibration have been based on absolute levels and not a change in level. BS 5228-2 (Ref 7.1) recommends measurement of the peak particle velocity (PPV) and comparing the levels to the ones given in the guidance, that is

representative of the point of entry into sensitive receptors. This can be applied to both assessing structural damage and human response in residential buildings for example.

- 7.5.8 In other cases (other than blasting) where vibration might more continuous and over longer periods of time affecting residential receptors, more specific guidance relating to human response from vibration exposure can be obtained from BS 6472-1:2008 (British Standards Institution) (Ref 7.23), and application of the vibration dosage value (VDVs) may be more appropriate.

Construction Impact: Traffic Noise

- 7.5.9 The procedure for assessing impact of changes in traffic flow shall be done in accordance to guidance from the Design Manual for Roads and Bridges (Ref 7.17) and BS 5228-1:2009+A1:2014 (Ref 7.1).
- 7.5.10 The procedure (as referenced by Highways England) for predicting noise levels from a road is described in the Department of Transport and Welsh Office technical memorandum Calculation of Road Traffic Noise (Ref 7.16). This method can be used to predict noise levels from changes in traffic using two-way average traffic flow of vehicles over an 18-hour workday (6:00 – 24:00), speed and the percentage of Heavy Goods Vehicles (HGVs).
- 7.5.11 Once the existing and predicted noise levels are determined, the magnitude of impact at noise sensitive receptors within the study area can be calculated.
- 7.5.12 Impact can be evaluated using lowest observable adverse effect level (LOAEL) and significant observable adverse effect level (SOAEL) as set out in the Design Manual for Roads and Bridges (Ref 7.17) and reported within the environmental assessment for all noise sensitive receptors within the construction activity study area. For example, increases in base line noise levels of less than 1.0 dB of closest public road used for construction traffic are regarded as having negligible impact at receptors.
- 7.5.13 The road traffic noise assessments will be based on a comparison of 'Do Minimum' and 'Do Something' scenarios. The 'Do Minimum' scenarios will represent the future baseline with minimum interventions and without the Proposed Development or alternatives. The 'Do Something' scenarios will represent predicted road traffic changes during construction and operation.

Operational Impact: Fixed plants

- 7.5.14 Assessment of the operational noise impact of a fixed plant will be based on guidance from BS 4142:2014+A1:2019 (Ref 7.22). In summary, noise levels (LAeq) from the specific fixed plant would need to be measured while the plant is both on and off, along with background noise level measurements. Then a correction is applied

based on the acoustic features of the noise, in order to determine a rating level, which is then compared against the background noise levels.

- 7.5.15 A difference of around +10 dB is likely to be an indication of a significant adverse impact, a difference of around +5 dB is likely to be an indication of an adverse impact. Where the rating level does not exceed the background sound level, this is an indication of low impact.

7.6 Summary

- 7.6.1 There is the potential for impacts for sensitive receptors near the Proposed Development. **Table 7-2** provides a summary of the noise and vibration scope for EIA of the Proposed Development.

Table 7-2: Summary of the scope of the EIA for noise and vibration

Element	Likely significant effect	Justification	Scoped in/out	
			Construction	Operation
Vibration – People	Potential	Platform, track and footbridge construction works include piling. Changes operational train speed; frequency of services; and/or train type are not anticipated to result in a significant change in operational vibration.	In	Out
Vibration – Buildings	Potential	Platform, track and footbridge construction works include piling. Changes operational train speed; frequency of services; and/or train type are not anticipated to result in a significant change in operational vibration.	In	Out
Airborne Noise	Potential	Construction works may include noisy activities such as piling and demolition. Some of the	In	In

Element	Likely significant effect	Justification	Scoped in/out	
			Construction	Operation
		works are in close vicinity to sensitive receptors. These construction activities and timing are likely to result in a perceptible effect. Changes operational train speed; frequency of services; and/or train type may result in changes in operational noise.		
Ground-borne Noise	Not anticipated	Ground-borne noise effects from construction activities is not expected as airborne noise will dominate. Ground-borne noise as a result of the operation of the Scheme not anticipated to increase above existing levels (see operational vibration above).	Out	Out
Construction Traffic Noise	Potential	Diversions and partial closures as well as changes to junctions likely to affect traffic and driver decisions during construction.	In	Out
Operational Noise - Fixed Plants	Potential	There is potential for additional fixed plant to be required as part of the reconfiguration of the Station.	Out	In

8. MATERIALS AND WASTE

8.1 Introduction

8.1.1 This section presents an initial baseline for materials and waste relevant to the Proposed Development, provides an overview of the assessment methodology to be followed for the environmental assessment and identifies the potential effects provisionally identified.

8.1.2 This section follows the methodology set out in the Institute of Environmental Management and Assessment (IEMA) guide to: Materials and Waste in Environmental Impact Assessment, Guidance for a Proportionate Approach (referred to herein as the 'IEMA Guidance') (Ref 8.1).

8.1.3 For the purpose of this Report, materials and waste comprise:

- The consumption of materials (key construction materials only including steel, aggregate, concrete and asphalt); and
- The generation and management of waste.

Study Area

8.1.4 The Study Areas for the assessment of impacts related to materials and waste are defined in line with the IEMA Guidance (Ref 8.1).

Proposed Development Study Area

8.1.5 The Proposed Development Study Area for the use of construction and operational materials (key construction materials only) and construction and operational waste generation comprises the Site. The Study Area is deemed to include the footprint of the proposed works, together with any temporary land requirements during the construction. This may include temporary offices, compounds and storage areas.

8.1.6 The Proposed Development Study Area for the impacts on allocated or safeguard mineral and waste sites is defined by the Site. Impacts on allocated or safeguarded waste sites are not included within the scope of the IEMA Guidance (Ref 8.1), however they are included for completeness and a high-level assessment of impacts on such sites will be considered in the assessment if appropriate.

8.1.7 Impacts on MSAs are not assessed in the materials and waste assessment in accordance with the IEMA Guidance (Ref 8.1). MSAs are included for context in the baseline, since MSAs are a planning consideration and further consultation and assessment in accordance with Mineral Planning Authority policies may be required at a later stage.

Expansive Study Area

- 8.1.8 The Expansive Study Area for non-hazardous and inert waste management is the North West England region (as defined by the Environment Agency (EA)), comprising the sub-regions of Cheshire, Cumbria, Greater Manchester, Lancashire, and Merseyside. This is the region in which the Proposed Development is located. The Expansive Study Area includes the following sub-regions as outlined in the EA's 2023 Waste Summary Tables for England – Version 1 (Ref 8.3). The Expansive Study Area for non-hazardous and inert waste management is defined based on professional judgement and informed by consideration of the proximity principle, whilst not constraining value for money.
- 8.1.9 The Expansive Study Area for hazardous waste management is England. The Study Area is defined based on professional judgement and informed by consideration of the proximity principle, whilst not constraining value for money.
- 8.1.10 The proximity principle for hazardous waste in England is outlined in Principle 2 – Infrastructure Provision in the Strategy for Hazardous Waste Management in England: “We look to the market for the development of hazardous waste infrastructure, which implements the hierarchy for the management of hazardous waste and meets the needs of the UK to ensure that the country as a whole is self-sufficient in hazardous waste disposal, facilities are put in place for hazardous waste recovery in England, and the proximity principle is met.” (Ref 8.4). Planning for hazardous waste management is also undertaken at a national level.
- 8.1.11 The Expansive Study Area for availability of key construction materials (steel, aggregates, concrete and asphalt) is national (United Kingdom (UK) or Great Britain (GB)) and the North West England region (dependent on baseline information availability).

8.2 Legal and Policy Framework

- 8.2.1 Legislation, planning policy and guidance relating to materials and waste, and pertinent to the Proposed Development, comprises:
- E Waste FD (Ref 8.2);
 - The Environmental Protection Act (1990) (Ref 8.5);
 - The Hazardous Waste (England and Wales) Regulations (2005) as amended (Ref 8.6);
 - The Waste (England and Wales) Regulations (2011) as amended (Ref 8.7);
 - The Environmental Permitting (England and Wales) Regulations (2016) as amended (Ref 8.8); and
 - The Environment Act 2021 (Ref 8.9).

- National Planning Policy Framework (NPPF) (Ref 8.10);
- National Planning Policy Guidance for Minerals (2014) (Ref 8.11);
- National Planning Policy Guidance for Waste (2015) (Ref 8.12);
- National Planning Policy for Waste (2014) (Ref 8.13);
- The Waste Management Plan for England (2021) (Ref 8.14);
- A Green Future: Our 25 Year Plan to Improve the Environment (2018) (Ref 8.15);
- Our Waste, Our Resources, A Strategy for England (Resources and Waste Strategy for England) (2018) (Ref 8.16); and
- Environmental Improvement Plan (2023) (Ref 8.17).
- Greater Manchester Joint Minerals Plan Development Plan Document (Ref 8.18)
- Greater Manchester Joint Waste Development Plan Document (Ref 8.19)
- Manchester's Local Development Framework Core Strategy Development Plan Document (Ref 8.20)
- 5-Year Environment Plan for Greater Manchester 2019-2024 (Ref 8.21)
- Places for Everyone Joint Development Plan Document for Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan: 2022 to 2039 (Ref 8.22)

Baseline Conditions

Current Baseline

Availability of Key Construction Materials

8.2.2 National (UK) and regional data has been used to establish a quantitative baseline of the consumption for key constructional materials, as summarised in **Table 8-1**.

Table 8-1: Consumption and Demand for Key Construction Materials

Material	National consumption (million tonnes, year)	North West England availability	Baseline data year	Data reference
Steel	15	Not applicable, steel will be assessed at the national level.	2023	UK's requirement, Steel UK, Key Statistics Guide, Steel requirement

				May 2024 (Ref 8.25).
Crushed rock (million tonnes) (production)	Not applicable, these materials will be assessed at the regional level	7.2	2022	Mineral Products Association (MPA). 2023. Profile of the UK Mineral Products Industry (Ref 8.26).
Sand and gravel (million tonnes) (production)		1.8		
Ready-mixed concrete (million m3) (sales)		1.4		
Ready-mixed concrete (million tonnes, assumed density of 2.4 t/m3) (sales)		3.4		
Asphalt (million tonnes) (sales)		2.1		

8.2.3 There is no publicly available information on potential long-term changes to the national and regional demand for materials by the time of construction of the Proposed Development. Construction material demand is closely aligned to both the quantity of construction taking place and the general economy, therefore it is deemed inappropriate to forecast future demand as the demand is unlikely to be linear. Therefore, future consumption is assumed to be the same as the current baseline as outlined in **Table 8-1**.

8.2.4 Potential recycled content for the main construction materials are outlined in **Table 8-2**. These “good practice” rates are derived from the Waste Resources Action Plan’s (WRAP) Designing Out Waste Tool for Civil Engineering (Ref 8.24).

Table 8-2: Potential Recycled Content

Material Type	Potential recycled content (% by weight)
Concrete	16
Asphalt	25
Aggregates	50
Steel reinforcement	100
Structural steel	60

Mineral Safeguarding Areas and Allocated and Safeguarded Mineral and Waste Sites

8.2.5 No active, allocated or safeguarded mineral sites or MSAs are located within or immediately adjacent to the Site (Ref 8.18).

- 8.2.6 No permitted landfill sites (Ref 8.28) or other permitted or safeguarded waste sites (Ref 8.19) are located within or immediately adjacent to the Site.

Landfill Capacity

- 8.2.7 Baseline information consists of current landfill capacity in the North West England region for non-hazardous waste and England for hazardous waste (Ref 8.3) as summarised in **Table 8-3**.
- 8.2.8 For non-hazardous waste, total landfill capacity in the North West England region (excluding non-hazardous restricted) at the end of 2023 was approximately 22.9 million m³.
- 8.2.9 For hazardous waste, total merchant landfill capacity in England at the end of 2023 was approximately 9.7 million m³. Hazardous restricted landfill capacity is excluded since such capacity is usually limited to waste from specific waste sources or producers, commonly the site operator e.g. a manufacturing site.

Table 8-3: Landfill Capacity (2023) in North West England Region (Ref 8.3)

Landfill Type	North West England Landfill Capacity (000s m ³)	England Landfill Capacity (000s m ³)
Hazardous Merchant	3,010	9,680
Hazardous Restricted	0	695
Non-hazardous with Stable Non-Reactive Hazardous Waste (SNRHW) cell	7,172	45,270
Non-hazardous	10,488	148,005
Non-hazardous Restricted	0	0
Inert	5,279	122,249
Total	25,949	325,899

Waste Management Infrastructure

- 8.2.10 In relation to the baseline for non-landfill waste management infrastructure, the IEMA Guidance (Ref 8.1) (page 14) states that it “*does not consider waste processing and recovery facilities as sensitive receptors, rather: they are part of a system that has the potential to reduce the magnitude of adverse impacts associated with waste generation and disposal. Waste processing and recovery facilities are, hence, different to landfills, in that the latter are finite resources.*” Since the IEMA Guidance (Ref 8.1) does not consider non-landfill waste management infrastructure to be a sensitive receptor, baseline data is not required to enable the assessment.

Historic Landfills

- 8.2.11 Historic landfills are potentially relevant to this assessment since excavations in historic landfill can give rise to hazardous and non-hazardous wastes that require management. The EA's Historic Landfill Sites spatial data (Ref 8.27) does not identify any historic landfill sites within or immediately adjacent to the Site.

Targets and Performance

- 8.2.12 In England, the national target for recovery of construction and demolition waste is 70% by weight, as set out in the E Waste FD (Ref 8.2) and the Waste Management Plan for England (Ref 8.14). The target specifically excludes naturally occurring materials with waste code 17 05 04 (soil and stones other than those mentioned in (waste code) 17 05 03* (soil and stone containing hazardous substances)). Recovery is deemed to include reuse, recycling and other recovery e.g. energy recovery and recovery to land.
- 8.2.13 As outlined in the IEMA Guidance (Ref 8.1), a 'good practice' landfill diversion target of 90% has been achieved and exceeded by some major UK development projects. In 2022, England generated 63 million tonnes of non-hazardous construction and demolition waste, of which 59.4 million tonnes was recovered (Ref 8.29). This represents a recovery rate of 94.3%. The England recovery rate for non-hazardous construction and demolition waste remained at 92 to 94% from 2010 to 2022 (Ref 8.29).
- 8.2.14 Standard, good and best practice waste recovery rates by material are provided by WRAP (Ref 8.30) and summarised in **Table 8-4**.

Table 8-4: Standard, Good and Best Practice Recovery Rates by Material

Material	Standard practice recovery (%)	Good practice recovery (%)	Best practice recovery (%)
Metals	95	100	100
Packaging	60	85	95
Concrete	75	95	100
Inert	75	95	100
Plastics	60	80	95
Miscellaneous	12	50	75
Electrical equipment	Limited information	70	95

Material	Standard practice recovery (%)	Good practice recovery (%)	Best practice recovery (%)
Cement	Limited information	75	95
Liquids and oils	100	100	100
Hazardous	50	Limited information, cannot be 100% since some hazardous waste e.g. asbestos must be landfilled.	

8.3 Potential Impacts

8.3.1 The IEMA Guidance (Ref 8.1) identifies the potential materials and waste impacts as comprising:

- Materials: The consumption of resources; and
- Waste: Generation and disposal of waste.

8.3.2 The construction, operation and maintenance of the Proposed Development will require the use of materials and the generation of waste. The types of materials that are expected to be used and the types of waste that may be generated are outlined in **Table 8-5**.

Table 8-5: Types of Material Use and Waste Arising from the Proposed Development

Scheme phase	Material use	Waste arisings
Construction	<u>Enabling works:</u> Fill materials (aggregates and soils). Temporary fencing. Site compound infrastructure. <u>Construction:</u> Excavated materials and soils. Aggregates: including ballast, engineering fills, general fill. Concrete: in-situ cast and pre-cast components. Bricks, blocks, slabs, asphalt.	<u>Enabling works:</u> Excavated materials and soils. Unsuitable/contaminated excavated materials. Vegetation from Site clearance. <u>Demolition:</u> Permanent way demolition: spent ballast, rail, sleepers, formation sand, drainage materials (granular materials), ancillaries (sleeper fastenings, clips, pads etc.), troughing, cables, signals, other assets. Non-permanent way demolition (including footbridge): inert materials (brick, block, concrete, tiles), asphalt, steel and other metals, timber, other (cladding, services, fixtures).

Scheme phase	Material use	Waste arisings
	Steel, for structures and other uses. Other metals, including cabling, fixtures. Prefabricated units e.g. bridge sections, canopies. Timber. Plastics. Composite materials.	Potential hazardous materials: asbestos, Polychlorinated Biphenyl (PCB) containing components, contaminated ground. Construction: Excavated materials from foundations. Offcuts, damaged materials, surplus materials. Packaging from materials delivered to site. Construction worker waste from offices and rest areas. Street/Site cleaning residues. Waste oils from construction plant. Hazardous wastes.
Operation/ Maintenance	Operational materials. Maintenance materials.	Worker waste from offices and rest areas. Passenger waste. Maintenance waste. Littering/fly-tip clearance.

8.3.3 Although there is limited information available at the time of writing this Report, it is anticipated that material use (changes in demand for materials) and waste generation during the construction phase of the Proposed Development can be managed in accordance the Design Waste Management Plan (DWMP), which will form part of the Construction Environmental Management Plan (CEMP) prepared during the ES. The precautionary measures and remedial actions for material and waste management will be specified in the DWMP for implementation during construction. This topic is therefore scoped out of the assessment. The DWMP will be developed in accordance with Network Rail Standard NR/L2/ENV/015 - Environment & Social Minimum Requirements – Design and Construction (Ref 8.30).

8.3.4 The following matters are also scoped out of the assessment of materials and waste:

- Direct impacts on safeguarded or allocated mineral sites (no active, allocated or safeguarded mineral sites are located within or immediately adjacent to the Site).
- Direct impacts on safeguarded or allocated waste sites (no active, allocated or safeguarded waste sites are located within or immediately adjacent to the Site)
- Direct impacts on MSAs: no MSAs are located within or immediately adjacent to the Site.

- Impacts on material use (changes in demand for materials) during operation: impacts and effects during operation are (using professional judgement) considered minimal due to the type of development and the likely operational and maintenance requirements.
- Impacts on waste generation (changes in available landfill void capacity) during operation: Forecast impacts and effects during operation are (using professional judgement) considered minimal due to the type of development and the likely operational and maintenance waste arisings.
- Impacts associated with decommissioning: The Proposed Development has a long design life and as such it is not considered reliable to forecast decommissioning and associated infrastructure requirements and facilities that far in the future.

8.4 Proposed Assessment Methodology

- 8.4.1 As the topic is scoped out, no assessment of significant effects associated with materials and waste is required.
- 8.4.2 A Resource Efficiency workshop will be carried out as part of the development of DWMP to identify waste avoidance, reduction and/or reuse opportunities.

8.5 Assumptions and Limitations

- 8.5.1 The following matters do not form part of the assessment of materials and waste:
- Waste arising from extraction, processing and manufacture of construction components and products. This is based on the assumption that these products and materials are being developed in a manufacturing environment with their own waste management plans, facilities, and supply chain, which are potentially in different regions of the UK or the world and therefore outside of the geographical scope of this study. Such matters cannot be accurately predicted and assessed in the ES as they relate to procurement decisions that cannot be assured.
 - Other environmental impacts associated with the management of waste from the Proposed Development e.g., on water resources, air quality, noise or traffic resulting from the generation, handling, on-site temporary storage or off-site transport of materials and waste are addressed separately in other relevant sections.
 - The IEMA Guidance (Ref 8.1) *“does not consider waste processing and recovery facilities as sensitive receptors, rather: they are part of a system that has the potential to reduce the magnitude of adverse impacts associated with waste generation and disposal. Waste processing and recovery facilities are, hence, different to landfills, in that the latter are finite resources”* and are therefore not included in the assessment.

8.6 Summary

- 8.6.1 Materials and waste are scoped out of further assessment in the EIA stage. A Design Waste Management Plan, which will form part the Construction Environmental Management Plan (CEMP). The Plans will be developed at ES stage and implemented by the Contractor to control the effects of the construction material used and wastes generated during Construction.

Table 8-6: Summary of the scope of the EIA for materials and waste

Element	Likely significant effect	Justification	Scoped in/out	
			Construction	Operation
Materials	Potential (Changes in availability of key construction materials)	Construction materials will be managed through the DWMP. Further assessment is not required.	Out	Out
Materials	Potential (Changes to a safeguarded mineral site)	No active or allocated mineral sites located within or immediately adjacent to the Site. Further assessment is not required.	Out	Out
Waste	Potential (Changes in available landfill void capacity)	Construction wastes generated from excavation, demolition and construction activities will be managed through implementation of the DWMP. Further assessment is not required.	Out	Out
Waste	Potential (Changes to a safeguarded waste site).	No active or allocated waste sites located within or immediately adjacent to the Site. Further assessment is not required.	Out	Out

9. HISTORIC ENVIRONMENT

9.1 Introduction

- 9.1.1 This section addresses the scope of the EIA with respect Historic Environment. It includes a summary of baseline conditions and the approach to the assessment of the potential construction and operational effects. Aspects that are to be scoped in and out are identified.

Study Area

- 9.1.2 For the purpose of this Scoping Report, the Study Area is defined as the Site, including all temporary and construction areas, and a 200 m buffer. For archaeological remains and historic buildings, the Study Area for the EIA will be reported in the ES.

9.2 Legal and Policy Framework

- 9.2.1 Legislation, planning policies and guidance relating to the historic environment, and pertinent to the Proposed Development, comprises:
- Ancient Monuments and Archaeological Areas Act 1979 (Ref 9.1);
 - Planning (Listed Buildings and Conservation Areas) Act 1990 (Ref 9.2); and
 - National Planning Policy Framework (NPPF) (Ref 9.3);
 - Manchester City Council Core Strategy 2012-2027 (adopted July 2012) (Ref 9.4);
 - Addendum to Manchester Core Strategy (adopted March 2024) (Ref 9.5); and
 - Places for Everyone Joint Development Plan for Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan 2022 to 2039 (adopted March 2024) (Ref 9.6).

9.3 Baseline Conditions

- 9.3.1 The historic environment baseline locations are presented on **Figure 3**.
- 9.3.2 The historic environment baseline has been established using the following sources of information:
- The National Heritage List for England (NHLE) register of all nationally designated assets (Scheduled Monuments, Listed Buildings, Protected Wrecks, Registered Parks and Gardens and Battlefields) available through MAGIC Map (Defra, 2024) (Ref 9.7);
 - Manchester City Council for information on Conservation Areas (Ref 9.8); and

- Greater Manchester Urban Historic Landscape Characterisation (Archaeology Data Service [distributor], Norman Redhead, 2012) (Ref 9.9).

Heritage Assets - Nationally Designated Assets

9.3.3 There are 82 designated assets within the 200 m Study Area. These comprise:

- One Scheduled Monument;
- Three Grade I Listed Buildings;
- Six Grade II* Listed Buildings; and
- 72 Grade II Listed Buildings.

9.3.4 There are no other designated assets located within Study Area such as Registered Parks and Gardens, Registered Battlefields or Protected Wreck Sites (**Appendix C**).

Conservation Areas

9.3.5 There are two Conservation Areas within the Site and one within the Study Area. These are described in **Table 9-1**.

Table 9-1: Conservation Areas Within 200 m of the Site

Conservation Area	Date of Designation	Location	Description
Whitworth Street Conservation Area	September 1974, extended June 1985	The Proposed Development includes land within the Conservation Area along its southern boundary from the A34 Oxford Road to the A6 London Road.	Whitworth Street Conservation Area is uniquely Mancunian in character with a high quality townscape resulting from Victorian and Edwardian buildings erected between 1850 and 1920. It demonstrates the importance of the textile industry within the city and also contains a number of important buildings, not only those related to the textile industry.

Conservation Area	Date of Designation	Location	Description
Castlefield Conservation Area	October 1979, extended June 1985	The Proposed Development includes land within the Conservation Area between Water Street, New Elm Road, Potato Wharf and the railway line. The Proposed Development is also adjacent to the Conservation Area on the eastern side of the Conservation Area on Bridgewater Viaduct, next to Castle Street.	Castlefield Conservation Area is focused on the Roman fort, called Mamucium, which is the first definite record of human settlement in Manchester. Following the growth of the canal network, Castlefield became a hub and supported a number of new warehouses to supply the rapidly growing population in Manchester. When canals could no longer transport goods quickly enough, the world's first railway station was opened on Liverpool Road in 1830. Since the decline of canal and rail transport in the 20th century, tourism and leisure are now growth industries which have transformed Castlefield into a thriving attraction within the city.
George Street Conservation Area	Jun-85	The closest point is approximately 190 m north-east of the Proposed Development at the junction of the A34 Oxford Street and Portland Street.	George Street represents the industrial expansion of the city in the Georgian period when agricultural fields were given over to urban uses, with new streets laid out on regular grid patterns. Principally a busy commercial district, the area developed with the Industrial Revolution and fell into disrepair with the decline of the British cotton industry in the mid-20th century. In the 1960s the area became popular with the Chinese community and is now commonly known as Chinatown.

Historic Landscape Character Areas

- 9.3.6 Within the Site the Greater Manchester Urban Historic Landscape Characterisation Project records the area as the broad types of commercial and communications, characterised as part of the railway line and a business park.
- 9.3.7 The Study Area is predominantly characterised by the broad types of commercial, communications (including railway lines), residential and industrial.

9.4 Potential Impacts

Construction

Archaeological Remains and Historic Buildings

9.4.1 Construction of the Proposed Development has the potential to impact heritage assets in the following ways:

- Partial or total removal of archaeological assets within the Site;
- Removal of buried archaeological remains during Construction;
- Changes in groundwater levels leading to the desiccation of waterlogged archaeological deposits;
- Partial or total demolition of Listed Buildings within the Site;
- Demolition of Screen One (the heritage significance of this structure, within or forming part of the Grade II listed Manchester South Junction and Altrincham Railway Viaduct [NHLE 1200837] will be assessed in the ES);
- Damage to Listed Buildings as a result of vibrations; and
- Effects on the setting of designated and non-designated heritage assets including visual and noise intrusion, severance and adverse impact on amenity as a result of construction works, and through the presence of the finished Proposed Development within an asset's setting.

9.4.2 Impacts can be positive or negative. There is potential for likely significant effects during construction to historic buildings, and archaeological remains. Effects to both historic buildings and archaeological remains during construction are scoped into this EIA.

Historic Landscape Character

9.4.3 The Proposed Development is remodelling an existing railway asset for continued use of the railway and will not result in a change to the Historic Landscape Character of the railway during Construction. Effects to Historic Landscape Character are scoped out of this EIA.

Operation

Historic Buildings

9.4.4 The Proposed Development's operation will be mostly consistent with existing operations in the area and will not have the potential to impact heritage assets as much as the construction may do. The Proposed Development's operation may still impact on the setting of heritage assets including visual and noise intrusion and adverse impacts on amenity. Effects to historic buildings and conservation areas are therefore scoped into this EIA.

Archaeological Remains

- 9.4.5 No likely significant effects on archaeological remains during operation are anticipated. Effects to archaeological remains and Historic Landscape Character during operation are scoped out of this EIA.

Historic Landscape Character

- 9.4.6 No likely effects on Historic Landscape Character during operation are anticipated. Effects to archaeological remains and Historic Landscape Character during operation are scoped out of this EIA.

Design and Best Practice Measures

- 9.4.7 It is anticipated that good practice measures for heritage assets during construction and operation will be incorporated into the design.
- 9.4.8 The extent, nature and significance of the impacts resulting from the construction and operation of the Proposed Development on the cultural heritage receptors will be considered in detail as part of the ES.

9.5 Proposed Assessment Methodology

- 9.5.1 The assessment of potential effects as a result of the Proposed Development on cultural heritage will be undertaken using the methodology set out below.
- 9.5.2 The value of a heritage asset (its heritage significance) is guided by its designated status but is derived also from its heritage interest which may be archaeological, architectural, artistic or historic (NPPF Annex 2, Glossary) (Ref 9.3). Each identified heritage asset can be assigned a value in accordance with the criteria set out in **Table 9-2**. Using professional judgement and the results of consultation, heritage assets are also assessed on an individual basis and regional variations and individual qualities are taken into account where applicable.

Table 9-2: Criteria for Assessing the Value of Heritage Assets

Asset Value	Description
High	World Heritage Sites. Scheduled Monuments. Grade I and II* Listed Buildings. Registered Battlefields. Grade I and II* Registered Parks and Gardens. Conservation Areas of demonstratable high value. Non-designated heritage assets (archaeological sites, historic buildings, monuments, parks, gardens or landscapes) that can be shown to have demonstrable national or international importance. Well preserved historic landscape character areas, exhibiting considerable coherence, time-depth or other critical factor(s).
Medium	Grade II Listed Buildings. Conservation Areas. Grade II Registered Parks and Gardens. Non-designated heritage assets (archaeological sites, historic buildings, monuments, parks, gardens or landscapes) that can be shown to have demonstrable regional importance. Averagely preserved historic landscape character areas, exhibiting reasonable coherence, time-depth or other critical factor(s). Historic townscapes with historic integrity in that the assets that constitute their make-up are clearly legible.
Low	Locally listed buildings. Non-designated heritage assets (archaeological sites, historic buildings, monuments, park, gardens or landscapes) that can be shown to have demonstrable local importance. Assets whose values are compromised by poor preservation or survival of contextual associations to justify inclusion into a higher grade. Historic landscape character areas whose value is limited by poor preservation and/or poor survival of contextual associations.
Very Low (Not Significant)	Assets identified on national or regional databases, but which have no archaeological, architectural, artistic or historic value. Assets whose values are compromised by poor preservation or survival of contextual associations to justify inclusion into a higher grade. Landscape with no or little significant historical merit.

9.5.3 Having identified the value of the heritage asset, the next stage in the assessment will be to identify the level and degree of impact to an asset arising from the development. Impacts may arise during construction or operation which can be temporary, reversible, or permanent. Impacts can occur to the physical fabric of the asset or affect its setting. The contribution of the setting to the significance of any affected assets will be subject to assessment.

9.5.4 The level and degree of impact (impact rating) will be assigned with reference to a four-point scale as set out in **Table 9-3**. The assessment of the level and degree of

impact will be made in consideration of any Proposed Development design mitigation (embedded mitigation). If no impact is identified, no impact rating will be given and no resulting effect reported.

Table 9-3: Factors Influencing the Assessment of Magnitude of Impacts

Magnitude of Impact	Description of Impact
High	Changes such that the significance of the asset is totally altered or destroyed. Comprehensive change to, or total loss of, elements of setting that would result in harm to the asset and our ability to understand and appreciate its significance.
Medium	Change such that the significance of the asset is significantly altered or modified. Changes such that the setting of the asset is noticeably different, affecting significance and resulting in changes in our ability to understand and appreciate the significance of the asset.
Low	Changes such that the significance of the asset is slightly affected. Changes to the setting that have a slight impact on significance resulting in changes in our ability to understand and appreciate the significance of the asset.
Very Low (Not Significant)	Changes to the asset that hardly affect significance. Changes to the setting of an asset that have little effect on significance and no real change in our ability to understand and appreciate the significance of the asset.

9.5.5 An assessment to classify the effect, having taken into consideration any embedded mitigation, is determined using the matrix in **Table 3-1**. Major and moderate effects will be considered significant.

9.5.6 Within the NPPF (paragraphs 207 and 208) (Ref 9.3), impacts affecting the value of heritage assets are considered in terms of harm, and there is a requirement to determine whether the level of harm amounts to ‘substantial harm’ or ‘less than substantial harm’. There is no direct correlation between the classification of effect as reported in the ES and the level of harm caused to heritage significance in accordance with the NPPF. A major (significant) effect on a heritage asset would, however, more often be the basis by which to determine that the level of to the significance of the asset would be substantial. A moderate (significant) effect is unlikely to meet the test of substantial harm and would therefore more often be the basis by which to determine that the level of harm to the significance of the asset would be less than substantial. A minor or negligible (not significant) effect would still amount to less than substantial harm. However, a neutral effect is classified as no

harm. In all cases, the determination of the level of harm to the significance of the asset arising from development impact is one of professional judgement.

9.5.7 The baseline assessment of historic environment in the EIA will be undertaken in accordance with the guidance set out by the Chartered Institute for Archaeologists (CIfA) and Historic England, in particular the guidance listed below:

- Managing Significance in Decision-Taking in the Historic Environment Good Practice Advice in Planning: 2 (GPA2) (Historic England, 2015) (Ref 9.10);
- The Setting of Heritage Assets – Historic Environment Good Practice Advice in Planning: 3 (GPA3) (Historic England, 2017) (Ref 9.11);
- Standard and Guidance for Historic Environment Desk-Based Assessment (CIfA, 2020) (Ref 9.12); and
- Code of Conduct: Professional Ethics in Archaeology (CIfA, 2022) (Ref 9.13).

9.5.8 Principles of Cultural Heritage Impact Assessment in the UK (Institute of Environmental Management and Assessment (IEMA), 2021) (Ref 9.14) is a guide to good practice in cultural heritage impact assessment published jointly by the IEMA, the Institute of Historic Building Conservation and CIfA. The document provides guidance on understanding cultural heritage assets and evaluating the consequences of change and will be considered when undertaking this assessment.

9.5.9 The MCC Conservation Officers and the Historic England Regional Inspector will be consulted as part of the assessment. A detailed Heritage Assessment will be undertaken to inform the EIA. This will include the results of a Site inspection and setting assessment in accordance with Historic England's guidance.

9.5.10 Non-designated heritage assets have not been considered within this Scoping Report. The Historic Environment Record (HER) will be consulted at the EIA baseline stage to make a detailed assessment of archaeological potential.

9.6 Assumptions and Limitations

9.6.1 The assessment will be primarily a desk-based study and will utilise secondary information derived from a variety of sources, only some of which will be directly examined for the purpose of this assessment. The assumption will be made that this data, as well as the information derived from other secondary sources, is reasonably accurate. The records held by the HER are not a record of all surviving heritage assets, but rather, a record of the discovery of a wide range of archaeological and historical components of the historic environment. The information held in a HER is not a complete record and does not preclude the subsequent discovery of elements of the historic environment that are currently unknown.

9.7 Summary

- 9.7.1 Historic Environment is scoped in for further assessment due to the potential for historic environment construction impacts for sensitive receptors within or near to the Site. **Table 9-4** provides a summary of the historic environment assessment scope for EIA of the Proposed Development.

Table 9-4: Summary of the scope of the EIA for Cultural Heritage

Element	Likely significant effect	Justification	Scoped in/out	
			Construction	Operation
Archaeological Remains	Potential	Removal of buried archaeological remains. Impacts to archaeological remains to be mitigated during the construction phase so there are no anticipated effects during operation.	In	Out
Historic Buildings	Potential	Listed Buildings, Conservation Areas and non-designated heritage assets within the Site and near to construction activities and during new operations could be impacted, physically and/or through change to setting.	In	In
Historic Landscape	Not anticipated	The Proposed Development is updating an existing rail asset for continued use as a railway asset and does not will not result in a change to historic landscape character of the railway.	Out	Out

10. TOWNSCAPE AND VISUAL

10.1 Introduction

- 10.1.1 This section addresses the scope of the EIA with respect to townscape character and visual amenity. It provides a summary of the baseline conditions, the approach to the assessment of possible construction and operational effects. Aspects that are to be scoped in and out of the assessment are identified.

Study Area

- 10.1.2 Manchester City Centre is defined as the area inside the Inner Relief Route and extends to the south to encompass the Oxford Road Corridor. The City Centre has several distinct areas as defined within Manchester's Core Strategy 2012-2027 (Ref 10.6). The Site borders both Southern Gateway Area and Petersfield Area with the railway line forming the boundary line between the two distinct areas. Corridor Manchester Area is located to the immediately east of the Site.
- 10.1.3 A Study Area of 1 km offset from the edge of the Site boundary is therefore adopted. The extent of the Study Area is informed by best practice outlined in the Guidelines for Landscape and Visual Impact Assessment (GLVIA3) (Ref 10.1) and is based upon the worst-case scenario where the tallest element (i.e. Tower cranes used during construction) associated with the Proposed Development could theoretically impact townscape and visual receptors. However, owing to the dense urban character it is deemed highly unlikely that significant effects will be possible from further than 1 km from the edge of the Site.
- 10.1.4 Subsequently throughout this Townscape and Visual Impact Assessment (TVIA) landscape also refers to townscape character.
- 10.1.5 This chapter is supported by the following figures:
- **Figure 9:** Landscape Designations.
 - **Figure :** Zone of Theoretical Visibility and Viewpoint Locations.

10.2 Legal and Policy Framework

- 10.2.1 Legislation, planning policy and guidance relating to townscape and visual, and pertinent to the Proposed Development, comprises:
- The European Landscape Convention (2000) (Ref 10.2).
 - The Environment Act 2021 (Ref 10.3).
 - Countryside and Rights of Way Act 2000 (Ref 10.4).
 - National Planning Policy Framework (NPPF) (Ref 10.5).

- Manchester Core Strategy 2012-2027 (Adopted 2012) (Ref 10.6).
 - Policy CC 9: Design and Heritage.
 - Policy EN 1: Design Principles and Strategic Character Areas.
 - Policy EN 3: Heritage.
 - Policy EN 9: Green Infrastructure.
 - Policy EN 10 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.
- Addendum to Manchester Core Strategy 2024 (Adopted 2024) (Ref 10.7).
- Places for Everyone Joint Development Plan 2022 to 2039 (Adopted 2024) (Ref 10.8).

10.3 Baseline Conditions

10.3.1 This section provides a summary of the baseline conditions in respect of townscape and visual amenity. The existing conditions of the townscape and visual resource in the vicinity of the Proposed Development can be identified through a combination of desk and field-based study and provides the basis against which proposed change is measured.

10.3.2 An initial study of the baseline environment has been undertaken through desk-based research to establish the existing conditions of the townscape and visual resources of the Study Area. The desk-based research involves review and analysis of a range of information, including the following:

- Ordnance Survey (OS) mapping, and aerial photography;
- OS Digital Terrain Model (DTM);
- Relevant national, regional, and local planning policy and guidance;
- National Character Areas; and
- Published regional landscape character assessments.

Site Location and Context

10.3.3 The Station approach is located at the crossroads of Oxford Street and Whitworth Street and as such the area is often very busy with pedestrian and vehicular movement resulting in a bustling townscape character. The three distinct areas defined within the Manchester Core Strategy (Ref 10.6) which lie in close proximity to the intersection highlights the somewhat chaotic nature of the area heightened by the busy Oxford Road Corridor.

- 10.3.4 Petersfield Area, located north of the Site, at the top of Oxford Road is most noted for its purpose as a civic area and includes important buildings and monuments including the Central Library and Town Hall. Large scale buildings, mainly of a Victorian and Georgian architectural style are accompanied with substantial public realm space resulting in a coarse urban grain in comparison to other areas of the city.
- 10.3.5 The Southern Gateway sited south of the Site is abundant with residential development and incorporates a series of high-rise skyscrapers creating a dense urban gain.
- 10.3.6 The Oxford Road Corridor to the east of the Site features a concentration of public, private, academic, and clinical institutions. Architectural style is mixed, the area encompasses Whitworth and Princess Street Conservation Area, characterised by Victorian and Edwardian warehouse buildings relating to Manchester's textile heritage. Streets are generally arranged in a rectangular grid with Oxford Road/Street providing the main arterial route through the area, linking the city to the south. Further south the urban grain becomes looser with pockets of open space in the form of public parks.

National Townscape/Landscape Designations

- 10.3.7 Areas of Outstanding Natural Beauty (AONB), Special Landscape Areas (SLA), registered parks and gardens within the Study Area.
- 10.3.8 There are no Tree Preservation Orders (TPO's) within the Site. However, there are a limited number of TPO's within the Study Area (**Appendix D**).

Heritage

- 10.3.9 The Site encompasses the are Grade II listed buildings, i.e. the Oxford Road Station including platform structures and the Manchester South Junction and Altrincham Railway Viaduct (under which the Screen One is located).
- 10.3.10 Within the wider Study Area there are additional Historic England designations. One notable designation is the Scheduled Monument (Ref 1001953) the remains of the eastern wall of the Roman fort (located under a viaduct).
- 10.3.11 Please refer to **Chapter 9: Historic Environment** for further information on Scheduled Monuments and Listed Buildings.

Conservation Areas

- 10.3.12 The Site encompasses two Conservation Areas, including the Castlefield Conservation Area (a western portion of the Site is within the Conservation Area) and the Whitworth Street and Princess Street Conservation Area (an eastern portion of the Site is within the Conservation Area).

10.3.13 There are other Conservation Areas within the Study Area (Appendix D).

National Cycle Network (NCN)

10.3.14 A section National Cycle Network (NCN) Route 6 is within the Site. Route NCN 6 travels along Whitworth Street West and Gloucester Street. NCN 55 joins into NCN 6 at the western edge of the Study Area. NCN 66 beings at the eastern edge of the Study Area adjacent to Manchester Piccadilly station.

Townscape / Landscape Character

10.3.15 The Study Area is encompassed National Character Area (NCA) 55: Manchester Conurbation (Ref 10.14) which was registered by Natural England on 18 July 2013. The Manchester Conurbation Character Area is characterised by dense urban and industrial development.

10.3.16 Although the Greater Manchester Landscape Character and Sensitivity Assessment (2018) (Ref 10.15) encompasses the Study Area there were no National level of Landscape Character Types or Landscape Character Areas identified.

10.3.17 At the local level, townscape / landscape character is identified by Manchester Core Strategy 2012-2027 (Adopted 2012) (Ref 10.6). There are three Strategic Character Areas which encompass part of the Study Area, including City Centre Character Area, Central Arc Character Area and Corridor (Higher Education Precinct (HEP)) Character Area.

Visual Receptors

10.3.18 **Table 10-1** provides initial proposed viewpoint locations and for inclusion in the TVIA at the time of writing. The locations will be reviewed and update if required during EIA. The locations of the proposed representative viewpoints an are shown on **Figure** in **Appendix A**.

Table 10-1: Proposed Representative viewpoint locations

Ref	Location Description	Receptor Type / Reason for inclusion
VP01	Palace Theatre	Recreation/Road Users/Employment Direct, close-range views of the Station and cranes
VP02	Kimpton Clocktower Hotel	Recreation/Road Users/ Direct, close-range views of the Station and cranes
VP03	Students Unite, Great Marlborough Street	Residential Direct, close-range views of the Station and cranes
VP04	Whitworth Street	Residential/NCN/Employment/Pedestrian/Road Users

Ref	Location Description	Receptor Type / Reason for inclusion
		Direct, close-range views of the Station, cranes and working area within the Site
VP05	Deansgate Castlefield	Rail/ Residential/ Recreation Oblique, close range views of the working area within the Site and mid-range views of the Station and cranes for rail users. Viewpoint also representative of oblique, mid-range views for residents/ recreational users of the Beacon Tower Manchester
VP06	Granby Row	Employment Direct, close-range views of the rail corridor and working area within the Site. Mid-range views of the cranes above intervening buildings.
VP07	Whitworth Street/Portland Road	Residential/Employment/Pedestrian/Road users Direct, mid-range views of the Station and cranes for residents along Portland Street. Oblique mid-range views for employment along Whitworth Street
VP08	Vimto Park	Recreation/Education Direct, close-range views of the rail corridor and Site
VP09	MMU, Chester Street	Education Direct mid-range views of the Station and cranes
VP09	Square Gardens, Chester Street	Residential Direct close-range views of the Site. Mid-range views from tower blocks towards the Station and cranes
VP11	The Residences, Deansgate Square	Residential Direct mid-range views from tower blocks towards the Station and cranes
VP12	Oxford Road / Charles Street	Residential Mid-range views of the cranes
VP13	St Peters Square	Recreation/Rail/Road/Employment Mid-range views of the cranes
VP10	Potato Wharf	Residential Direct and oblique views of the Vehicle Holding Area at Water Street
VP11	Bridgewater Way Tow Path	Recreation
		Close range views of the Throstles Nest RRAP

10.4 Potential Impacts

Construction

- 10.4.1 Construction activities associated with the Proposed Development include movement of machinery, construction of structures, crane operation, road surfacing, vehicle movements, excavation and temporary storage of materials, would generally result in short-term townscape and visual impacts. In addition, traffic management operations, additional congestion or changes to vehicles, temporary diversions or closure of bus stops, footpaths and cycle paths are likely to result in temporary impacts during the construction phase.
- 10.4.2 Temporary visual impacts will be anticipated due erection of temporary scaffolding and hoardings, temporary multistorey office and welfare facilities, and temporary lighting associated with night-time working.
- 10.4.3 The extent, nature and significance of the impacts resulting from the enabling works and construction phases of the Proposed Development on the townscape and visual receptors will be assessed upon availability of further information on the Construction Methodology. Townscape and visual effects are scoped in for further assessment.

Operation

- 10.4.4 The Proposed Development involves changes to existing structures, such as new footbridge and demolition of Screen One, which will lead to change to physical and perceptual aspects of townscape/landscape character and townscape / landscape designations. There will also be change to views experienced by residential and recreational receptors, employment, road users, pedestrians and rail travellers due to changes to existing railway structures and infrastructure. Therefore, townscape and visual effects on townscape/landscape character and townscape/landscape designations are scoped in for further assessment.

10.5 Proposed Assessment Methodology

- 10.5.1 The following section summarises the methodology for the TVIA which builds on the general assessment methodology presented in Chapter 3: EIA Methodology.
- 10.5.2 The TVIA will be undertaken with consideration of the following good practice guidance documents:
- Guidelines for Landscape and Visual Impact Assessment (GLVIA), Third Edition (Ref 10.1).
 - Notes and Clarifications on Aspects of Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVIA 3) Technical Guidance Note LITGN-2024-01(Ref 10.19).
 - An Approach to Landscape Character Assessment (Ref 10.10).

- Assessing landscape value outside national designations, Technical Guidance Note 02/21 (Ref 10.11).
- Visual Representation of Development Proposals, Technical Guidance Note 06/19 (Ref 10.12).
- Tranquillity – An overview, Technical Information Note 01/2017 (Revised) (Ref 10.13).

10.5.3 Although townscape/landscape character and visual amenity are closely related, the potential effects on townscape/landscape character and visual amenity will be assessed separately for clarity and in accordance with good practice.

10.5.4 The visual assessment will be based on a series of representative viewpoints chosen to provide a cross-section of receptor types and locations within the Study Area, focused on those with the potential for significant effects.

Baseline Conditions, Visual Receptors and Viewpoint Locations

Existing Baseline Conditions

- 10.5.5 A further site survey will be undertaken to test the findings of desk-based research (Section 10.3) to help further refine and inform a detailed understanding of the existing baseline conditions and guide further design development.
- 10.5.6 Identification and characterisation of townscape/ landscape character units for use in the assessment will be informed by review of published landscape character studies and other information sources listed above, in combination with observations made in the field.

Future Baseline Conditions

- 10.5.7 The ES will consider future baseline conditions of the townscape character and visual amenity within the study area for the relevant assessment year which is likely to be during the peak construction period (to be confirmed in the ES) as well as during the anticipated full build out year (currently assumed as 2033).

Visual Receptors

- 10.5.8 The extent and nature of effects on visual receptors will be assessed as part of the TVIA. The identified list of potential visual receptors (**Table 10-1**) will be reviewed and identified through the establishment of a refined Zone of Theoretical Visibility (ZTV) for the Proposed Development and are anticipated to include:
- Residents of properties in the Study Area;
 - Office workers;
 - Students in University Buildings;

- Vehicle travellers using surrounding roads;
- Rail travellers using the Station;
- Walkers/cyclists using local National Cycle Network;
- Walkers/cyclists using local Public Rights of Way (PRoW);
- Walkers/cyclists/canal users along the Rochdale Canal;
- Walkers/cyclists using paths along the Medlock River;
- People using public open space;
- Theatre goers (i.e. the Palace Theatre);
- Tourists experiencing elevated views from hotel accommodation; and
- Tourists experiencing elevated views from city centre attractions.

Representative Viewpoint Locations

- 10.5.9 Upon review of further details in the Construction methodology, the list of representative viewpoints (**Table 10-1**) will be refined for the visual assessment. The visual assessment will provide a cross-section of receptor types and locations within the Study Area, focused on those with the potential for significant effects. Details of the proposed viewpoint locations will be provided for each part of the Proposed Development, outlining the reasons for inclusion of each viewpoint in the TVIA. The locations of the initial proposed representative viewpoints are shown on **Figure 10**.
- 10.5.10 Consultation will be held with relevant LPA and statutory consultees early in the TVIA process. This will help to inform refinement of the location of representative viewpoints that will form the basis of the visual assessment and to agree the approach to mitigation measures and townscape / landscape reinstatement.

Assessment Criteria

- 10.5.11 Sensitivity of Townscape / Landscape Receptors is defined in **Error! Reference source not found..** The overall sensitivity assessment of the townscape / landscape receptor is made by employing professional judgement to combine and analyse the identified value and susceptibility with overall levels given from high, medium, low to very low.

Table 10-2: Sensitivity of Townscape/Landscape Receptors

	High Sensitivity		Low Sensitivity
Value	A designated landscape (National Park, National Landscape, National Scenic Area, World Heritage Site) or a landscape in very good condition, exceptional scenic quality and high recreational opportunities or a high degree of rarity.		Landscapes containing few if any notable elements/features, of poor condition or containing several detracting features and limited aesthetic qualities. Landscapes which are not formally designated.
Susceptibility	Attributes that make up the character of the landscape which offer very limited opportunities to accommodate change of the type proposed without fundamentally altering key characteristics.		Attributes that make up the character of the landscape which are tolerant of a large degree of the type of change proposed without fundamentally altering the key characteristics.

Sensitivity of Visual Receptors

10.5.12 Sensitivity of visual receptors (**Table 10-3**) is defined through appraisal of the viewing expectation, or value placed on the view as identified in the baseline study, and its susceptibility to change.

10.5.13 The overall sensitivity assessment of the visual receptor is determined by employing professional judgement to combine and analyse the identified value and susceptibility on a scale from high, medium, low to very low. The basis of the assessment is made clear in the evaluation of each visual receptor.

Table 10-3: Sensitivity of Visual Receptors

	High Sensitivity		Low Sensitivity
Value	Views protected by designation, or nationally recognised, or recorded on maps/guidebooks or with cultural associations. Views that have high scenic qualities relating to the content and composition of the view.		Views which are not documented or protected with minimal or no cultural associations. Views that exhibit low scenic qualities relating to the content and composition of the view.

	High Sensitivity		Low Sensitivity
Susceptibility	Viewers whose attention or interest is focussed on their surroundings.		People whose attention or interest is not focussed on their surroundings and where the view is incidental to their enjoyment.

Magnitude of Change – Landscape Receptors

- 10.5.14 Magnitude of change on landscape receptors refers to the extent to which the Proposed Development would alter the existing characteristics of the landscape.
- 10.5.15 An overall assessment of the magnitude of change resulting from the Proposed Development on the landscape receptor is made combining the above judgements using evidence and professional judgement. The levels of magnitude of change are described as being high, medium, low, very low and are defined below. The criteria of the magnitude of landscape change are shown in **Table 10-4**.

Table 10-4: Magnitude of Change – Landscape Receptors

Magnitude	Criteria
High	Large alteration to the landscape receptor or may impact an extensive area or unique characteristics at a local level. May be longer term impacts, permanent or reversible.
Medium	Partial alteration to the landscape receptor or may impact a wide area or characteristics at a local level. May be medium term impacts, permanent or reversible.
Low	Slight alteration to the landscape receptor or may impact a restricted area and few key characteristics. May be short to medium term impacts, permanent or reversible.
Very Low	Very slight alteration to the landscape receptor or may impact a limited area or no key characteristics. May be short term impacts, permanent or reversible.
None	No change to the landscape receptor.

Magnitude of Visual Change

- 10.5.16 Magnitude of visual impact relates to the extent to which the Proposed would alter the existing view and is an expression of the size or scale of change in the view, the geographical extent of the area influenced and its duration and reversibility.
- 10.5.17 An overall assessment of the magnitude of visual impact resulting from the Proposed Development on the visual receptor is made combining the above judgements using evidence and professional judgement. The levels of magnitude of impact are described as being high, medium, low, very low and are defined below. The criteria of the magnitude of change on visual receptor is shown in **Table 10-5**.

Table 10-5: Magnitude of Change – Visual Receptors

Magnitude	Criteria
High	A pronounced change to the composition of the view or change that may be viewed in the foreground or directly. May be longer term impacts, permanent or reversible.
Medium	A noticeable change to the composition of the view or change that may be viewed in the middle ground or indirectly. May be medium term impacts, permanent or reversible.
Low	An unobtrusive change in the composition of the view or change that may be viewed in the background or obliquely. May be short to medium term impacts, permanent or reversible.
Very Low	A barely perceptible change in the composition of the view or change that may be viewed in the background and/or very obliquely. May be short term impacts, permanent or reversible.
None	No change to the view.

Significance of Effects

10.5.18 Determination of the significance of townscape and visual effects will be undertaken by employing professional judgement and experience to combine and analyse the magnitude of change against the identified sensitivity of the receptor. The assessments will take account of direct and indirect change on existing landscape elements, features, key characteristics and evaluates the extent to which these would be lost or modified, in the context of their importance in determining the existing baseline character. The visual assessment will take into account likely changes to the visual composition, including the extent to which new features would distract or screen existing elements in the view or disrupt the scale, structure or focus of the existing view.

10.5.19 The levels of townscape and visual effects will be described with reference to the criteria outlined below in Table 10-6. For the purposes of this assessment, effects of moderate or above are generally considered to be significant.

Table 10-6: Significance of Effect

Magnitude	Landscape	Visual
Major Beneficial	Alterations that result in a considerable improvement of the existing landscape resource. Valued characteristic features would be restored or reintroduced.	Alterations that typically result in a pronounced improvement in the existing view.

Magnitude	Landscape	Visual
Moderate Beneficial	Alterations that result in a partial improvement of the existing landscape resource. Valued characteristic features would be largely restored or reintroduced.	Alterations that typically result in a noticeable improvement in the existing view.
Minor Beneficial	Alterations that result in a slight improvement of the existing landscape resource. Characteristic features would be partially restored.	Alterations that typically result in a limited improvement in the existing view.
Negligible Beneficial	Alterations that result in a very slight improvement to the existing landscape resource, not uncharacteristic within the receiving landscape.	Alterations that typically result in a barely perceptible improvement in the existing view
Neutral	No alteration to any of the components that contribute to the existing landscape resource.	No change to the existing view.
Negligible Adverse	Alterations that result in a very slight deterioration to the existing landscape resource, not uncharacteristic within the receiving landscape.	Alterations that typically result in a barely perceptible deterioration in the existing view.
Minor Adverse	Alterations that result in a slight deterioration of the existing landscape resource. Characteristic features would be partially lost.	Alterations that typically result in a limited deterioration in the existing view.
Moderate Adverse	Alterations that result in a partial deterioration of the existing landscape resource. Valued characteristic features would be largely lost.	Alterations that typically result in a noticeable deterioration in the existing view.
Major Adverse	Alterations that result in a considerable deterioration of the existing landscape resource. Valued characteristic features would be wholly lost.	Alterations that typically result in a pronounced deterioration in the existing view.

Cumulative Townscape / Landscape and Visual Effects

- 10.5.20 Assessment of cumulative townscape and visual effects will be undertaken based on applications for schemes of a similar type, nature and scale agreed in advance with consultees. The cumulative assessment will be based on the addition of the Scheme in combination with the cumulative schemes (consented and application schemes)

where there is likely to be intervisibility and potentially significant cumulative townscape and visual effects.

10.6 Assumptions and Limitations

- 10.6.1 Townscape and visual impacts are considered to result from changes to the physical and perceptual aspects of the townscape and changes to views resulting from loss of existing landscape elements including vegetation, alteration to existing topography and/or the introduction of new structures and infrastructure. Due to the early stage of the design development of the Scheme there is limited information on the and design of new structures and infrastructure.
- 10.6.2 Limited information on the required land take, the construction working area and methodology is available.

10.7 Design, Mitigation and Enhancement Measures

- 10.7.1 The principal scope for mitigation is that of primary measures, so those developed through the iterative design process, which have become integrated or embedded into the project design. This approach helps to ensure that wherever possible adverse effects on the townscape and visual amenity are designed out and the opportunity for beneficial effects are maximised.

10.8 Summary

- 10.8.1 Townscape and Visual is scoped in for further assessment. Potential effects of townscape/landscape character and visual amenity will be identified in the EIA. **Table** shows the summary of the scope of the assessment.

Table 10-7: Summary of the scope of the EIA for the Proposed Development

Element	Receptor	Potential likely significant effect	Rationale	Scoped in/out	
				Construction	Operation
Townscape/Landscape character	National Character Area (NCA)	Not anticipated	No major change to NCA 55 is anticipated.	Out	Out
Townscape/Landscape character	Strategic Character Areas	Potential	Character Areas to be refined during the assessment.	In	In
Townscape/Landscape character	National Cycle Network (NCN) Route 6	Potential	Views during construction and new buildings and infrastructure during operation.	In	In
Townscape/Landscape character	National Cycle Network (NCN) Routes 55 & 66	Potential	No major change to NCN 55 and 66 Network is anticipated due to distance and intervening buildings.	Out	Out
Visual amenity	Residents (e.g. Macintosh Village)	Potential	Views during construction and during operation owing to new buildings and infrastructure.	In	In
Visual amenity	Employees (e.g. Office Workers, Retail & Restaurant Staff etc)	Potential	Views during construction and during operation owing to new buildings and infrastructure.	In	In
Visual amenity	Students (e.g. Unite Students - Bridgewater Heights and Unite Students - Artisan Heights)	Potential	Views during construction and during operation owing to new buildings and infrastructure.	In	In
Visual amenity	Vehicle travellers (using surrounding roads)	Potential	Views during construction and during operation owing to new buildings and infrastructure.	In	In
Visual amenity	Rail travellers (using the Station)	Potential	Views during construction and during operation owing to new buildings and infrastructure.	In	In
Visual amenity	Users of local PRoWs	Potential	Views during construction and during operation owing to new buildings and infrastructure	In	In
Visual amenity	Users of Public Open Space (e.g. Vimto Park)	Potential	It is anticipated that only the Tower Cranes will be visible during construction.	In	Out
Visual amenity	Users of the Rochdale Canal & Towpath	Potential	It is anticipated that only the Tower Cranes will be visible during construction.	In	Out
Visual amenity	Identified visual receptors at viewpoint locations 1-11.	Potential	Views during construction and during operation owing to new buildings and infrastructure.	In	In
Visual amenity	Theatre goers (i.e. the Palace Theatre)	Potential	Views during construction and during operation owing to new buildings and infrastructure.	In	In
Visual amenity	Tourists experiencing elevated views from hotel accommodation	Potential	Views during construction and during operation owing to new buildings and infrastructure. Hotel adjacent to Scheme e.g. Kimpton Clocktower Hotel	In	In

11. TRANSPORT AND ACCESS

11.1 Introduction

11.1.1 This section addresses the scope of the EIA with respect to traffic and transport and the Proposed Development. It includes a summary of baseline conditions and the approach to the assessment of possible construction and operational effects. Aspects that will be scoped in and out of the assessment are also identified.

Study Area

11.1.2 The Study Area of the Proposed Development will be the Station, offsite compounds (vehicle holding area and Rail Road Access Points), and the transport network in the vicinity. Focus will be given to the area between Water Street to the west of the Station and Princess Street to the east. The local highway network is shown in **Plate 11-1** below.

Plate 11-1 Local Highway Network



11.1.3 Key roads within the local highway network include:

- Water Street;
- Trinity Way;
- Egerton Street;
- A57(M) Mancunian Way/Ring Road;
- Cambridge Street;
- Princess Street; and

- B6469 Whitworth Street West.

11.1.4 The extent of the Study Area for assessment in terms of highway impact will be subject to discussion, and agreement will be sought with National Highways and the Local Highway Authority at MCC.

11.1.5 The rationale for selecting the Study Area is based on professional judgement and a review of online mapping to identify that the above roads are those likely to be used to access the Site. Further details will be provided within the EIA.

11.2 Legal and Policy Framework

11.2.1 Legislation, planning policy and guidance relating to transport and access, and pertinent to the Proposed Development, comprises:

- National Planning Policy Framework (NPPF) (Ref 11.1);
- Transport Investment Strategy (Department for Transport, 2017) (Ref 11.2); and
- Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Traffic and Movement (2023) (Ref 11.3).
- Greater Manchester Transport Strategy 2040 (Updated 2021) (Ref 11.4);
- Places for Everyone Joint Development Plan Document (Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford, and Wigan) (2024) (Ref 11.5); and
- Manchester Core Strategy (2024) (Ref 11.6).

11.3 Baseline Conditions

Baseline Conditions

11.3.1 The Site is located at the junction of B649 Whitworth Street West and Oxford Road within Manchester City Centre. The traffic and transport Study Area will include the anticipated construction routes serving the Proposed Development. As a minimum, it is anticipated that the links mentioned in this Section 0 will likely be used by construction vehicles to access the Site.

11.3.2 Baseline conditions for the land associated with the Proposed Development will be described in detail in the EIA.

Consultation

11.3.3 National Highways and the Local Highway Authority team at MCC will be consulted with regard to traffic and transport to determine, and seek agreement on, the proposed scope and approach to the EIA assessment.

- 11.3.4 This will include the extent of the Study Area for the EIA assessment in terms of highway impact and the scoping of potential junction capacity analysis.

Sources of Baseline Information and Consultation

- 11.3.5 To inform the EIA assessment of the Proposed Development, information from several sources will be collected. The sources which will be used are set out below:

- Automatic Traffic Counts (ATCs) will be undertaken at several locations in the vicinity of the Site to determine the baseline traffic conditions of the surrounding highway network. Average Annual Daily Traffic (AADT) flows will be derived from the ATC data to enable the baseline traffic flows to be established at the required design years. The extent of the traffic data and scope for any traffic surveys that may be needed will be agreed with the Local Highway Authority at MCC and National Highways;
- Personal Injury Accident (PIA) data for the most recent five-year period (excluding Covid years), obtained from the Local Highway Authority at MCC, will provide information on each collision including severity as well as factors attributed to the collision;
- OS/Architectural Base Mapping will be used to ascertain an accurate geographical representation of the areas in the vicinity of the Proposed Development; and
- Local travel information will be gathered from various sources including local bus operators and the Transport for Greater Manchester (Bee Network) website.

- 11.3.6 To determine the impact of the Proposed Development, several scenarios will be assessed using the information collated above. The scenarios considered appropriate for assessment are:

- Baseline (2024);
- Year of peak construction without the Proposed Development (2029); and
- Year of peak construction with the Proposed Development (2029).

- 11.3.7 The year of peak construction will be ascertained from the construction programme once available and will consider both HGV and all other traffic associated with the construction of the Proposed Development.

- 11.3.8 The future baseline will be established by growing the 2024 traffic data to the future assessment year using appropriate factors (based on the local Middle Super Output Area (MSOA)). The growth factor will be derived from the TEMPro software, which is the industry standard in line with guidance from the Department for Transport. This will provide a robust estimate of the future baseline traffic levels during the year of peak construction.

- 11.3.9 A consideration of any committed and cumulative developments within the area will also be included in the EIA assessment.

Automatic Traffic Count Surveys

- 11.3.10 ATC surveys will be undertaken during a neutral month and will provide two-way traffic flows, classified by vehicle type, including heavy goods vehicles (HGVs). In line with Transport Analysis Guidance (TAG) Unit M1.2 (Ref 11.7) neutral periods are defined as Monday to Thursday from March to November (excluding August) and avoid the weeks before and after Easter. Surveys may be conducted outside these months if the conditions being surveyed are representative. This will be confirmed with the Local Highway Authority at MCC.
- 11.3.11 As discussed, the locations and timings of the ATC surveys, along with the requirement for any detailed junction capacity modelling will be agreed with the Local Highway Authority at MCC and National Highways before any surveys are undertaken.
- 11.3.12 The ATC survey locations selected, subject to agreement, will provide a basis for the analysis and incorporate local routes within the Study Area close to potential sensitive receptors, and routes along local strategic links, to provide a robust baseline for EIA assessment. These locations will be surveyed for one full week (Monday to Sunday) for 24 hours a day.
- 11.3.13 The most likely impacts will be on the roads providing routing for construction vehicles. ATC survey locations will be identified along the route.
- 11.3.14 A site visit will be required to inform the EIA assessment and validate the high-level desktop-based assessments. Detailed notes and a photographic record will be undertaken on the Site visit and consideration will be given to the identification of receptor locations.

11.4 Potential Impacts

Construction

- 11.4.1 There is the potential for impacts arising from the additional construction vehicle movements during the construction phase. Changes may have likely significant traffic and transport impacts during Construction will include, but are not necessarily limited to:
- Road closures during construction;
 - Changes in road traffic levels as a result of diversions and road closures during Construction;

- Changes in road traffic levels on existing routes as a result of construction traffic, including vehicles, staff arriving/departing site compound and Construction sites, and the removal of waste;
- Changes to local bus routes as a result of diversions;
- Traffic management causing increased traffic and increased journey times on other routes;
- Changes in journey length (duration) for non-motorised users (NMU) pedestrians and cyclists, as a result of any temporary closures or diversion of roads and footpaths;
- Footpath diversions or closures causing temporary severance impacts;
- Changes to journey times causing driver delay
- Changes to the operation of the Station (e.g. closure for construction), use of replacement buses due to closure of the Station causing disturbance to users of the Station; and
- Changes to volume of traffic flow, HGV composition, the speed of vehicles passing causing fear and intimidation of people in proximity of the traffic as well as affecting the road safety.

11.4.2 In view of the above, impacts from construction traffic, severance, NMU amenity, driver delay, fear and intimidation, and road safety impacts, during this Construction will be scoped in for further assessment, including an assessment examining vehicle movements against existing road traffic.

Operation

11.4.3 The Proposed Development will become operational in 2033 and will comprise of new rail infrastructure and enhanced accessibility provisions, such as new lift access to the platforms and better street-level access. Changes during operation that may have likely significant effects will include, but are not limited to:

- Changes in trips by active travel modes accessing the Station;
- Changes in public transport trips by those using the rail network as part of an onward journey; and
- Changes vehicle trips associated with additional station/maintenance staff and an increase in rail passenger numbers.

11.4.4 The Operational effects of the Proposed Development on the transport network is therefore scoped in for further assessment.

Design and Best Practice Measures

11.4.5 It is anticipated that best practice measures will be incorporated into the design. These measures will be considered in the impact assessment and recorded within the Construction Traffic Management Plan (CTMP).

11.5 Proposed Assessment Methodology

Transport Assessment

- 11.5.1 The peak in terms of vehicle movements with respect to the Construction programme will be established in the EIA. During this peak, the expected worker (car/LGV) and HGV movements will be derived. Abnormal Indivisible Load (AIL) vehicles may also be required to transport, for example, tower crane components, which will be based at the Site.
- 11.5.2 Traffic associated with all aspects of the Proposed Development and different construction phases will be added to the road network to estimate the future temporary traffic levels. This will then be used to form the basis of the assessment to be presented in the ES.
- 11.5.3 The Transport Assessment (TA) which will support the EIA will contain information on the construction programme, the construction hours, the routes for construction traffic, the number of construction trips, details on construction personnel and details on construction management to minimise the negative impacts of the construction. The TA will be developed by following the Planning Practice Guidance (PPG) 'Travel Plans, Transport Assessments and Statements' guidance document (Ref 11.8). The key issues to be considered in a TA include:
- The planning context of the development proposal;
 - Appropriate study parameters (such as the area, scope, and duration of the study);
 - Assessment of public transport capacity, walking/cycling capacity and road network capacity;
 - Road trip generation and trip distribution methodologies and/or assumptions about the development proposal;
 - Measures to promote sustainable travel;
 - Safety implications of development; and
 - Mitigation measures (where applicable) – including scope and implementation strategy.

Construction/Operational Traffic Impact

- 11.5.4 The impact of development-generated traffic will be assessed based on that outlined in the IEMA 'Guidelines for the Environmental Assessment of Road Traffic' (2023) (Ref 11.3).
- 11.5.5 The IEMA Guidelines state that a link on the highway network should be included within the assessment if one of the following criteria is met:

- Rule 1 – traffic flows increase by more than 30% (or HGV flows increase by more than 30%); or
- Rule 2 – traffic flows in sensitive areas increase by more than 10%.

The IEMA Guidelines set out several criteria by which the magnitude of impact can be measured, outlined below. Many of the criteria do not provide specific thresholds by which such impacts can be measured, and as a result, will be measured qualitatively where appropriate and professional judgement will be used when necessary.

11.5.6 **Error! Reference source not found. 11-2** in shows further details of the individual aspects of the assessment and the thresholds to be applied for each, considering the increase in traffic.

11.5.7 As noted in **Error! Reference source not found.**, professional judgement will be applied where baseline traffic flows are relatively low, and a percentage change criterion is not appropriate (based on Paragraph 3.16 of the IEMA Guidance). In such instances, it is possible for a high percentage change to be associated with a low number of trips that can be easily accommodated within the road network, where the magnitude should not be considered 'High'.

Table 11-1: Impact Magnitude Criteria (Transport and Access)

Element	Magnitude			
	High	Medium	Low	Very Low
Construction/ Operational Traffic	High number of vehicles using roads over a protracted period: More than a 40% increase for more than 6 months.	Moderate number of vehicles using roads over a protracted time: 16-39% increase for more than 6 months; or More than 40% increase for 3-6 months.	Small number of vehicles using roads over a short period: 6-15% increase for more than 6 months; or 16-39% for 3-6 months; or More than 40% increase for less than 3 months.	Occasional vehicles using roads over a short period: - Less than 5% increase for more than 6 months; or - Between 6-30% increase for 3 - 6 months; or Between 31-40% for less than 3 months.
Severance ¹	Increase in total traffic flows or HGV flows of 90% and above.	Increase in total traffic flows of 60-89% (or increase in HGV flows of 40-89%).	Increase in total traffic flows of 30-59% (or increase in HGV flows of 20-39%).	Increase in total traffic flows of 29% or under (or increase in HGV flows under 10%).
NMU Amenity	Increase in total traffic flows of 100% or above.	Increase in total traffic flows of 70-99%.	Increase in total traffic flows of 50-69%.	Increase in total traffic flows of 49% or under.

¹ A change in the traffic flow of 30%, 60% and 90% are regarded as producing 'slight', 'moderate' and 'substantial' changes in severance, respectively Paragraph 3.16 IEMA Guidance states that "caution needs to be observed when applying these thresholds as very low baseline flows are unlikely to experience severance impacts even with high percentage changes in traffic"

Element	Magnitude			
	High	Medium	Low	Very Low
Driver Delay	Change in total traffic or HGV flows over 90%.	Change in total traffic or HGV flows of 60-89%.	Change in total traffic or HGV flows of 30-59%.	Change in total traffic or HGV flows of 29% or under.
Fear and Intimidation	Two-step changes in level, e.g. if the level of fear and intimidation rises from small to great / extreme or moderate to extreme.	One step change in level (e.g. small to moderate), but with >400 vehicle increases in average 18 hr two-way all vehicle flow; and / or >500 HGV increase in total 18 hour HGV flow.	One step change in level (e.g. small to moderate), with <400 vehicle increases in average 18 hr two-way all vehicle flow; and / or <500 HGV increase in total 18 hour HGV flow.	No step changes.
Road Safety	All links estimated to experience increases in total traffic flows above 30% or increases in HGV flows above 10% are analysed further on a case-by-case basis.	All links estimated to experience increases in total traffic flows above 30% or increases in HGV flows above 10% are analysed further on a case-by-case basis.	All links estimated to experience increases in total traffic flows above 30% or increases in HGV flows above 10% are analysed further on a case-by-case basis.	Increase in total traffic flows of 30% or under (or increase in HGV flows under 10%).

Significance

- 11.5.8 The general approach adopted for evaluating the significance of effects considering the sensitivity of the receptor and the magnitude of impact is outlined in **Table 11-2**. Effects are defined as beneficial or adverse.

Table 11-2: Significance of Effects Matrix (Transport and Access)

Receptor Sensitivity	High	Medium	Low	Very Low
High	Major (S)	Major (S)	Moderate (S)	Minor (NS)
Medium	Major (S)	Moderate (S)	Minor (NS)	Negligible (NS)
Low	Moderate (S)	Minor (NS)	Negligible (NS)	Negligible (NS)
Very Low	Minor (NS)	Negligible (NS)	Negligible (NS)	Negligible (NS)

S = Significant; NS = Not Significant

- 11.5.9 Effects predicted to be ‘major’ or ‘moderate’ are considered ‘significant’ whilst effects predicted to be ‘minor’ or ‘negligible’ are considered ‘not significant.’

11.6 Summary

- 11.6.1 Transport and Access has been scoped in for further assessment in the EIA. The impacts on the elements shown in **Table 11-3** will be assessed.

Table 11-3: Summary of the scope of the EIA for Transport and Access

Element	Potential likely significant effect	Rationale	Scoped in/out	
			Construction	Operation
Construction/ Operational Traffic	Potential	The temporary (construction period) or permanent (operational period) increase in traffic could generate potentially significant effects.	In	In
Severance	Potential	The temporary (construction period) or permanent (operational period) increase in traffic could generate potentially significant effects.	In	In
NMU Amenity	Potential	Footpath diversions during construction / operation.	In	Out
Driver Delay	Potential	The temporary (construction period) increase or permanent (operational period) decrease	In	In

Element	Potential likely	Rationale	Scoped in/out	
		in traffic could generate potentially significant effects.		
Fear and Intimidation	Potential	The temporary (construction period) or permanent (operational period) increase in traffic could generate potentially significant effects.	In	In
Road Safety	Potential	The temporary (construction period) or permanent (operational period) increase in traffic could generate potentially significant effects.	In	In

12. WATER – HYDROLOGY AND SURFACE WATER

12.1 Introduction

- 12.1.1 This section addresses the scope of the EIA with respect to water resources, including water quality, hydromorphology, flood risk and groundwater. It includes a summary of baseline conditions and the approach to the assessment of possible construction and operational effects. Aspects that are to be scoped in and out of the assessment are identified.
- 12.1.2 Alongside the submission of the Water Resources and Flood Risk EIA, a Flood Risk Assessment (FRA) is being prepared to support the TWAO application, and Prior Approval. The FRA will assess the risk of flooding to and from the Proposed Development during its operation to ensure there is no increase in flood risk and if necessary, mitigation will be recommended.

Study Area

- 12.1.3 The Proposed Development is located immediately north of the River Medlock which is classified as an Environment Agency Main River. The River Medlock flows south-west under the railway viaduct, east of the Station, then continues south-west under the A34 Oxford Road. The River Medlock is culverted under Hulme Street and River Street until it comes out of a culvert at the Station.
- 12.1.4 The current location of the vehicle holding area is located approximately 0.2 km south-east of the River Irwell, which is classified as an Environment Agency Main River. The River Irwell flows south-west, bisecting Salford and Manchester and then joining the Rivers Irk and Medlock.
- 12.1.5 Rochdale Canal, an Ordinary Watercourse, is located immediately north of the Proposed Development. Approximately 0.5 km north-west of the Proposed Development, the River Tib (a largely culverted watercourse) confluent with Bridge Water Hall basin and further confluent with Rochdale Canal.
- 12.1.6 An initial Study Area of 1 km from the Site has been adopted for water quality, flood risk, surface water and groundwater receptor and impact pathway identification.

12.2 Legal and Policy Framework

- 12.2.1 Legislation, planning policy and guidance relating to water – hydrology and surface water, and pertinent to the Proposed Development, comprises:
- National Planning Policy Framework (NPPF) and associated Planning Practice Guidance (PPG) (Ref 12.1);
 - Water Resources Act 1991 (as amended) (Ref 12.2);
 - Control of Pollution (Oil Storage) (England) Regulations 2001(Ref 12.3);

- Water Act 2003 (Ref 12.4) and Water Act 2014(Ref 12.5);
- Flood and Water Management Act 2010 (Ref 12.6);
- Land Drainage Act 1991 (as amended) (Ref 12.7);
- Environmental Permitting (England and Wales) Regulations 2016 (Ref 12.8);
- Water Framework Directive (2000/60/EC) (Ref 12.9) and Water Environment (Water Framework Directive) (England and Wales) Regulations 2015 (Ref 12.10); and
- The Groundwater (England and Wales) Regulations 2009 (Ref 12.11).

12.3 Baseline Conditions

- 12.3.1 A short summary of the Proposed Developments baseline conditions are presented below. Several datasets have been used to identify water resource receptors and to identify the risk of flooding from each source. Data has been retrieved by online resources from DEFRA Open Data (Ref 12.12), MagicMap (Ref 12.13) and publicly available external sources such as documentations from MCC.

Water resource receptors

- 12.3.2 There are three Water Framework Directive (WFD) waterbodies located within the Study Area, the River Medlock, the River Irwell and Rochdale Canal. The River Medlock is located approximately 0.7 km south from the Site. The WFD ecological status of the River Medlock, which falls under the Medlock (Lumb Brook to Irwell) Water Body is classified as moderate. The River Medlock has a WFD chemical status of fail due to high levels of mercury, polybrominated diphenyl ethers (PBDE) and perfluorooctane sulphonate (PFOS).
- 12.3.3 The current location of the vehicle holding area is located approximately 0.2 km south-east of the River Irwell. The WFD ecological status of the River Irwell, which falls under the Irwell/Manchester Ship Canal (Irk to confluence with Upper Mersey) Water Body is classified as moderate. The River Irwell has a WFD chemical status of fail due to high levels of mercury, PBDE, PFOS and tributyltin compounds.
- 12.3.4 A review of the Canal and River Trust network map indicates the nearest canal to the Site is the Rochdale Canal which is located approximately 0.12 km north-west of the Site at its closest point. The Rochdale Canal (western section) WFD Water Body is an artificial waterbody, with an ecological status classification of moderate; although the status if all physic-chemical elements is High, the waterbody is 'moderate or less' for the Mitigation Measures Assessment which indicates not all measures which would allow Good Potential for an artificial waterbody are in place. The WFD chemical status of Rochdale Canal is classified as fail due to high levels of mercury and PBDE.

- 12.3.5 In terms of hydrogeology, the Site is underlain by Sandstone and Mudstone in the bedrock and till deposits in the superficial geology. The bedrock underlying the Site is a Principal aquifer, whilst the superficial drift geology is a Secondary B aquifer.
- 12.3.6 Given the permeable characteristics of the bedrock aquifer, the layers are capable of supporting water supplies. The Site is shown to be in a Groundwater Source Protection Zone (SPZ) 3 Total Catchment where all groundwater within this zone ends up at the abstraction point. However, it is noted that the Site isn't identified within a Drinking Water Safeguard Zone for surface water or groundwater. The Secondary B aquifer in the superficial deposits are generally lower permeability layers, but may store or yield limited amounts of groundwater through fissures, openings or eroded layers.

Flood Risk

- 12.3.7 A review of the Environment Agency Flood Map for Planning shows that most of the Site is located within Flood Zone 2 (0.1-1% Annual Exceedance Probability (AEP)) and Flood Zone 3 (> 1% AEP) associated with the River Medlock and River Irwell. Given that the permanent works of the Proposed Development are located on a viaduct, elevated above the River Medlock, the risk of fluvial flooding is low for these aspects. However, the temporary compounds and the current tower crane 1 location and vehicle holding area are at ground level and are at risk of fluvial flooding.
- 12.3.8 A review of the Environment Agency Risk of Flooding from Surface Water map identifies that most of the Site is at low risk (0.1 – 1% AEP) of surface water flooding. However, a localised area of medium risk (1% - 3.3% AEP) of surface water flooding is present to the east of the Site, near the entrance to the Station and a surface water flow path is also present, falling from the Station to the B6469 Whitworth Street West.
- 12.3.9 A review of the Manchester City, Salford City and Trafford Councils Level 2 Hybrid Strategic Flood Risk Assessment (SFRA) highlights the Site is within a Critical Drainage Area.
- 12.3.10 The Environment Agency Reservoir Flood Extent map indicates that the Site is within the predicted flood extent of the nearest reservoir (Gorton Reservoirs, situated approximately 6.5 km south-east of the Site) in the unlikely event of a reservoir breach. However, reservoirs present a managed risk and therefore the risk from reservoir flooding is considered residual.
- 12.3.11 Whilst flood risk from Rochdale Canal is not mapped, a review of LiDAR shows there are no plausible flow routes from the canal to the Site in the unlikely event of a breach/overtopping event. In addition, the permanent works are located on a viaduct, elevated above Rochdale Canal, therefore the risk of canal flooding is considered low.

- 12.3.12 The Manchester City, Salford City and Trafford Councils Level 1 and Level 2 Hybrid SFRA's highlight that United Utilities sewer flood risk data was not available. Therefore, the existing risk of sewer flood risk could not be quantified in this assessment. However, due to the highly urban nature of the Site, there is a potential for the presence sewer flood risk due to the presence of sewers and manholes. The risk would apply to the temporary aspects of the Proposed Development on ground level as the permanent aspects of the Proposed Development will be elevated above ground level.
- 12.3.13 A review of the Manchester City, Salford City and Trafford Councils Level 1 SFRA highlights that there are no historical groundwater incidents within or around the Site. Further, works are elevated above ground level on a viaduct, groundwater flood risk to the Proposed Developments operation is negligible.

12.4 Potential Impacts

Construction

Water Resources

- 12.4.1 Contaminated runoff may cause the deterioration in water quality of nearby surface water receptors, principally the River Medlock and the River Irwell. The accidental release of polluting substances used on site (e.g. oils, fuels etc) as well as construction vehicles can cause pollution. This has the potential to result in deterioration of the ecological status of the WFD surface waterbodies or to impact the underlying aquifers through reduction in water quality.
- 12.4.2 Construction can also alter runoff flow paths, increasing runoff volumes into watercourses and alter sediment dynamics through an excess discharge of sediment and increased flow rates which can alter erosion and deposition patterns.
- 12.4.3 Works, e.g. piling and excavations, which may be required for utility diversions and potentially for the construction of crane foundations have the potential to alter groundwater flow movements (including dewatering), which may reduce any base flow to nearby watercourses and create preferential pathways for pollutants. However, the groundwater sub catchment surrounding the Site is relatively large and the Site itself relative to this is minimal and temporary in nature. Therefore, during construction, the Proposed Development is likely to have a negligible impact on groundwater storage capabilities. Good practice pollution control methods will be adopted for any required piling and excavation works to minimise the risk of groundwater pollution during construction. Groundwater resources impacts are therefore scoped out of the assessment.

Flood Risk

- 12.4.4 During construction, two temporary compounds will be located within 8 m of the River Medlock, along Cambridge Street, south-west of the Site and along Oxford Street, situated east of the Proposed Development. There is also a possibility that tower crane 1 could be located in Flood Zone 2, it is currently positioned near the entrance of the Station. In addition, the current location of the vehicle holding area is in Flood Zone 2 adjacent to New Elm Road. Given the possibility of the temporary compounds, current location of tower crane 1 and the vehicle holding area being located within Flood Zones 2 and 3, flood waters could be displaced and flood risk increased if not mitigated.
- 12.4.5 During construction, works have the potential to increase impermeable surfaces due to new hardstanding areas such as access roads and tracks, resulting in increased surface water runoff. Further, construction works have the potential to impede existing surface water flow routes, change runoff rates and create new overland flow paths, resulting in an increase in flood risk to neighbouring areas.
- 12.4.6 Assuming that there are no new connections or diversions to the sewer network within the Site, the impact of flooding to and from the sewer system is considered low. Temporary sewer flood risk changes are therefore scoped out of the assessment.
- 12.4.7 It is also assumed that the impact of construction from a flood risk perspective to canals or reservoirs are considered low. There are no works that could directly affect the canal and will not alter the risk of reservoir flooding which remains residual. Temporary canal and reservoir flood risk changes are therefore scoped out of the assessment.
- 12.4.8 Given the minimal extent of below ground works (limited to potential works such as piling and excavations which may be required for utility diversions and the construction of the tower crane foundations) it is unlikely that the Proposed Development would result in any temporary changes to groundwater flood risk. Temporary groundwater flood risk changes are therefore scoped out of the assessment.

Operation

Water Resources

- 12.4.9 During operation, there is a risk of a pollution incident such as an accidental spillage from the Station and track if allowed to drain untreated into the existing track drainage network, which could then be discharged to watercourses. However, this is not considered an additional risk compared to the current baseline, given the current Site usage as a working station and rail corridor.

- 12.4.10 The Proposed Development does not introduce any materially different new aspects which could result in additional pollution risks during operation and hence permanent operation impacts on water resources are scoped out of the assessment.

Flood Risk

- 12.4.11 During operation, the Site will be in Flood Zone 2 (0.1-1% AEP) and Flood Zone 3 (>1% AEP). However, as the permanent works of the Proposed Development are located on a viaduct, elevated above the River Medlock, the risk of fluvial flooding is considered low and hence fluvial flood risk is scoped out of the assessment
- 12.4.12 Increases to surface water flooding through disruption of flow routes and changes in runoff rates may occur. The reconfiguration and lengthening of three platforms and the construction of an overbridge will likely increase the impermeable surfaces across the Site if not mitigated by a proposed drainage system.
- 12.4.13 During operation, it is assumed that there will be no new sewer connections or diversions, therefore the potential risk of sewer flooding is considered low, however this will be considered as part of the Drainage Strategy developed for the Proposed Development.
- 12.4.14 During operation, the Proposed Development will have no impact on flood risk from canals and reservoirs and flood risk from this source during operation is therefore scoped out of the assessment.
- 12.4.15 During operation, it is anticipated that there will be no impacts to groundwater subsurface flows due to the Proposed Development being raised on a viaduct and hence flood risk from this source during operation is therefore scoped out of the assessment.

Design and Best Practice Measures

- 12.4.16 It is a legal requirement that the Proposed Development complies with the WFD and other legislation protecting water resources and the management of flood risk.
- 12.4.17 The risk of temporary impacts during construction will be managed through the adoption of good practice construction methods and recorded in the CEMP. This will set out how works will be undertaken in accordance with good practice measures and protocols for the storage, use and management of potential contaminants on site as well as the control and management of surface water runoff and sediment sources close watercourses during construction.
- 12.4.18 The CEMP will include measures such as requiring that materials and equipment are kept over 10 m away from watercourses where possible; setting out that, when concreting, a designated concrete wash-out area should be allocated; and for all chemical and potential contaminants to be stored appropriately. Wastewater generated should be treated at appropriate wastewater treatment plants.

- 12.4.19 In accordance with the Environmental Permitting Regulations (2016) (Ref 12.8), a FRAP is required for any activity within 8 m of the bank of a Main River or 16 m of a tidally influenced Main River. Due to both compounds along Cambridge Street and Oxford Road being located within 8 m of the Main River, a FRAP will be required. The FRAP will require a comprehensive assessment of flood risk via the production of an FRA which will set out how temporary flood risk will be mitigated.
- 12.4.20 Further, the two temporary compounds are located within Flood Zone 2 (0.1-1% AEP) and Flood Zone 3 (> 1% AEP). There is also a possibility that tower crane 1 and the vehicle holding area could be situated within Flood Zone 2 and therefore require mitigation during the construction phase due to the high risk of fluvial flooding if no other alternative locations in Flood Zone 1 are available.
- 12.4.21 In accordance with the NPPF, a site-specific FRA is required for all development in Flood Zones 2 and 3, including temporary aspects. The FRA produced for the Proposed Development will cover these temporary aspects to support both the FRAP and planning as required.
- 12.4.22 It is assumed that a drainage strategy will be implemented to manage drainage from the Proposed Development up to and including a 1 in 100 year + climate change event. Measures for water quality improvements should be considered such as Sustainable Drainage Systems and blue/green infrastructure. As such, the impact of surface water flooding is considered to be low and is scoped out of this assessment.
- 12.4.23 Sewer mapping, drainage connections data and CAT scans are required to make sure construction and operation works do not damage any existing sewer networks.
- 12.4.24 If there are any potential new connections to the drainage network, it is possible that the new connections will impact flood risk, therefore a Section 106 Agreement (Ref 12.14) should be undertaken to assess this risk and agree available capacity with the water utility company.
- 12.4.25 There are no permanent works proposed within the River Medlock, River Irwell or Rochdale Canal, therefore there is no requirement for any abstraction licenses or dewatering activities.
- 12.4.26 During construction, local weather conditions should be monitored, work within or near the watercourse during periods of heavy rainfall should be avoided and evacuation procedures /weather warnings should be in place. Further, works should only take place when there is low, or no rainfall forecast, and the storage of materials should be avoided in areas at risk of surface water flooding or within surface water flow paths.

12.5 Proposed Assessment Methodology

- 12.5.1 As the Site is located within Flood Zone 2 and 3, a site-specific FRA will be required in addition to a sustainable drainage strategy which will feed into the design process of the proposed and accompany the Planning Application. Through the FRA process any mitigation measures and design parameters for flood risk and drainage will be agreed with the appropriate regulatory bodies including the Environment Agency and MCC as the Lead Local Flood Authority, where appropriate. This will ensure flood risk to the Proposed Development during its operation is mitigated and there is no increased flood risk to the surrounding land.
- 12.5.2 Further, a FRAP is required for both compounds that are within 8 m of the River Medlock. The FRAP application documentation will assess the risk of flooding to and from the compounds across all flood risk sources including fluvial, surface water, groundwater and sewers.
- 12.5.3 A Section 106 Agreement (Ref 12.14) should be undertaken to assess the capacity within the existing network if any new drainage connections are proposed within the Proposed Development.

12.6 Assumptions and Limitations

- 12.6.1 It is assumed that there will be a proposed drainage network to accommodate surface water flood risk up to and including the 1 in 100 year + climate change event.
- 12.6.2 It is assumed that there will be no new sewer connections to the existing network.
- 12.6.3 The current location of tower crane 1 is assumed between Whitworth Street West and Great Marlborough Street.
- 12.6.4 It is assumed that the current vehicle holding area is located adjacent to New Elm Road and is located within Flood Zone 2.

12.7 Summary

- 12.7.1 The water environment has been scoped into further assessment for the EIA stage which will focus upon water quality, hydromorphology, flood risk and groundwater. Geomorphology has been scoped out of further assessment due to the distance downstream to any surface watercourses and due to the discharges of surface water runoff to the existing highway drainage network. The EIA in **Table 12-1** will be supported by a FRA and a FRAP.

Table 12-1: Summary of the scope of the EIA for Water – Hydrology and Surface Water

Receptor	Potential likely	Rationale	Scoped in/out	
			Construction	Operation

Receptor	Potential likely significant effect	Rationale	Scoped in/out	
Water quality – surface water features	Not anticipated	Due to the close proximity of the Site to the River Medlock, River Irwell and Rochdale Canal, there is a potential for the deterioration of water quality through contaminated runoff or additional sediment from the construction of the Proposed Development; however good practice pollution control measures will limit the risk of this pathway. There are no new impact pathways for the operational of the Proposed Development, over and above the current usage.	Out (assuming CEMP measures)	Out
Water quality – groundwater features	Not anticipated	Contaminated runoff during construction has the potential to result in the deterioration of groundwater quality within the underlying aquifers where it is allowed to infiltrate, therefore the Proposed Development is sensitive to groundwater pollution; however good practice pollution control measures will limit the risk of this pathway. During operation, no works below ground.	Out	Out
Flood Risk – Fluvial	Potential	The Proposed Development and its accompanying compounds, which are located south-west of the Site accessed via Cambridge Street and east of the Site accessed via Oxford Road , are both located within Flood Zones 2 and 3. Further, whilst no works are proposed to the Main River, the compounds are within 8 m of the River Medlock. This may reduce the capacity of the existing floodplain storage and impact existing flood flows.	In (assessed via FRA for FRAP and planning)	Out

Receptor	Potential likelihood	Rationale	Scoped in/out	
Flood Risk – Surface Water	Potential	Construction and operation have the potential to increase impermeable surfaces and impede existing or create surface water flow routes.	In (assessed via FRA for FRAP and planning)	In (assessed via FRA using Drainage Strategy)
Flood Risk - Groundwater	Potential	During construction, the proposed compounds are considered to be at risk of groundwater emergence. During operation, the Proposed Development is not expected to elevate groundwater flooding due to works being undertaken on an impermeable base elevated above ground level on a viaduct.	In (assessed via FRA for FRAP and planning)	Out
Flood Risk – Canal Breach	Not anticipated	During construction, there are no plausible flow routes from the canal to the Site. There are also no works that could directly affect the canal. The risk of flooding from a canal breach is therefore considered low. The permanent works of the Proposed Development will be undertaken on a viaduct therefore the risk of flooding from a canal breach is considered low.	Out	Out
Flood Risk – Reservoirs	Not anticipated	The Site is situated within the predicted reservoir flood extent in the unlikely event of a breach.	Out	Out
Flood Risk - sewers	Potential	Dependent on whether new sewer connections are proposed as part of the Proposed Development, a Section 106 agreement (Ref 12.14) will need to be completed to confirm available capacity within the network.	In (assessed via FRA using Drainage Strategy)	In (assessed via FRA using Drainage Strategy)

13. ECOLOGY, NATURE CONSERVATION AND BIODIVERSITY

13.1 Introduction

- 13.1.1 This section addressed the scope of the EIA with respect to ecology, nature conservation and biodiversity. It includes a summary of the baseline conditions and the approach to the assessment of possible construction and operational effects. Aspects that are to be scoped in and out of the assessment are identified.

Study Area

- 13.1.2 The Proposed Development has been reviewed in order to identify the spatial scale at which ecological features could be affected. In accordance with the 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (Ref 13.1), the Study Area has been defined by determining a Zone of Influence (Zol) encompassing all likely biophysical changes that would occur as a result of the Proposed Development. This will include direct and indirect effects. Defining the Zol with regards to potential ecology, nature conservation and biodiversity impacts is an iterative process and the extend varies depending on the individual ecological features.

- 13.1.3 The desk study search includes:

- Statutory sites of international nature conservation² value within 2 km of the Proposed Development
- any sites of international nature conservation² value that have potential links via watercourses or other hydrological links to the Proposed Development;
- Special Areas of Conservation (SACs) within 30 km of the Proposed Development where bats are noted as the reason for designation, or one of the qualifying features;
- Statutory sites of national nature conservation interest³ and non-statutory designated sites of nature conservation value within 2 km of the Proposed Development;
- Ancient woodlands and Habitats of Principal Importance within 1 km of the Proposed Development; and
- Protected and/or notable species recorded within 2 km of the Project (unless stated otherwise).

² Sites of international nature conservation value include Special Protection Areas (SPAs), potential SPAs (pSPAs), Special Areas of Conservation (SACs), potential SACs (pSACs), and Ramsar sites (wetlands of international importance)

³ Statutory sites of national nature conservation interest include Sites of Special Scientific Interest (SSSIs), Local Nature Reserves (LNRs)

- 13.1.4 The search distances described above are considered sufficient to identify features of importance for biodiversity, including those which may be directly affected due to their occurrence on land required for the Proposed Development, or those which may be indirectly affected by factors such as dust, noise or vibration.
- 13.1.5 The desktop Study Areas include the Proposed Development in its entirety, including areas that are likely to be used for temporary construction compounds, rail road access points, and vehicle holding area/car parking.

13.2 Legal and Policy Framework

- 13.2.1 Legislation, planning policy and guidance relating technology, nature conservation and biodiversity, and pertinent to the Proposed Development, comprises:
- The Invasive Alien Species (Enforcement and Permitting) Order 2019 (as amended) (Ref 13.2) and the Invasive Non-Native Species (Amendment etc.) (EU Exit) Regulations 2019 (Ref 13.3);
 - The Environment Act 2021(Ref 13.4);
 - The Wildlife and Countryside Act 1981 (as amended) (Ref 13.5);
 - The Countryside and Rights of Way Act 2000(Ref 13.6);
 - The Conservation of Habitats and Species Regulations 2017(Ref 13.7);
 - The Natural Environment and Rural Communities (NERC) Act 2006(Ref 13.8); and
 - Animal Welfare Act 2006(Ref 13.9).
 - The National Planning Policy Framework (NPPF) (Ref 13.10)
 - The National Policy Statement for National Networks (Ref 13.11)
 - The Manchester's Local Development Framework Core Strategy 2012 to 2027 Policy EN 9 Green Infrastructure and Policy EN 15 Biodiversity and Geological Conservation (Ref 13.12);
 - The Greater Manchester Biodiversity Action Plan (GMBAP) (Ref 13.13)

13.3 Baseline Conditions

- 13.3.1 The baseline conditions collated from ecological desk-based studies and ecological field survey work undertaken based on the indicative land requirement of the Proposed Development in May 2024, as outlined within **Table 13-1**.

Table 13-1: Summary of Ecological Desk Study and Field Surveys Undertaken to Date

Feature	Type and Area	Date Undertaken	Description of Assessment and Methodology
Habitats and suitability for protected/notable species	Extended Phase 1 Habitat Survey within Proposed Development	May and June 2024	Preliminary Ecological Appraisal – included an extended Phase 1 habitat survey to identify ecological features within the Proposed Development plus a 50 m buffer. Followed Guidelines for Preliminary Ecological Appraisal (Ref 13.14)
Roosting bats	Daytime Walkover Survey within Proposed Development	May and June 2024	Initial assessment of trees and structures categorising the suitability to support roosting bats in accordance with the Bat Conservation Trust guidance (Ref 13.15).
Invasive Non-Native Plant Species (INNPS)	INNPS walkover survey within Proposed Development	May and June 2024	Record and identify any invasive non-native plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), Invasive Non-Native Species (Amendment etc.) (EU Exit) Regulations 2019 (which directly replaces the EU IAS Regulation 1143/2014 in the UK); and, Invasive Alien Species (Enforcement and Permitting) Order 2019. Undertaken in accordance with current good practice published by the Environment Agency (Ref 13.16), Royal Institute of Chartered Surveyors (Ref 13.17) and the Property Care Association (Ref 13.18).

Designated Sites, Ancient Woodland and HPis

13.3.2 Designates sites identified within the Study Area are detailed in **Table 13-2**. The location of the designated sites is shown on **Figure** and Figure , **Appendix A**.

Table 13-2: Statutory and Non-Statutory Designated Sites of Nature Conservation Importance Within the Study Area

Designation	Reason(s) for Designation	Relationship to Proposed Development
Rochdale Canal: Scott's Lane to Ducie Street Basin Site of Biological Importance (SBI)	This SBI covers an area of 8.9 ha comprising part of the Rochdale Canal. Designated for its regionally important aquatic habitats and flora.	0.87 km north-east
Ashton Canal (West) SBI	The SBI covers an area of 8.5 ha comprising part of the Ashton Canal. It is designated for its submerged aquatic flora.	0.95 km north-east
River Irwell SBI	Supports wintering ducks	13.85 km north-east

13.3.3 There are no statutory designated sites for nature conservation within the Study Area. There are several SACs within 30 km of the Proposed Development, however none that are designated for bats, shown on Figure , **Appendix A**.

13.3.4 There are no ancient woodland sites within the Study Area. There are areas of deciduous woodland located within the Study Area, however there are no protected or notable habitats within or adjacent to the Site as shown on **Figure , Appendix A**.

13.3.5 The Proposed Development is in close proximity to the River Medlock, River Irwell and the Bridgewater Canal. However, the Proposed Development is not hydrologically connected to these watercourses/bodies.

Phase 1 Habitats

13.3.6 The following habitats were recorded within or within 50 m of the Site (defined as all land within the Proposed Development boundary plus a 50 m buffer where access was possible):

- Broadleaved scattered trees;
- Buildings/structures;
- Ephemeral/Short perennial;
- Hardstanding;
- Other habitat (railway line);
- Poor semi-improved grassland;
- Running water;

- Scattered scrub; and,
- Tall ruderal vegetation.

Protected and Notable Species

13.3.7 **Table 13-3** presents the protected and notable species, including INNPS, that have been identified as present, potentially present or likely absent within the Proposed Development boundary and Zol.

Table 13-3: Summary of Baseline Details for Protected and Notable Species

Species	Baseline Detail – Desk Study	Baseline Detail – Field Surveys
Badger (<i>Meles meles</i>)	There are no recent records of badger within the Study Area.	No evidence or signs of badger was recorded during the field surveys. There is no suitable foraging or sett building habitat for badger within the Site.
Bats	There are 87 recent records of bats within the Study Area, there are no records of roosting bats within or adjacent to the Site.	There are no suitable habitats within the Proposed Development that could support roosting bats. The River Medlock may provide foraging and commuting habitat for bats, the remainder of the habitats within the Site offer no foraging or commuting habitat for bats.
Breeding birds	There are recent records for 360 notable bird species within the Study Area (Ref 13.19). These includes species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended): black redstart (<i>Phoenicurus ochruros</i>), kingfisher (<i>Alcedo atthis</i>) and peregrine (<i>Falco peregrinus</i>).	Scattered scrub, buildings, and trees within and adjacent to the Site provide suitable habitat for common bird species. The River Medlock, River Irwell and the Bridgewater Canal may provide suitable foraging and commuting for kingfisher, however, there is no suitable nesting opportunities due to the limited riparian habitat and engineered banks. Black redstart is known to nest in urban environments and there are existing records in the Study Area, the closest is approximately 300 m west of the Site. Habitats are present within the Site that could support nesting black redstart. Peregrine falcon is known to nest within Manchester City Centre, however no buildings within the Site are suitable to support nesting falcon and there are no existing records of this species within the Site.

Species	Baseline Detail – Desk Study	Baseline Detail – Field Surveys
Fish	The desk study revealed no records of protected or notable species of fish within the Study Area.	Due to their character and location in an urban setting, these waterbodies are considered unlikely to support significant populations of rare or notable fish.
Great crested newt (<i>Triturus cristatus</i>) and other notable amphibians	There are no existing records of any amphibian species within the Study Area.	There is no suitable terrestrial or aquatic habitat for amphibians or reptiles within 250 m of the Site, the Site and surrounding habitats are largely urban in nature comprising hardstanding and buildings. The River Irwell, the River Medlock and the Bridgewater Canal are located within close proximity to the Site, these waterbodies do not offer suitable habitat for breeding amphibians due to lack of suitable bankside and aquatic vegetation.
INNPS	There are no existing records of INNPS within the Study Area.	During the site surveys the presence of Japanese knotweed (<i>Reynoutria japonica</i>) and Himalayan balsam (<i>Impatiens glandulifera</i>) were recorded adjacent to the River Medlock.
Otter (<i>Lutra lutra</i>)	There are three recent records of otter (<i>Lutra lutra</i>) within the Study Area. The closest of these records is associated with the River Irwell.	No evidence or signs of otter were recorded during the field surveys. The sections of the River Medlock and the Bridgewater Canal adjacent to the Site do not provide suitable resting places for otter due to the high levels of disturbance and lack of vegetation. The watercourse is culverted in sections and urbanised with high concrete walls with no banks or vegetation.
Reptiles	There are no existing records of any reptile species within the Study Area.	There is not suitable habitat for reptile species within the Proposed Development.
Water vole (<i>Arvicola amphibius</i>)	There are no recent records of water vole (<i>Arvicola amphibius</i>) within the Study Area.	There are no suitable habitats present within the Site that are suitable to support water vole. The sections of the River Medlock and the Bridgewater Canal adjacent to the Site do not provide

Species	Baseline Detail – Desk Study	Baseline Detail – Field Surveys
		suitable habitat due to the lack of bankside vegetation.

13.4 Potential Impacts

Construction

13.4.1 Construction effects on ecology, nature conservation and biodiversity is scoped in for further assessment due to the following likely significant impacts:

- Habitat loss - Permanent and temporary loss of habitats associated with construction clearance, use of areas of land for temporary car parking/access;
- Invasive non-native plant species – direct impacts from spread of INNPS either from or onto land within the Site;
- Indirect impacts such as watercourse pollution, sedimentation and dust deposition;
- Changes in air quality – as a result of emissions from increases in demolition construction activities, and vehicle movements; and
- Species mortality i.e. birds – direct impacts on species associated with mortalities due to construction activities, for example site clearance.

Operation

13.4.2 Operational effects on ecology, nature conservation and biodiversity is not anticipated as a result of operation of the Proposed Development and are therefore scoped out of further assessment. Although there is likely to be an increase in trains per hour from 12 to 14, this change is unlikely to result in an increase in disturbance levels above what is already present.

13.5 Proposed Assessment Methodology

Ecological Survey

13.5.1 As the design evolves, the land requirement for Construction may change, and further surveys will be required in 2025 to cover any changes to areas of land required for the Proposed Development. These surveys will be reported in the ES.

Nature Conservation Evaluation

- 13.5.2 In line with the Chartered Institute of Ecology and Environmental Management (CIEEM) approach to Ecological Impact Assessment (EcIA) Guidelines (Ref 13.1) data received through consultation, desk-based investigations and field-based investigations will be used to identify relevant ecological features (including designated sites, ecosystems, habitat and species) of value (or potential value) and to describe the main factors contributing to their value in relation to available guidance.
- 13.5.3 A hierarchical geographical approach will be used to assign nature conservation resource importance (or value) based upon those within the CIEEM Guidelines (Ref 13.) (hereafter referred to as the CIEEM guidelines) and professional judgement.
- 13.5.4 Although the assessment will focus on those that are 'relevant' i.e. ecological features considered important and potentially affected by the Proposed Development in accordance with EcIA, the Proposed Development will be designed and constructed with respect to Network Rail's Standard NR/L2/ENV/015 Environment & Social Minimum Requirements – Design and Construction (Ref 13.20), to identify opportunities to deliver a net gain of biodiversity either on site (i.e. enhancements on NR land) or near the site (i.e. offsetting on 3rd party land), which is aligned with National policy documents regarding the need to achieve net gains for nature and that a core principle for planning to conserve and enhance the natural environment and reduce pollution.
- 13.5.5 Relevant reasons for which an ecological feature is important will be described and considered in order to assign each relevant ecological feature an overall value in accordance with the following geographical frames of reference, i.e., International, National, Regional, County, District, Local and Negligible.
- 13.5.6 All ecological features of Local value and above, where there is the potential for the Proposed Development to directly or indirectly impact them, will be taken forward to impact assessment and will be the 'relevant ecological features' for the purposes of EcIA.
- 13.5.7 According to the EcIA Guidelines, impact and effect are defined as follows:
- Impact – actions resulting in changes to an ecological feature; for example, demolition activities leading to the removal of a building utilised as a bat roost; and
 - Effect – outcome resulting from an impact, acting upon the conservation status or structure and function of an ecological feature; for example, killing/injury of bats and reducing the availability of breeding habitat because of the loss of a bat roost may lead to an adverse effect on the conservation status of the population concerned.

13.5.8 Significant effects (both adverse and beneficial) will be qualified with reference to the geographic scale at which the effect is significant (e.g. an adverse effect significant at a national level).

13.5.9 The classification of effects is defined in **Table 13-4** below.

Table 13-4: CIEEM Effect Classification

Effect Classification	Terminology used in other ES chapters	Equivalent CIEEM Assessment
Significant (beneficial)	Major beneficial	Beneficial effect on structure/function or conservation status at regional, national or international level.
	Moderate beneficial	Beneficial effect on structure/function or conservation status at District or County level.
Not significant	Minor beneficial	Beneficial effect on structure/function or conservation status at Local level.
	Negligible	No effect on structure or conservation status.
	Minor adverse	Adverse effect on structure/function or conservation status at Local level.
Significant adverse	Moderate adverse	Adverse effect on structure/function or conservation status at District or County level.
	Major adverse	Adverse effect on structure/function or conservation status at Regional, National or International level.

13.5.10 Any significant adverse effects would be mitigated or compensated for, whilst ecological enhancements may be recommended where appropriate to meet planning policy objectives. Following the implementation of any mitigation and compensation, as appropriate, any residual effects on ecological features will be identified. All ecological mitigation measures applicable to the Proposed Development construction phase will be included in a CEMP.

Habitats and Species Populations

13.5.11 Habitats and species populations are valued on the basis of their recognised status (such as through published lists of species of conservation concern or designation of Biodiversity Action Plan (BAP) status) their legal protection and, respectively, their extent or size.

13.5.12 Due regard will also be paid to the legal protection afforded to species during the development of mitigation and compensation measures to be implemented as part of the Proposed Development. For European Protected Species, there is a requirement that the Proposed Development should not be detrimental to the maintenance of the population of the species concerned at a Favourable

Conservation Status in their natural range. All mitigation and compensation measures will be included in the CEMP.

- 13.5.13 Assessing the importance of features requires consideration of both existing and future predicted baseline conditions. Therefore, the description and valuation of ecological features will take account of any likely changes, such as trends in the population size or distribution of species, likely changes to the extent of habitats and the effects of other schemes or land use changes.

Biodiversity Net Gain Assessment

- 13.5.14 A Biodiversity Net Gain Assessment for the Proposed Development will be included within the EIA.

13.6 Assumptions and Limitations

- 13.6.1 Due to changes in the land requirement after the extended Phase 1 habitat was completed, part of the Site as shown on **Figure 11, Appendix A** has not been subject to an extended Phase 1 habitat survey. When access is possible these areas will be subject to an extended Phase 1 habitat survey.
- 13.6.2 Due to changes to the land requirement made after the Preliminary Ecological Appraisal and the breeding bird survey season, an assessment using aerial and OS mapping was carried out and habitats that could support breeding black redstart were identified throughout the Proposed Development with the exception of Manchester Oxford Road Station itself. Surveys for black redstart will be carried out in 2025 to confirm presence/absence of this species. Five survey visits will be carried out between mid-April and the end of June.

13.7 Summary

- 13.7.1 Ecology, nature conservation and biodiversity has been scoped into further assessment for the EIA stage which will focus upon habitats, bats, breeding birds, black redstart (presence within the Proposed Development is currently unknown), fish, otter and INNSP. Statutory and non-statutory designated sites, badger, great crested newts and other notable amphibians and water vole has been scoped out of further assessment as summarised in **Table 13-5**.

Table 13-5: Summary of the EIA for ecology, nature conservation and biodiversity

Receptor	Potential likely significant effect	Rationale	Scoped in/out	
			Construction	Operation
Statutory and non-statutory designated sites	Not anticipated	No construction or operational impacts are anticipated The Proposed Development will not result in the direct loss of any non-statutory designated sites and there is no potential for indirect affects as a result of the Proposed Development. Rochdale Canal: Scott's Lane to Ducie Street Basin SBI, Ashton Canal (West) SBI and River Irwell SBI are located upstream of the Proposed Development. Due to the nature of the project, being localised works to existing infrastructure, and the SBIs being upstream.	Out	Out
Habitats	Potential	The Site does not contain any protected or notable habitats or flora. However, although the Proposed Development will not directly impact the River Medlock, River Irwell or Bridgewater Canal, as the Proposed Development is limited to the area within rail infrastructure, indirect impacts may occur through pollution runoff. Therefore, standard pollution prevention methods will be required to prevent pollution entering the River Medlock during the works implemented through a CEMP.	In	Out
Badger	Not anticipated	No suitable habitat within the Proposed Development. No construction or operational impacts are anticipated.	Out	Out
Bats	Potential	Given the urban nature of the Site and likely existing disturbance from lighting and noise associated with a busy city centre it is unlikely that an important assemblage of foraging and commuting bats use the habitats within the Proposed Development. If the Proposed Development requires lighting during construction which would result existing dark corridors being lit, the design should, where practical, implement suitable lighting for bats following standard	In	Out

Receptor	Potential likely	Rationale	Scoped in/out	
		practice guidance (Ref 13.21) and complete an assessment of the effects of this lighting on bats in the form of a Bat and Lighting Statement.		
Breeding Birds	Potential.	Vegetation clearance works and demolition of structures should take place outside the bird nesting season (usually considered to be between March and August inclusive) in areas which may support breeding birds. If works need to occur during the bird nesting season, then an ecologist should be appointed to confirm the absence of active bird nests in suitable areas of habitat within 48 hours of works commencing. If a nest is discovered, clearance and construction works should be stopped within an exclusion zone to be determined by an ecologist (generally 5 m radius). The nest will subsequently need to be monitored, typically on a weekly basis, by a suitably qualified ecologist. Once it is confirmed that no nests are in use within the exclusion zone, the vegetation can be removed.	In	Out
Black redstart	Potential	Surveys for the presence of black redstart will be carried out in 2025.	In	Out
Great crested newt and other notable amphibians	Not anticipated	No suitable habitat within the Proposed Development. No construction or operational impacts are anticipated.	Out	Out
Fish	Potential	No suitable habitat within the Proposed Development. However, Construction should follow standard best practice implemented as part of a CEMP. No construction or operational impacts are anticipated.	In	Out
Otter	Potential	Unlikely to be present within the Proposed Development. Otters may use this section of the River Medlock/Bridgewater Canal for commuting to more suitable habitats, however, the Proposed Development will not increase levels of current disturbance and therefore would not impact otters using this section as commuting habitat. Noise and vibration levels may	In	Out

Receptor	Potential likely	Rationale	Scoped in/out	
		increase during construction of the Proposed Development; however, these areas are already subject to noise and vibration as they are within an urban environment. Currently no permanent lighting is proposed in this area, however if lighting is required during construction it is very unlikely to reach sufficient levels to disturb commuting otters due to the existing light levels.		
Water vole	Not anticipated	No suitable habitat within the Proposed Development. No construction or operational impacts are anticipated.	Out	Out
INNPS	Potential	Measures to minimise the risk of INNPS being inadvertently spread onto and along the Proposed Development are required through a INNPS management plan.	In	Out

14. CLIMATE CHANGE

14.1 Introduction

- 14.1.1 This section addresses the scope of the EIA with respect to climate change. It includes a summary of baseline conditions and the approach to the assessment of possible construction and operational effects. Aspects that are to be scoped in and out of the assessment are identified.
- 14.1.2 Lifecycle greenhouse gas (GHG) impact, Climate Change risk and the In-combination climate change impact will be considered in the climate change assessment.
- 14.1.3 Climate Change Impact assessment – the impact of climate change on the assets of the Proposed Development on the climate over its lifetime. The assessment will include Weather Resilience and Climate Change Adaptation (WRCCA) risk assessment, in line with Network Rail Standard NR/L2/ENV/015.

Study Area

Lifecycle GHG Impact Assessment

- 14.1.4 The Study Area for the lifecycle GHG impact assessment covers all direct GHG emissions arising from activities undertaken on the Site during the construction, operation and maintenance of the Proposed Development. It also includes indirect emissions, such as embedded carbon in construction materials due to use of energy during production, as well as emissions arising from the transportation of materials, waste, and construction workers.
- 14.1.5 The assessment will cover the emissions from the Proposed Development during its life cycle and the associated emissions sources described in Table 14-1.

Table 14-1: Summary of Potential GHG Emission Sources

Phase	Life Cycle Module	PAS 2080:2023 Module	Study Area
Construction	Production stage - Raw material supply - Transport - Manufacture	A1 – A3	Emissions from the raw material extraction and manufacturing of products are required to build the equipment for the Proposed Development.
			Transportation of materials for such processes/ manufacturing (where available).
			Land clearance.

Phase	Life Cycle Module	PAS 2080:2023 Module	Study Area
	Transportation of materials for such processes/ manufacturing (where available).	A4	Direct vehicle emissions from the transportation of transportation of products and materials during their processing and manufacture.
	Construction Processes	A5	Direct emissions from on-site construction activities in the Site, including operation of welfare facilities and temporary offices; emissions from lighting, heating etc.; emissions from all activities for the treatment and supply of water to the Site.
			Emissions from on-site deconstruction activity i.e., demolition and dismantling of existing structures and buildings.
			Emissions from transportation of construction workers to and from the Site.
Operation stage		B1 – B8	Emissions from the generation and supply of energy used by infrastructure-integrated technical systems to enable it to deliver its service.
			Emissions from the ongoing maintenance, repair, replacement and refurbishment activities.

14.1.6 The Proposed Development is not expected to have a specific decommissioning date. Asset replacement will be considered as part of the operational emissions. As such, emissions associated with end-of-life disposal and site activities are scoped out.

14.1.7 As the environmental impact associated with GHG emissions is also a national and global issue, estimated GHG emissions from the Proposed Development will also be assessed against the reduction targets defined in the Climate Change Act 2008 (2050 Target Amendment) Order 2019 (Ref 14.3) and associated five-year, legally binding carbon budgets.

Climate Change Impact Assessment (CCIA)

- 14.1.8 The Study Area for the CCIA includes 1) the land within the Site i.e. it covers the construction and operation of all assets (e.g. employees, contractors, and visitors) and infrastructure which constitutes the Proposed Development, and 2) as defined in other technical topics of this Report, namely Water Resource and Flood Risk (Chapter 12) and Ecology, Nature Conservation and Biodiversity (Chapter 13)., where all receptors relevant to climate change impact assessment are identified.

14.2 Legal and Policy Framework

- 14.2.1 Legislation, planning policy and guidance relating to climate change, and pertinent to the Proposed Development, comprises:

- United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement (Ref 14.4); and
- Kyoto Protocol (Ref 14.5).
- EIA Regulations (Ref 14.6);
- The Climate Change Act 2008 (Part 1) (Ref 14.7);
- The Climate Change Act 2008 (2050 Target Amendment Order) (Ref 14.3);
- The Carbon Budget Order 2021 (Ref 14.8); and
- The Sixth Carbon Budget: The UK's Path to Net Zero 2020 (Ref 14.9).
- National Planning Policy Framework (Ref 14.10);
- Our Green Future: Our 25-year Plan to Improve the Environment (Ref 14.11);
- Net Zero Strategy: Build Back Greener (Ref 14.12);
- Clean Growth Strategy (Ref 14.13);
- Transport Decarbonisation Plan (Ref 14.14); and
- Carbon Budget Delivery Plan (Ref 14.15).
- Greater Manchester's Plan for Homes, Jobs and the Environment (Ref 14.16);
- 5 Year Environment Plan for Greater Manchester (Ref 14.17);
- Greater Manchester Transport Strategy 2040 (Ref 14.18); and
- Manchester Climate Change Framework 2020-25 (Ref 14.19).

- 14.2.2 Network Rail Standard NR/L2/ENV/015 - Env & Social Minimum Requirements – Design and Construction (Ref 14.20) and the guidance notes including Climate Change Projections (NR/GN/ESD23) (Ref 14.21), Weather resilience & climate change impact assessment (NR/GN/ESD11) (Ref 14.22), and Adaptation Pathways Methodology (NR/GN/ESD41) (Ref 14.23) are also adhered to in the climate change assessment.

14.3 Baseline Conditions

- 14.3.1 This section provides a summary of the existing and future baseline conditions used to inform the proposed scope of the climate change assessment.

Data Gathering Methodology

- 14.3.2 A desk-based study will be undertaken to inform the baseline characterisation on which the impact assessment will be based.
- 14.3.3 The principal data sources used to inform the current baseline conditions presented in this chapter comprise the following:
- Operational emission data of the existing Site
 - Historical climate data obtained from the Met Office (Ref 14.27);
 - UK Climate Projections 2018 (UKCP18) (Ref 14.28); and
 - Climate hazards identified from Think Hazard (Ref 14.26).

Lifecycle GHG Impact Assessment

Existing Baseline

- 14.3.4 The existing baseline of the Proposed Development on the climate is a 'business as usual' scenario where the Proposed Development is not constructed and the current Site's activities (i.e., the Station) are left in its current operational form.
- 14.3.5 The current GHG baseline will be established by quantifying any GHG emissions from the existing Site, which will comprise GHG emissions from sources within the boundary of the Site (i.e. the baseline is assuming that the Proposed Development does not progress).
- 14.3.6 Where data is available, this will be used to quantify GHG emissions. Where data is unavailable, benchmarks, estimates, or approximations will be used based on professional judgement.

Future Baseline

- 14.3.7 The future baseline assumes the Proposed Development is constructed and operated. The future baseline for the GHG assessment will include the GHG emissions associated with any expected future operational emissions from future infrastructure for each of the lifecycle phases identified in (i.e., construction and operation). If data is not available or if the Proposed Development does not have any operational emissions the baseline will be considered as zero GHG emissions, being a worst-case analysis as a precautionary approach.

Climate Change Impact Assessment

Existing Baseline

- 14.3.8 The current baseline for climate change impact assessment will be based on historical climate data obtained from the Met Office (Ref 14.27). The Rochdale Climate Station is the closest meteorological station to the Site (located approximately nine miles north of the Proposed Development) and has been utilised

to inform the baseline climate average data for 1981-2010, as summarised in Table 14-2 below.

Table 14-2: Historic Climate Data (Rochdale Climate Station) (Ref 14.27)

Climate Variable	Baseline Data 1981-2010
Mean annual maximum daily temperature (°C)	12.72
Mean summer maximum daily temperature (°C)	18.98
Mean winter minimum daily temperature (°C)	6.72
Number of days of air frost per annum	48.4
Highest average temperature for baseline period (°C)	19.45 (August)
Lowest average temperature for baseline period (°C)	0.96 (February)
Mean annual rainfall (mm)	93.21
Mean summer rainfall (mm)	83.1
Mean winter rainfall (mm)	105.8
Wettest month on average (mm)	122.27 (December)

Future Baseline

14.3.9 The future baselines for each of each phase of the Proposed Development will be based on UKCP18 data from the Met Office for the 25 km grid square in which the Site is located (Ref 14-28). The future baseline for the Site is displayed in **Table I-1 of Appendix E**. The future baseline projections outlined within **Table I-1** highlight the following examples of changes to the existing 1981-2010 climate baseline (see **Error! Reference source not found.**) under the Representative Concentration Pathway (RCP) 8.5:

- Mean temperatures are expected to increase in both summer and winter;
- Mean daily maximum and minimum temperatures to increase across the UK in both summer and winter;
- Winter precipitation is expected to increase, and summer precipitation will decrease; and
- Increased frequency of extreme weather events.

14.3.1 Recent extreme weather events (**Appendix E**) near the Site will also be used to inform the baseline.

14.4 Potential Impacts

Lifecycle GHG Impact Assessment

14.4.1 *Potential Receptor*

- 14.4.2 The global atmosphere is a GHG emissions receptor of Very High Sensitivity. It will be irreversible if it experiences adverse effects of the Proposed Development.

Potential for Significant Effects

- 14.4.3 The Proposed Development has the potential to affect climate by causing emissions of GHGs from sources (as shown in Table 14-1) during its construction and throughout its operational life.
- 14.4.4 It is possible that the Proposed Development will cause increase in emission during Construction which may lead to adverse effect on the global receptor; the Proposed Development may also cause a reduction in emissions during Operational phase, which may lead to a beneficial effect.
- 14.4.5 The Applicant is committed to prevent significant adverse effect on global atmosphere, therefore, it is required under Network Rail standard NR/L2/ENV/015 'Environment & Social Minimum Requirements – Design & Construction' (hereafter 'NR/L2/ENV/015') (Ref 14.Ref 14.20) that a separate GHG assessment on the Proposed Development is being undertaken. This lifecycle GHG assessment has been conducted using the Rail Safety and Standards Board's (RSSB) Rail Carbon Tool (Ref 14.Ref 14.35) across PAS2080 modules (Ref 14.Ref 14.25) i.e., a global standard for best practice in carbon management⁴ (**Error! Reference source not found.**)**Error! Reference source not found.** Carbon 'hotspots' and associated carbon reduction opportunities across the Proposed Development's lifecycle will be identified. The findings will be used to identify design and best practice measures for mitigating the effect of the Proposed Development on climate change to reduce GHG emissions across the construction, and operational phases of the Proposed Development to align with the UK Government's national and Network Rail's organisational target to achieve net zero emissions by 2050 (Ref 14.Ref 14.37). The construction related best practice measures will be included in the CEMP for implementation during Construction. Design best practice related to the Site's operation measures will be embedded in the design of the Proposed Development.
- 14.4.6 With implementation of the design and best practice measure, whilst there may be an adverse or beneficial effect on climate, it is likely that the effects of GHG emissions is to be minor and therefore not significant. Life-cycle GHG emission assessment is scoped out.

Climate Change Impact Assessment (CCIA)

Potential Receptors

⁴ PAS2080 specifies requirements for the management of whole life carbon in buildings and infrastructure – in the provision, operation, use and end of life of new projects and/or programmes of work, with the wider aim to align the built environment with the transition to a net zero carbon economy by 2050.

- 14.4.7 The CCIA consider climate change risk on the assets of the Proposed Development during both the construction and operational phases. The receptor is the Proposed Development itself, including workers, infrastructure, and visitors.
- 14.4.8 The CCIA also considers how the resilience of various receptors in the surrounding environment is affected by the Proposed Development in combination with future climatic conditions.

Potential Significant Effects

- 14.4.9 In accordance with NR/L2/ENV/015 (Ref 14.) that a climate change impact assessment will be required during the design of the Proposed Development. Relevant data sources will be used in the assessment.
- 14.4.10 The impacts of adverse/extreme weather and future climate change on the Proposed Development's infrastructural assets and location will be assessed in line with the WRCCA Impact Assessment guidance note (NR/GN/EDS11) and Climate Change Projections guidance note (NR/GN/EDS41).
- 14.4.11 All adaptation measures for construction, operation and maintenance of the Proposed Development identified will be captured in a Weather Resilience and Climate Change Adaptation (WRCCA) Risk Report. The measures will be incorporated in the design of the Proposed Development, including liaison with Network Rail's internal stakeholder.
- 14.4.12 Design and best practice measures for mitigating the effects of climate change on the Proposed Development will be identified by the WRCCA and informed by the relevant technical specialist. The design and best practice measures will focus on increasing the resilience of the Proposed Development and receptors in the surrounding environment to climate change impacts. For example, following consultations with technical specialists from Water Resources and Flood Risk (**Chapter 12**), this may include designing surface water drainage systems to make sure flows up to the 1 in 100-year return period can be contained and managed within the Proposed Development, and/or contribute to the biodiversity target set by technical specialist from Ecology through a sustainable drainage design.
- 14.4.13 The construction related best practice measures will be included in the CEMP for implementation during Construction. The operation related design best practice measures will be embedded in the design of the Proposed Development.
- 14.4.14 With the mitigation in place, significant effect from climate change is not anticipated. Therefore, climate change impact assessment is scoped out of the EIA.

14.5 Assumptions and Limitations

- 14.5.1 It is assumed that the assessments will consider the construction, and operation of the Proposed Development in line with NR/L2/ENV/015 standard (Ref 14.20) and relevant Network Rail guidelines.
- 14.5.2 It is assumed that embedded mitigation and adaptation measures developed through the assessments will be implemented through CEMP during construction and incorporated in the design of the Proposed Development.

14.6 Summary

- 14.6.1 In summary, with the embedded mitigation and adaptation measures in place, no significant effects to the climate and from climate change as a result of the Proposed Development is not anticipated. The lifecycle GHG impact and the CCIA are scoped out of further assessment (**Table 14-3**).

Table 14-3: Summary of the scope of the EIA for Climate Change

Element	Potential likely significant effect	Rationale	Scoped in/out	
			Construction	Operation
GHG Impact	Not anticipated	Through the lifecycle GHG assessment conducted in accordance with Network Rail Standard NR/L2/ENV/015, design and best practice measures will be identified to mitigate the effect of the Proposed Development on climate change to reduce GHG emissions across construction and operational phases of the Proposed Development. The construction related best practice measures will be included in the CEMP for implementation during Construction. The operation related design best practice measures will be embedded in the design of the Proposed Development.	Out	Out
Climate Change Impact	Not anticipated	Climate change impact assessment is a requirement for the design of the Proposed Development in accordance with Network Rail Standard NR/LR/ENV/015. Through the assessment, design and best practice measures will be identified to enhance the weather resilience and climate change adaptation of the Proposed Development and the receptors through design and best practices measures. The construction related best practice measures will be included in the CEMP for implementation during Construction. The operation related design best practice measures will be embedded in the design of the Proposed Development.	Out	Out

15. SOCIO-ECONOMIC

15.1 Introduction

15.1.1 This section addresses the scope of the EIA with respect to socio-economics. It includes a summary of baseline conditions and the approach to the assessment of possible construction and operational effects. Aspects that are to be scoped in and out of the assessment are identified.

15.1.2 Other relevant EIA technical sections will inform the socio-economic assessment. These are as follows:

- **Chapter 6: Air Quality;**
- **Chapter 7: Noise and Vibration**
- **Chapter 10: Townscape and Visual;**
- **Chapter 11: Traffic and Access;**

Study Area

15.1.3 The Site is located within Manchester City Centre and is positioned between the Deansgate and Manchester Piccadilly Stations. **Section Error! Reference source not found.: Error! Reference source not found.** provides a description of the Site and its surroundings, and is illustrated in **Error! Reference source not found..**

15.1.4 The socio-economic impacts of the Proposed Development are considered at varying spatial levels according to the nature of the effects considered, this reflects the baseline profile set out in **Section Error! Reference source not found.: Error! Reference source not found..**

15.1.5 The potential socio-economic impacts of the Proposed Development are assessed in relation to a defined Study Area. For instance, employment impacts are analysed within the principal labour market catchment area for the Proposed Development and will be derived based on analysis of reasonable travel times to the Proposed Development and drawing on demographic and economic data/indicators for the combined statistical areas that aligns with the radius deemed most appropriate. The assessment of local receptors and land use will consider those within the Site and the adjacent land up to a 250 m radius (recognising impacts identified by other disciplines outside of this catchment, which are set out in the relevant chapters of this Report), and any direct and/or indirect effects that may occur due to this change.

15.1.6 **Table 15-1** presents the different components of the socio-economic assessment and the geographical scale at which each impact is assessed. **Section Error! Reference source not found.: Error! Reference source not found.** provides further detail on the scoping of which impacts are to be assessed during each phase of the Proposed Development.

Table 15-1: Socio-economic Impacts by Geographical Scale

Impact	Study Area	Rationale for impact area
Generation of employment, training and apprenticeship opportunities	60 minute travel area.	Research by Chartered Institute of Personnel and Development (CIPD) found that 90% of national employees commuted for 60 minutes or less each way. This was reported by CIPD in the 2017 Employee outlook 'Employee views on working life' (Ref 15.1)
Generation of Gross value Added (GVA)		
Land take and displacement, including the following receptors: - Residential properties - Commercial premises - Community facilities - Visitor/tourist attractions.	250 m radius from the Site.	Professional judgement and location of sensitive receptors for impacts arising from the Proposed Development.
Amenity impacts, including the following receptors: - Residential properties - Commercial premises - Community facilities - Visitor/tourist attractions.	250 m radius from the Site.	Professional judgement and location of sensitive receptors for impacts arising from the Proposed Development as informed by other assessments. The principal impacts on amenity will be considered on a geographical scale based on the finding of other assessments presented in supporting discipline chapters in the ES.
Severance impacts, including the following receptors: - Residential properties - Commercial premises - Community facilities - Visitor/tourist attractions.	250 m radius from the Site.	Professional judgement and location of sensitive receptors for impacts arising from the Proposed Development as informed by other assessments. The principal impacts on severance will be considered on a geographical scale based on the finding of other assessments presented in supporting discipline chapters in the ES.

15.2 Legal and Policy Framework

15.2.1 Network Rail has a Public Sector Equality Duty under the Equality Act 2010 to consider groups with protected characteristics and advance equality of opportunity. A Diversity Impact Assessment has been prepared for the Proposed Development by Network Rail.

15.2.2 Legislation, planning policy and guidance relating to socio-economics, and pertinent to the Proposed Development, comprise:

- National Planning Policy Framework (NPPF) (Ref 15.2);
- National Planning Practice Guidance (Ref 15.3);
- The Greater Manchester Strategy 2021 – 2031 (Ref 15.4);
- Places for Everyone 2022 – 2039 (Ref 15.5);
- Greater Manchester Local Industrial Strategy (Ref 15.6);
- Greater Manchester Infrastructure Framework 2040 (Ref 15.7);
- Greater Manchester Transport Strategy 2040 (Ref 15.8);
- Greater Manchester Five Year Transport Delivery Plan 2021 – 2026 (Ref 15.9);
- 5 Year Environment Plan for Greater Manchester 2019 – 2024 (Ref 15.10);
- Manchester's Local Development Framework: Core Strategy (Ref 15.11);
- Our Manchester Strategy 2016 – 2025 (Ref 15.12);
- Our Manchester Industrial Strategy (Ref 15.13); and
- City Centre Transport Strategy to 2040 (Draft) (Ref 15.14).

15.3 Baseline Conditions

15.3.1 This section covers the key socio-economic indicators that are relevant to this chapter. This will form the basis of establishing the sensitivity of the Study Area to the impacts resulting from the Proposed Development.

Data Sources

15.3.2 A high-level summary of baseline conditions has been presented based upon review of the following datasets:

- Office for National Statistics (ONS) (2021); Mid-year population estimates (Ref 15.15);
- Ministry of Housing, Community and Local Government (MHCLG) (2019); English Indices of Deprivation (Ref 15.16);
- ONS (2024); Regional Gross Value Added (Ref 15.17);
- ONS (2021); Census 2021 (Ref 15.18);
- ONS (2022); UK Business Register and Employment Survey (Ref 15.19); and
- ONS (2018); Population projections (Ref 15.20).

Local Economy

Demographics

- 15.3.3 The 2021 Census provides data on population and age demographics within the Study Area. The population of the Direct Impact Area is 25,361, approximately 4.6% of the Wider Impact Area's 551,937 population and approximately 0.9% of GMCA's 2,867,761 population. The Direct Impact Area has the smallest proportion of individuals aged 65+ (2.2%) and the largest proportion of individuals aged 15 to 64 (95.5%), highlighting its predominantly working-age population, a characteristic of the Study Area's geography as a major urban city.

Deprivation

- 15.3.4 Based on the 2019 Indices of Multiple Deprivation (IMD), which is measured at local authority level, Manchester (Wider Impact Area) is the 2nd most deprived local authority of 317 districts in England (where 1 is most deprived) according to average rank. 43% of the Wider Impact Area's Lower Level Super Output Areas (LSOAs) are in the most deprived 10% in England on the IMD (122 out of 282). Notably, the Wider Impact Area has the highest proportion of LSOAs in this category within the GMCA region.
- 15.3.5 Conversely, data at the Ward level suggests the Direct Impact Area ranks above 27 (out of 32 wards) in terms of overall deprivation levels. This indicates relatively low levels of deprivation within the Direct Impact Area, highlighting its socio-economic resilience compared to other areas in the city.

Economic Activity

- 15.3.6 The Direct Impact Area performs well in terms of economic activity, with the highest proportion of economically active individuals. In the Area, 57.6% of the population (excluding full time students) are economically active, surpassing both the Wider Impact Area (54.3%) and GMCA (57.4%), however is below the national average (58.6%). The proportion of economically active full-time students is notably higher in the Direct Impact Area (8.5%) compared to the other areas, characteristic of the Site's proximity to educational institutions and consequent presence of a large student population. The Direct Impact Area has the highest proportion of full-time employees (44.0%), albeit lower proportions of part-time employees (4.6%) and self-employed individuals (6.2%) compared to other geographies.
- 15.3.7 Unemployment rates vary slightly across the regions; the Direct Impact Area reported the highest unemployment rate at 3.2%, followed by the Wider Impact Area (1.7%), GMCA (0.8%), and England (0.6%).

Local Receptors and Land Use

Tourism and Visitor Attractions

- 15.3.8 According to 2023 data (Ref 15.21), Greater Manchester attracts around 36.8 million domestic day visits and 4.2 million overnight visits annually, alongside 1.7 million international visitors. The average length of stay for overnight visits stands at 2.96 nights. The tourism sector contributes £8.7 billion to the Greater Manchester economy and supports 87,500 full-time equivalent (FTE) jobs. In the Manchester Local Authority area (Wider Impact Area), tourism contributes £4.65 billion and supports 45,600 FTE jobs.
- 15.3.9 There are a number of visitor attractions and activities in and near to the Site. There are numerous tourism accommodation facilities within 250 m of the Site, including hotels, B&Bs, and hostels.

Community Facilities

- 15.3.10 Alongside the visitor attractors, there are other leisure and community-based assets in and around the Site. Community facilities within 250 m to the Site include places of worship, community centres, educational facilities, childcare facilities, healthcare facilities, sports facilities, leisure centres, post offices, public transport facilities, and public gardens. National Cycle Route 6, which passes from Watford to Windermere via Manchester, passes beneath the Gloucester St Bridge to the west of the Station. There are no public rights of way within 250 m of the Site.

Residential Properties

- 15.3.11 The Site is surrounded by high density residential development, including modern high-rise buildings and contrasting townhouse style buildings.

Commercial Premises

- 15.3.12 The Site is surrounded by various commercial premises including a diverse range of office spaces, retail outlets, and hospitality venues.

15.4 Potential Impacts

Construction

- 15.4.1 During the construction phase, the following potential types of impacts have been identified:
- **Generation of employment, training and apprenticeship opportunities:** Construction employment is expected to be generated as part of the Proposed Development. The impacts on the local economy will be assessed including the potential indirect and induced employment effects.

- **Land use and displacement:** Although majority of construction activity will be located on existing Network Rail owned or leased land, temporary land use changes are anticipated, such as establishment of temporary construction compounds on existing carpark, relocation of bus stops and taxi ranks. The construction phase may result in temporary adverse land take and displacement impacts, with receptors including residential properties, commercial premises, community facilities, and visitor/tourist attractions.
- **Amenity impacts:** There may be short to medium term disturbance and nuisance within the local area during construction, associated with demolition and construction activities and vehicle movements which may impact the local amenity of the area. The residual effects reported in the **Chapter 6: Air Quality**, **Chapter 7: Noise and Vibration** and **Chapter 10: Townscape and Visual** assessments will be used to determine the significance of amenity effects on socio-economic receptors including residential properties, commercial premises, community facilities, and visitor/tourist attractions.
- **Severance impacts:** Construction activities, including road closures, demolition, and increased vehicle movements, may cause connectivity and severance impacts in the local area. The residual effects reported in the **Chapter 10: Townscape and Visual** and **Chapter 11: Transport and Access** assessments will be used to determine the significance of severance effects on socio-economic receptors including residential properties, commercial premises, community facilities, and visitor/tourist attractions.

Operation

15.4.2 During the operation phase, the following potential impacts have been identified:

- **Generation of employment, training and apprenticeship opportunities:** The Proposed Development may generate local employment and training effects during its operation.
- **Amenity impacts:** The operational phase is expected to deliver modifications to access, capacity, and usage of the Station which may impact the local amenity of the area. The residual effects reported in the **Chapter 6: Air Quality**, **Chapter 7: Noise and Vibration**, **Chapter 10: Townscape and Visual** and **Chapter 11: Transport and Access** assessments will be used to determine the significance of amenity effects on socio-economic receptors including residential properties, commercial premises, community facilities, and visitor/tourist attractions.
- **Severance impacts:** The operational phase is expected to deliver modifications to access, capacity, and usage of the Site which may result in connectivity and severance impacts for local users. The residual effects reported in the **Chapter 10: Townscape and Visual** and **Chapter 11: Transport and Access** assessments will be used to determine the significance of severance effects on socio-economic receptors including residential properties, commercial premises, community facilities, and visitor/tourist attractions.

Design and Best Practice Measures

- 15.4.3 It is anticipated that good practice measures will be incorporated into the design and construction methodology, this will be taken into account during the impact assessment.

15.5 Proposed Assessment Methodology

- 15.5.1 There is currently no statutory guidance on the methodology for undertaking assessments of socio-economic effects. There is no accepted definition of what constitutes a likely significant (or not significant) socio-economic effect. It is recognised that 'significance' reflects the relationship between the scale of impact (magnitude) and the sensitivity (or value) of the affected resource or receptor. As such, the significance criteria for socio-economic effects have been assessed using the expert judgement of authors with professional experience in socio-economics, and relies on the following considerations:
- The sensitivity of a given receptor: the assessment takes account of the qualitative (rather than quantitative) 'sensitivity' of each receptor, particularly their ability to respond to change based on the given impacts of the Proposed Development; and
 - The magnitude of the impact: this entails consideration of the size of the impact, for example, on people, businesses, users of public rights of way, private properties, employees and development land in the context of the area in which impacts will be experienced.
- 15.5.2 The sensitivity and magnitude of socio-economic receptors is assessed as high, medium, low or very low. These factors have then been combined to determine the consequent likely significance of the effect.
- 15.5.3 To determine the overall significance of effects of the Proposed Development, effects are defined as beneficial, adverse, negligible, or no effect.
- 15.5.4 Duration of effect will also be considered, with more weight given to permanent changes than to temporary ones. For the purposes of this assessment, short-term effects are one year or less, medium-term effects are one to five years and long-term effects are for durations over five years.
- 15.5.5 Where an effect is assessed as being beneficial or adverse, the effect will be classified as Major, Moderate, Minor or Negligible. The assessment of significance is informed by considering the sensitivity of the receptor and the magnitude of impact as set out in **Table 3-1**. For the purposes of this assessment, only likely Moderate and Major effects which are beneficial or adverse are considered to be 'significant'. Effects identified as negligible or minor are 'not significant'.

15.5.6 Assignment of significance is carried out with consideration of embedded mitigation measures relevant to socio-economics, and residual effects consider additional mitigation measures.

15.6 Summary

15.6.1 **Table 15-2** summarises the socio-economic assessment scope for the for the Proposed Development

Table 15-2: Summary of the scope of the EIA for Socio-economics

Element	Likely significant effect	Justification	Scoped in/out	
			Construction	Operation
Generation of employment, training and apprenticeship opportunities	Potential	Employment generation is anticipated as part of the Proposed Development.	In	In
Land take and displacement	Potential	Temporary and permanent land take and displacement effects may occur as a result of the Proposed Development. Displacement effects are only assessed during the construction phase.	In	Out
Amenity impacts	Potential	Demolition activity, removal of vegetation, operation of heavy machinery, and increased construction vehicle movements in the construction phase, and changes to the access, layout, and capacity during operation may generate amenity effects.	In	In
Severance impacts	Potential	Temporary access arrangements around the Site and to associated infrastructure will be impacted under the Proposed Development and need to be assessed.	In	Out

16. HUMAN HEALTH

16.1 Introduction

- 16.1.1 This chapter addresses the scope of the EIA with respect to human health and the Proposed Development. It includes a summary of baseline conditions and the approach to the assessment of possible construction and operational effects. Aspects that will be scoped in and out of the assessment are also identified.
- 16.1.2 Other relevant EIA technical sections will inform the health assessment. These are as follows:
- **Chapter 6: Air Quality;**
 - **Chapter 7: Noise and Vibration**
 - **Chapter 10: Townscape and Visual;**
 - **Chapter 11: Traffic and Access;**
 - **Chapter 14: Climate Change;** and
 - **Chapter 15: Socio-economics.**

16.2 Study Area

- 16.2.1 The Site is located within Manchester City Centre and is positioned between the Deansgate and Manchester Piccadilly Stations. Section 2.5: The Site provides a description of the Site and its surroundings and is illustrated on **Error! Reference source not found..**
- 16.2.2 The human health impacts of the Proposed Development are considered at varying spatial levels according to the nature of the effects considered, this reflects the baseline profile set out in **Section 16.3: Baseline Conditions**. The Study Area for human health varies depending on the effect or type of resource being assessed.
- 16.2.3 The Study Area is also defined based on the definitions in other topics for each environmental aspect of relevance to human health (namely Air Quality, Climate Change, Townscape and Visual, Noise and Vibration, Socio-Economics, Transport and Access) and these are as set out in the relevant chapters of this Report.

16.3 Legal and Policy Framework

- 16.3.1 There is no principal legislation within the United Kingdom governing human health. The planning policy and guidance relating to human health, and pertinent to the Proposed Development, comprises:
- National Planning Policy Framework (NPPF) (**Error! Reference source not found.****Error! Reference source not found.**);

- National Planning Practice Guidance (**Error! Reference source not found.**);
- NHS Long Term Plan (2019) (**Error! Reference source not found.**);
- IEMA Guide to Scoping of Human Health in EIA (2022) (**Error! Reference source not found.**);
- IEMA Determining Significance for Human Health in EIA Guidance (2022) (**Error! Reference source not found.**);
- NHS Healthy Urban Development Unit (HUDU) Rapid Health Assessment Tool (2019) (**Error! Reference source not found.**);
- Spatial Planning for Health: An evidence resource for planning and designing healthier places (2017) (**Error! Reference source not found.**); and
- Public Health England (PHE) Strategy 2020 to 2025 (2017) (**Error! Reference source not found.**).
- Places for Everyone 2022 – 2039 Joint Development Plan Document (2024) (**Error! Reference source not found.**);
- Mental Health and Wellbeing Strategy 2024 – 2029 (2024) (**Error! Reference source not found.**);
- Manchester's Local Development Framework Core Strategy (2012) (**Error! Reference source not found.**);
- 5 Year Environment Plan for Greater Manchester 2019 – 2024 (2019) (**Error! Reference source not found.**);
- Our Manchester Strategy 2016 – 2025 (2015) (**Error! Reference source not found.**);
- City Centre Transport Strategy to 2040 (Draft) (**Error! Reference source not found.**);
- Manchester Population Health Plan 2018 – 2027 (2017) (**Error! Reference source not found.**); and
- Improving Health and Care in Greater Manchester 2023 – 2028 (2023) (**Error! Reference source not found.**).

16.4 Baseline Conditions

16.4.1 To capture the profile of the human health baseline, the Study Area is divided into distinct geographical levels. This allows analysis of local, regional, and broader impacts. The Study Area for the baseline profile is therefore split into the following geographies:

- The Study Area, comprising two metropolitan district wards Deansgate and Piccadilly;
- The Wider Impact Area, consisting of the Manchester Local Authority Area;

- The sub regional comparator, consisting of the Greater Manchester Combined Authority (GMCA) area; and
- The national comparator, England.

16.4.2 This section covers the key human health indicators that are relevant to this chapter. This will form the basis of establishing the sensitivity of the Study Area to the impacts resulting from the Proposed Development

Data Sources

16.4.3 A high-level summary of baseline conditions has been presented based upon review of the following datasets:

- Office for National Statistics (ONS) (2021); Census 2021 (**Error! Reference source not found.**);
- Office for Health Improvement & Disparities (OHID) (2023); Public health outcomes framework (**Error! Reference source not found.**); and
- Ministry of Housing, Community and Local Government (MHCLG) (2019); English Indices of Deprivation (**Error! Reference source not found.**).

Health Baseline

16.4.4 For a general overview of the demographic character of the Study Area and how it compares to the Wider Impact Area, GMCA area, and England, see Chapter 15: Socio-economics. for the breakdown of the populations' age demographics.

General Health

16.4.5 The 2021 Census provides estimates on how usual residents classify their state of general health. The majority of the Study Area (92.0%) reports their health to be 'very good' or 'good', which is notably above that in the Wider Impact Area (82.2%), the GMCA area (81.2%) and the national average (82.2%) (**Error! Reference source not found.**). Data from the 2021 Census on self-reported health is presented in **Table 16-1** below.

Table 16-1: Self-reported health (%)

Category	Study Area (%)	Wider Impact Area (%)	GMCA (%)	England (%)
Very good health	58.1	50.8	48.7	48.5
Good health	33.9	31.4	32.5	33.7
Fair health	6.5	11.8	12.9	12.7
Bad health	1.3	4.5	4.6	4.0

Very bad health	0.3	1.5	1.4	1.2
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Source: ONS. (2023); Census 2021 (**Error! Reference source not found.**).

Life expectancy

16.4.6 The Office for Health Improvements & Disparities (**Error! Reference source not found.**) produce public health outcome frameworks for different regions across the UK, providing information on life expectancy data. Data is not available for the two metropolitan district wards Deansgate and Piccadilly that comprise the Study Area or for the GMCA; therefore, it was only possible to compare the Wider Impact Area with national comparators.

16.4.7 The life expectancies for both males and females in the Wider Impact Area is notably lower than the national average for both males and females. Data on life expectancies across the wider geographies is outlined in **Table 16-2** below.

Table 16-2: Life expectancy

Life expectancy at birth (2018-20)	Study Area (%)	Wider Impact Area (%)	GMCA (%)	England (%)
Males	Not available	75.6	Not available	79.5
Females	Not available	79.7	Not available	83.2

Source: OHID. (2023); Public health outcomes framework (**Error! Reference source not found.**).

Long-term Illness or Disability

16.4.8 The 2021 Census provides data on the extent to which a physical or mental disability limits residents' day-to-day activities (**Error! Reference source not found.**). Residents that report that their day-to-day activities are limited a lot or a little are considered disabled under the Equality Act 2010 (**Error! Reference source not found.**). Whereas residents that report not having a mental or physical condition that limits day-to-day activities, or any long term mental or physical health conditions at all, are considered not disabled under the Equality Act 2010.

16.4.9 The Study Area has a lower percentage of people classified as disabled in its population when compared to all other comparators. In all, 10.9% of the Study Area's population report that their day-to-day activities are limited either a lot or a little by a physical or mental condition which notably lower than the Wider Impact Area (17.6%), the GMCA (18.3%) and the national average at 17.3% (**Error! Reference source not found.**).

Deprivation

16.4.10 Based on the 2019 Indices of Multiple Deprivation (IMD) (**Error! Reference source not found.**), which is measured at local authority level, Manchester (Wider Impact

Area) is the 2nd most deprived local authority of 317 districts in England (where 1 is most deprived) according to average rank. 43% of the Wider Impact Area's Lower Super Output Areas (LSOAs⁵) are in the most deprived 10% in England on the IMD (122 out of 282). Notably, the Wider Impact Area has the highest proportion of LSOAs in this category within the GMCA area.

- 16.4.11 Conversely, data at the Ward level suggests the Study Area ranks above 27 (out of 32 wards) in terms of overall deprivation levels. This indicates relatively low levels of deprivation within the Direct Impact Area, highlighting its socio-economic resilience compared to other areas in the city.

Future Baseline

- 16.4.12 The future baseline would be representative of the conditions and trends set out in the current Baseline section of this chapter. In the absence of the Proposed Development, the impact on human health is not anticipated to be materially different.

16.5 Potential Impacts

- 16.5.1 The assessment will consider the potential consequences for human health from the construction and operation phases of the Proposed Development. It is informed by the assessment findings of the following environmental topics.

Construction

- 16.5.2 During Construction, the following potential impacts have been identified from the relevant environmental topics and are scoped in:
- **Air Quality:** there is potential for people to be exposed (on and off site) to contaminants in dust via ingestion and inhalation as a result of construction works. This may cause respiratory diseases in the population and lead to premature mortality.
 - **Noise and Vibration:** there is potential for noise and vibration disturbance to nearby residents as a result of the construction works. This may cause annoyance and sleep disturbance which may lead to health problems.
 - **Flood risk, drainage, and surface water:** There may be impacts to the drainage and surface water and nearby waterbodies as well as increases in flood risk associated with onsite activities and infrastructure during the Construction that may lead to injury or fatality of the population.
 - **Townscape and Visual:** there is a potential for human health impacts during the construction phase caused by a change to townscape and visual amenity.

⁵ Lower Super Output Areas (LSOAs) are a type of small geographical area that typically have a population of approximately 1,000 people.

These factors may have health impacts resulting from reduced physical activity and stress.

- **Traffic and Access:** traffic congestion, disruption to public transport services, and changes in amenity (in relation to path diversions) for public rights of way are potential impacts during construction works. This can have health impacts resulting from reduced levels of physical activity and increases in social exclusion or stress.
- **Socio-economics:** Construction works have the potential to impact on access to community, commercial, private and recreational receptors and access to pedestrian/cycle routes. Local amenity may be impacted by disturbance and nuisance during the works and temporary changes to land-use required for construction. Health impacts may arise due to reduced levels of physical activity and increases in social exclusion or stress. There may be beneficial impacts on the local economy due to construction employment which may in turn lead to an increase standard of living and associated improvements in health.

Operation

16.5.3 During Operation, the following potential impacts have been identified from the relevant environmental topics and are scoped in:

- **Noise and Vibration:** there is potential for an increase in noise and vibration due to increased train services. This may cause annoyance and disturbance which may lead to health problems.
- **Townscape and Visual:** the new infrastructure would have the potential to impact the character of the existing landscape, potentially resulting in impacts, particularly mental health.
- **Traffic and Access:** During operation, there is potential for decrease in traffic, leading to a beneficial impact.
- **Socio-economics:** There is potential for local employment effect due to the remodelled Station, leading to potential increase in economic status in the communities. Changes in access and local amenity are expected during operation.

Design and Best Practice Measures

16.5.4 The health assessment will utilise the likely significant effects from the other EIA topics following impact assessment. An assessment on health will only be undertaken where a residual likely significant effect is identified in the EIA chapters. If it is determined that a health likely significant effect would arise as a result of a likely significant effect identified in a related EIA topic chapter, specific mitigation measures for human health impacts will be as part of the human health assessment within the ES.

16.6 Proposed Assessment Methodology

16.6.1 IEMA guidance “Determining Significance for Human Health in Environmental Impact Assessment” forms the basis of the approach adopted to assess impacts on human health in this chapter (**Error! Reference source not found.**). In addition, consideration has been given to NHS England’s Healthy Urban Development Unit’s (HUDU) Rapid Health Assessment (HIA) Tool to identify of relevant health determinants of the Proposed Development.

16.6.2 Drawing on the IEMA guidance, “Guide to Effective Scoping of Human Health” (**Error! Reference source not found.**), this assessment considers the following human health determinants of relevance to the Proposed Development:

- Transport modes, access and connections, including: community connectivity such as access to services, facilities and open space; prioritisation of walking and cycling; and road and route safety;
- Employment and income, including provision of economic opportunities and resources that protect and promote good health;
- Air quality;
- Noise and vibration; and
- Townscape and visual.

Assessment Criteria

16.6.3 The specific magnitude and sensitivity criteria applied for the human health assessment, as summarised below, will reflect the IEMA guidance, “Determining Significance for Human Health in Environmental Impact Assessment”, released in 2022 (**Error! Reference source not found.**). Best practice principles for assessing impacts on human health are also provided in NHS England’s Healthy Urban Development Unit’s (HUDU) Rapid HIA Toolkit 2019 (**Error! Reference source not found.**), which alongside IEMA guidance, will also be drawn on to identify potential impacts in this section.

16.6.4 The sensitivity of population health is driven by a number of factors which are set out in **Table 16-3**, and are based on guidance set out in the IEMA guidance.

Table 16-3: Human Health Sensitivity Criteria – Population Health

Sensitivity level	Sensitivity criteria
High	High levels of deprivation (including pockets of deprivation); reliance on shared re-sources (between the population and the Proposed Development); existing wide inequalities between the most and least healthy; a community whose outlook is predominantly anxiety or concern; people who are

Sensitivity level	Sensitivity criteria
	prevented from undertaking daily activities; dependents; peoples with very poor health status; and/or people with a limited capacity to adapt.
Medium	Moderate levels of deprivation; few alternatives to shared resources; existing widening inequalities between the most and least healthy; a community whose outlook is predominantly uncertainty with some concern; people who are highly limited from undertaking daily activities; people providing or requiring a lot of care; people with poor health status; and/or people with a limited capacity to adapt.
Low	Low levels of deprivation; many alternatives to shared resources; existing narrowing inequalities between the most and least healthy; a community whose outlook is pre-dominantly ambivalence with some concern; people who are slightly limited from undertaking daily activities; people providing or requiring some care; people with fair health status; and/or people with a high capacity to adapt.
Very Low	Very low levels of deprivation; no shared resources; existing narrow inequalities be-tween the most and least healthy; a community whose outlook is predominantly support with some concern; people who are not limited from undertaking daily activities; people who are independent (not a carer or dependent); people with good health status; and/or people with a very high capacity to adapt.

Source: Adapted from: IEMA Guide to Determining Significance for Health (Table 7.1) (**Error! Reference source not found.**)

16.6.5 Magnitude of impact is driven by a number of factors which are set out in **Table 16-4**, based on guidance set out in the IEMA guidance.

Table 16-4: Human Health Magnitude of Impact Criteria

Magnitude level	Magnitude criteria
High	High exposure or scale; long-term duration; continuous frequency; severity predominantly related to morbidity (physical or mental health) or very severe illness/injury out-comes; majority of population affected; permanent change' substantial service quality implications.
Medium	Low exposure or medium scale; medium-term duration; frequent events; severity pre-dominantly related to moderate changes in morbidity or moderate change in quality of life; large minority of population affected; gradual reversal; small service quality implications.

Low	Very low exposure or small scale; short-term duration; occasional events; severity pre-dominantly related to minor change in morbidity or moderate change in quality of life; small minority of population affected; rapid reversal; slight service quality implications.
Very Low	Negligible exposure or small scale; very short-term duration; one off frequency; severity predominantly relates to minor change in quality of life; very few people affected; immediate reversal once activity complete; no service quality implications.

Source: Adapted from: IEMA Guide to Determining Significance for Health (Table 7.2) (**Error! Reference source not found.**).

Significance

- 16.6.6 The general approach adopted for evaluating significance of human health effects considers the relationship between the sensitivity of the relevant population health, and the magnitude of the impact. An outline for how significance is determined is set out in **Table 16-5**.
- 16.6.7 Where two options are shown for the assessment of significance (e.g. minor/negligible) professional judgement is used to determine which of the two options is most appropriate. Duration of effect is also considered, with more weight given to longer-term or permanent changes than to shorter-term or temporary ones.

Table 16-5: Significance of Effects Matrix (Human Health)

Magnitude of Impact	Sensitivity of Receptor			
	High	Medium	Low	Very Low
High	Major	Major/moderate	Moderate/minor	Minor/negligible
Medium	Major/moderate	Moderate	Minor	Minor/negligible
Low	Moderate/minor	Minor	Minor	Negligible
Very Low	Minor/negligible	Minor/negligible	Negligible	Negligible

Source: Adapted from: IEMA Generic indicative EIA significance matrix (Table 7.3) (**Error! Reference source not found.**).

- 16.6.8 The assessment aims to be objective and quantifies effects as far as possible. However, some effects can only be evaluated on a qualitative basis. Effects will be defined as follows:

- Beneficial classifications of significance indicate an advantageous effect on human health, which may be minor, moderate or major in effect;
- Adverse classifications of significance indicate a disadvantageous effect on human health, which may be minor, moderate or major in effect;
- Negligible classifications of significance indicate imperceptible effects on human health; and
- No effect classifications of significance indicate that there are no effects on human health.

16.6.9 In accordance with the methodology set out in the IEMA guidance, the following criteria will be applied:

- ‘Moderate’ or ‘Major’ effects are classed ‘significant’;
- ‘Minor’ effects are classed as ‘not significant’, although they may be a matter of local concern; and
- ‘Negligible’ effects are classed as ‘not significant’.

Scope for Mitigation

16.6.10 Assignment of significance is carried out with consideration of embedded mitigation measures relevant to socio-economics, and residual effects consider additional mitigation measures.

16.7 Assumptions and Limitations

16.7.1 The human health assessment will be partly based on professional judgement and consider both the adverse and beneficial impacts that the Proposed Development may have on surrounding receptors. It provides an indication of human health effects on people and the local community.

16.7.2 It should be noted that it is not always possible to determine the catchment area for community facilities. Residents of an area may utilise facilities located within different districts or regions without regard for statutory boundaries.

16.8 Summary

16.8.1 **Table 16-6** provides a summary of the human health scope and rationale for the EIA of the Proposed Development. It is proposed that decommissioning of the Proposed Development is scoped out of the EIA because the completed works will form part of the national railway network, which is unlikely to be closed in the foreseeable future, hence Table 16-6 considers elements relevant to construction and operation.

Table 16-6: Summary of the scope of the EIA for Human Health

Receptor	Potential likely significant effect	Rationale	Scoped in/out	
			Construction	Operation
Access to open space, PRoW, recreational facilities and opportunities for physical activity and active travel.	Potential	There may be some disruption to the accessibility of recreational routes and open space around the Site. This has the potential to impact physical activity levels. However, these effects are only likely to have an impact during the construction phase.	In	Out
Road and route safety.	Potential	There may be effects in relation to accident numbers and safety during construction.	In	Out
Provision of economic opportunities and resources that protect and promote good health.	Potential	There is potential for effects on work, income and training due to employment generation associates with the Proposed Development's construction and operation phases.	In	In
Air Quality	Potential	There may be air quality impacts associated with onsite activities and traffic during Construction.	In	Out
Noise and vibration	Potential	There may be noise and vibration impacts associated with onsite activities and traffic during Construction and Operational phases.	In	In
Townscape and visual amenity	Potential	There may be amenity impacts associated with onsite activities and infrastructure during Construction and Operational phases.	In	In
Flood risk, drainage, and surface water	Potential	There may be impacts to the drainage and surface water as well as increases in flood risk associated with onsite activities and infrastructure	In	In

Receptor	Potential	Rationale	Scoped in/out	
		during the construction and operation phases.		
Community identity and social participation	Potential	There may be impacts to the community and social cohesion and engagement associated with onsite activities and traffic during construction, however this will likely not extend into the operation phases as the Proposed Development will improve local connectivity and ease community cohesion.	In	Out

17. MAJOR ACCIDENTS AND DISASTERS

17.1 Introduction

- 17.1.1 This section addresses the scope of the EIA with respect to the potential for major accidents and disasters. It includes a summary of the baseline conditions, the approach and the assessment of potentially significant adverse construction and operational effects of the Proposed Development on the environment deriving from its vulnerability to risks of relevant major accidents and/or disasters.
- 17.1.2 The assessment considers two aspects: the vulnerability of the Proposed Development to a major accident or disaster and the potential for the Proposed Development to cause a major accident or disaster.
- 17.1.3 The assessment of major accidents and disasters differs from other topics considered in the EIA for the Proposed Development as it focuses on identifying major risks in the context of potential for likely significant effects.
- 17.1.4 The main sources of potential major accidents and disasters were divided into the following categories:
- A **major accident** is an event (for instance, train derailment or major road traffic accident) that threatens immediate or delayed serious environmental effects to human health, welfare and/or the environment and requires the use of resources beyond those of the client or its appointed representatives (i.e. contractors) to manage.
 - A **disaster** is a man-made/external hazard (such as an act of terrorism) or a natural hazard (such as an earthquake) with the potential to cause an event or situation that meets the definition of a major accident.

Study Area

- 17.1.5 The Study Area for the desk study of the risk of major accidents and disasters associated with the Proposed Development considers:
- Control of Major Accident Hazards (“COMAH”) facilities within 3 km.
 - Rail infrastructure within 1 km.
 - Connections to existing road infrastructure.
 - Transmission (gas, electrical, oil/fuels) crossing the Scoping Boundary.
 - Natural features with the potential to create risks within 1 km.
- 17.1.6 Schedule 4, paragraph 8 of the EIA Regulations require: “A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned.”

17.1.7 The key applicable legislative framework covering the design, construction and operation of the Project include:

- Health and Safety at Work etc. Act 1974 (HASWA) (Ref 16.1)
- Construction (Design and Management) Regulations 2015 (CDM) (Ref 16.2).

Baseline Conditions

17.1.8 The baseline relevant to major accidents and disasters primarily comprises:

- Features external to the Proposed Development that contribute a potential source of hazard to the Proposed Development itself.
- Sensitive environmental receptors at risk of significant effect.
- Identified major accident and disaster risks which currently exist within the local area.

17.1.9 In line with regulations, the baseline environment would be established through existing sources of risk assessment or other relevant studies, rather than collecting survey data.

17.1.10 Baseline information described for major accidents and disaster events are derived from the following desk study sources:

- Technical chapters of this Scoping Report (Chapters 6 to 16).
- Health and Safety Executive COMAH 2015 Public Information Search (Ref 16.3).
- Aerial photography.
- Google street view maps covering the Site.

Receptors

17.1.11 Receptors are features of the environment which may be affected and thus are subject to assessment under Section 5 (2) of the EIA Regs Infrastructure Planning (Environmental Impact Assessment) (EIA) Regulations 2017, namely biodiversity, land, soil, water, air and climate, material assets, cultural heritage and landscape. Key receptors also include human populations.

17.1.12 Sensitive receptors at risk from potential major accidents or disasters from the Proposed Development are:

- Members of the public and local communities.
- The natural environment, including ecology and biodiversity, land and soil quality, air quality, surface and groundwater resources, landscape and views.
- The historic environment, including archaeology and built heritage.

17.1.13 These have been identified through a review of base mapping and aerial photography as well as consultation with the other EIA topics (Chapters 6-16). **Table 17-1** identifies the key major event receptors within the Study Area.

Table 17-1: Identified Key Receptors for Major Events

Major Event Receptor	Type	Description
Members of the public and local communities	Human Health, Air Quality	The Site is surrounded by high density residential development, including modern high-rise buildings and contrasting townhouse style buildings, and various commercial premises including a diverse range of office spaces, retail outlets, and hospitality venues. There are a number of visitor attractions and activities in and near to the Site. There are numerous tourism accommodation facilities within 250 m of the Site, including hotels, B&Bs, and hostels. Alongside the visitor attractors, there are other leisure and community-based assets in and around the Study Area. Community facilities within 250 m to the Site include places of worship, community centres, educational facilities, childcare facilities, healthcare facilities, sports facilities, leisure centres, post offices, public transport facilities, and public gardens.
Evonik Chemicals Limited	Land	Seven COMAH establishments located within three miles of post code M1 6FU (i.e. the Station). The closest COMAH establishment is Evonik Chemicals Limited, who manufacture speciality chemicals, and are located 3.9km east of the Site.
River Medlock	Surface Water and groundwater resources	Pose risk of fluvial flooding of temporary construction compounds located within 8 m of the River Medlock, along Cambridge Street, south-west of the Site and along Oxford Street, situated east of the Proposed Development.
Heritage assets and archaeology	Cultural Heritage	There are designated and non-designated heritage assets within the Scoping Boundary and the 1 km Study Area for this topic.

17.2 Accident and Disaster Categories

- 17.2.1 Within the Study Area, the potential major accidents and disaster groups and categories considered are listed in **Table 17-2**. Major accident and disaster events are then derived from each of the categories

Table 17-2: Major Accidents and Disaster Groups and Categories

Group	Categories
Natural	Hydrological
	Climatological and meteorological
	Biological
Technological or Manmade hazards	Transport accidents
	Pollution accidents
	Utility failures
	Engineering accidents and failures
	Human error/management failure
	Design error

17.3 Potential Impacts

Assessment method

- 17.3.1 There is no specific guidance on the assessment of the potential for major accidents or disasters for infrastructure projects. A precautionary approach for the purposes of this assessment has been adopted, which involves establishing the baseline, screening the risk of potential accidents and disasters that may give rise to likely significant effects, followed by further assessment of the risk, mitigation, and residual risk.
- 17.3.2 The assessment has also taken into account of the emerging EIA good practice, including guidance by IEMA on major accidents and disasters in EIA (Ref 16.4) in addition to other useful documents which relate to the assessment of Risk:
- The International Standards Organisation's ISO 31000:2018 Risk Management – principles and guidelines (Ref 16.5).
 - Defra (2011) 'Guidelines for Environmental Risk Assessment and Management (Ref 15.6).

Construction Impacts

- 17.3.3 Baseline conditions were reviewed to identify existing facilities, natural features or potential hazards which may lead to events associated with potential major accident or disasters in combination with the Proposed Development.
- 17.3.4 The risks of potential major accidents and disasters were then screened to identify events requiring further consideration and those which may be scoped out as no likely significant effect is anticipated. The screening was broadly based on accepted technical risk assessment methods and the source – pathway – receptor model to identify:
- Sources (potential hazards which may be associated with a major accident or disaster).
 - Pathway (for transmission of the potential hazard to the receptor).
 - Receptors which may potentially be exposed to potential hazards (source).
- 17.3.5 For risks of potential major accidents and disasters to be screened for further assessment all three components of the source – pathway – receptor model needs to be present to identify the events which may result in likely significant effects. The review also considered what barriers or embedded mitigation are in place to prevent the source – pathway – receptor event from occurring.
- 17.3.6 The assessment defines whether the potential event may comprise a potential major accident or disaster in accordance with the definitions presented in **Table 17-3**: Definition of the terms major accident and natural disaster below.

Table 17-3: Definition of the terms major accident and natural disaster

Term	Definition
Major accident	The definition of a 'major accident' used in this assessment draws on the Control of Major Accident Hazards Regulations 2015 (COMAH 2015). These Regulations define a "major accident" as an occurrence such as a major emission, fire, or explosion resulting from uncontrolled developments during the operation of any establishment and has the potential to lead to serious danger to human health or the environment (whether immediate or delayed) inside or outside the establishment and involving one or more dangerous substances. The terms which define a major accident are as follows: • Injury to persons and damage to property – a death; six persons injured within the establishment and hospitalised for at least 24 hours; one person outside the establishment hospitalised for at least 24 hours; a dwelling outside the establishment damaged and unusable as a result of the accident; the evacuation or confinement of persons for more than two hours where the value (persons hours) is at least 500; or the interruption of drinking water,

Term	Definition
	electricity, gas or telephone services for more than two hours where the value (persons hours) is at least 1,000). • Immediate damage to the environment – permanent or long-term damage to terrestrial habitats of 0.5 ha or more of a habitat of environmental or conservation importance protected by legislation, or 10 ha or more of more widespread habitat, including agricultural land; significant or long-term damage to freshwater and marine habitats (10 km or more of river or canal; 1 ha or more of a lake or pond; 2 ha or more of delta; or 2 ha or more of a coastline or open sea; or significant damage to an aquifer or underground water: 1 ha or more). • Damage to property: damage to property in the establishment, to the value of at least EUR 2,000,000 (approximately £1,712,450); or damage to property outside the establishment, to the value of at least EUR 500,000 (approximately £431,150).
Natural disaster	A naturally occurring event such as extreme weather (storm, flooding) or a ground related potential hazard event (subsidence, landslide, or earthquake) with the potential to cause an event or situation that meets the definition of major accident: Immediate damage to the environment: • Permanent or long-term damage to; • Terrestrial habitats of 0.5 ha, or • more than 0.5 ha of a habitat of environmental or conservation importance protected by legislation, or • 10 ha or more of more widespread habitat, including agricultural land. • Significant or long-term damage to freshwater and marine habitats • 10 km or more of river or canal; • 1 ha or more of a lake or pond; • 2 ha or more of delta; or • 2 ha or more of a coastline or open sea; or • Significant damage to an aquifer or underground water: 1 ha or more).

Operational Impacts

- 17.3.7 The basis of the operational major accidents assessment will be the same as described in the construction impacts section above.

17.4 Assessment

- 17.4.1 In general, major accident and disaster events, as they relate to the Proposed Development, will fall into three categories:

- Events that could not realistically occur, due to the type of development or its location.
- Events that could realistically occur, but for which the Proposed Development, and associated receptors, are no more vulnerable than any other development.
- Events that could occur, and to which the Proposed Development is particularly vulnerable, or which the Proposed Development has a particular capacity to exacerbate.

17.4.2 The above three groups of major events have been reviewed and, the assessment of the potential risks is presented Appendix E.

17.5 Summary

17.5.1 Based on the assessment presented in **Appendix E**, there is no likelihood of impacts from potential major accidents when the industry standard mitigation is implemented. Therefore, this topic has been scoped out of the assessment.

Table 17-4: Summary of the scope of the EIA for Major Accidents

Element	Likely significant effect	Rationale	Scoped in/out	
			Construction	Operation
Transport accidents	Major road traffic accident involving construction plant or vehicles	- HGVs will transport materials and waste along designated haulage routes suitable for such vehicles will be outlined in the ES. - Construction traffic movements controlled as part of the Construction Traffic Management Plan. - A Mobility Management Plan will be developed as part of the CTMP to address all modes of transport and travel required to deliver the project during the construction phase. This will include details regarding construction workers travelling to site, car-parking, haulage routes and construction compounds to reduce potential effects (incl. traffic accidents) caused due to construction traffic and residential neighbourhoods. - All accesses to the worksite and the compounds will be signposted, and anyone outside the work will be prohibited, installing the necessary perimeter fences and the necessary warning signs. - The necessary traffic signs will be placed outside the work to warn pedestrian and vehicle traffic of the risks involved in the work. - All HGV drivers will be provided with appropriate safety awareness training. - There is no vehicle movement related to operation of the Proposed Development. No likely significant effect is anticipated.	Out	Out
Transport accidents	Train derailment/collision	The design and environmental management meet Network Rail standards and comply with health and safety, operational and maintenance requirements. During construction the following will be implemented: - Scheduling of works outside of operational times of rail services and freights i.e., night time works. - Complete possession of rail line when works at, or near the rail line need to be carried out at daytime. - Emergency response plans will be developed by the Contractor. The Proposed Development interface between freight operating companies and logistic service providers will be defined in accordance with Office of Rail Regulation (“ORR”) requirements and standards. Emergency response procedures and plans will be developed and will in all likelihood form an annex to the Facility Management Plan. The ORR will only authorise the interface of the Proposed Development with existing rail infrastructure before it is placed into service, on the basis of an accepted and independently assessed application of the Common Safety Method for Risk Assessment (which must ensure that all risks are mitigated to be ALARP). Without this authorisation, the Proposed Development would not be granted a licence to operate. The bridge structures have been surveyed and works have been identified. The rail horizontal and vertical alignments. No likely significant effect is anticipated.	Out	Out
Human error/management failure	Electric accidents	The Proposed Development may involve works, such as - Installation of OLE. - Construction works at or near live railway line - Installation of electrical equipment of buildings. The following measures will be implemented:	Out	Out

Element	Likely significant	Rationale	Scoped in/out	
		- Appropriate training will be provided to the workers for installing OLE. - Method statements for works in proximity of the OLE and the live rail line will be developed by the Contractor. They will meet Network Rail standards and comply with health and safety requirements and will be implemented by the Contractor to control the risks. Network Rail has Home Safe Plan, a structured approach to safety during Construction and Operation of the Proposed Development to ensure all staff and supply chain are working in a safe environment. All staff will work in compliance with Network Rail standards and will comply with health and safety, operational and maintenance requirements. No likely significant effect is anticipated.		
Utility failures	Impact on critical infrastructure that may have impact on overground and underground utilities.	During Construction of the Proposed Development, - The Contractor will undertake thorough check to confirm the location of any overground and underground utilities near to where construction works will be carried out. - If deemed necessary, the Contractor will liaise with relevant utility providers to arrange utility diversion in advance of the construction works. - Method statements and an emergency response plan will be developed by the Contractor and implemented to control the risks. - Any utility diversion will comply to relevant code of practice established for individual utility infrastructure. Mitigation by design achieves an acceptable level and will not lead to MADs. Operation of the Proposed Development will be within Network Rail ownership boundary. No impact on critical infrastructure is anticipated.	Out	Out
Engineering accidents and failures	Collapse/ Damage to existing structure during construction due to works such as structure strengthening, vibratory activities (e.g. piling), demolition of existing structures.	During Construction of the Proposed Development, - Method statements and an emergency response plan for works in proximity to the buildings and structures will be developed and implemented by the Contractor to control the risks. - The works will follow relevant design and materials standards. - Groundwater extraction will be required prior to construction works. Continuous monitoring of groundwater levels, earthworks. Pump tests will be carried out prior to pumping of the groundwater. - Stakeholder consultations with owners of sensitive structures / buildings. - Monitoring of existing historic / sensitive structures during construction to ensure their stability and durability. - Where appropriate, sensitive structures at risk from construction works will be protected. - A CEMP and an emergency response plan will be prepared to manage the risk of collapse / damage to structures. - Mitigation measures in relation to vibration identified in the ES Chapter on Noise and Vibration will be adhered to. Operation of the Proposed Development there is no activities that would cause any damage to or have any impact on the existing structure.	Out	Out
Pollution accidents	Release of asbestos during demolition of building/structures which may be	Prior to Construction of the Proposed Development, - Detailed asbestos survey by qualified asbestos specialist prior to any construction will be carried out to assess the potential presence of asbestos in the surroundings of the Site. - In buildings where traces of asbestos are found, a remedial strategy will be developed by the Contractor prior to any construction and demolition works.	Out	Out

Element	Likely significant	Rationale	Scoped in/out	
	contaminated with asbestos.	Removal of asbestos, if deemed necessary, must be carried out by qualified asbestos professionals. Mitigation by design achieves an acceptable level and will not lead to MADs. Operation of the Proposed Development will not involve any activities that will lead to release of asbestos.		
Human error/management failure	Fire/explosion caused by fire accidents due to electrical accidents, or construction works requiring hot work e.g., cutting, welding, soldering. Platform fire during Operation.	During Construction of the Proposed Development, all construction compounds and construction sites will have appropriate fencing. The risk is managed through the CEMP and emergency response plan. All personnel engaged in hot working must comply with the required controls defined in the Safe System of Work / Permit to Work and co-operate with management by undertaking appropriate instruction and training. All construction compounds and construction sites will have 24/7 security. Explosive materials will not be stored on construction site /compounds overnight. Network Rail has Home Safe Plan, a structured approach to safety during Construction and Operation of the Proposed Development to ensure all staff and supply chain are working in a safe environment. All staff will work in compliance with Network Rail standards and will comply with health and safety, operational and maintenance requirements. The Station and platforms will be operated and maintained in accordance with the MORS Operations & Maintenance Plan. A Fire Strategy will be developed and implemented during Operation of the Station. No likely significant effect is anticipated.	Out	Out
Engineering accidents and failures	Platform failure	The design of the platforms complies with guidelines/standards and are approved by Network Rail. No likely significant effect is anticipated.	Out	Out
Engineering accidents and failures	Tower crane collapse during construction	The design, installation, operation and maintenance of the tower crane must adhere to relevant design standard and comply with relevant Statutory requirements. - A safe system of work or a Lifting Plan will be developed and implemented by the Contractor for all lifting operations. - Only a competent and adequately trained personnel is involved in a lifting operation. - An emergency response plan will also be developed and implemented by the Contractor to ensure immediate remedial actions will be undertaken should there any incident (such as tower crane collapse) happen. Tower crane operation is not required for the Operation of the Proposed Development.	Out	Out
Engineering accidents and failures	Works near surface water or groundwater emergence during construction that may lead to death or injury to workers and /or the general public, or release of large quantities of water within construction site.	Mitigation by design below will be adopted to achieve an acceptable risk level: - Preliminary assessments of the geotechnical risks associated with the Proposed Development will be developed further as the design evolves, aiding the identification of items for investigations and design mitigation. - Further geophysical survey and ground investigation will be undertaken by the Contractor prior to construction works. Operation of the Proposed Development will be within Network Rail ownership boundary. No activities will be carried out near surface water.	Out	Out

Element	Likely significant	Rationale	Scoped in/out	
Pollution accidents	Contamination of surface water and groundwater Spillage or long-term seepage of pollutants into a watercourse	Contamination of surface water and groundwater occur during Construction of the Proposed Development may be caused by: • An uncontrolled breach of the waterbody (River Madlock) during construction. • The excavations for associated drainage, and below ground utilities during construction could be vulnerable to groundwater inundation and flooding • accidental spillage or removal of hazardous materials or materials such as ballast that might be contaminated. By implementing the following mitigation an acceptable risk level can be achieved: • Network Rail procedures for the removal of non-hazardous and potentially hazardous waste and contaminated material. • Temporary storage of ballast on the construction site is expected to be exempt from Environment Agency permitting. • Temporary storage would require management, including pre- and post-ground analysis, basal and covering layers and control of runoff. • Removal of ballast to one of Network Rail's central processing centres for treatment, recycling and reuse, or disposal. • All temporary construction sites would have been cleaned up and restored to their previous use. Construction Environmental Management Plan (CEMP) will be prepared during the ES. The precautionary measures and remedial actions for pollution accidents will be specified in the CEMP for implementation during construction to prevent adverse impacts (such as water pollution) of on habitats and watercourses. Method statements for excavation works will be developed and implemented to control the risks. Operation of the Proposed Development will be within Network Rail ownership boundary. No activities will be carried out near surface water. Network Rail procedures for the removal of non-hazardous and potentially hazardous waste and contaminated material will be followed.	Out	Out
Climatological and Meteorological	Flood risk	The Station is within a Flood Zone 2 area (medium probability of flooding) and in proximity to a Flood Zone 3 area (high probability of flooding) associated with the River Medlock. • Weather events leading to flooding such as heavy / prolonged rainfall / tidal event. • Prolonged heavy rain / flooding directly over construction sites. • Prolonged heavy rain resulting in breach of embankments in nearby waterbodies. • Extreme / prolonged rainfall events causing sediment runoff during construction. A Flood Risk Assessment will be undertaken to inform the ES and the design. A Flood Management Plan for the construction phase. • The use of the construction compounds will be agreed with the EA through permitting. With the implementation of a Flood Risk Assessment to inform the design, and a Flood Management Plan, no likely significant effect is anticipated.	Out	Out
Biological	Animal and Plant Disease	• Preliminary Ecological Appraisal has confirmed that there is INNPS within the Study Area. An INNPS management plan will be prepared to control the spread of the INNPS during Construction of the Proposed Development. • According to Defra, The risk of highly pathogenic avian influenza (HPAI) H5 in wild birds in Great Britain is assessed as low (event is rare but does occur). In case dead wild birds are found, the Contractor will report to Defra through their guidance (Ref. 18-1) ⁶.	Out	Out

⁶ Defra Guidance on how to report dead wild birds [Report dead wild birds - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/614442/Report-dead-wild-birds-2018.pdf).



Element	Likely significant	Rationale	Scoped in/out	
		With the implementation of the above mitigation it is anticipated that the risk will at an acceptable level and will not lead to MADs. Operation of the Proposed Development will be within Network Rail ownership boundary. No INNPS is within the boundary. In case dead wild birds are found, the staff will report to Defra through their guidance ⁷ .		

⁷ Defra Guidance on how to report dead wild birds [Report dead wild birds - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/guidance/report-dead-wild-birds).

18. CUMULATIVE AND COMBINED EFFECTS

18.1 Introduction

18.1.1 This section addresses the scope of the EIA with respect to cumulative and combined effects. Cumulative and combined effects occur when incremental environmental, social or economic effects caused by past, present and reasonably foreseeable future activities combine or interact in a location or within a timeframe to create additional impacts. Cumulative and combined effects have the potential to occur during both construction and operation of a development.

18.1.2 The cumulative and combined effects are two different types of effects, and are described in further detail below:

- The cumulative effect of individual impacts from the Proposed Development, for example where a local resident receptor is affected by both noise and traffic disruption during the construction and/or operation of the Proposed Development.
- The combined effects of other developments which may, on an individual basis be insignificant but, cumulatively with the Proposed Development, have a new or different likely significant effect.

18.2 Cumulative Effects

18.2.1 This section will focus on the scope of potential cumulative effects that could arise from the construction and operation of the Proposed Development.

Legal and Policy Framework

18.2.2 Part 1, Paragraph 4, (2) (a-e) of the EIA Regulations notes the following in relation to cumulative effects:

‘The EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors –

Population and human health;

Biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC(a) and Directive 2009/147/EC(b);

land, soil, water, air and climate;

material assets, cultural heritage and the landscape;

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

Potential Impacts

18.2.3 **Table 18-1** presents the receptors identified in the technical chapters of this Report as having the potential to be cumulatively affected by the Proposed Development. The receptors only include those that are likely to experience potential residual significant effects from more than one technical topic.

Table 18-1: Environmental receptors with the potential to be cumulatively affected by the Proposed Development

Receptor	Air Quality	Noise and Vibration	Materials and Waste	Cultural Heritage	Townscape and Visual	Transport and Access	Water – Hydrology and Surface Water	Ecology, Nature Conservation and Biodiversity	Climate Change	Social Economic	Major Accidents
Local residents	X	X			X	X	X		X	X	X
Heritage assets				X							
Community assets including amenity and severance						X				X	
Landscape					X						

18.2.4 There is the potential for residual, cumulative effects from the following:

- Impacts to local residents, community assets and severance: through increased levels of dust, increased road traffic emissions, reduced road safety, impacts to townscape and visual, impacts to water quality, impacts to the use of PRow and local amenities, and severance of communities.

18.2.5 These potential significant residual combined effects will be reviewed and updated in the ES.

Proposed Assessment Methodology

18.2.6 There is no established EIA methodology for assessing and quantifying the effects of a number of individual impacts on the same sensitive receptor.

18.2.7 The assessment methodology will be based on previous experience and professional judgement and will involve a two staged approach.

Stage 1 – Screening

18.2.8 Screening of all receptors within each technical chapter will be undertaken to determine whether a sensitive receptor is exposed to more than one type of residual effect during the construction and operational stages of the Proposed Development.

18.2.9 Residual effects of negligible significance in the technical chapters have not been considered in the screening stage. Common sensitive receptors exposed to two or more types of residual effects with a significant of minor, moderate or major have been taken forward into stage 2 of the assessment

Stage 2 - Assessment

18.2.10 A qualitative assessment of the overall significance of the cumulative effects on common receptors identified at the stage 1 will be undertaken based on information provided in the technical chapters of the ES and supporting appendices, as well as professional judgement. This assessment will identify the cumulative residual effect upon the identified receptor.

Assumptions

18.2.11 The outcome of this assessment assumes the information and conclusions provided within the technical chapters is correct.

18.3 Combined Effects

18.3.1 This section will focus on the scope of potential combined effects that could arise from the construction and operation of the Proposed Development and other relevant developments.

Legal and Policy Framework

18.3.2 In addition, Schedule 4, Paragraph 5(e) of the EIA Regulations states that the ES should include a description of the likely significant effects of the development on the environment resulting from:

‘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.’

Baseline

18.3.3 The baseline data search has identified developments available at the scoping stage of the EIA. The list will be further refined and updated during the later stages of the EIA. The baseline consists of the following:

- Data collected within this scoping report as part of the environmental topic sections;
- Information collated from the MCC planning portal Ref 18.1(Ref 18.1) and Salford City planning portal Ref 18.1(Ref 18.2) about other third party planning applications; and
- Information from MCC.

18.3.4 A search of committed developments within 1 km of the Proposed Development was performed through a review of the MCC planning portal and Salford City planning portal in October 2024, as well as other sources including local plans (**Appendix G**). For the purposes of this assessment, a committed development is defined as those developments meeting one or more of the following criteria:

- Has obtained planning permission within the last 2 years and is currently under construction.
- Has obtained planning permissions within the last 5 years, but construction has yet to commence.
- Is subject to a planning application which has been submitted within the last 2 years, but has not yet been determined.
- Is identified as a local plan commitment.

18.3.5 The following types of planning applications have not been considered in the cumulative assessment:

- Change of use.
- Non-material amendments or variation/discharge of conditions.
- Applications for illuminated signs.

Potential Impacts

18.3.6 There is the potential for various environmental impacts construction, which could result in combined effects. The identification of these combined effects will be informed by the EIA and within the ES and are scoped in for further assessment.

18.3.7 There is also the potential for combined effects during operation.

Proposed Assessment Methodology

18.3.8 For the assessment of the combined effects a four-stage approach will be adopted based on the guidance set out in the Planning Inspectorate's advice on cumulative effects assessment (Ref 18.3). The stages used were as follows:

Stage 1: Long List

- 18.3.9 The Zone of Influence for the Proposed Development will be established and a long-list of 'other existing developments and/or development applications' will be collated.

Stage 2: Short List

- 18.3.10 A short-list of 'other existing developments and/or development applications' will be identified by applying inclusion or exclusion criteria to the Stage 1 list.

Stage 3: Information Gathering

- 18.3.11 Information on the short-listed developments will be compiled to inform Stage 4, this will include:

- The design and location;
- Programme of construction and operation; and
- Any available EIA information.

Stage 4: Assessment

- 18.3.12 The combined effects of the Proposed Development with the other development identified in Stages 1 to 3 of the process will be assessed.

18.4 Assumptions

- 18.4.1 The assessments will be based on the best available data from other proposed and committed developments and associated information which is currently in the public domain or has been provided to the Proposed Development. The assessment will assume that publicly available information is accurate; the assessment is also reliant on collaboration with a range of statutory consultees, neighbouring authorities and other developers to identify changes in information which may be pertinent to the assessment.

18.5 Summary

- 18.5.1 There is the potential for cumulative and combined effects on sensitive receptors near the Proposed Development. The following table provides a summary of the scope for cumulative and combined effects assessments in the EIA of the Proposed Development.

Table 18-2: Summary of the scope for cumulative and combined effects assessment

Element	Likely significant effect	Justification	Scoped in/out	
			Construction	Operation
Cumulative	Potential	There is potential for cumulative effects to occur between different environmental topics within the Proposed Development, as a result of the Proposed Developments direct effects. The identification of these cumulative effects will be informed by the EIA within the ES.	In	In
Combined	Potential	There is the potential for combined effects as a result of the Proposed Development interacting with other developments. The identification of the combined effects will be informed by the EIA within the ES.	In	In

19. SUMMARY

19.1 Scoping Results

19.1.1 **Table 19-1** presents the summary of the Scoping Results by topic.

Table 19-1: Summary of Scoping Results by Topic

Topic	Element	Scoped in/out	
		Construction	Operation
Air Quality	Site equipment and plant emissions during Construction	Out	Out
	Dust	In	Out
	Road traffic emissions	In	Out
	Rail Emissions	Out	Out
Noise and Vibration	Vibration – People & Buildings	In	Out
	Airborne Noise	In	In
	Ground-borne Noise	Out	Out
	Traffic Noise	In	Out
	Industrial noise	Out	In
	Tranquil areas	Out	Out
Material and Waste	Materials	Out	Out
	Waste	Out	Out
Cultural Heritage	Archaeological Remains	In	Out
	Historic Buildings	In	In
	Historic Landscape	Out	Out
Townscape and Visual	Townscape/ Landscape character - National Character Area (NCA)	Out	Out
	Townscape/ Landscape character - Strategic Character Areas	In	In

Topic	Element	Scoped in/out	
	Townscape/ Landscape character - National Cycle Network	In	In
	Visual amenity – Residents, Employees, Students, Vehicle travellers, Rail travellers, Users of local Public Right of Ways, Identified visual receptors at viewpoint, Theatre goers, Tourists experiencing elevated views from hotel accommodation.	In	In
	Users of Public Open Space	In	Out
	Users of the Rochdale Canal & Towpath	In	Out
Transport and Access	Construction / Operational Traffic	In	In
	Severance	In	In
	NMU Amenity	In	Out
	Driver Delay	In	In
	Fear and Intimidation	In	In
	Road Safety	In	In
Water – Hydrology and Surface Water	Water quality – surface water features	Out	Out
	Water quality – groundwater features	Out	Out
	Flood Risk – Fluvial	In	Out
	Flood Risk – Surface Water	In	In
	Flood Risk - Groundwater	In	Out
	Flood Risk – Canal Breach	Out	Out
	Flood Risk – Reservoirs	Out	Out
	Flood Risk - sewers	In	In
Ecology, Nature Conservation	Statutory and non-statutory designated sites	Out	Out

Topic	Element	Scoped in/out	
and Biodiversity	Habitats	In	Out
	Badger	Out	Out
	Bats	In	Out
	Breeding Birds	In	Out
	Black redstart	In	Out
	Great crested newt and other notable amphibians	Out	Out
	Fish	In	Out
	Otter	In	Out
	Water vole	Out	Out
	INNSP	In	Out
Climate Change	Lifecycle Green House Gas	Out	Out
	Climate Change Impact	Out	Out
Socio-Economic	Generation of employment, training and apprenticeship opportunities	In	In
	Land use and displacement	In	Out
	Amenity impacts	In	In
	Severance impacts	In	In
Human Health	Access to healthcare and other social infrastructure services.	In	In
	Access to open space, PRow, recreational facilities and opportunities for physical activity and active travel.	In	Out
	Road and route safety.	In	Out

Topic	Element	Scoped in/out	
	Provision of economic opportunities and resources that protect and promote good health.	In	In
	Air Quality	In	In
	Noise and vibration	In	In
	Townscape and visual amenity	In	In
	Flood risk, drainage, and surface water	In	In
	Community identity and social participation	In	Out
Major Accidents and Disasters	Transport accidents	Out	Out
	Human error/management failure	Out	Out
	Utility failures	Out	Out
	Engineering accidents and failures	Out	Out
	Pollution accidents	Out	Out
	Climatological and Meteorological	Out	Out
	Biological	Out	Out
Cumulative and Combined Effects	Cumulative Effects	In	In
	Combined Effects	In	In

REFERENCES

Introduction

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Description of the Proposed Development

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LIST OF ABBREVIATIONS

Abbreviation	Definition
AADT	Annual Average Daily Traffic
AADT	Average Annual Daily Traffic
ADMS	Atmospheric Dispersion Modelling System
AEP	Annual Exceedance Probability
ALARP	As low as reasonably possible
AONB	Area of Outstanding Natural beauty
AQAL	Air Quality Assessment Level
AQMA	Air Quality Management Areas
AQS	Air Quality Strategy
ATCs	Automatic Traffic Counts
BAP	Biodiversity Action Plans
CBDP	Carbon Budget Delivery Plan
CCC	Climate Change Committee
CCRA	Climate change risk assessment
CDM	Construction (Design and Management) Regulations
CEMP	Construction Environmental Management Plan
CH ₄	Methane
CIEEM	Chartered Institute of Ecology and Environmental Management
CIFA	Chartered Institute for Archaeologists
CIPD	Chartered Institute of Personnel and Development
CL:AiRE	Contaminated Land: Applications in Real Environments
CO ₂ e	Carbon Dioxide Equivalent
COMAH	Control of Major Accident Hazards
CoPA	Control of Pollution Act
CRN	Calculation of Railway Noise
CTMP	Construction Traffic Management Plan.
dB	Decibel(s)
DEFRA	Department for Environment, Food and Rural Affairs
DESNZ	Department for Energy Security and Net Zero
DfT	Department for Transport

Abbreviation	Definition
DMRB	Design Manual for Roads and Bridges
DoWCoP	Definition of Waste: Code of Practice
DTM	Digital Terrain Model
E Waste FD	European Waste Framework Directive
EA	Environment Agency
EcIA	Ecological Impact Assessment Guidelines
EIA	Environmental Impact Assessment
EMFs	Electromagnetic Fields
EPUK	Environmental Protection UK
ES	Environmental Statement
EU	European Union
EWC	European Waste Catalogue
FRA	Flood Risk Assessment
FRAP	Flood Risk Activity Permit
FTE	Full-time Equivalent
GB	Great Britain
GCMA	Greater Manchester Combined Authority
GHG	Greenhouse Gas
GLVIA	Guidelines for Landscape and Visual Impact Assessment
GMBAP	Greater Manchester Biodiversity Action Plan
GPDO	General Permitted Development Order 2015
GVA	Generation of Gross value Added
HASWA	Health and Safety at Work Act 1974
HER	Historic Environment Record
HFCs	Hydro fluorocarbons
HGV(s)	Heavy Goods Vehicle
HIA	Rapid Health Assessment
HPAI	Highly Pathogenic Avian Influenza
HPE	Higher Education Precinct
HUDU	NHS Healthy Urban Development Unit
IAQM	Institute of Air Quality Management
ICCI	In-combination climate change impact

Abbreviation	Definition
ICE	Inventory of Carbon and Energy
IEMA	Institute for Environmental Management and Assessment
IMD	Indices of Multiple Deprivation
INNPS	Invasive Non-Native Plant Species
IRR	Internal Rate of Return
ISO	International Organisation for Standardization
km	Kilo Metre(s)
LAeq	A-weighted, equivalent continuous sound level
LAeq,T	A-weighted, equivalent continuous sound level measured over Period of Time
LCA	Landscape Character Areas
LCT	Landscape Character Types
LDV	Light-Duty Vehicle
LNR	Local Nature Reserves
LOAEL	Lowest observable adverse effect level
LPA	Local Planning Authority
LSOA	Lower Super Output Areas
LSOAs	Lower Level Super Output Areas
m	Metre
m ³	Cubic metre(s)
MADs	Major Accidents or Disasters
MCC	Manchester City Council
MHCLG	Ministry of Housing, Communities and Local Government
MORS	Manchester Oxford Road Station
MPA	Mineral Products Association
MSAs	Presence of Mineral Safeguarding Areas
MtCO ₂ e	Million Metric Tons of Carbon Dioxide Equivalent
N ₂ O	Nitrous oxide
NCA	National Character Areas
NCN	National Cycle Network
NF ₃	Nitrogen trifluoride
NHLE	The National Heritage List for England

Abbreviation	Definition
NHS	The National health Service
NIA	Noise Important Areas
NIR	The Noise Insulation Regulations
NMU	Non-Motorised User
NO ₂	Nitrogen Oxide
NPPF	National Planning Policy Framework
NPSE	Noise Policy Statement for England
NPSE	Noise Policy Statement for England
NR/L2/ENV/015	Network Rail standard 'Environment & Social Minimum Requirements – Design & Construction'
OHID	Office for Health Improvement & Disparities
OLE	Overhead Line equipment
ONS	Office for National Statistics
ORR	Office of Rail Regulation
OS	Ordnance Survey
PBDE	Polybrominated diphenyl ethers
PCB	Polychlorinated Biphenyl
PFCs	Perfluorocarbons
PFOS	Perfluorooctane sulphonate
PHE	Public Health England
PIA	Personal Injury Accident
PM ₁₀	Particulate Matter 10
PM _{2.5}	Particulate Matter 2.5
PPG	Planning Practice Guidance
PPG-N	the Planning Practice Guidance – Noise
PPV	Peak Particle Velocity
PRoW	Public Rights of Way
pSACs	Potential Special areas of Conservation
pSPAs	Potential Special areas of Conservation
RCP	Representative Concentration Pathway
RLB	Red Line Boundary
RRAP	Road rail-road access point

Abbreviation	Definition
RSSB	Rail Safety and Standards Board's
SACs	Special Areas of Conservation
SBI	Site of Biological Importance
SF ₆	Sulphur Hexafluoride
SFRA	Strategic Flood Risk Assessment
SLA	Special landscape Areas
SOAEL	Significant observable adverse effect level
SPAs	Special Protection Areas
SRN	Strategic Road Network
SSSI	Sites of Special Scientific Interest
SWMP	Site Waste Management Plan
t/m ³	Metric Ton per cubic metre(s)
TAG	Transport Analysis Guidance
TAG	Transport Assessment
TC1	Tower Crane 1
TPOs	Tree Preservation Orders
TVIA	Townscape and Visual Impact Assessment
TWAO	Transport and Works Act Order
UK	United Kingdom
UKCP18	UK Climate Projections 2018
UNFCCC	United Nations Framework Convention on Climate Change
VDVs	vibration dosage value
WFD	Water Framework Directive
WHO	World Health Organisation
WPAs	Waste Planning Authorities
WRAP	Waste Resources Action Plan's
WRCCA	Weather Resilience and Climate Change Adaptation
ZoI	Zone of Influence
ZTE	Zone of Theoretical Visibility

APPENDICES

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APPENDIX A. FIGURES

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Figure 2 - Site Plan

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Figure 2b – Operation Notes

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Figure 14 – Notable and Protected Habitats

APPENDIX B. AIR QUALITY MONITORING DATA

Table B-1: Greater Manchester NO₂ monitoring within 1 km of the Site

Name	Distance (m) / Direction	Monitor	Site Type	X	Y	Annual Mean NO ₂ Concentration (µg/m ³)				
						2019	2020	2021	2022	2023
29A	20 / E	Diffusion tube	Roadside	384119	397503	55	39	45	50	50
Manchester Oxford Rd	210 / SE	Continuous	Kerbside	384233	397287	59	36	44	43	41
82, 83 and 84	220 / SE	Diffusion tube	Roadside	384239	397276	52	34	41	43	41
77	250 / W	Diffusion tube	Urban Background	383576	397489	44	27	31	33	32
72	450 / E	Diffusion tube	Urban Background	384761	397384	33	25	28	26	24
24	500 / N	Diffusion tube	Kerbside	383968	398070	41	27	32	32	30
112B	720 / S	Diffusion tube	Roadside	383987	396734	-	-	21	23	20
Manchester Piccadilly	810 / NE	Continuous	Urban Centre	384310	398337	36	27	30	29	27
59, 60 and 61	810 / NE	Diffusion tube	Urban Background	384310	398337	32	22	25	25	24
9A	910 / NE	Diffusion tube	Kerbside	384601	398303	45	33	36	38	36
96B	920 / E	Diffusion tube	Roadside	385189	397167	46	36	41	44	40
97B	930 / W	Diffusion tube	Roadside	382886	397215	32	23	28	28	27
113B	990 / SE	Diffusion tube	Roadside	385087	396891	-	-	28	29	28

Notes: Exceedances of the annual mean criterion of 40 µg/m³ are shown in **bold**.

Table B-2: Greater Manchester PM₁₀ monitoring within 1 km of the Site

ID	Site Name	Site Type	X	Y	Valid Date Capture 2022 (%)	Annual Mean PM ₁₀ Concentration (µg/m ³)				
						2019	2020	2021	2022	2023
MAN1	Manchester Oxford Rd	Kerbside	384233	397287	96.42	26	18	18	18	18
MAN3	Manchester Piccadilly	Urban Centre	384310	398337	82.6	20	15	15	17	15

Notes: Exceedances of the annual mean criterion of 40 µg/m³ are shown in bold.

Table B-3: Greater Manchester 24-Hour Mean PM₁₀ Monitoring Results within 1 km of the Site, Number of PM₁₀ 24-Hour Means > 50µg/m³

ID	Site Name	Site Type	X	Y	Valid Date Capture 2022 (%)	Number of PM ₁₀ 24-Hour Means > 50µg/m ³				
						2019	2020	2021	2022	2023
MAN1	Manchester Oxford Rd	Kerbside	384233	397287	96.42	18	5	2	8	4
MAN3	Manchester Piccadilly	Urban Centre	384310	398337	82.6	7	1	2	4	1

Notes: Exceedances of the annual mean criterion of 35 days exceeding the 24-hour PM₁₀ standard (50 µg/m³) per year are shown in bold.

Table B-4: Greater Manchester PM_{2.5} monitoring within 1 km of the Site

ID	Site Name	Site Type	X	Y	Valid Date Capture 2022 (%)	Number of PM ₁₀ 24-Hour Means > 50µg/m ³				
						2019	2020	2021	2022	2023
MAN3	Manchester Piccadilly	Urban Centre	384310	398337	82.6	12	8	9	10	9

Notes: Exceedances of the annual mean criterion of 20 µg/m³ are shown in bold.

Table B-5: Defra Mapped Background Pollutant Concentrations

Grid Square	Pollutant	2023 Annual Mean Concentration (µg/m³)
383500, 397500	NO2	21.3
	PM10	12.7
	PM2.5	8.1
384500, 397500	NO2	23.1
	PM10	13.6
	PM2.5	8.6

APPENDIX C. HISTORIC ENVIRONMENT BASELINE

Table C-1: Nationally Designated Heritage Assets Within 200 m of the Proposed Development

NHLE Number	Asset Name/Description	Designation	Approx. Distance and direction from the Site (m)
1255053	Manchester Oxford Road Station (Including Platform Structures)	Grade II Listed Building	Within the Site
1376146	Deansgate Station	Grade II Listed Building	Within the Site
1200837	Manchester South Junction and Altrincham Railway Viaduct	Grade II Listed Building	Within the Site
1218253	Granby House	Grade II Listed Building	0 m to the north
1200838	Orient House	Grade II Listed Building	0 m to the north
1293175	Lass O Gowrie Public House	Grade II Listed Building	0 m to the south
1254888	The Ritz Dance Hall	Grade II Listed Building	0 m to the north
1282998	Former Cotton Mill on West Side of Junction with Cambridge Street	Grade II Listed Building	0 m to the south
1283003	Pair of Culvert Arches Over River Medlock and Associated Overflow Channel	Grade II Listed Building	15 m to the south-east
1270897	Manchester House	Grade II Listed Building	17 m to the north-east
1292311	Former Congregational Chapel	Grade II Listed Building	19 m to the west
1247596	Rochdale Canal Lock Number 89 (TIB Lock), on South Side of Havelock Mills	Grade II Listed Building	22 m to the north
1197776	Mill on North East Corner of Junction with Chester Street	Grade II Listed Building	24 m to the east
1197775	Chorlton Old Mill	Grade II Listed Building	24 m to the south-east

NHLE Number	Asset Name/Description	Designation	Approx. Distance and direction from the Site (m)
1254836	India House (Including Attached Wrought Iron Gateway Linked to Lancaster House)	Grade II* Listed Building	26 m to the north
1271429	Former Refuge Assurance Company Offices	Grade II* Listed Building	27 m to the north
1197774	Chorlton New Mill and Attached Chimney	Grade II Listed Building	28 m to the south-east
1475255	Electricity Junction Box in Castlefield Canal Basin, Manchester	Grade II Listed Building	30 m to the south-west
1218746	Mill Chimney Stack on West Side of Junction with Cambridge Street	Grade II Listed Building	34 m to the south
1400857	Sculptural Wall	Grade II Listed Building	35 m to the south
1247483	Rochdale Canal Lock Number 91 at East End of Gaythorn Tunnel	Grade II Listed Building	35 m to the north
1271227	Palace Theatre	Grade II Listed Building	40 m to the north-east
1247482	Rochdale Canal Lock Number 90, Approximately 30 Metres West of Albion Lodge	Grade II Listed Building	44 m to the north
1247597	Rochdale Canal Lock Keepers Cottage at Lock Number 91, Next to Gaythorn Tunnel	Grade II Listed Building	44 m to the north
1247432	Asia House	Grade II* Listed Building	46 m to the north-east
1254887	Lancaster House	Grade II* Listed Building	54 m to the north-east
1384997	Dancehouse Theatre Including Numbers 6-14	Grade II Listed Building	55 m to the south
1279694	13-17, Albion Street	Grade II Listed Building	55 m to the north
1270857	Rochdale Canal Lock Number 88, to East of Oxford Street	Grade II Listed Building	59 m to the north-east
1475459	Electricity Junction Box in Castlefield Canal Basin, Manchester	Grade II Listed Building	63 m to the south

NHLE Number	Asset Name/Description	Designation	Approx. Distance and direction from the Site (m)
1247068	The Giants Basin	Grade II Listed Building	63 m to the south-east
1271294	Tootal, Broadhurst and Lee Building	Grade II* Listed Building	67 m to the north
1270606	Bridgewater House	Grade II Listed Building	68 m to the north
1254726	Railway Viaduct Linking Bridge over Irwell to Liverpool Station	Grade II Listed Building	68 m to the north
1282975	Boundary Stone on Knott Mill Bridge	Grade II Listed Building	70 m to the south
1291477	Former Liverpool Road Railway Station Masters House	Grade I Listed Building	74 m to the north-east
1219418	Former Commercial House	Grade II Listed Building	76 m to the north-east
1475254	Electricity Junction Box on Castle Street, Manchester	Grade II Listed Building	77 m to the west
1210156	Floodgate on East Side of Knott Mill Bridge	Grade II Listed Building	77 m to the south
1247609	Institute of Science and Technology (University of Manchester)	Grade II Listed Building	83 m to the north
1218358	Lee House	Grade II Listed Building	83 m to the north
1200804	123, Liverpool Road	Grade II Listed Building	83 m to the north
1246959	Bridgewater Canal Basin at Potato Wharf	Grade II Listed Building	89 m to the south-west
1292050	The Britons Protection PH The Britons Protection Public House	Grade II Listed Building	89 m to the north
1001953	Remains of Eastern Wall of the Roman Fort	Scheduled Monument	96 m to the north-west
1246571	St James Building	Grade II Listed Building	98 m to the north
1293058	Peveril of the Peak Public House	Grade II Listed Building	99 m to the north

NHLE Number	Asset Name/Description	Designation	Approx. Distance and direction from the Site (m)
1197918	Police and Fire Station	Grade II* Listed Building	101 m to the north
1270603	Railway Bridge over River Irwell to Former Liverpool Road Station	Grade I Listed Building	110 m to the north-west
1197919	Former Goods Offices to Piccadilly Station	Grade II Listed Building	112 m to the north
1247389	Central House	Grade II Listed Building	112 m to the north
1254835	Regency House with Barclays Bank	Grade II Listed Building	115 m to the north
1283067	Chepstow House	Grade II Listed Building	117 m to the north
1282991	Old Warehouse to North of Former Liverpool Road Railway Station	Grade I Listed Building	117 m to the north
1254829	Railway Viaduct over River Irwell Leading to Lower Byrom Street Warehouse	Grade II Listed Building	118 m to the north-west
1255031	Former Electricity Power Station	Grade II Listed Building	122 m to the north
1293040	Chatham Mill	Grade II Listed Building	128 m to the east
1247608	46, Sackville Street	Grade II Listed Building	132 m to the north
1246286	61, Oxford Street	Grade II Listed Building	133 m to the north
1208597	Canada House	Grade II Listed Building	138 m to the north
1247387	Lionesse House	Grade II Listed Building	145 m to the north
1292315	Castlefield Railway Viaduct From G-Mex to Dawson Street	Grade II Listed Building	147 m to the north-west

NHLE Number	Asset Name/Description	Designation	Approx. Distance and direction from the Site (m)
1247580	Rochdale Canal Lock Number 87, to East of Princess Street, with Cast Iron Footbridge Beside Street	Grade II Listed Building	150 m to the north
1200805	Colonnaded Railway Viaduct at Former Liverpool Road Goods Depot	Grade II Listed Building	151 m to the north
1246958	127-133, Portland Street	Grade II Listed Building	152 m to the north
1283077	3, Brazil Street	Grade II Listed Building	154 m to the north
1283014	Train Shed and Undercroft at Manchester Piccadilly Station	Grade II Listed Building	159 m to the north-east
1270791	42 and 44, Sackville Street	Grade II Listed Building	160 m to the north
1247444	New Union Public House	Grade II Listed Building	170 m to the north
1197791	Dalton Statue in Forecourt of Dalton College	Grade II Listed Building	170 m to the south
1247555	Boundary Wall to Rochdale Canal Between Princess Street and Sackville Street Rochdale Canal Boundary Wall to Canal Street Between Princess Street and Sackville Street	Grade II Listed Building	171 m to the north
1219402	29-41, Liverpool Road	Grade II Listed Building	174 m to the north
1218476	12, Harter Street, 104, Bloom Street	Grade II Listed Building	175 m to the north
1219441	K6 Telephone Kiosk Beside South West Corner of Number 330 Deansgate	Grade II Listed Building	176 m to the north
1270607	The Shena Simon Sixth-Form College	Grade II Listed Building	177 m to the north
1270911	Rhodesia House	Grade II Listed Building	178 m to the north
1200853	Castlefield Information Centre	Grade II Listed Building	183 m to the north

NHLE Number	Asset Name/Description	Designation	Approx. Distance and direction from the Site (m)
1270914	109, Princess Street	Grade II Listed Building	185 m to the north
1067874	Entrance Portal and Lodges to Former White City Greyhound Track	Grade II Listed Building	188 m to the south-west
1197915	Former Market Hall	Grade II Listed Building	197 m to the north
1356520	Trafford Road Bridge	Grade II Listed Building	197 m to the north-west
1270835	51 and 53, Richmond Street	Grade II Listed Building	199 m to the north

APPENDIX D. TOWNSCAPE AND VISUAL

List E-1 Tree Preservation Orders (TPO's) within the Study Area

TPO's north of the Site which are within the Study Area include:

- 18/00441/TPO: The Manchester City Council (Albert Bridge House, Bridge Street) TPO 2018
- 16/00428/TPO: The Manchester City Council (Land Adjacent Overseas House, Quay Street) TPO 2016
- 05/00265/TPO: The Manchester City Council (Chatsworth House, 19 Lever Street) TPO 2005

TPO's south of the Site and within the Study Area include:

- 98/00161/TPO: City of Manchester (Grosvenor Street/Upper Brook Street, Ardwick) TPO 1998 Order 'A'
- 98/00442/TPO: City of Manchester (Grosvenor Street/Upper Brook Street, Ardwick) TPO 1998 Order 'B'
- 07/00312/TPO: The Manchester City Council (Land at Boundary Lane/Booth Street West, Hulme) TPO 2007

List E-2 Additional Conservation Areas

The Study Area encompasses the following Conservation Areas:

- Empress Conservation Area;
- Adelphi and Bexley Square Conservation Area;
- Crescent Conservation Area;
- St John Street Conservation Area;
- Deansgate and Peter Street Conservation Area;
- Albert Square Conservation Area;
- St Peter's Square Conservation Area;
- George Street Conservation Area;
- Flat Iron Conservation Area;
- Parsonage Gardens Conservation Area;
- St Ann's Square Conservation Area;
- Upper King Street Conservation Area;
- Smithfield Conservation Area; and
- Stevenson Square Conservation Area.

APPENDIX E. CLIMATE CHANGE

Table E-1: Climate Change Baseline and Projection Data (Ref 14.28)

Baseline data		Projection (change)			Projected Trend	Climate projection source
Climatic Variable	1981-2010	2020 - 2049	2040 - 2069	2070-2099		
Temperature						
Mean annual maximum daily temperature (°C)	12.72	+0.95 (+0.39 to +1.52)	+1.72 (+0.83 to +2.63)	+3.43 (+1.88 to +5.01)	↑	UKCP18 (RCP8.5)
Mean summer maximum daily temperature (°C)	18.98	+1.13 (+0.29 to +1.96)	+2.08 (+0.78 to +3.42)	+4.41 (+2.04 to +6.83)	↑	UKCP18 (RCP8.5)
Mean winter minimum daily temperature (°C)	6.72	+0.83 (+0.06 to +1.64)	+1.54 (+0.41 to +2.71)	+2.83 (+1.02 to +4.78)	↑	UKCP18 (RCP8.5)
Number of days of air frost per annum	48.40				n/a	Met Office
Highest temperature for baseline period (°C)	19.45 (August)	+1.13 (+0.29 to +1.96)	+2.08 (+0.78 to +3.42)	+4.41 (+2.04 to +6.83)	↑	UKCP18 (RCP8.5)
Lowest temperature for baseline period (°C)	0.96 (February)	+0.83 (+0.06 to +1.64)	+1.54 (+0.41 to +2.71)	+2.83 (+1.02 to +4.78)	↑	UKCP18 (RCP8.5)
Rainfall						
Mean annual rainfall (mm)	93.21	+0.21 (-5.14 to +5.44)	-0.79 (-6.70 to +5.38)	+0.27 (-54.90 to -4.78)	↑↓	UKCP18 (RCP8.5)
Mean summer rainfall (mm)	83.10	-5.11 (-21.56 to +10.58)	-16.18 (-37.36 to +5.26)	-31.34 (-54.90 to -4.78)	↓	UKCP18 (RCP8.5)

*Environmental Impact Assessment – Screening/Scoping Report**Document reference (177127-AEC-ZZ-XX-REP-EEN-000001)*

Mean winter rainfall (mm)	105.80	+1.85 (-5.87 to +10.14)	+6.38 (-3.39 to +17.57)	+13.39 (-1.15 to +31.06)	↑	UKCP18 (RCP8.5)
Wettest month on average (mm)	122.27 (December)	+1.85 (-5.87 to +10.14)	+6.38 (-3.39 to +17.57)	+13.39 (-1.15 to +31.06)	↑	UKCP18 (RCP8.5)
Driest month on average (mm)	83.10	-5.11 (-21.56 to +10.58)	-16.18 (-37.36 to +5.26)	-31.34 (-54.90 to -4.78)	↓	UKCP18 (RCP8.5)
Other						
Extreme Rainfall	The UKCP18 model projects a trend towards wetter winters on average, shown by the gradual increase of mean winter rainfall across the projection period. This trend is stronger under a high GHG emission scenario (i.e., RCP8.5). Extreme rainfall events can cause surface water and or flash flooding to occur proximal to the Proposed Development. However, it is the distribution of rainfall throughout the seasons that will determine flood risk across Greater Manchester.				↑	UKCP18 (RCP8.5)
Droughts	The Met Office has projected a trend towards drier summers on average, with the trend being stronger under a high GHG emission scenario compared to a low one, however, it is the distribution of rainfall throughout the seasons that will determine UK drought risk.				↑	UKCP18 (RCP8.5)
Wildfires	The wildfire hazard is classified as medium according to the information that is currently available to the Think Hazard tool. This means that there is between a 10% and 50% chance of experiencing weather that could support a hazardous wildfire that may poses some risk of life and property loss in any given year.				↑	Think Hazard

List E-1 Recent climate change events in Greater Manchester

- Heavy rain and flooding (September 2024): Heavy rain hit Greater Manchester, leading to an eventual yellow weather warning from the Met Office. The downpours resulted in travel disruptions and flooding in some areas (Ref 14.Ref 14.32).
- Storms and flash flooding (June 2023): A severe storm brought torrential rain and lightning strikes causing flash flooding and significant travel disruptions across Greater Manchester. Roads were flooded, rail services were delayed, and flights from Manchester Airport were diverted (Ref 14.Ref 14.33).
- Storm Ciara (February 2020): Storm Ciara caused widespread travel disruptions and power cuts across Greater Manchester. For example, fallen trees affected tram services, and floods led to road closures and rail service disruptions (Ref 14.Ref 14.34).

APPENDIX F. POTENTIAL RISKS OF MAJOR ACCIDENTS

Major Event Group	Major Event Category	Major Event Type	Potential hazard/disaster source and/or pathway	Reasonable worst consequence (for the receptor) if event did occur	Incorporated risk management (Mitigation by design)	Categories of receptors	Could the risk, if eventuated, constitute a major accident or disaster?	Is the worst consequence managed to an acceptable level with existing mitigation in place?	If no, what secondary mitigation is required to reach an acceptable level?
Construction Phase									
Technological or Manmade hazards	Transport accidents	Major road traffic accident involving construction plant or vehicles	- Incident associated with increased number of construction Heavy Goods Vehicle (HGVs) or Light Goods Vehicles or cars along haulage routes and construction site access points. - Traffic diversions effected routes (where required), which would lead to potential conflict between construction	Major road traffic accident which can lead to: - injury or fatality to the vehicle occupants, cyclists or pedestrians; - Delays and congestion along the road network - Multiple vehicle collisions (from unexpected fallen construction	HGVs will transport materials and waste along designated haulage routes suitable for such vehicles will be outlined in the ES.	- Traffic and Transport - Water - Social Economics	Yes	No	- Construction traffic movements controlled as part of the Construction Traffic Management Plan. - A Mobility Management Plan will be developed as part of the CTMP to address all modes of transport and travel

			traffic, road users, cyclists and pedestrians in the city centre. • Materials such as structures, unsecure large objects and debris falling from HGVs onto the roads.	objects from HGVs or general increase of HGVs along the network) Proper ty damage. • Spillage of the vehicle load on the road, such as ballast formation, and entering highway drainage.					required to deliver the project during the construction phase. This will include details regarding construction workers travelling to site, car-parking, haulage routes and construction compounds to reduce potential effects (incl. traffic accidents) caused due to construction traffic and residential neighbourhoods. • All accesses to the worksite and the compounds will be
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									signposted, and anyone outside the work will be prohibited, installing the necessary perimeter fences and the necessary warning signs. • The necessary traffic signs will be placed outside the work to warn pedestrian and vehicle traffic of the risks involved in the work. • All HGV drivers will be provided with appropriate safety awareness training.
Technological or Manmade hazards	Transport accidents	Train derailment/ collision	• Works on and adjacent to a live rail corridor. • Falling objects	Train accident / derailment which can result in: ○ Death /	The design and environm	Human Health Social Economics	Yes – it is unlikely that the incident to	Yes	Mitigation by design achieves an acceptable

			falling onto to the train/rail track during construction, or due to the failure of bridge structures where construction works are to be carried out,	injury to a member of the public. ○ Delays and congestion along the rail network ○ Property damage	ental management meet Network Rail standards and comply with health and safety, operational and maintenance requirements: • Scheduling of works outside of operational times of rail services and freights i.e., night time works. • Complete possession of rail line when works at, or near the rail line need to be carried out at daytime. • Emergency response plans will be developed by the Contractor.	Cultural Heritage	occur; however, if it occurs, the consequence will be profound.		level and will not lead to MADs. Secondary mitigation is not required.
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Technological or Manmade hazards	Human error/management failure	Electric accidents	• Installation of OLE. • Construction works at or near live railway line • Installation of electrical equipment of buildings.	Accidents leading to injury and in severe cases, death when handling electrical equipment can lead to injury or death.	• Appropriate training will be provided for installing OLE. • Method statements for works in proximity of the OLE and the live rail line will be developed by the Contractor. They will meet Network Rail standards and comply with health and safety requirements and will be implemented by the Contractor to control the risks.	Human Health	Yes	Yes	Mitigation by design achieves an acceptable level and will not lead to MADs. Secondary mitigation is not required.
Technological or Manmade hazards	Utility failures	Impact on Critical Infrastructure	Impact on overground and underground utilities.	Damage to: • electrical utilities (overground and underground) resulting in power outage, risk of electrification which can lead to serious injury or death. • gas mains	• The Contractor will undertake thorough check to confirm the location of any overground and underground utilities near to where construction works will be carried out. • If deemed necessary, the Contractor will liaise with relevant utility providers to arrange utility diversion in	• Socio-Economic • Human Health • Water	Yes	Yes	Mitigation by design achieves an acceptable level and will not lead to MADs. Secondary mitigation is not required.

				which can result in supply outage, risk of explosion or gas inhalation which can lead to serious injury or death. • water piping can lead to supply outage, flooding of construction sites and property damage to nearby buildings. • foul piping can lead to contamination of construction site, risk of water and soil pollution and other associated environmental impacts.	advance of the construction works. • Method statements and an emergency response plan will be developed by the Contractor and implemented to control the risks. • Any utility diversion will comply to relevant code of practice established for individual utility infrastructure.				
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Environmental Impact Assessment – Screening/Scoping Report

Document reference (177127-AEC-ZZ-XX-REP-EEN-000001)

Technological or Manmade hazards	Engineering accidents and failures	Collapse / Damage to existing structure	- Strengthening works to existing structures such as the railway bridges will be required. - Vibratory works in vicinity of sensitive structures, such as buildings of architectural/historical significance. - Demolition of existing buildings/structures (Screen One and existing platforms) is an activity with structural collapse risk	- Risk of building/structure e.g., MORS station/viaduct collapsing, resulting in injury or death to workers and the public. - Collapse /Damage to protected structures. - Damage to adjacent occupied buildings resulting in injury or death to the public.	- Method statements and an emergency response plan for works in proximity to the buildings and structures will be developed and implemented by the Contractor to control the risks. - The works will be in compliance with relevant design and materials standards.	- Socio-Economic - Human Health - Cultural Heritage	Yes – it is unlikely that the incident to occur; however, if it occurs, the consequence will be profound.	No	- Groundwater extraction will be required prior to construction works. Continuous monitoring of groundwater levels, earthworks. Pump tests will be carried out prior to pumping of the groundwater. - Stakeholder consultations with owners of sensitive structures / buildings. - Monitoring of existing historic / sensitive structures during construction
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									to ensure their stability and durability. • Where appropriate, sensitive structures at risk from construction works will be protected. • A CEMP and an emergency response plan will be prepared to manage the risk of collapse / damage to structures. • Mitigation measures in relation to vibration identified in the ES Chapter on Noise and Vibration will be adhered to.
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Environmental Impact Assessment – Screening/Scoping Report

Document reference (177127-AEC-ZZ-XX-REP-EEN-000001)

Technological or Manmade hazards	Pollution accidents	Release of asbestos	Demolition of building/structures which may be contaminated with asbestos.	- Exposure of workers to asbestos containing materials. - In extreme cases, an uncontrolled release of asbestos containing materials and the subsequent exposure of the material to the public.	- Detailed asbestos survey by qualified asbestos specialist prior to any construction will be carried out to assess the potential presence of asbestos in the surroundings of the Site. - In buildings where traces of asbestos are found, a remedial strategy will be developed by the Contractor prior to any construction and demolition works. - Removal of asbestos, if deemed necessary, must be carried out by qualified asbestos professionals.	Human Health	No	Yes	Mitigation by design achieves an acceptable level and will not lead to MADs. Secondary mitigation is not required.
Technological or Manmade hazards	Human error/management failure	Fire / explosion	- Fire accidents due to electrical accidents. - Construction works requiring hot work e.g., cutting, welding,	Fire / explosion at construction site leading to damage or collapse to proposed structures	All construction compounds and construction sites will have appropriate fencing.	Human Health	Yes – it is unlikely that the incident to occur; however, if it occurs, the	No – the probability is medium	The risk is managed through the CEMP and emergency response

			soldering.	and / or nearby property affecting members of the public.			consequen ce will be profound.		plan. - All personnel engaged in hot working must comply with the required controls defined in the Safe System of Work / Permit to Work and co-operate with management by undertaking appropriate instruction and training. - All construction compounds and construction sites
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									will have 24/7 security. Explosive materials will not be stored on construction site / compounds overnight.
Technological or Manmade hazards	Engineering accidents and failures	Tower Crane Collapse	Tower crane dropped//collapsed during construction.	Severe injury and/or fatality of workers and/or public	The design, installation, operation and maintenance of the tower crane must adhere to relevant design standard and comply with relevant Statutory requirements.	- Socio-Economic - Human Health - Cultural Heritage	Yes	No – the probability is medium	- A safe system of work or a Lifting Plan will be developed and implemented by the Contractor for all lifting operations. - Only a competent and adequately trained personnel is involved

									in a lifting operation. An emergency response plan will also be developed and implemented by the Contractor to ensure immediate remedial actions will be undertaken should there any incident (such as tower crane collapse) happen
Technological or Manmade hazards	Engineering accidents and failures	Works near surface water or groundwater	- Unknown groundwater level or regime - An uncontrolled breach of the waterbody (River	Death or injury to workers and /or the general public.	Preliminary assessments of the geotechnical risks associated with the Proposed Development will	- Human Health - Water	No	Yes	Mitigation by design achieves an acceptable level and will not lead to

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		emergence during construction.	Medlock) during construction. • Failure of temporary cofferdams or similar could release very large quantities of water.	• Release of large quantities of water within construction site.	be developed further as the design evolves, aiding the identification of items for investigations and design mitigation. • Further geophysical survey and ground investigation will be undertaken by the Contractor prior to construction works.				MADs. Secondary mitigation is not required.
Technological or Manmade hazards	Pollution accidents	Contamination of surface water and groundwater	• An uncontrolled breach of the waterbody (River Madlock) during construction. • The excavations for associated drainage, and below ground utilities during construction could be vulnerable to groundwater inundation and flooding • accidental spillage or removal of hazardous materials or	• Mobilisation of contaminants to surface and ground water during construction. • Contamination of temporary construction compounds. • Health and safety risk to workforce following inappropriate handling of waste can lead to	• Network Rail procedures for the removal of non-hazardous and potentially hazardous waste and contaminated material. • Temporary storage of ballast on the construction site is expected to be exempt from Environment Agency permitting. • Temporary storage would require management, including pre- and post-ground analysis, basal and	• Materials and Waste • Human Health • Social Economic • Biodiversity • Water	No	Yes	Mitigation by design achieves an acceptable level and will not lead to MADs. Secondary mitigation is not required.

			materials such as ballast that might be contaminated.	○ Death or injury to workers and / or the general public. ○ Release of large quantities of water within construction site.	covering layers and control of runoff. • Removal of ballast to one of Network Rail's central processing centres for treatment, recycling and reuse, or disposal. • the temporary construction sites would have been cleaned up and restored to their previous use. • Construction Environmental Management Plan (CEMP) will be prepared during the ES. The precautionary measures and remedial actions for pollution accidents will be specified in the CEMP for implementation during construction. • Method statements for excavation works will be developed and implemented to control the risks.				
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Technological or Manmade hazards	Pollution accidents	Spillage or long-term seepage of pollutants into a watercourse	• Works near and over watercourses (River Medlock). • Accidental pollution / long-term seepage of pollutants from construction materials into watercourses during construction.	• Impacting the water quality status of watercourses from accidental pollution event / sediment runoff from construction sites into the waterbody. • Pollution event on downstream European sites. • Pollution to surface water which connects with groundwater, potentially affecting drinking water supply.	CEMP and an emergency response plan will be prepared and implemented during construction to prevent adverse impacts (such as water pollution) of on habitats and watercourses.	• Water • Ecology and Biodiversity	No	Yes	Mitigation by design achieves an acceptable level and will not lead to MADs. Secondary mitigation is not required.
Natural Hazard	Climatological and Meteorological	Flood risk	The Station is within a Flood Zone 2 area (medium probability of flooding) and in proximity to a Flood Zone 3 area (high probability of flooding) associated	• Temporary inundation of the Site. • Loss of any plant or materials stored at the	A Flood Risk Assessment will be undertaken to inform the ES and the design. A Flood Management Plan for the construction phase.	• Water • Social Economic • Biodiversity	TBC	Yes – with the existing risk minimisation undertaken as part of the	With the implementation of a Flood Risk Assessment to inform the design, and a Flood Management

			with the River Medlock. - Weather events leading to flooding such as heavy / prolonged rainfall / tidal event. - Prolonged heavy rain / flooding directly over construction sites. - Prolonged heavy rain resulting in breach of embankments in nearby waterbodies. - Extreme / prolonged rainfall events causing sediment runoff during construction.	Site, collapse of temporary and permanent structures. - Obstruction of drainage lines, - Sediment runoff / release of contaminants into watercourses from construction sites - Health risk to construction workers.	The use of the construction compounds will be agreed with the EA through permitting.	Health		Proposed Development the probability of a hazard eventuating is low.	Plan, no likely significant effect is anticipated.
Natural Hazard	Biological	Animal and Plant Disease	Presence of invasive species at construction sites and compounds.	Spread of invasive species during construction	Preliminary Ecological Appraisal has confirmed that there is INNPS	Ecology Human Health	No	Yes	Mitigation by design achieves an acceptable level and will

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			Workers' infection due to Avian Flu or other animal diseases.	works.	within the Study Area. An INNPS management plan will be prepared. According to Defra, The risk of highly pathogenic avian influenza (HPAI) H5 in wild birds in Great Britain is assessed as low (event is rare but does occur). In case dead wild birds are found, the Contractor will report to Defra through their guidance⁸.				not lead to MADs. Secondary mitigation is not required.
Operational Phase									
		Train derailment/collision	- Obstruction on the line - track - inadequate stability and condition of track which is not suitable for line speeds	Potential for off-track and outside boundary derailment causing: severe disruption to rail	The Proposed Development interface between freight operating companies and logistic service providers will be defined in accordance with Office of Rail Regulation ("ORR") requirements and	Traffic and Transport Water Social Economics	Yes	Yes – the probability is low.	The design and environmental management meet Network Rail standards and comply with health and safety, operational

⁸ Defra Guidance on how to report dead wild birds [Report dead wild birds - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/61111/Report_dead_wild_birds_-_GOV.UK.pdf).

			• Power outage affecting the electrical rail fleet. • Electromagnetic interference. • Failure of electrical infrastructure (e.g., failure of signalling, communications) • Collapse of new structures (e.g. footbridge, canopy) onto the rail track. • Obstruction along the railway line • New track installation on approach	transportation network and existing road network. • injury and fatalities for staff and all passengers • Spillage of contamination of nearby drains from fuel leaks in the event of derailment.	standards. Emergency response procedures and plans will be developed and will in all likelihood form an annex to the Facility Management Plan. The ORR will only authorise the interface of the Proposed Development with existing rail infrastructure before it is placed into service, on the basis of an accepted and independently assessed application of the Common Safety Method for Risk Assessment (which must ensure that all risks are mitigated to be ALARP). Without this authorisation, the Proposed Development would not be granted a licence to operate. The bridge structures have been surveyed and works have been identified. The rail horizontal and vertical alignments.				and maintenance requirements. No likely significant effect is anticipated.
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		Electrical Accidents	Members of staff coming into contact with OLE and/or electrical equipment.	Injury or fatality of staff who is in contact with the OLE/electrical equipment.	Network Rail has Home Safe Plan, a structured approach to safety to ensure all staff and supply chain are working in a safe environment. All staff will work in compliance with Network Rail standards and will comply with health and safety, operational and maintenance requirements.	Human Health	No	Yes – the probability is low.	No likely significant effect is anticipated.
		Platform failure/Fire	Collapse or fire of the proposed new platforms	Injury to staff and/or members of the public.	The design of the platforms complies with guidelines/standards and are approved by ??. A Fire Strategy will be developed and implemented during operation of the Station. The Station and platforms will be operated and maintained in accordance with the MORS Operations &	Human Health	Yes	Yes – the probability is low.	No likely significant effect is anticipated.

					Maintenance Plan.				
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APPENDIX G. CUMULATIVE AND COMBINATION EFFECTS

Table G-1 Committed Developments Considered in the Cumulative Assessment

Application Reference	Description	Distance (m)	Location	Status
Manchester City Council Planning Applications				
137387/FO/2023 - Bridgewater Heights	Re-cladding and facade remediation works.	0	Adjacent to the Site	Approved
138805/FO/2023 - Hotspur Press Complex	Partial demolition of the former Hotspur Press Complex (Medlock Mill) and redevelopment of the site to provide Purpose Built Student Accommodation (Sui Generis Use Class) above ground floor commercial or community uses (Use Classes F(e), F2(a)(b) and E(b)), within a part 4/5-storey and part 37-storey building plus roof parapet level above basement level, associated ancillary internal and external amenity space, public realm (including a new public square), hard and soft landscaping and associated highway works.	0	Adjacent to the Site	Awaiting decision
134170/LO/2022 - Piccadilly Railway Station	Listed Building Consent for installation of 12 CCTV cameras in various locations within the station building and adjacent operational land.	0	Adjacent to the Site	Approved
137263/FO/2023 – Baring Street	Erection of 9 storey office development with mezzanine and plant level (Class E) with ground and basement floor retail, cafe and / or restaurant and / or gym (Use Class E) uses, rooftop amenity spaces and terrace levels, associated public realm and riverside walkway and associated works.	0	Adjacent to the Site	Approved

Application Reference	Description	Distance (m)	Location	Status
125714/LO/2019 – former London Road fire station	LISTED BUILDING CONSENT for internal and external works in association with refurbishment, restoration, reconfiguration and extension of former London Road Fire Station site to create a mixed use development comprising of hotel, workspace/office, commercial floorspace for shop and food and drink uses, residential apartments and leisure, together with access and highways works, servicing, rooftop plant, landscaping and associated works	0	Adjacent to the Site	
141074/LO/2024 – Picaddilly Railway Station	Listed building consent for repair works to roof truss.	0	Adjacent to the Proposed Development	Awaiting decision
135839/FO/2022 – Palace Theatre	Installation of new plant and louvred plant enclosure to an existing flat roof area of the building, including installation of new ducting and electrical services, enlargement of existing vent grilles and installation of new vent grille positions in the ceiling of the Auditorium area within the building.	0	Adjacent to the Site	Approved
138024/LO/2023 – Lee House	Listed Building Consent for the retention of the internal works to the part first floor and for the installation of additional glazed partitions.	0	Adjacent to the Site	Approved
139716/LO/2024 – Viadux Phase 2	Listed Building Consent for alterations to Castlefield Viaduct structure including alterations and creation of openings to facilitate structural works, localised removal of masonry, creation of basement and part removal of Great Bridgewater Street Bridge in association with the erection of two residential buildings.	0	Adjacent to/within the Site	Awaiting decision

Application Reference	Description	Distance (m)	Location	Status
139715/FO/2024 – Viadux Phase 2	Phased construction of 3 buildings to include: Plot 2a: residential building (Use Class C3a) with flexible commercial units (Use Class E) and basement, Plot 2b: residential building (Use Class C3a) with flexible commercial units (Use Class E); and Plot 2c: commercial building (Use Class E) (Plot 2c), landscaping and public realm, servicing and access arrangements, with associated highways alterations, and other associated works.	0	Adjacent to/within the Site	Awaiting decision
140597/LO/2024 - Piccadilly Railway Station	Listed Building Consent for the retention of partly installed temporary containment netting to the underside of the train shed at Manchester Piccadilly railway station and installation of additional netting for a temporary period of 3 years.	15	South of the Site	Approved
136958/LO/2023 – Bridgewater House	Listed Building Consent for internal and external alterations including installation of louvres to sixth floor, installation of suspended ceilings, raised floors and partitions together with installation of rooftop plant in association with office refurbishment. Full planning permission for the installation of 10 no. louvres to the 6th floor and additional external plant to the roof level of the Grade II Listed Bridgewater House.	50	North-east of the Site	Approved
138842/LO/2023 – St James buildings	LISTED BUILDING CONSENT for internal and external alterations associated with works to undercroft service area and associated works to provide protected fire escape route	50	North of the Site	Approved
134911/LO/2022 - Piccadilly Railway Station	Listed Building Consent for the installation of 3 rapid EV chargers and associated works to short stay car park	60	West of the Site	Approved

Application Reference	Description	Distance (m)	Location	Status
140057/LO/2024 – 5 th Floor Bridgewater House	Listed building consent for internal alterations to fifth floor.	70	North-east of the Site	Approved
136958/LO/2023 – Bridgewater House	Listed Building Consent for internal and external alterations including installation of louvres to sixth floor, installation of suspended ceilings, raised floors and partitions together with installation of rooftop plant in association with office refurbishment. Full planning permission for the installation of 10 no. louvres to the 6th floor and additional external plant to the roof level of the Grade II Listed Bridgewater House.	70	North-east of the Site	Approved
134350/LO/2022 – Bridgewater House	Listed Building Consent for the refurbishment of 5th and 6th floor offices including reconfiguration of the lobby entrance doors from lift on 5th and 6th floor and the introduction of new glazed entrance doors	70	North-east of the Site	Approved
140228/LO/2024 – Bridgewater House	Listed Building Consent for internal alterations to part of ground floor and fourth floor including refurbishment works, installation of partitions, and new toilet block to fourth floor.	70	North-east of the Site	Approved
140228/LO/2024 – Bridgewater House	Listed Building Consent for internal alterations to part of ground floor and fourth floor including refurbishment works, installation of partitions, and new toilet block to fourth floor.	70	North-east of the Site	Approved
138842/LO/2023 – St James Buildings	LISTED BUILDING CONSENT for internal and external alterations associated with works to undercroft service area and associated works to provide protected fire escape route	90	North of the Site	Approved
141010/LO/2024 – Canada House	Listed Building Consent for installation of internal secondary glazing and external lightning protection	90	North of the Site	Awaiting decision

Application Reference	Description	Distance (m)	Location	Status
141010/LO/2024 – Canada House	Listed Building Consent for installation of internal secondary glazing and external lightning protection	100	North of the Site	Awaiting decision
135565/FO/2022 - Demolition of the central atrium	Demolition of the central atrium, car park ramps, and other elements, retention of casino (Sui Generis), bowling alley and existing food and drink unit (Use Class E) alongside to allow refurbishment, restoration and re-use of the Great Northern Car Park to provide office accommodation, retail and/or food and drink uses (Use Class E) and ancillary areas; and Refurbishment, restoration, partial demolition and erection of a 3-storey extension to Deansgate Terrace (northern section) and Goods Yard Entrance to form office, retail and / or food and drink use (Use Class E) and drinking establishments / hot food takeaway (Sui Generis), with associated public realm works comprising the reconfiguration of Great Northern Square and the introduction of additional public realm with associated hard and soft landscaping, highways works, access and servicing facilities, rooftop plant and other associated works; and Partial demolition of the existing leisure box to erect three residential buildings (ground plus 16, 27 and 34 storeys) to provide 746 residential apartments (Use Class C3), reconfiguration of existing car parking together with the creation of office, retail and / or food and drink use (Use Class E), or Sui Generis (drinking establishments / hot food takeaway) at ground floor and level 3, hard and soft landscaping, together with highways works, access and servicing facilities, rooftop plant and other associated works; and, External alterations and restoration of Deansgate Terrace (southern section) to provide office, retail or food and drink use (Use Class E) or Sui Generis (drinking establishments / hot food takeaway / live music venue), along with delivery of associated public realm, highways works, plant, and associated works	120	North of the Site	Awaiting decision

Application Reference	Description	Distance (m)	Location	Status
134909/FO/2022 – rear Beaver House	Erection of a single storey rear extension to form additional accommodation together with installation of external bin shed and substation, boundary treatment, outdoor seating and landscaping	150	North of the Site	Approved
136246/FO/2023 – Roman Gardens	Public realm improvements, landscaping and heritage improvement works to the Roman Gardens	150	East of the Site	Approved
133031/LO/2022 – 74 Princess Street	Listed Building Consent for the refurbishment of part of the basement of building in association with a change of use to a Beauty Spa	170	North-east of the Site	Approved
128181/FO/2020 - John Dalton Central	Full planning application for external alterations to the John Dalton Central building comprising a new facade to the North and East elevations, infilling of two small areas to create new internal teaching space including laboratories and a new internal fire escape staircase, demolition of the 'glazed link' between the John Dalton East and John Dalton Central buildings and the John Dalton East plant room and associated works.	180	South of the Site	Approved
140876/LO/2024 – Castlefield Viaduct	LISTED BUILDING CONSENT for works to Castlefield Viaduct to enable its use as an urban park, including the installation of stair and lift access to Egerton Street.	185	West of the Site	Awaiting decision
135419/FO/2022 – One Medlock Street	Demolition of the existing hotel building and structures and redevelopment of the site to comprise two separate buildings: one 13 storey office building with commercial unit (Use Class E) at ground floor; a part 11, part 38 storey building comprising 1,014 purpose built student accommodation units (sui generis) with ground floor office/community uses (Use Class E, F1 or F2); and associated ancillary internal and external amenity space, hard and soft landscaping and associated highway works.	200	South of the Site	Approved

Application Reference	Description	Distance (m)	Location	Status
137226/FO/2023 – Great Jackson Street	Full planning permission for the demolition of existing structures and the phased construction of four residential buildings (two at 47 storeys and two at 51 storeys) to provide 1,746 homes (Use Class C3), flexible commercial, leisure, food and drink uses (all Use Class E) and / or drinking establishment (Sui Generis), basement car parking, cycle parking, landscaping and public realm, servicing and access arrangements, highways alterations and associated works.	200	South-west of the Site	Awaiting decision
135618/LO/2022 – Eastern House	Listed Building Consent for the installation of lightning protection system, ground level generator and plant screen compound within courtyard	213	North of the Site	Approved
128535/FO/2020 – Charles Street multi storey	Installation of galvanised wire mesh panels to infill open balconies and staircases and the provision of electrically operated galvanised roller shutters to the vehicles entrances; new anti-climb fencing installed around the plant roof; and new external doors are to be installed to staircases 001 and 004.	240	East of the Site	Approved
137894/FO/2023 – 2 Picadilly Place	Installation of steel door and associated platform to form additional entrance/exit.	250	North of the Proposed Development	Approved
137414/LO/2023 – Manchester Central Convention	LISTED BUILDING CONSENT for works to introduce a restaurant and cafe bar facility within the front foyer of the existing building with 2 windows and 2 louvres within extents of existing louvre panels and alterations to glazing to install a double door entrance with alterations to existing ramps.	250	North of the Site	Approved
134506/FO/2022 - All Saints Campus	Installation of a living wall on external elevation facing the Mancunian Way	300	South of the Site	Approved
133558/LO/2022 – Lock 85 Rochdale Canal	Listed Building Consent for the installation of oak fendering to the head gated at Lock No. 85 of Rochdale Canal, to include remedial work/repairs to the towpath.	340	North of the Site	Approved

Application Reference	Description	Distance (m)	Location	Status
137795/LO/2023 – no 12 Picadilly	Listed Building Consent for the external and internal alteration and refurbishment of no 12. Piccadilly to form aparthotel in association with the erection of a 34 storey building (land at no. 14-16 Piccadilly), including ground floor cafe (Use Class E (b)), first floor exhibition hall (Use Class F1) and a rooftop bar and restaurant (Use Class E (b)), and associated works.	360	North of the Site	Approved
135857/FO/2022 – Ardiwick Green	Erection of 16 x 3 storey townhouses (Class C3) with associated parking, landscaping and boundary treatment and new vehicular access from Cotter Street and associated works	380	South-east of the Site	Approved
138261/LO/2023 - New Warehouse Science And Industry Museum	Listed building consent for Phased refurbishment works, with Phase 1 including full replacement of the roof with new insulation, downpipes and gutters, access gantries and ladders and revised rooflight arrangement, fabric repairs and decoration works to the facades, waterproofing works to the Special Exhibitions Gallery at basement level including some excavation of the Upper Yard to allow for access, the installation of a new entrance porch on the west elevation, installation of scaffolding and hoarding during construction works, other associated works, and Phase 2 comprising the reinstatement of the Upper Yard hard landscaping following completion of the waterproofing works to the Special Exhibitions Gallery.	395	North-west of the Site	Approved
136926/LO/2023 – Lindencourt House	Listed Building Consent for internal and external alterations in association with renovation of existing office accommodation within building including installation of internal lift, new windows, and internal reconfiguration.	430	North of the Site	Approved

Application Reference	Description	Distance (m)	Location	Status
135988/FO/2023 – Booth Street	Refurbishment of existing office building to comprise elevational alterations, a single storey rooftop extension with external roof terrace (Use Class E), installation of photovoltaic panels and works to extend the pavement of Booth Street and install street furniture.	484	North of the Site	Approved
136747/LO/2023 - 1830 Warehouse Museum Of Science	Listed Building Consent for reprofiling of valley gutters, repairs to roof trusses and replacement of torching to Bay 4 within the 1830 Warehouse roof.	490	North-west of the Site	Approved
138273/FO/2023 - Land Bound By New College Street	Demolition of the existing buildings and structures and the erection of a 16-storey office building (Use Class E(g)), with flexible ground floor uses (Use Class E), rooftop amenity space and works to facilitate public realm improvements.	560	North-west of the Site	Approved
140166/LO/2024 – Clarence Street	Listed Building Consent for creation of new level access entrance and internal and external alterations.	580	North of the Site	Approved
134910/FO/2022 - First Floor City Tower	Installation of glazed louvres to the 8th and 9th floors on the north-west and south-east elevations of City Tower together with replacement of existing aluminium louvres to other floors	595	North of the Site	Approved
140166/LO/2024 – Clarence Street	Listed Building Consent for creation of new level access entrance and internal and external alterations.	600	North of the Site	Approved
136042/LO/2023 – Irwell Street	Listed Building Consent for the removal of fabric from the bridge abutment (brickwork and stone coping) on the Water Street side of the bridge to establish a fire safety access point from Shipyard (Albert Shed) associated with the reuse of the building.	645	North-west of the Site	Approved

Application Reference	Description	Distance (m)	Location	Status
140847/LO/2024 – King Street	Listed building consent for installation of safety film to 3 no. windows and balcony doors	660	North of the Site	Awaiting decision
137013/LO/2023 - 16 Newton Street	Listed building consent for internal and external works including insertion of indoor outdoor amenity breakout spaces on the 1st and 4th floors, - partial removal and reinstatement of the existing lath and plaster ceiling, reconfiguration of WC layouts, insertion of external amenity breakout space on the 2nd floor, restoration of the street facing facades of No. 10 and 12 and reinstatement of 3 sliding sash windows on the 3rd floor and other internal works	660	North-west of the Site	Approved
135675/FO/2022 - Tariff Street Manchester	Erection of two residential apartment buildings (Use Class C3) comprising Block 1 -part 9, part 10 (plus roof level amenity block) and Block 2- 12 storey building (comprising of 261 dwellings in total) above basement levels with ground floor commercial units (Use Class E (excluding E (b))), associated residents amenity space, cycle parking, landscaping, access, street loading and other associated works following demolition of the existing building and structures on site	680	North of the Site	Approved
137399/FO/2023 - Sci-tech use	Erection of a 6 to 9 storey building for Sci-Tech use (Use Class E (g)(ii)) and 265sqm of a cafe/bar (Use Class E (b)), and a 9 to 23 storey building for Purpose Built Student Accommodation (PBSA) (Use Sui Generis), comprising 737 bedrooms and 293sqm of community use (Use Class F2 (b)) and 80sqm of commercial floorspace (Use Class E), alongside new public realm, access, parking, and associated works following demolition of existing buildings	700	South of the Site	Awaiting decision

Application Reference	Description	Distance (m)	Location	Status
139605/FO/2024 - New Islington Marina	Erection of two single storey buildings together with demolition of existing building	775	North of the Site	Approved
137299/LO/2023 – Manchester Royale Exchange	LISTED BUILDING CONSENT - Refurbishment of the roof of the building, involving the replacement of the roofing material	850	North of the Site	Approved
135950/LO/2023 – St Anns Square	Listed Building Consent for internal and external works comprising reinstatement of plaster and tiles on stairwell walls, reinstatement of metal framed high level windows, works to the roof and retention of 1no. roof access hatch.	880	North of the Site	Approved
137185/LO/2023 - 39 Great Ancoats Street	Listed Building Consent for internal and external works associated with the creation of a residential dwellinghouse (Use Class C3a) together with extensions and elevational alterations including re-instatement of front dormer, installation of conservation type rooflights, erection of a single storey rear extension, together with the installation of 2 metre boundary treatment to the rear.	890	North of the Site	Approved
Salford City Council Planning Applications				
21/78553/FUL – 9 Lapwing Centre	External alterations to the existing industrial unit, including the erection of a substation, plant equipment and enclosure, bin store, louvres, new elevational treatment and ducting, the reconfiguration of car parking areas and other associated works	400	North of the Site	Approved
22/80146/FUL - 2 Capital Quay	Installation of a drive thru lane and external alterations including partial demolition in association with use of the property as a drive thru coffee shop	630	North of the Site	Approved

Application Reference	Description	Distance (m)	Location	Status
19/74529/FUL - 319 And 321 Ordsall Lane	Demolition of existing buildings and redevelopment of existing sites comprising the erection of residential development ranging from 6 to 9 storeys (above lower ground level) providing 500 dwellings together with associated amenity space, on-site car parking, cycle storage, landscaping, boundary treatments and new public realm.	700	North-east of the Site	Approved
21/78212/OUTEIA – Middlewood Locks	Outline planning application, including access to, but not within the site, for mixed use development comprising a maximum of 93,000sqm office floorspace (Use Class E(g)), a maximum of 1,000 dwellings (Use Class C3), a maximum of 23,706sqm of commercial floorspace (Use Classes C1, E (a, b, e and f) and drinking establishments (Sui Generis)), multi-storey car park, infrastructure and other associated works.	850	North-west of the Site	Approved with conditions



Network Rail
Square One
4 Travis Street
Manchester
M1 2NY