

9.0 TRANSPORT AND ACCESS

Introduction

- 9.1 This chapter assesses the likely significant effects of the Development on the local transport conditions. Specific consideration is given to the potential effects on a range of environmental criteria relevant to transport.
- 9.2 A separate Transport Assessment (TA) has been prepared which outlines technical details in relation to the travel demand associated with the Development and the proposed delivery of infrastructure and sustainable transport measures. The TA is submitted as a separate document in support of the planning application. Relevant information from the TA is provided within this Chapter where it relates to mitigation proposals, but the scope of the two assessments is inherently different.
- 9.3 A Travel Plan has also been prepared to encourage travel by sustainable transport modes and as with the TA is submitted as a separate document in support of the planning application.
- 9.4 This Chapter presents an assessment of the likely significant environmental effects of the Development and how any mitigation would prevent, reduce or offset any adverse effects, or provide beneficial effects. The conclusions are provided both in terms of the residual effects, and whether these are considered significant, as well as cumulatively with other identified developments.
- 9.5 This Chapter outlines the following:
- The assessment methodology and criteria for assessment;
 - The baseline transport conditions of the Site and surroundings;
 - The identification of any receptors which would be sensitive to changes in transport conditions;
 - The assessment of a range of environmental criteria relevant to the sensitivity of receptors;
 - An assessment of the magnitude of changes in traffic across the study area, but with particular focus on the identified sensitive receptors;
 - The proposed mitigation measures to prevent, reduce or offset any significant adverse effects;
 - The likely residual effects after these measures have been employed.
- 9.6 This Chapter, and its associated figures, are intended to be read as part of the wider Environmental Statement (ES) with particular reference to the introductory chapters of this ES (Chapters 1-5), as well

as the TA which outlines more specifically the provision for sustainable modes of transport and considers issues of highway capacity along with an accompanying Travel Plan as standalone planning application documents.

Planning Policy Context

National Planning Policy

National Planning Policy Framework (2021)

9.7 The latest National Planning Policy Framework (NPPF)ⁱ was published in July 2021 by the MHCLG, replacing the previous versions published in 2012, 2018 and 2019. The NPPF sets out the government's planning policies for England and how these are expected to be applied. At the heart of the Framework is a presumption in favour of sustainable development.

9.8 As part of promoting sustainable transport, paragraph 110 of the revised NPPF states that in assessing applications for development, it should be ensured that:

a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;

b) safe and suitable access to the Site can be achieved for all users;

c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and

d) any significant impacts from the development on the transport network (in terms of capacity and congestion), or highway safety, can be cost effectively mitigated to an acceptable degree.

9.9 With regards to applications for development, the NPPF at para. 111 states that:

Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

9.10 Finally, the NPPF notes that travel plans can form an important part of development, and a Travel Plan has been prepared in support of this planning application, to form the basis of a long-term management strategy for the Site delivering sustainable transport objectives and promoting opportunities.

Local Planning Policy and Guidance

- 9.11 Relevant transport planning policy and guidance at the local level is contained within Greater Manchester Transport Strategy (2021 – 2040)ⁱⁱ and the Rochdale Adopted Core Strategy (2016 – 2028)ⁱⁱⁱ.

Greater Manchester Transport Strategy 2040

- 9.12 Transport for Greater Manchester (TfGM) has developed a 2040 Transport Strategyⁱⁱ that sets out ambitions for a radical new approach to planning Manchester's transport system in support of long-term needs and aspirations.
- 9.13 The vision is for Greater Manchester to have *"World class connections that support long-term, sustainable economic growth and access to opportunity for all."* The Transport Vision aims are as follows:

- *Supporting Sustainable Economic growth.*
- *Protecting Our Environment.*
- *Improving Quality of Life for All.*
- *Developing an Innovative City Region.*

- 9.14 The 2040 Vision is supported by policies and proposals for improving the transport network in the medium term up to 2025 structured around spatial themes.
- 9.15 The Delivery Plan of Transport measures to 2025 is wide ranging package, includes reformation of the bus market, further expansion of the Metrolink network and its capacity, Rail Capacity improvements including improving the capacity on the Castlefield Corridor, Princess Parkway/Mancunian Way Roundabout improvements, Cycle Improvements on the Corlton-Manchester Corridor among a wider package of cycle and pedestrian improvements as part of the Mayors Challenge Fund.
- 9.16 The Development aspires to conform to the vision and goals as set out within the 2040 Vision Document by ensuring that the Site is accessible by a variety of sustainable transport modes in order to deliver a quality development that enhances the environment.

Rochdale Adopted Core Strategy (2016 – 2028).

- 9.17 The Rochdale Adopted Core Strategyⁱⁱⁱ was adopted in October 2016. This document sets out the long-term strategy for future development of Rochdale Borough and its Core Strategy seeks to address the

community's key priorities set out in the Sustainable Community Strategy. It also helps to guide other strategies and plans of the Council and its partner agencies.

9.18 More specifically, the Core Strategy establishes how much housing should be planned and where development should be located as well as identifying what facilities and infrastructure is needed to support that development.

9.19 The Core strategy seeks to deliver sustainable development and growth in accordance with the objectives of the NPPF. Some strategic objectives of the Core Strategy are:

- *To promote a greener environment, and*
- *To improve accessibility and deliver sustainable transport.*

9.20 Policy SD1 – Delivering sustainable development states that:

When considering development proposals, the Council will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. It will always work pro-actively with applicants jointly to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social, and environmental conditions in the area.

Planning applications that accord with the policies in this Local Plan will be approved without delay unless material considerations indicate otherwise.

Where there are no policies relevant to the application or relevant policies are out of date at the time of making the decision then the Council will grant permission unless material considerations indicate otherwise – taking into account whether:

- *Any adverse impacts of granting permission would significantly and demonstrably outweigh the benefits, when assessed against the policies in the National Planning Policy Framework taken as a whole; or*
- *Specific policies in the National Planning Policy Framework indicate that development should be restricted.*

Places for Everyone Joint Development Plan Document (not yet adopted at time of writing)

9.21 Places for Everyone (not yet adopted at time of writing)^{iv} is a long-term plan of nine Greater Manchester districts (Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan) for sustainable growth along with other investment topics. It wants to ensure that all new developments

are sustainably integrated into Greater Manchester's transport network or supported by new infrastructure.

Legislative Framework and Guidance

- 9.22 The Site forms part of the Policy JP Allocation 2 in the August 2021 publication of the Places for Everyone (PfE) Joint Development Plan Document^{iv}.
- 9.23 Best practice guidance considered as part of this assessment includes the Institute of Environmental Assessment (now IEMA) note 'Guidelines for the Environmental Assessment of Road Traffic' (1993) ^v. This sets out the recommended list of likely environmental impacts which could be considered within the scope of an ES whenever a new development is likely to give rise to changes in traffic flows.
- 9.24 Reference has also been made to the Design Manual for Roads and Bridges (DMRB), Sustainability & Environment Appraisal, LA104 – Environmental assessment and monitoring Revision 1 (August 2020), and LA112 - Population and human health Revision 1 (January 2020).
- 9.25 The Ministry of Housing, Communities & Local Government's (MHCLG) (Now named the Department for Levelling Up, Housing and Communities) Planning Practice Guidance 'Transport evidence bases in plan making and decision taking' document states that, *"Critical locations on the road network with poor accident records should be identified. This is to determine if the Development will exacerbate existing problems or, if proposed, whether highway mitigation works, or traffic management measures will help to alleviate the problems"*. Accident analysis has been undertaken within the corresponding TA as well as within this Chapter.

Assessment Methodology and Significance Criteria

- 9.26 The proposed scope of the Transport and Access chapter was set out in the EIA Scoping Report submitted to Rochdale Borough Council (RBC) in October 2022 (refer to Appendix 2.1). A separate Transport Assessment Scoping Study was also submitted to RBC as the local planning and highway authority.
- 9.27 Scoping responses have been received from the local highway authority, Transport for Greater Manchester and National Highways as part of the wider ES Scoping Response (refer to Appendix 2.2). The responses predominantly relate to the TA and are therefore addressed in the TA but have also been incorporated in the Chapter where appropriate.

Scope of the Assessment

- 9.28 Best practice guidance considered as part of this assessment includes the IEMA note 'Guidelines for the Environmental Assessment of Road Traffic' (1993). This sets out the recommended list of likely environmental impacts which could be considered within the scope of an ES whenever a new development is likely to give rise to changes in traffic flows. These criteria are as follows:
- Severance;
 - Driver delay;
 - Pedestrian and cyclist delay and amenity; and
 - Accidents and safety.
- 9.29 The IEMA guidelines state that in scoping out the extent of the assessment for the operational and construction phases, it suggests that *"two broad rules of thumb could be used as a screening process to delimit the scale and extent of the assessment"*. Those Rules are:
- Rule 1: Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and
 - Rule 2: Include any other specifically sensitive areas where traffic flows have increased by 10% or more.
- 9.30 The IEMA Guidelines go on to state that any increases in traffic flows of less than 10% are generally accepted as having negligible impact as daily variance in traffic flows can be of equal magnitude. The 30% threshold relates to the level at which humans may perceive change and there may therefore be an effect. Impacts above this level therefore do not suggest that there is a significant impact, only that further consideration is required to assess the significance.
- 9.31 The Development will comprise up to 1,380 residential dwellings and an ancillary local centre to serve the new housing. The planning application will be hybrid with approximately 2330 units to be provided as part of the detailed element of the Development and the remainder to be provided in outline.
- 9.32 In traffic terms the worst-case scenario has been tested for up to 1,500 dwellings being developed.
- 9.33 The scale of the Development and some of the related infrastructure proposals are such that some changes in traffic patterns are expected to take place in future, leading to increases as well as decreases in traffic levels on some roads. This Chapter will clearly specify if and where this is the case, with reference to the different scenarios.

- 9.34 The main opportunities and benefits relating to the Development are defined in terms of safety, sustainability, the promotion of a modal shift and the enhancement of public transport links. The importance of sustainable transport choices will be reflected in the application of a Travel Plan, which is submitted separately as part of the planning application.

Extent of the Study Area

- 9.35 For the purposes of consistency and robustness, the local highway network assessed within this Chapter, includes the same geographical scope that is presented within the TA.
- 9.36 In accordance with IEMA Guidelines, an assessment of sensitive receptors has been undertaken relative to their location in respect of the Development and whether changes in future traffic levels are attributable to the Development. This is on the basis that, as the distances increase, so would the effect of the Development in traffic terms. Generally, sites which have been considered to be sensitive receptors are:
- Schools;
 - Health facilities (GP Surgeries / Dental Practices etc.);
 - Community facilities (such as parks, community centres etc.) and sheltered housing; and
 - Congested junctions.
- 9.37 In accordance with the IEA guidelines, the following thresholds are generally applied in determining if a change in traffic levels will be perceptible to a user:
- Links where traffic flows are expected to change by more than 30%, or where HGV flows are expected to change by more than 30% as a result of the Development; and
 - Links in proximity to sensitive receptors, where traffic flows are expected to change by more than 10% as a result of the Development.
- 9.38 The categorisation above can provide an initial sequential approach in considering which road links should be included within the study area. This Chapter has thus reported changes on all links for which traffic data were available within the study area, before then extracting the information for the road links relevant to each identified sensitive receptor.

Data Sources

Baseline Assessment

- 9.39 An assessment was undertaken to evaluate current baseline conditions i.e., without the Development. Site visits were undertaken in order to observe the operation and existing conditions of the highway network. A number of traffic surveys were undertaken in October 2022 to record traffic flow volumes and queuing. These observations have also been used to inform the modelling and baseline assessment process considered in the TA. These detailed models have formed a suitable basis on which to assess the operation of the junctions under future forecast year traffic flow information, when establishing the merits for localised junction improvements.
- 9.40 As set out in ES Chapter 5: Construction Methodology and Programme, the indicative year of completion of the Development is 2038. However, for the purpose of this assessment, a future assessment year of 2033 has been adopted, 10 years for the year of application, in line with the National Highways guidance "The strategic road network: Planning for the future."^{vi} Future baseline conditions have been calculated using National Traffic Model (NTM) growth factors and modified by TEMPRO local growth factors.
- 9.41 Appropriate factors have been derived from the Department for Transport database to estimate the Average Annual Daily Traffic (AADT) flows for use with this Chapter as well as other related daily flows used within the noise and air quality assessments. Where assessments require an understanding of vehicle speeds, information has been derived from the Automatic Traffic Count (ATC) data where available and, if not, from the posted speed limits.
- 9.42 Personal Injury Accident (PIA) data for the most recently available five-year period, which is from 2017 to 2021, inclusive, were obtained from CrashMap database^{vii}.
- 9.43 In order to assess the operation of the junctions, models of the junctions have been created in the industry-standard modelling software package LinSig for signalised junctions and Junctions 9 for priority-controlled junctions.
- 9.44 At signalised junctions, an indication of the overall spare capacity at the junction is also given by the Practical Reserve Capacity (PRC) within LINSIG. PRC denotes the maximum desirable flow through a junction and typically a PRC of 0% is reached when one or more approaches to the junction are at 90% of their actual capacity. A Degree of Saturation (DoS) of 90% (i.e. a headroom of 10%) therefore indicates that there is still some spare capacity to deal with fluctuations in traffic volumes.
- 9.45 Junction capacity is specified with reference to the Ratio of Flow over Capacity (RFC) for priority and roundabout junctions and DoS for signalised junctions. In doing so, values of 0.85 and 90%,

respectively, would typically indicate the practical design capacity at which congestion is likely to begin to occur with values of 1.00 and 100% being the theoretical point at which this congestion is forecast to occur regularly during the assessment period.

- 9.46 Queues in Junctions 9 are reported in terms of the maximum forecast queue during the modelled period (in vehicles or Passenger Car Units (PCUs), as indicated), while queues in LinSig are reported in terms of the Mean Maximum Queue (MMQ), measured in PCUS during the modelled period.

Construction Traffic

- 9.47 Construction Traffic has been estimated based on the following typical rates. These rates have been based on previous project experience and have been applied to the consideration of HGV and construction worker vehicular movements. This is based on an indicative build-out of the Development, with rates of delivery.

Table 9.1: Typical Construction Vehicle Construction Rates (1-way movements)

Typical Construction Elements	Unit		HGV arrivals per unit (total construction period)	Worker's arrivals per day and unit
Residential	1	dwelling	13.69	0.927
Employment	100	sqm GFA	16.7	2.52
Local Centre	100	sqm	6.5	2.52
Gas supply	100	m	3.5	0
Electricity Supply (cables)	100	m	3.1	0
Water Supply (main)	100	m	7.1	0
Foul water (rising main)	100	m	13.2	0

- 9.48 It is anticipated that HGV movements will total approximately 25 per day, subject to final build out rates and number of construction outlets.

Determining sensitivity of receptor

- 9.49 The IEA 'Guidelines for the Environmental Assessment of Road Traffic state that road links should be assessed where traffic flows increase by more than 30% of more than 10% in other sensitive areas.
- 9.50 The IEA Guidelines also detail which areas can be considered sensitive, defined by the presence of sensitive receptors. For the purposes of this assessment the sensitivity of receptors are classified as follows:

- Areas of low sensitivity to traffic flows – Receptors of negligible sensitivity;

- Public open space, nature conservation areas, residential areas with adequate footways – Receptors of low sensitivity;
- Congested junctions, hospitals, community facilities, conservation areas – Receptors of medium sensitivity; and
- Sections of highway close to schools and colleges or accident black-spots – Receptors of high sensitivity.

9.51 Within the vicinity of the Site, receptors of low, medium, and high sensitivity, have been identified, as summarised below in Table 9.2.

Table 9.2: Sensitivity of Identified Receptors

Identified Receptors	Location from Site access	Sensitivity
St John's Thornham CE Primary School	Adjacent to the Site boundary	High
Elm Street Pre-School	440m north	High
St John's Thornham Church	Adjacent to the Site boundary	Medium
Thornham Cricket Club	100m south	Medium
Richard Bentley Smalley Memorial Hall	450m south	Medium
BP Petrol Station	450m south	Medium
Existing Farm (with potential for future residential development, as shown)	Adjacent to the Site boundary	Low
Hopwood Arms Farm Shop	520m south	Low

9.52 The magnitude of potential impact (both beneficial and adverse) on environmental baseline conditions will be identified through the detailed consideration of the Development, taking into account the following:

- Relevant legislation, policy or guidelines (i.e. IEMA Guidelines for the Environmental Assessment of Road Traffic (1993));
- The degree to which the environment is potentially affected for example, whether the quality is enhanced or impaired;
- The scale or degree of change from baseline conditions as a result of the Development;
- The duration of the effect for example, whether it is temporary or permanent; and
- The reversibility of the effect.

9.53 The magnitude of change has been considered as the change experienced from the current or future baseline conditions at the sensitive receptor and has been considered on a scale of large, medium, small, or negligible.

9.54 In relation to transport, the IEMA Guidelines identify thresholds for determining the magnitude of changes in traffic on road links within the study area. The magnitude of change is categorised as follows:

- **Large:** Change in traffic/HGV levels as a result of the Development is expected to be in excess 90%;
- **Medium:** Change in traffic/HGV levels as a result of the Development is expected to be within the range of 60-90%;
- **Small:** Change in traffic/HGV levels as a result of the Development is expected to be within the range of 30-60%; and
- **Negligible:** Change in traffic /HGV levels is less than 30%.

9.55 The above categorisation will be applied to the assessment of the likely and significant effects set out in this Chapter.

Level Of Effect

9.56 The level of effect attributed to each effect has been based on the magnitude of change due to the Development and then the sensitivity of the affected receptor.

- **Major effect:** where the Development is likely to cause a considerable change from the baseline conditions and the receptor has limited adaptability, tolerance or recoverability or is of the highest sensitivity. This effect is considered to be 'Significant';
- **Moderate effect:** where the Development is likely to cause either a considerable change from the baseline conditions at a receptor which has a degree of adaptability, tolerance or recoverability or a less than considerable change at a receptor that has limited adaptability, tolerance or recoverability. This effect is considered more likely to be 'Significant' but will be subject to professional judgement;
- **Minor effect:** where the Development is likely to cause a small, but noticeable change from the baseline conditions on a receptor which has limited adaptability, tolerance or recoverability or is of the highest sensitivity; or where the Development is likely to cause a considerable change from the baseline conditions at a receptor which can adapt, is tolerant of the change or/and can recover from the change. This effect is considered less likely to be 'Significant' but will be subject to professional judgement; and
- **Negligible:** where the Development is unlikely to cause a noticeable change at a receptor, despite its level of sensitivity or there is a considerable change at a receptor which is not considered sensitive to a change. This effect is 'Insignificant'.

Significance of Effect

9.57 The assessment of potential effects resulting from the Development takes into account both the construction and operational phases. The significance level attributed to each effect will be determined based on the magnitude of change due to Development, and the sensitivity of the affected receptor /

receiving environment to change, as well as a number of other factors that are outlined in more detail previously in this Chapter. The matrix shown in the table below will generally be used, supplemented by judgement where required.

Table 9.3: Significance of Effect

		Sensitivity of Receptor/Receiving Environment to Change/Effect			
		High	Medium	Low	Negligible
Magnitude of Change/ effect	High	Major	Moderate to Major	Minor to Moderate	Negligible
	Medium	Moderate to Major	Moderate	Minor	Negligible
	Low	Minor to Moderate	Minor	Negligible to Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

Source: IEMA Guidelines

- 9.58 The above will be replicated for each environmental criteria, where relevant to each identified sensitive receptor, where the changes in traffic levels justifies further assessment.

Environmental Criteria of Assessment

Severance

- 9.59 The Design Manual for Roads and Bridges (DMRB) defines severance as

"...the separation of residents from facilities and services they used within their community caused by new or improved roads or by changes in traffic flows."

- 9.60 Several factors are considered in determining the existing level of severance. These include road width, traffic flow and composition, traffic speeds and the availability of pedestrian crossing facilities.
- 9.61 The DMRB provides a set of measures for the identification of severance and offers guidance as to the level of pedestrian diversion that may ensue in terms of negotiating a two-way flow present on a particular road link. Table 9.4 outlines the thresholds of pedestrian severance and delay levels.

Table 9.4: Thresholds of Severance Levels

Severance Level	Traffic Flow (AADT)	Length of Diversion
High	> 16,000	> 500m
Medium	8,000-16,000	250-500m
Low	4,000-8,000	50-250m
Negligible	< 4,000	< 50m

Source: Design Manual for Roads and Bridges

- 9.62 The DMRB also provides guidance on the level of severance relief that may be afforded by the pedestrian crossings. It also outlines the extent to which severance may be reduced by the provision of pedestrian crossings. Where these facilities align with pedestrian desire lines, it suggests that the effect of severance can be reduced by up to 90%.

Driver delay

- 9.63 Increases in traffic levels can lead to a greater degree of driver delay. The degree of delay is therefore correlated with severance.
- 9.64 The IEMA Guidelines note that these delays are only likely to be:

"significant (or Major) when the traffic on the network surrounding the development is already at, or close to, the capacity of the system."

- 9.65 Table 9.5 outlines the thresholds for driver delay levels and magnitude of effect.

Table 9.5: Driver Delay Magnitude of Effect and Definition

Magnitude of Effect	Definition of Magnitude
High	Over 4-minute increase, averaged over all arms at a junction
Medium	Between 3 and 4-minute increase in delay, averaged over all arms at a junction
Low	Between 2 and 3-minute increase in delay, averaged over all arms at a junction
Negligible	Less than 2-minute increase, averaged over all arms at a junction

Pedestrian and cyclist delay and amenity

- 9.66 Increases in traffic levels can lead to a greater degree of delay to pedestrians wishing to cross the road. The degree of delay is therefore correlated with severance.
- 9.67 In relation to pedestrian amenity, the importance of walking and cycling in contributing towards sustainable travel patterns is recognised in the NPPF. It places emphasis on the roles that walking, and cycling can play as both main modes of transport and as part of a longer journey by public transport.
- 9.68 The IEMA Guidelines itself broadly defines amenity as:

"the relative pleasantness of a journey, and is considered to be affected by traffic flow, traffic composition and pavement width/separation from traffic."

- 9.69 However, few quantitative methods exist for assessing amenity directly. The IEMA Guidelines suggest a range of pedestrian crossing times of 10 seconds (lower threshold) to 40 seconds (higher threshold) which equate to a road link with no crossing facilities exhibiting a two-way flow of approximately 1,400 vehicles in the peak periods. However, the guidance also recommends that assessments of this environmental effect should be based on professional judgement rather than specific thresholds.
- 9.70 The definition of 'pleasantness' is based on a qualitative view of the routes available adjacent to or across links within the study area. The associated infrastructure can thus be classified as very poor, poor, average, good or very good as a means of assessing the pedestrian/cycle environment in accordance with the IEMA Guidelines.
- 9.71 For the purpose of determining the magnitude of change (relating to pedestrian and cyclist delay and amenity) resulting from the Development, the thresholds set out in Table 9.3 will be applied.

Accidents and road safety

- 9.72 It is recognised that the hierarchy and use of the road network will change in the future, whether this be a result of forecast baseline conditions or as direct result of the Development.
- 9.73 It entails that little meaningful quantitative information can generally be gained from historical data, other than a simpler inference based on the reported increases and decreases in traffic flows, which is categorised by some form of correlation with expected accident event frequency (if not also severity).

Limitations and Assumptions

- 9.74 To ensure transparency within the EIA process, the following limitations and assumptions have been identified.
- The IEA Guidelines have been used as the criteria against which to assess the effects of the Proposed Scheme in terms of traffic and transport. Where appropriate additional criteria from the DMRB have been used to quantify and inform the judgements reached.
 - The forecasted traffic flows used in estimating the impacts across the study area have been informed by the traffic surveys and growth factors in line with the National Traffic Model (NTM) were applied in order to quantify the level of background traffic growth that could occur on the local highway in the assessment year of 2033. The traffic volumes thereby analysed remain the best forecast available. Even if there could be some variability in any future 'on the ground' measure of traffic, it is expected that the relative difference and broad conclusions reached as to the effects of the Development would be maintained.

- The Development incorporates a number of highway improvements, for which Road Safety Audits will be carried out in taking forward the concepts to the subsequent detailed design phases. The designs will therefore be subject to a normal process of refinement as the process takes its course, based on the outcome of the audits.

Baseline Conditions

Local Transport Environment

- 9.75 The Site is located approximately 2km to the south of Castleton and approximately 4km to the south of Rochdale Town Centre. The Site is enclosed by existing urban development by housing, the M62, A627(M) and Manchester Road.
- 9.76 The Site extends to approximately 89 hectares and predominantly comprises a series of fields which are currently used for pasture together with a garden centre fronting Manchester Road to the west. There are several public rights of way (PRoW) and bridleways traversing the Site. The surrounding area is mixture of residential to the west, employment to the south and open countryside to the north and east, beyond the motorways bounding the Site.

A664 Manchester Road

- 9.77 The A664 Manchester Road is located to the west of the Site and connects Castleton and Rochdale to the north and Manchester to the south. Manchester Road is subject to a 30mph speed limit in the vicinity of the Site and the carriageway width varies between approximately 7m to 9m in this area, benefitting from footways, street lighting and dropped kerbs at the majority of side roads and crossing points.
- 9.78 Manchester Road provides direct frontage access to a number of residential properties, commercial units and access to a number of residential cul-de-sacs.
- 9.79 The commercial units served include the 'All-in-One' garden centre which is within the Site and forms part of the western boundary. It has an existing access onto Manchester Road, which forms the minor arm of a major/minor priority-controlled junction with a ghost island turning area. The garden centre frontage is approximately 220m long and double yellow line traffic regulation orders are in place along it.
- 9.80 There are pedestrian refuge islands located on Manchester Road at intervals of approximately 160m to aid pedestrians crossing the road.

Thornham New Road

- 9.81 Thornham New Road forms the northern Site boundary. It provides access to residential properties and streets to either side. The carriageway is approximately 5m wide for 330m from Manchester Road to the west, where it forms the minor arm of a simple priority-controlled junction. Beyond this point to the east, Thornham New Road transitions to a rural access track serving local farm properties.
- 9.82 On-street car parking occurs along the south side of the carriageway, predominantly in the vicinity of the row of terraced properties and approximately central along the formal section of Thornham New Road, which do not benefit from off-street car parking.

Thornham Lane

- 9.83 Thornham Lane dissects the southern section of the Site and connects the A664 Manchester Road to the west to the A671 Oldham Road to the east where Thornham Lane becomes Thornham Old Road.
- 9.84 Thornham Lane is not fully surfaced with lighting columns and a footway along the north side provided along the row of residential properties extending approximately 150m from the junction with the A664, where it forms the minor arm of a major/minor priority controlled junction with a ghost island turning area.
- 9.85 St John Thornham Church and St John's C.E Primary School are located further east and are also served by Thornham Lane in the vicinity of the Site, which is understood to be used for pick-up and drop-off car parking at the school.

A627 (M)

- 9.86 The A627(M) is a two-way dual carriageway which runs in a west to east direction and borders the south-eastern portion and eastern portion of the Site. Manchester Road connects to the A627 at the Slattocks roundabout approximately 600m south of the proposed primary Site access. From this roundabout, the A627(M) runs east for approximately 950m before reaching another roundabout where the A627(M) begins to head in a north to south direction.
- 9.87 From the second roundabout, the A627(M) runs north along the eastern Site boundary and connects to the M62 at a roundabout located approximately 1.3km north of the roundabout. To the south it connects to Oldham approximately 5km south of the roundabout.

M62

- 9.88 The M62 is a motorway which runs in a west to east direction, bordering the north-eastern portion of the Site. The M62 runs between Liverpool and Hull, through Manchester and Leeds and can be accessed from the Site via Manchester Road and the A627(M).

*Accessibility**Walking*

- 9.89 As an undeveloped site, current pedestrian provision within the Site is provided by PRow footpaths and restricted byways.
- 9.90 Beyond the Site, surfaced footway provision is provided on both sides of the road on Manchester Road, from which the primary Site access will be taken. Manchester Road is subject to a 30mph speed limit and has street lighting from the roundabout located 600m south of the proposed primary access to the settlements of Castleton and Rochdale to the north. There are dropped kerbs where the footways cross access points and there are pedestrian refuge islands approximately every 160m.
- 9.91 Manchester Road provides pedestrians with access to the existing local bus stops and is mostly lined with residential properties with occasional commercial uses. There are also a handful of existing services which serve the current residential properties in the area within walking distance, with a cricket club located 100m south of the proposed primary access, a public house 350m to the south and a petrol station with a small convenience store 400m to the south.
- 9.92 The pedestrian accessibility of the Site has been modelled using Geographical Information System (GIS) software to produce isochrones mapping. The purpose of the isochrones is to demonstrate the areas within an acceptable walking distance of the Site, as shown on Figure 9.1.

Cycling

- 9.93 There is a restricted byway within the Site which can be used by cyclists, which runs south-east from Thornham New Road for approximately 475m through the centre of the Site.
- 9.94 Beyond the Site, there are currently no dedicated cycling lanes or facilities on the surrounding highway network in the direct vicinity of the Site. However, National Cycle Network (NCN) route 66 runs in a north to south direction following the Rochdale Canal which runs approximately 350m east of the western Site boundary. NCN route 66 can be accessed to the south-west via Manchester Road

approximately 620m to the south of the proposed primary Site access, or to the north-west via Manchester Road and Earl Street approximately 675m to the north-west.

- 9.95 NCN route 66 runs in a north to south direction connecting to Rochdale and Littleborough to the north and to Middleton to the south. The route is made up of a mixture of on-road and off-road cycling trails, however, the section between Middleton and Rochdale, which will be most useful to those accessing the route from the Site, is almost entirely off-road.
- 9.96 GIS software has been used to model 5km cycle catchment from the Site and is shown on Figure 9.2.
- 9.97 Bus Services
- 9.98 The closest bus services to the Site operate along Manchester Road to the west of the Site where there are bus stops at regular intervals. The nearest bus stops are the 'Garden Centre' stops, located approximately 115m south of the proposed primary Site access and the 'Chesham Avenue' stops which are 350m to the north of the proposed primary Site access.
- 9.99 The 'Garden Centre' stops are the closest to the proposed primary Site access and benefit from bus shelters, seating and timetable information. Meanwhile, the 'Chesham Avenue' stops are located to the north of the Site access and also both benefit from bus shelters, seating and timetable information.
- 9.100 Both the 'Garden Centre' and 'Chesham Avenue' bus stops are served by the same bus services, the 17 and the R7, operated by Go North-West and Rosso, respectively. Further details on the bus services currently from these stops can be found in Table 9.6.

Table 9.6: Bus Services

Service	Operator	Route	First Service	Last Service	Weekday Frequency
17	Go North-West	Shudehill – Middleton – Castleton - Rochdale	04:55	00:15	10 mins
R7	Rosso	Rochdale – Kirkholt - Middleton	05:29	23:29	60 mins

Rail Services

- 9.101 At present, the closest railway station to the Site is Castleton Station, located approximately 1.7 km to the north of the proposed primary Site access. From the access point, the station can be accessed via a 21-minute walk, 6-minute cycle, 8-minute bus journey or 4-minute drive.
- 9.102 The station has cycle parking facilities covered by CCTV for up to 10 bicycles and a small station car park for rail users with 22 car parking spaces.

- 9.103 Castleton Station is managed by Northern and lies on the Calder Valley Line which runs between Leeds and Manchester, with an additional line which runs to Blackpool. During Monday through to Saturday daytimes, there is a half-hourly service in each direction from Castleton Station. Table 9.7 below details some of the key services available from the station.

Table 9.7: Rail Services

Destination	Average Weekday Frequency	Approximate Journey Time
Rochdale	30 mins	3 mins
Mills Hill	30 mins	5 mins
Manchester Victoria	30 mins	17 mins
Salford Crescent	30 mins	25 mins
Bolton	30 mins	37 mins

Tram Services

- 9.104 Whilst there are no Metrolink tram stops within Castleton or in the direct vicinity of the Site, the closest tram stop is located in Rochdale at the railway station and lies approximately 4.6km to the north-east of the proposed primary Site access.
- 9.105 The Rochdale Railway tram stop lies at the end of the line in zone 4 and offers services from Rochdale to Manchester City Centre and beyond to East Didsbury. From this tram stop there are frequent services between the hours 06:00 AM to 00:00 AM Monday through to Saturday and between 07:00 AM to 00:00 AM on a Sunday. Some of the services and journey times are detailed in Table 9.8.

Table 9.8: Tram Services

Destination	Approximate Journey Time	Destination	Approximate Journey Time
Rochdale Town Centre	3 mins	Oldham Central	21 mins
Kingsway Business Park	5 mins	Manchester Victoria	45 mins
Shaw and Crompton	13 mins	Deansgate	56 mins

- 9.106 TRACC Travel Time Analysis software has been used to map a 60-minute journey time using public transport, including the walk to the nearby bus stops, tram and railway stations, and are presented on Figure 9.3. The analysis demonstrates that it is possible to reach areas such as Manchester, Oldham, Halifax, Burnley and Media City UK amongst others, within an acceptable 60-minute commute time.

Accidents

- 9.107 The MCLHG Planning Practice Guidance 'Transport evidence bases in plan making and decision taking' document states that:

"Critical locations on the road network with poor accident records should be identified. This is to determine if the Development will exacerbate existing problems or, if proposed, whether highway mitigation works or traffic management measures will help to alleviate the problems".

- 9.108 Personal injury accident data has been obtained from the online resource CrashMap for the most recent 5 full year period available and is summarised for the junctions within the study area in Table 9.9.

Table 9.9: Personal Injury Accident Data Summary

Junction (at or near)	Fatal	Serious	Slight	Total
A664 Manchester Road / Proposed Site Access signalised junction	0	0	0	0
A664 Manchester Road / Thornham New Lane simple priority junction	0	1	1	2
Slattock's Roundabout	1	0	3	4
A664 Manchester Road / A664 Queensway signalised junction	0	0	4	4
A58 / A664 Manchester Road signalised junction	0	0	5	5
A58 / B6452 / A664 signalised junction	0	0	7	7
A664 / Assheton Way / A669 roundabout junction	0	1	3	4
A627 (M) / A627 Chadderton Way / Burnley Lane roundabout (A627(M) Junction 1)	0	2	16	18
A627(M) / A627(M) Spur roundabout (A627(M) Junction 2)	0	0	0	0
M62 J20 roundabout	0	1	10	11

- 9.109 There has been a total of nine accidents reported between 2017 and 2021 along the A664 Manchester Road, between M62 underpass (south of Junction 20) and Slattocks Roundabout. Six accidents were categorised as "slight", two as "serious" and one as "fatal".
- 9.110 The fatality occurred on 24 December 2020 at 7:35 PM. A car travelling north on Manchester Road collided with a parked car and subsequently a pedestrian, who was shielded by the parked car, resulting in the fatality of the pedestrian.
- 9.111 There has been a total of three accidents reported between 2017 and 2021 at Slattocks Roundabout. Two accidents were categorised as "slight" and one as "fatal".

9.112 The fatality occurred on a Friday in March 2020, at 10:33 PM and only involved one vehicle. The car overturned after skidding, causing three passengers to be seriously injured, one of which resulted in a fatality.

9.113 Accidents occurred at a range of locations and no significant clusters appear on the local highway network. It is noted that a number of accidents occurred at or near the A627 (M) / A627 Chadderton Way / Burnley Lane roundabout (A627(M) Junction 1) and M62 J20 roundabouts, however these are existing highly trafficked motorway interchanges and the relative number of accidents does not present a material concern in relation to the Development.

Traffic data

9.114 Baseline traffic data has been based on traffic surveys undertaken in October 2022, comprising both Manual Classified Counts (MCCs) and recording turning movements.

9.115 The MCCs were primarily used for the purpose of the TA, where calibration of individual junction models was required against recorded queuing. The surveyed locations were identified based on the calculated vehicle trip generation and assignment and are as follows:

- A664 Manchester Road / Thornham New Road simple priority junction;
- A664 Rochdale Road / Thornham Lane simple priority junction;
- Slattock's Roundabout;
- A664 Manchester Rd / A664 Queensway;
- A58 / A664 Manchester Road;
- A58 Manchester Rd / Rochdale Bypass;
- A627 (M) A627 Spur Roundabout (A627(M)) Junction 2;
- A664 / Assheton Way / A669;
- A627 (M) / A627 Chadderton Way / Burnley Lane; and
- M62 J20.

9.116 Traffic flows recorded during the junction surveys formed a basis to calculate the link flows.

9.117 Based on the information obtained from the DfT website, Table 9.10 below outlines the factors used in the expansion of the peak hour (combined) data so that these could match the AADT format required of the assessments presented in this Chapter. These factors were differentiated by the different vehicle classifications.

Table 9.10: AADT Expansion Factors (combined AM and PM peak to AADT)

Vehicle Classification	24hr AADT
All Vehicles	5.962
Heavy Goods Vehicles (HGVs)	6.166

9.118 Table 9.11, summarises the two-way AADT link flows in the 2022 Baseline scenario on the highway links within the study area. These remain valid to inform consideration of the current baseline position, given the following:

- Baseline Traffic Counts are within 3 years of the planning application, representing a suitable basis for the assessment. For local roads, it is acceptable for this to be within 5 years.

Table 9.11: Observed 2022 Baseline Traffic Flow Summary (Two-way AADT)

Link		24hr AADT		
Road	Location	Total Flow	HGV	%HGV
A58 Bolton Road	East of Silk St	20807	857	4%
Silk Street	East of A664	6928	303	4%
A58 Manchester Road	North of Silk Street	29130	1170	4%
Manchester Rd	West of the B6452	2182	50	2%
B6452 Roch Walley Way	North of the A58	15769	509	3%
A58	East of B6452	37376	1399	4%
B6452 Roch Walley Way	South of the A58	34162	1367	4%
A664 Manchester Road	South of Silk Street	16276	776	5%
Albion Street	East of A664	3172	148	5%
A664 Queensway	North-east of Albion St	5241	240	5%
A664 Manchester Road	South of Albion Street	12926	600	5%
A664 Queensway	South of Albion Street	10714	426	4%
Albion Street	South of the A664 Queensway	2295	43	2%
A664 Manchester Road	South of the A664 Queensway	12896	621	5%
M62 (east-bound off-slip)	A627 Roundabout	18059	1202	7%
A627	North of the M62	36696	1992	5%
M62 (east-bound on-slip)	A627 Roundabout	10362	654	6%
M62 (west-bound off-slip)	A627 Roundabout	11447	1079	9%
A627	South of the M62	52048	2972	6%
M62 (west-bound on-slip)	A627 Roundabout	14201	906	6%
A664 Manchester Road	South of the M62	16324	668	4%
Thornham New Road	East of the A664	829	19	2%
A664 Manchester Road	North of Site Access	16151	650	4%
Earl St	West of The A664	215	0	0%
A664 Manchester Road	South of Site Access	16795	694	4%
Thornham Lane	East of the A664	704	12	2%
A664 Manchester Road	South of Thornham Lane	16998	719	4%
A627	East of Bentley Ave	16646	998	6%
Bentley Avenue	South of the A627	1556	72	5%
Whitbrook Way	South of the A664	9092	833	9%
A664 Rochdale Rd	West of Whitbrook Way	20456	696	3%
A627	West of the A627 Roundabout	16944	1000	6%

Link		24hr AADT		
Road	Location	Total Flow	HGV	%HGV
A627 (north-bound on-slip)	East of A664 / A627 Roundabout	3017	290	10%
A627 (south-bound off-slip)	East of A664 / A627 Roundabout	5879	444	8%
A627 (south-bound on-slip)	East of A664 / A627 Roundabout	6034	271	4%
A627 (north-bound off-slip)	East of A664 / A627 Roundabout	5032	160	3%
A664 Assheton Way	North of Oldham Road	16634	928	6%
Oldham Road	East of Ashton Lane	12890	671	5%
Ashton Lane	South of Oldham Road	483	13	3%
Oldham Road	West of Ashton Lane	28099	1464	5%
A627 (north-bound on-slip)	Roundabout with Burnely Lane / Broadway	17570	721	4%
A627 (south-bound off-slip)	Roundabout with Burnely Lane / Broadway	17928	808	5%
Broadway	East of the A627	25488	901	4%
A627 Chadderton Way	South of Braodway	38073	1159	3%
A627 (south-bound on-slip)	Roundabout with Burnely Lane / Broadway	6582	228	3%
A627 (north-bound off-slip)	Roundabout with Burnely Lane / Broadway	3822	111	3%
Burnely Lane	West of the A627	14965	336	2%

Construction Vehicle Movements

- 9.119 The majority of construction traffic movements will be generated from construction workers' cars and vans, having a largely incidental impact on the surrounding highway network.
- 9.120 Construction traffic flows have been estimated using assumptions of build rates and of the likely duration taken to construct each phase of the Development, in accordance with Table 9.1 above.
- 9.121 Based on broad estimates of movements, a summary of the resulting two-way HGV and construction worker movements is shown in Table 9.12. This has been shown in an Average Annual Weekday Traffic (AAWT) format, given the prevalence for construction movements to take place during the working week, with less frequent movements at weekends.

Table 9.12: Indicative Construction Vehicular Movements (AAWT Two-way)

Typical Construction Elements	Unit		Buildout rate (at any one time)	Period (Years)	Total HGV arrivals per unit	Worker's arrivals per day and unit	HGVs	Cars / LGVs
Residential	1	dwelling	75	0.25	13.69	0.927	31.1	115.9
Local Centre	100	sqm	500	0.5	6.5	2.52	0.5	15.2
Gas supply	100	m	100	0.1	3.5	0	0.3	0.0
Electricity Supply (cables)	100	m	100	0.1	3.1	0	0.2	0.0
Water Supply (main)	100	m	500	0.5	7.1	0	0.5	0.0

Typical Construction Elements	Unit		Buildout rate (at any one time)	Period (Years)	Total HGV arrivals per unit	Worker's arrivals per day and unit	HGVs	Cars / LGVs
Foul water (rising main)	100	m	500	0.5	13.2	0	1.0	0.0
Total							33.6	131.1

9.122 The above calculation suggests that approximately 34 HGVs and 131 cars or Light Goods Vehicles (LGVs) could access the Site on a typical weekday. Given the inherent variability that will exist, this is very much an estimate to help inform the assessment of construction effects. It is also the case that, as the Development is built out, the number of construction vehicle movements would reduce over time, meaning that the above estimates are reflective of a worst-case situation. The operational level of traffic will also always be in excess of these estimates, thereby representing a worst-case situation in overall trip-making terms.

Future Year Operational Movements

Proposed EIA Traffic Flow Scenarios

9.123 The following section describes each of the future year scenarios that has been used to assess the impact of the Development on the study area road network.

9.124 Capacity assessments have been undertaken in the future assessment year of 2033 in the 'with' and 'without' Development scenarios. The 2033 'without Development' (Scenario 1) baseline traffic flows are the sum of the relevant increased (surveyed) traffic flows (to reflect future years) and the committed development traffic flows.

9.125 The 2033 'with Development' (Scenario 2) assessment traffic flows are the sum of the 2033 'without Development' baseline traffic flows and the Development traffic flows.

Forecast Traffic Flow Outputs

9.126 Table 9.13 presents a summary of the two-way AADT flows for the future year EIA scenarios outlined above.

Table 9.13: Baseline and Future Year Traffic Flow Summary Two-way AADT

Link		Scenarios		Scenario 1 vs Scenario 2	Scenario 1 vs Scenario 2 (%)
Road	Location	Scenario 1	Scenario 2		
A58 Bolton Road	East of Silk St	22,716	23,555	839	4%
Silk Street	East of A664	7,563	7,563	0	0%
A58 Manchester Road	North of Silk Street	31,803	33,004	1,201	4%
Manchester Rd	West of the B6452	2,382	2,382	0	0%
B6452 Roch Walley Way	North of the A58	17,216	17,817	601	3%
A58	East of B6452	40,805	41,406	601	1%
B6452 Roch Walley Way	South of the A58	37,297	37,297	0	0%
A664 Manchester Road	South of Silk Street	17,770	19,840	2,071	12%
Albion Street	East of A664	3,463	3,463	0	0%
A664 Queensway	North-east of Albion St	5,721	5,721	0	0%
A664 Manchester Road	South of Albion Street	14,307	16,377	2,071	14%
A664 Queensway	South of Albion Street	11,697	13,394	1,698	15%
Albion Street	South of the A664 Queensway	2,506	2,506	0	0%
A664 Manchester Road	South of the A664 Queensway	14,079	17,847	3,768	27%
M62 (east-bound off-slip)	A627 Roundabout	19,716	19,934	218	1%
A627	North of the M62	40,063	40,063	0	0%
M62 (east-bound on-slip)	A627 Roundabout	11,313	11,471	158	1%
M62 (west-bound off-slip)	A627 Roundabout	12,497	12,639	142	1%
A627	South of the M62	56,824	57,225	401	1%
M62 (west-bound on-slip)	A627 Roundabout	15,504	15,748	243	2%
A664 Manchester Road	South of the M62	17,822	22,631	4,810	27%
Thornham New Road	East of the A664	905	1,520	615	68%
A664 Manchester Road	North of Site Access	17,633	22,416	4,784	27%
Earl St	West of The A664	234	234	0	0%
A664 Manchester Road	South of Site Access	18,336	22,756	4,420	24%
Thornham Lane	East of the A664	768	768	0	0%
A664 Manchester Road	South of Thornham Lane	18,557	22,977	4,420	24%
A627	East of Bentley Ave	18,173	20,213	2,040	11%
Bentley Avenue	South of the A627	1,699	1,699	0	0%
Whitbrook Way	South of the A664	9,926	10,159	232	2%
A664 Rochdale Rd	West of Whitbrook Way	22,332	24,479	2,147	10%
A627	West of the A627 Roundabout	18,499	20,539	2,040	11%
A627 (north-bound on-slip)	East of A664 / A627 Roundabout	3,294	3,695	401	12%
A627 (south-bound off-slip)	East of A664 / A627 Roundabout	6,418	6,778	360	6%

Link		Scenarios		Scenario 1 vs Scenario 2	Scenario 1 vs Scenario 2 (%)
Road	Location	Scenario 1	Scenario 2		
A627 (south-bound on-slip)	East of A664 / A627 Roundabout	6,587	7,261	674	10%
A627 (north-bound off-slip)	East of A664 / A627 Roundabout	5,494	6,098	605	11%
A664 Assheton Way	North of Oldham Road	18,160	19,231	1,070	6%
Oldham Road	East of Ashton Lane	14,072	14,072	0	0%
Ashton Lane	South of Oldham Road	527	527	0	0%
Oldham Road	West of Ashton Lane	30,677	31,747	1,070	3%
A627 (north-bound on-slip)	Roundabout with Burnely Lane / Broadway	19,182	19,787	605	3%
A627 (south-bound off-slip)	Roundabout with Burnely Lane / Broadway	19,573	20,247	674	3%
Broadway	East of the A627	27,826	28,078	252	1%
A627 Chadderton Way	South of Braodway	41,567	42,162	596	1%
A627 (south-bound on-slip)	Roundabout with Burnely Lane / Broadway	7,186	7,200	14	0%
A627 (north-bound off-slip)	Roundabout with Burnely Lane / Broadway	4,172	4,367	195	5%
Burnely Lane	West of the A627	16,338	16,347	9	0%

9.127 Given the modelling methodology used, the changes in traffic shown above are reflective of the effects of the Development. This includes the direct effects associated with the newly generated demand for car travel but also the indirect effects created by a re-assignment of traffic across the study area.

9.128 From the above information, it can be seen that only 1 link is forecast to experience a change in traffic in excess of 30%, while some will experience a change in traffic volumes in excess of 10%.

9.129 In relation to the potential sensitive receptors that have been identified, the following summary of the above information is provided in Table 9.14.

Table 9.14: Summary of Traffic Flows on Links Relevant to Sensitive Receptors (Two-way AADT)

Identified Receptors	Scenarios		Scenario 1 vs Scenario 2	1 vs Scenario 2 (%)
	Scenario 1	Scenario 2		
St John's Thornham CE Primary School	768	768	0	0%
St John's Thornham Church	768	768	0	0%
Thornham Cricket Club	18,336	22,756	4420	24%
Richard Bentley Smalley Memorial Hall	768	768	0	0%
BP Petrol Station	18,336	22,756	4420	24%
Existing Farm (with potential for future residential development, as shown)	905	1,520	615	68%

Hopwood Arms Farm Shop	18,336	22,756	4420	24%
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9.130 From the above, Thornham Cricket Club, BP Petrol Station, Existing Farm and Hopwood Farm Shop are considered to be subjected to changes in traffic volumes greater than 10% which may be perceptible and for which an assessment may get triggered in the case of a high sensitivity.

9.131 The effect on the following sensitive receptors can therefore be discounted as not being of significance:

- St John's Thornham CE Primary School;
- St John's Thornham Church; and
- Richard Bentley Smalley Memorial Hall.

Embedded Mitigation

Operational Phase

9.132 The Development incorporates a new access junction and a range of sustainable transport improvements including:

- Signal-controlled pedestrian crossing facilities will be provided at the signalised Site access on the A664 Manchester Road.
- Footway widening at the signalised crossings of the A664 Manchester Road into the Site;
- The Development will provide new footways and public realm through the Site for the benefit for residents and the general public;
- Provision of a mix of land uses in a new local centre within the west of the Development;
- The principal road infrastructure will be designed to accommodate bus services along this corridor. Bus stops would be located at appropriate intervals along the principal road infrastructure zone.

9.133 Enhanced pedestrian and cycle paths will be provided along PRow and new off-road active travel routes. The partial signalisation of the Slattocks roundabout is also proposed to mitigate the addition of traffic generated by the Development and reduce queuing and delay.

Likely Significant Effects

Construction Phase

9.134 Table 9.12 sets out that approximately 34 HGVs and 131 cars or Light Goods Vehicles (LGVs) could access the Site on a typical weekday. However, given the inherent variability of construction programme works, this is considered an estimate to help inform the assessment of construction effects. As the Development is built out, the number of construction vehicle movements would reduce over time, meaning that this estimate is considered to be worst-case. Furthermore, the operational level of traffic will also always be in excess of construction traffic estimates, thereby representing a worst-case situation in overall trip-making terms. It is concluded therefore that the movement of construction vehicular traffic will not be significant, when considered across a typical day. In relation to the sensitive receptors, none are located on proposed construction routes.

9.135 The potential effects of construction will be short-term with a **minor adverse** effect, which is not considered to be significant.

Operational Phase

9.136 The Development adopts the principles contained in the Government's Manual for Streets (MfS) by designing spaces and infrastructure for people that are conducive to walking and cycling. This approach will result in a sustainable form of development which will contribute towards minimising the level of car use.

Severance

9.137 Table 9.15 summarises the level of severance expected for the relevant scenarios.

Table 9.15: Summary of Severance Levels on Identified Sensitive Receptors

Identified Receptors	Scenarios		Severance Levels	
	2033 Baseline	2033 Baseline + Development	2033 Baseline	2033 Baseline + Development
Thornham Cricket Club	18,336	22,756	High	High
BP Petrol Station	18,336	22,756	High	High
Existing Farm (with potential for future residential development, as shown)	905	1,520	Negligible	Negligible
Hopwood Arms Farm Shop	18,336	22,756	High	High

9.138 The above shows that the severance level on the identified sensitive receptors is considered to be high under assessed forecast scenario at three of the receptors and negligible at the other.

Table 9.16: Summary of Severance Effects (Operational)

Identified Receptors	Scenarios		Magnitude of Change	Sensitivity of Receptor	Resultant Effect
	2033 Baseline	2033 Baseline + Development			
Thornham Cricket Club	18,336	22,756	Low	Medium	Minor
BP Petrol Station	18,336	22,756	Low	Medium	Minor
Existing Farm (with potential for future residential development, as shown)	905	1,520	Negligible	Low	Negligible to Minor
Hopwood Arms Farm Shop	18,336	22,756	Low	Low	Negligible

9.139 The above table shows that the sensitivity of the identified receptors is considered to be low or medium (see Table 9.2). The magnitude of change in traffic is considered to be Negligible or Low and, with reference to the criteria in Table 9.3, this means that the resultant impacts on severance is considered to lead to a direct, permanent, long-term, **minor adverse** effect (**not significant**).

Driver Delay

9.140 The relevant guidance suggests that Driver Delay is only likely to be significant where the traffic on the network is likely to be at or close to the capacity of the system.

9.141 To determine the impact of the Development on driver delay, a capacity assessment has been undertaken at all the junctions identified in Paragraph 9.114 of this chapter.

9.142 However, for the purpose of this assessment, it is only necessary to assess links where the proportionate impact of Development traffic is greater than 30%. This is only the case at Thornham New Road and to ensure a robust assessment, junctions where the impact is approaching 30% have been included.

9.143 The following junctions have been included on this basis:

- A664 Manchester Road / Thornham New Road (simple priority junction);
- A664 Manchester Road / A664 Queensway (signalised junction);
- A664 Manchester Road / A58 (signalised junction); and
- Slattocks Roundabout (priority controlled).

9.144 A summary of the modelling outputs is provided in this Chapter. Full details of this assessment can be found in the TA.

Baseline Assessment

9.145 Models representing the existing configuration of the junctions have been run in the first instance to establish a baseline operation before the addition of the Development traffic. A summary of the capacity results generated for the junction using the 2033 Baseline traffic flows is provided in Tables 9.17-9.19, with the outputs included within the TA submitted separately as part of the planning application.

Table 9.17: Junction modelling results for 2033 Baseline Assessment (Signalised Junctions)

Junction Arm	AM Peak			PM Peak		
	DoS (%)	Ave Delay s/veh (PCU)	MMQ (PCUs)	DoS (%)	Ave Delay s/veh (PCU)	MMQ (PCUs)
	Junction					
	A664 Manchester Road / A664 Queensway					
A664 Queensway	67.7	43.3	11.5	80.9	52.0	15.3
A664 Manchester Rd (NB)	67.1	28.1	11.3	81.0	33.6	18.8
A664 Manchester Rd (SB)	65.7	36.4	15.3	49.3	31.2	10.4
PRC	32.9			11.1		
Cycle Time	120			120		
	A664 Manchester Road / A58					
A58 (EB) Left	79.5	22.7	24.2	63.0	23.5	15.0
A58 (EB) Ahead/Right/Left	95.0	141.8	9.2	84.0	94.7	5.7
A58 Manchester Rd Left/Ahead	60.1	24.3	12.8	80.9	39.0	18.4
A58 Manchester Rd Right	94.3	55.9	31.6	85.6	47.9	20.6
Silk St Left/Ahead	40.3	60.1	2.4	38.5	49.1	2.9
Silk St Right	92.4	133.9	9.0	83.6	79.7	9.7
A664 Manchester Rd Ahead/Left	95.4	108.2	14.3	85.0	68.2	11.1
A664 Manchester Rd Ahead/Right	93.3	111.6	12.7	81.4	70.3	10.5
PRC	-6.0			5.0		
Cycle Time	112			112		

Table 9.18: Junction modelling results for 2033 Baseline Assessment (Priority Junctions)

Arm	Name	Stream	AM Peak			PM Peak		
			RFC	Delay (s)	Queue (PCU)	RFC	Delay (s)	Queue (PCU)
			A664 Manchester Road / Thornham New Road					
A	A664 Manchester Rd (NB)	A-BCD	0.03	4.55	0.0	0.09	3.94	0.2
B	Earl Street	B-ACD	0.06	11.84	0.1	0.02	11.44	0.0
C	A664 Manchester Rd (SB)	C-ABD	0.02	3.43	0.0	0.03	4.12	0.0
D	Thornham New Road	D-ABC	0.25	20.63	0.3	0.10	12.34	0.1

Table 9.19: Junction modelling results for 2033 Baseline Assessment (Slattocks Priority Roundabout)

Arm	Name	AM Peak			PM Peak		
		RFC	Delay (s)	Queue (PCU)	RFC	Delay (s)	Queue (PCU)
		Slattocks Roundabout					
1	A627 (M)	0.71	8.42	2.4	0.54	4.65	1.2
2	Bentley Ave	0.13	10.50	0.1	0.22	7.52	0.3
3	Whitbrook Way	0.23	2.69	0.3	0.37	3.28	0.6
4	A664 Rochdale Rd W	0.47	3.91	0.9	0.60	5.78	1.5
5	A664 Rochdale Rd N	0.86	17.62	5.7	0.58	6.51	1.4

9.146 As shown in Table 9.17, A664 Manchester Road/A664 Queensway junction is forecast to operate within capacity in both the AM and PM peaks under 2033 Baseline traffic conditions. A664 Manchester Road / A58 junction is expected to operate over the 90% DoS in the AM peak, whilst the PM peak is shown to work within capacity.

9.147 As shown in Table 9.18 in future assessment year of 2033 without the Development in place, the A664 Manchester Rd / Thornham New Road junction will operate comfortably within its practical capacity in both the AM and PM peaks.

9.148 Table 9.19 shows that overall Slattocks Roundabout will operate within capacity, however the A664 Rochdale Road north arm reaches its practical capacity in the AM peak hour.

Proposed Scenario

9.149 Having established the baseline operation of the junction, models which include the Development traffic have been developed and run using the 2033 Baseline 'With Development' traffic flows.

9.150 The results of the exercise are summarised in Table 9.19 - Table 9..

Table 9.19: Junction modelling results for 2033 Baseline with Development Assessment (Signalised Junctions)

Junction Arm	AM Peak			PM Peak		
	DoS (%)	Ave Delay s/veh (PCU)	MMQ (PCUs)	DoS (%)	Ave Delay s/veh (PCU)	MMQ (PCUs)
	Junction					
	A664 Manchester Road / A664 Queensway					
A664 Queensway	79.4	55.8	13.2	86.3	59.9	16.8
A664 Manchester Rd (NB)	81.5	29.4	18.6	87.5	37.6	23.6
A664 Manchester Rd (SB)	63.4	31.4	15.7	61.0	32.8	14.2
PRC	10.5			11.1		
Cycle Time	120			120		
	A664 Manchester Road / A58					
A58 (EB) Left	81.8	25.4	25.5	58.6	26.9	19.7

A58 (EB) Ahead/Right/Left	97.8	154.9	11.2	87.6	114.5	11.3
A58 Manchester Rd Left/Ahead	66.7	28.3	14.7	87.6	59.2	32.0
A58 Manchester Rd Right	100.0	92.3	40.7	81.7	56.1	27.6
Silk St Left/Ahead	40.3	60.1	2.4	42.6	71.0	4.6
Silk St Right	92.4	133.9	9.0	88.2	113.9	14.1
A664 Manchester Rd Ahead/Left	101.2	148.3	22.4	88.4	93.8	17.6
A664 Manchester Rd Ahead/Right	100.8	155.8	19.5	85.4	94.6	16.5
PRC	-12.5			1.8		
Cycle Time	112			112		

Table 9.20: Junction modelling results for 2033 Baseline with Development Assessment (Priority Junctions)

Arm	Name	Stream	AM Peak			PM Peak		
			RFC	Delay (s)	Queue (PCU)	RFC	Delay (s)	Queue (PCU)
			A664 Manchester Road / Thornham New Road					
A	A664 Manchester Rd (NB)	A-BCD	0.08	3.94	0.2	0.23	4.01	0.9
B	Earl Street	B-ACD	0.09	17.99	0.1	0.03	14.94	0.0
C	A664 Manchester Rd (SB)	C-ABD	0.03	3.34	0.0	0.04	3.60	0.1
D	Thornham New Road	D-ABC	0.60	52.12	1.4	0.23	21.31	0.3

Table 9.22: Junction modelling results for 2033 Baseline with Development Assessment (Slattocks Priority Roundabout)

Arm	Name	AM Peak			PM Peak		
		RFC	Delay (s)	Queue (PCU)	RFC	Delay (s)	Queue (PCU)
		Slattocks Roundabout					
1	A627 (M)	0.78	11.16	3.4	0.63	5.96	1.7
2	Bentley Ave	0.15	1.13	0.2	0.26	9.41	0.3
3	Whitbrook Way	0.24	2.87	0.3	0.41	3.72	0.7
4	A664 Rochdale Rd W	0.51	4.3	1.0	0.72	8.72	2.5
5	A664 Rochdale Rd N	1.07	135.46	63.5	0.68	8.48	2.1

9.151 As shown in Table 9.19 with the addition of Development traffic, the A664 Manchester Road / A664 Queensway junction is forecast to operate with a modest increase of queuing and an increase in Driver Delay of up to 13 seconds per vehicle in the AM peak and 8 seconds in the PM Peak on A664 Queensway. This change in traffic represents a negligible magnitude of effect on Driver Delay and a corresponding **negligible** significance of effect (**not significant**).

9.152 As shown in Table 9.19 with the addition of Development traffic, the A664 Manchester Road / A58 junction is forecast to operate with a slight increase of queuing and an increase in Driver Delay of up to 45 seconds per vehicle in the AM peak and 15 seconds in the PM Peak on A664 Queensway. This change in traffic represents a negligible magnitude of effect on Driver Delay and a corresponding **negligible** significance of effect (**not significant**).

- 9.153 As shown in Table 9. with the addition of Development traffic, the A664 Manchester Road / Thornham New Road junction is forecast to operate with a modest increase of queuing and an increase in Driver Delay of up to 32 seconds per vehicle in the AM peak and 9 seconds in the PM Peak on Thornham New Road. This change in traffic represents a negligible magnitude of effect on Driver Delay and a corresponding **negligible** significance of effect (**not significant**).
- 9.154 As shown in Table 9. with the addition of Development traffic, Slattocks roundabout is forecast to operate with a modest increase of queuing and an increase on each arm with the highest increase being on Rochdale Road north where the Driver delay increases by 117 seconds in the AM peak hour. This change in traffic represents a negligible magnitude of effect on Driver Delay and a corresponding **negligible** significance of effect (**not significant**). Notwithstanding this environmental impact, mitigation has been proposed as part of the TA to address the traffic impact on the junction capacity (see mitigation section).

Pedestrian Delay

- 9.155 In line with MfS, the Development will be expected to afford priority to pedestrians and cyclists. This will heighten drivers' perception of other road users, leading to an environment characterised by lower vehicular speeds.
- 9.156 It will provide improvements to the pedestrian environment compared with the baseline including provision of footways, signal-controlled crossings and cycleways at the proposed access junction and high-quality public realm within the Development itself. This additional infrastructure will improve pedestrian connectivity.
- 9.157 The proposed secondary access at A664 Manchester Road / Thornham New Road junction will provide upgraded footways and cycleways along the upgraded section of Thornham New Road linking the Site with the wider area.
- 9.158 Pedestrians have been identified as a low sensitivity receptor and the significance of effects are considered to be **negligible (not significant)**.

Pedestrian/Cyclist Amenity

- 9.159 Negative changes in pedestrian amenity are assumed to be significant where traffic flows (or HGV component) double or more.

- 9.160 The Development itself will provide high quality public realm including riverside frontages. This internal provision for pedestrians and cyclist will be complemented by enhancements to the external highway network, including footway widening and improvements to cycle facilities.
- 9.161 As previously outlined pedestrians have been identified as a low sensitivity receptor. Given none of the links considered have been shown to experience a doubling of flows, it is concluded that the magnitude of impact is negligible. The Development will also deliver enhancements to pedestrian and cyclist amenity and on this basis the significance of effects is identified as **minor beneficial**.

Accidents and Safety

- 9.162 As previously described in the Baseline Conditions section of this Chapter, a review of accident data has revealed that there are no accident blackspots/clusters on the highway network in the vicinity of the Site.
- 9.163 There is therefore no evidence to suggest that there are any underlying highway safety issues on the local highway network and no evidence to suggest that traffic from the Development would increase the risk of accidents.
- 9.164 All proposed Site access junctions and other supporting works are designed to the relevant guidelines and will be subject to safety audits from independent third parties. The significance of effect of the Development on accidents is safety is therefore concluded to be **negligible (not significant)**.

Mitigation Measures

Construction Phase

- 9.165 No significant effects have been identified for assessment in this Chapter, however, a variety of management measures will be in place to mitigate the impact of construction activity which will be managed by a Construction Transport Management Plan (CTMP) secured through a planning condition.
- 9.166 The construction programme is based on normal working hours in line with RBC guidance of 07:30-18:00 Monday to Friday and 08:00-14:00 on Saturdays. On Sundays and Bank holidays noisy working will generally not be planned. On some occasions there are certain operations that maybe required to proceed during these periods, for example tower crane erection and dismantling. These will be infrequent and will be agreed with the Environmental Health Officer (EHO) and local residents through a series of neighbourly engagements. The frequency of these will vary and respond to demand. Access to the Site will be permitted 30 minutes prior to working day commencing with noise being kept to a minimum for the first half hour of each day.

- 9.167 The Site is served well from the A627(M) and A664 Manchester Road and these in turn link to the M62. It is envisaged that deliveries will traverse from the A664 Manchester Road then enter the Site via the A664 Manchester Road/Thornham New Road junction for the northern parcel and via newly constructed junction directly off the A664 Manchester Road into the main Site.
- 9.168 This approach negates the need for traffic to access via the city centre.
- 9.169 A full CTMP will be developed to address the following issues:
- Integration of a traffic management scheme with surrounding construction developments and calming measures;
 - Access, egress, drop off and turning areas;
 - Temporary and/or permanent alterations to local traffic routes (both vehicular and pedestrian);
 - Additions, alterations and positions of any temporary signage, road markings or protection barriers;
 - Pedestrian access around the Site and relevant protection, lighting and signage schemes;
 - Temporary suspension / relocation of any parking bays or bus stops;
 - Segregation of plant, materials and pedestrians on-site and safe access routes between welfare and Site areas;
 - The provision of car parking, off and on-site, and public transport strategy for staff and operatives;
 - Loading bays, hoist positions and tower crane areas; and
 - Any other measures to ensure the safe integration of pedestrians, cyclists and road users both on, off and surrounding the Development.
- 9.170 In preparation of the above document a protocol of timed and booked deliveries, off-peak deliveries and prefabrication will be incorporated.
- 9.171 Delivery routes for the major materials and items of plant will be as per the construction route set out above, construction traffic will access from the A664 Manchester Road and Thornham New Road and will endeavour to deliver outside of peak traffic hours to minimise local disruption and the normal workings of the surrounding properties.
- 9.172 It is envisaged that there will be a limited number of visitor and key staff parking within the construction compound area. Site personnel will be encouraged to utilise the extensive public transport options available to them. Any personnel who have to attend by car will be asked to avoid parking in residential areas and instead utilise formal surface car parks within the local area.

Operational Phase

9.173 A Travel Plan has been prepared and is included separately as part of the planning application. This document will be developed into a full Travel Plan which will outline the strategy for ensuring the uptake of sustainable transport options is maximised amongst future Site users.

9.174 The principal aims of the Travel Plan are as follows:

- Encourage the use of more sustainable modes of transport, such as walking, cycling and using public transport;
- Reduce the need to travel; and
- Encourage the use of sustainable travel by improving facilities and providing information.

9.175 A range of measures will be considered and implemented to achieve the above aims.

9.176 Enhanced pedestrian routes will be provided within the Site including through new public realm areas, whilst signal controlled pedestrian crossing facilities will be provided at the signalised Site access on the A664 Manchester Road.

Residual Effects

Construction Phase

9.177 Following the implementation of the CTMP the effects would be negligible in relation to Pedestrian Delay, Pedestrian Amenity, Severance, Driver Delay and Accidents and Safety.

Operational Phase

Pedestrian Delay

9.178 As the secondary mitigation does not directly affect the identified sensitive receptors and existing pedestrians and cyclists, the residual effects are the same as that reported in the pre-mitigation scenario.

9.179 This residual effect would be negligible.

Pedestrian Amenity

9.180 As the secondary mitigation does not directly affect the identified sensitive receptors and existing pedestrians and cyclists the residual effects are the same as that reported in the pre-mitigation scenario.

9.181 This effect would be negligible.

Driver Delay

9.182 The effects of the proposed junction improvement mitigation scheme at Slattocks roundabout have been assessed using a LinSig signalised junction capacity model with the results provided in Table 9.23 below.

Table 9.23: Junction modelling results for 2033 Baseline with Development and Mitigation Assessment (Slattocks Partially Signalised Roundabout)

Junction Arm	AM Peak				PM Peak	
	DoS	Ave Delay s/veh (PCU)	MMQ	DoS	Ave Delay s/veh (PCU)	MMQ
	Slattocks Roundabout – Partially Signalised					
A627(M) Left Ahead	31.60%	2	0.2	14.40%	1.5	0.1
A627(M) Ahead	55.40%	3.7	0.6	62.40%	4	0.8
Bentley Ave Left Ahead	6.60%	2.8	0	15.10%	2.6	0.1
Ahead	18.30%	1.1	0.1	30.60%	1.3	0.2
Whitbrook Way Left	12.60%	2.5	0.1	22.20%	2.6	0.1
Whitbrook Way Left	40.90%	17.7	5.5	55.50%	12.6	7.8
A664 Rochdale Rd West Left Ahead	41.1 : 41.1%	1.6	0.3	50.5 : 50.5%	1.9	0.5
A664 Rochdale Rd North Left	88.9 : 88.9%	19	34	62.8 : 62.8%	15.6	14.7
A627 (NE-B)	31.00%	1.3	0.2	27.50%	1.3	0.2
A627 (NE-B)	11.10%	1	0.1	14.70%	1.1	0.1
Bentley Ave (SE-B)	4.00%	1	0	2.70%	1	0
Ahead	31.00%	1.3	0.2	15.20%	1.1	0.1
Ahead	0.00%	0	0	0.00%	0	0
Whitbrook Way	0.00%	0	0	0.00%	0	0
Whitbrook Way	0.00%	0	0	0.00%	0	0
A664 (SW-B) Ahead	56.00%	3.4	0.6	48.00%	2.9	4.8
A664 (SW-B) Ahead	55.70%	3.4	0.6	49.00%	2.9	0.5
A664 (SW-B)	67.70%	2.8	1	58.80%	2.2	0.7
A664 (NB)	35.40%	1.4	0.3	55.40%	2	0.6
Internal (SE-B) Ahead Right	15.00%	0	0	8.20%	0	0
Internal (SE-B) Right	42.60%	0	0	28.60%	0	0
Internal (SW-B) Left	32.50%	0	0	15.80%	0	0
Internal (SW-B) Ahead	29.30%	0	0	19.10%	0	0
Internal (SW-B) Ahead	44.70%	0	0	49.30%	0	0
Internal (EB) Ahead	30.00%	0	0	20.10%	0	0
Internal (EB) Ahead	46.00%	0	0	54.30%	0	0
Internal (NW-B) Ahead	35.40%	0	0	30.30%	0	0
Internal (NW-B) Ahead Right	55.60%	0	0	65.40%	0	0
Internal (NW-B) Right	4.10%	0	0	10.60%	0	0
Internal NB Ahead	13.70%	0	0	25.10%	0	0
Internal NB Right	6.70%	0	0	9.40%	0	0
Internal NB Right	4.10%	0	0	10.60%	0	0
Internal (EB) Ahead	79.10%	46.8	8.3	61.20%	33.4	9.9

Junction Arm	AM Peak				PM Peak	
	DoS	Ave Delay s/veh (PCU)	MMQ	DoS	Ave Delay s/veh (PCU)	MMQ
	Slattocks Roundabout – Partially Signalised					
Internal (EB) Ahead	84.80%	47.6	9.1	64.20%	33.6	10.6
Internal EB Ahead	32.30%	0	0	28.60%	0	0
Internal EB Right Ahead	69.20%	0	4.3	52.20%	0	4.8
A627 (NE-B) Ahead	31.00%	1.3	0.2	27.50%	1.3	0.2
A627 (NE-B) Ahead	11.10%	1	0.1	14.70%	1.1	0.1
PRC (%):	1.30%			37.70%		

9.183 The proposed mitigation scheme allows the junction to operate within capacity, whilst accommodating the traffic generated by the Development. This results in the delay on the Rochdale Road north approach reducing by 116 seconds in the worst-case AM peak hour.

9.184 The residual effect on driver delay would be negligible.

Cumulative Effects

9.185 It is possible that the construction of the Development could occur alongside the construction of other nearby development projects. However, this assessment has considered the cumulative effect of the Development alongside the operational effects of the Development.

9.186 In this regard, the operational effects are considered to outweigh the construction phase effects and thus, the incorporated assessment is robust. Notwithstanding, surrounding cumulative schemes would be subject to a CTMP such that the in-combination effects could be fully managed and mitigated in cooperation with the Local Highway and Planning Authorities.

Summary

9.187 SCP has undertaken a traffic and transport impact assessment in relation to the Development on land at Stakehill, Rochdale.

9.188 Baseline survey data was obtained from manually classified vehicle traffic surveys carried out in 2022 to characterise the existing traffic environment, with the resulting dataset used to inform the assessment. Factors from the Department for Transport statistics data website and TEMPro were used to estimate AADT and future year baseline traffic flows, respectively, for the assessment.

9.189 An assessment of impacts to receptors during the construction phase was undertaken in terms of severance, driver delay, pedestrian delay and loss of amenity, and road accidents and safety.

- 9.190 The operation of the Development has been assessed by way of a detailed transport assessment prepared to support the planning application. An assessment of the predicted traffic generation by the Development was undertaken using rate data from the TRICS national database.
- 9.191 A quantitative assessment of traffic and transport impacts during its operation, at an assumed year of completion of 10 years from application (2033), has been undertaken based on the predicted changes in traffic flows attributable to the proposed development against IEMA assessment criteria.
- 9.192 The Development is considered suitable for its intended use within the existing traffic and highway environment, assuming appropriate mitigation measures are incorporated through design. The assessment indicates that there are no residual significant effects as a result of the Development and the effects would be negligible.
- 9.193 Table 9.24: Summary of Effects, summarises the significance of transport and traffic effects during the construction and operation of the Development. There would be no significant residual effects.

Table 9.24: Summary of Effects – Traffic and Transport

Potential Effect	Nature of Effect (Permanent / Temporary)	Significance (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	Mitigation / Enhancement Measures	Geographical Importance*							Residual Effects (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)
				I	UK	E	R	C	B	L	
Construction											
Severance	Temporary	Minor adverse (not significant)	Implementation of CTMP							X	Negligible (not significant)
Driver Delay	Temporary	Minor adverse (not significant)								X	Negligible (not significant)
Pedestrian Delay	Temporary	Minor adverse (not significant)								X	Negligible (not significant)
Pedestrian & Cycle Amenity	Temporary	Minor adverse (not significant)								X	Negligible (not significant)
Accidents & Safety	Temporary	Minor adverse (not significant)								X	Negligible (not significant)
Completed Development											
Severance	Permanent	Minor adverse (not significant)	Infrastructure improvements as part of the Development incl. Sustainable Travel Plan							X	Negligible (not significant)
Driver Delay	Permanent	Negligible (not significant)								X	Negligible (not significant)
Pedestrian Delay	Permanent	Negligible (not significant)								X	Negligible (not significant)
Pedestrian & Cycle Amenity	Permanent	Minor beneficial (not significant)								X	Minor beneficial (not significant)
Accidents & Safety	Permanent	Negligible (not significant)								X	Negligible (not significant)

*** Geographical Level of Importance**

I = International; UK = United Kingdom; E = England; R = Regional; C = County; B = Borough; L = Local

REFERENCES

- ⁱ National Planning Policy Framework (2021), Ministry of Housing, Communities & Local Government
- ⁱⁱ Greater Manchester Transport Strategy (2021), Transport for Greater Manchester
- ⁱⁱⁱ Rochdale Adopted Core Strategy (2016), Rochdale Borough Council
- ^{iv} Places for Everyone (not yet adopted at time of writing), Greater Manchester Combined Authority
- ^v Guidelines for the Environmental Assessment of Road Traffic' (1993), IEMA
- ^{vi} The Strategic Road Network – Planning for the Future (2015). Highways England (now National Highways)
- ^{vii} Crashmap.co.uk