

Barratt David Wilson Homes & Hopkins Homes Ltd

Humber Doucy Lane, Ipswich

Transport Assessment

230597



MARCH 2024



RSK GENERAL NOTES

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Barratt David Wilson Homes & Hopkins Homes Ltd Humber Doucy Lane, Ipswich, Transport Assessment 230597-TA (01)



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1 INTRODUCTION

1.1 Overview

This Transport Assessment (TA) has been prepared by RSK on behalf of Barrat David Wilson Homes and Hopkins Homes ('the Applicant') in support of a hybrid planning application ('the Application') seeking full planning permission for the means of external access/egress to and from the site; and outline planning permission (all matters reserved) for a mixed use development for up to 660 dwellings (Use Class C3), up to 400 sq m (net) of non-residential floorspace falling within Use Class E and/or Use Class F2(b), an Early Years facility, and associated vehicular access and highway works, formal and informal open spaces, play areas, provision of infrastructure (including internal highways, parking, servicing, cycle and pedestrian routes, utilities and sustainable drainage systems), and all associated landscaping and engineering works ('the Proposed Development') on three parcels of land to the north and east of Humber Doucy Lane ('the Site') in Ipswich.

The site benefits from Local Plan Allocations for around 600 residential units with local centre, school, early years nursery and associated infrastructure. The development spans over two sites (approximately 31.52 ha in total) north of Humber Doucy Lane. The larger land parcel straddles two administrative bodies – East Suffolk Council and Ipswich Borough Council – which is allocated in the respective local plans for residential use with associated infrastructure.

Full details and scope of the Application is described in the submitted Planning Statement, prepared by Phase 2 Planning.

1.2 Scope of the Transport Assessment and consultation

The applicant has taken a collaborative approach to the development of the proposals which have been submitted for planning permission.

Pre-application engagement has taken place with Officers of East Suffolk Council (ESC), Ipswich Borough Council (IBC) and the Local Highway Authority (LHA) Suffolk County Council (SCC) – a summary of the pre-application meetings with officers is provide below:

- 1 November 2023 GI Workshop East Suffolk House (discussed the access options, walking and cycling routes and drainage);
- 02 November 2023 Highways Workshop Online (discussed the county model and access options);
- 29 November 2023 Infrastructure Phasing and Design Meeting Online (further discussion on access options);
- 08 December 2023 Pre-Application Meeting Online (Last meeting with the planning officers, access strategies were presented and deliberation occurred from the planning officers);

- 24 January 2024 Meeting with Principal Transport Development Planner from SCC – Online (discussed movement strategy); and
- 21 February 2024 Meeting with Principal Transport Development Planner from SCC Online (discussed county model and access).

Scoping notes were submitted throughout the process, supported by email dialogue with Highways Officers.

Discussions have also been held with the Public Transport Officer from SCC to make local bus companies aware of the proposed public transport improvements, detailed in Section 5.5. Further discussions with operators are ongoing.

A public webinar was held on the 1 November. Two public exhibitions have also been held on the 30 October 2023 at the Parish Hall in Rushmere St Andrew and on the 15 February 2024 at Venue 16 on Tuddenham Road, where the local community could participate in discussions on the emerging proposals and feedback their positive comments and / or concerns.

Consultation was also undertaken with Councillor Sandy Martin on the 15 November 2023 following the first public consultation event, at his request, to help him understand the emerging proposals and how these may impact on the surrounding and wider highway network, but in particular on Humber Doucy Lane and what measures would be introduced to encourage sustainable travel, the proposed access strategy, and how any emerging impacts may be mitigated or reduced.

Consultation was also carried out with the Parish Council Board of Rushmere St Andrew Parish Council on the 5th February 2024 to discuss the emerging development proposals and concerns they had regarding the use of The Street in Rushmere St Andrew by development traffic and particularly heavy goods vehicles during the construction stage. This was a very positive discussion.

1.3 Structure of the Report

This report appraises the transport-related aspects of the Proposed Development to ensure it meets the requirement of the LHA, SCC, in accordance with the agreed scope, methodology and assessment parameters.

The remainder of this report is structured as follows:

- Chapter 2 will highlight national, regional and local policy relevant to the development;
- Chapter 3 will describe the baseline context of the site;
- Chapter 4 will assess the local accessibility;
- Chapter 5 will describe the development proposals;
- Chapter 6 will assess the anticipated trip generation of the site;
- Chapter 7 will assess the impact of the proposals on the local road network; and
- Chapter 8 provides our summary and conclusions.

2 POLICY CONTEXT

2.1 Overview

In order to assess the transport aspects associated with the proposed development, it is first necessary to identify and understand each National, Regional, and Local Planning Policy relevant to the proposed development.

2.2 National Policy

2.2.1 National Planning Policy Framework, 2023

The National Planning Policy Framework (NPPF) was revised in response to the Levelling-up and Regeneration Bill: reforms to national planning policy consultation on 19 December 2023 and sets out the government's planning policies for England and how these are expected to be applied.

At the heart of the NPPF is a presumption in favour of sustainable development, which is to be seen as a golden thread for plan making and decision taking.

In respect of promoting sustainable transport, the NPPF outlines in Paragraph 108 that transport issues should be considered from the earliest stages of development proposals, so that the potential impacts of development on transport networks can be addressed. Plans and decisions should take account of:

- The potential impacts of development on transport networks;
- Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage – for example in relation to the scale, location or density of development that can be accommodated;
- Opportunities to promote walking, cycling and public transport use are identified and pursued;
- The environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and
- Patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places.

Significant development should be focussed on locations that are or can be made sustainable, as noted in Paragraph 109. This recognises that opportunities to maximise sustainable transport solutions will vary between urban and rural areas.

Paragraph 114 of the NPPF states that "in assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

- Appropriate opportunities to promote sustainable transport modes can be or have been taken up, given the type of development and its location;
- Safe and suitable access to the site can be achieved for all users;
- 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 Code; and

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

Paragraph 115 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. With this in mind, Paragraph 116 states that development should:

- Give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layout that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;
- Address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
- Create places that are safe, secure and attractive which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter and respond to local character and design standards;
- Allow for the efficient delivery of goods, and access by service and emergency vehicles; and
- Be designed to enable charging of plug-in and other ultra-low emission vehicles in safe accessible and convenient locations.

The NPPF defines sustainable transport modes as any efficient, safe and accessible means of transport with overall low impact on the environment, including walking and cycling, low and ultra-low emission vehicles, car sharing and public transport. This TA has been prepared with sustainable travel as the highest priority for the development and how the emerging access strategy and masterplan for the site has been designed to promote sustainable transport amongst residents and reduce any potential impacts of the development on the local transport network.

2.2.2 PPG: Travel Plans, Transport Assessments and Statements in Decision-Taking

In March 2014, the Ministry of Housing Communities and Local Government in conjunction with the Department for Transport (DfT), released advice on when transport assessments and transport statements are required, what they should contain (which is intended to assist stakeholders in determining whether an assessment may be required) and, if so, what the level and scope of that assessment should be.

The advice reflects current Government policy promoting a shift from the 'predict and provide' approach to transport planning to one more focused on sustainability. The document focuses on encouraging environmental sustainability, managing the existing network and mitigating the residual impacts of traffic from the development proposals.

The guidance sets out that Travel Plans, Transport Assessments and Statements can positively contribute to:

- Encouraging sustainable travel;
- Lessening traffic generation and its detrimental impacts;
- Reducing carbon emissions and climate impacts;
- Creating accessible, connected and inclusive communities;

- Improving health outcomes and quality of life;
- Improving road safety; and
- Reducing the need for new development to increase existing road capacity or provide new roads.

These documents support national planning policy which sets out that planning should actively manage patterns of growth in order to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable. A TA and Framework Travel Plan have been produced to support the planning application and have been completed with this guidance in mind.

2.2.3 Manual for Streets and Manual for Streets 2

The DfT's 'Manual for Streets' replaced their general road and street design guidance manual 'DB32' in 2007 and specifically focuses on lightly trafficked residential streets and highways. In terms of design it states that key consideration for achieving sustainable development is how the design can influence how people choose to travel. Designers and engineers need to respond to a wide range of policies aimed at making car use a matter of choice rather than habit or dependence. Local transport plans and movement strategies can directly inform the design process as part of the policy implementation process.

By creating linkages between new housing and local facilities and community infrastructure, the public transport network and established walking and cycling routes are fundamental to achieving more sustainable patterns of movement and to reducing people's reliance on the car.

Manual for Streets 2 expands on the design advice in Manual for Streets 1 to include how to plan and improve busy urban and rural streets.

2.3 Regional Policy

2.3.1 Suffolk Local Transport Plan 2011-2031

The Suffolk Local Transport Plan (SLTP) (2011-2031) lays out the policy objectives and expectations on existing and future developments in the county in regard to transport planning. The publication sets out a long term transport strategy and usefully collates a number of transport issues relevant to the proposed development at Humber Doucy Lane, Ipswich.

For example, the SLTP expresses the challenges associated with residential growth on the north and eastern fringes of Ipswich, stating that this development will place increased pressure on radial routes leading to the town centre employment areas.

Furthermore this is encouraged to be mitigated through the use of effective Travel Plans, integration with existing Local Development Plans, and ensuring sustainable development of transport infrastructure (e.g. reduce car dependency through implementation of active travel linkages).

2.3.2 ISPA Transport Mitigation Strategy 2019

The ISPA (Ipswich Strategic Planning Area) Transport Mitigation Strategy is a regional publication which aims to identify the impacts of new and ongoing Local Development Plans on Transport Planning in the region, and how these may be actioned through mitigation measures.

This publication usefully collates and summarises a number of reports, studies and evaluations which can be applied to the proposed development's considerations for future transport impacts.

The salient points of this strategy publication include:

- Ipswich has a larger proportion of working age, commuting population compared to the rest of the Suffolk County Region.
- There has been a downward trend in the number of commuting trips from 7.1 journeys per worker per week to 5.
- The average distance per commute trip has risen by 10% and the number of people in work has never been higher.
- Workers are commuting to work fewer days per week.

2.3.3 Suffolk Design: Streets Guide 2022

The Streets Guide is a guidance document designed to assist the delivery of welldesigned places in line with the National Design Guide as well as the National Model Design Code. The Streets Guide will be used by Suffolk County Council's highway engineers , drainage engineers and Public Rights of Way officers in responding to planning applications.

The Streets Guide sets new approaches to designing how sites for development should be accessed by focusing on the routes people need to travel by foot, wheel or cycle instead of vehicular accesses being starting points for the design process.

The guide has been used in consultation with SCC Highway Officers to develop the street typology and layout for the emerging masterplan proposals which addresses access by sustainable modes as a priority and is presented for consideration with the submitted planning application. Further detail is provided in the subsequent sections of this TA report.

2.3.4 Suffolk Parking Standards 2023

The SCC (Suffolk County Council) Parking Standards (2023 Update) is a publication intended to provide guidance on Parking policy in the county of Suffolk, consolidating publications and revisions made at national level to a local level, with greater specificity in regard to Parking provision.

The publication usefully lays out the salient transport planning issues relevant to parking in the county of Suffolk, as well as providing guidance on parking provision to ensure future projects have suitable parking implemented in a sustainable manner. The publication states that a key challenge is a lack of parking provision in residential areas. It is acknowledged National Parking Policy rhetoric promotes reduction in parking provision with the goal of encouraging sustainable forms of travel. However, despite the general success of this Policy when applied to inner-city environments, this publication goes further to recognise that rural, peri-urban and peripheral communities must balance this guidance against true demand for parking.

The guidance on residential land use parking provision can be summarised in the following key points:

- Consideration of type and scale of development should be taken into account.
- Layouts must accommodate safe passage of highway users, including vulnerable users, such as cyclists, pedestrians, mobility vehicles etc.
- Adequate parking should be provided at people's homes that uses land efficiently.
- Unallocated parking (not linked to an individual residence) usefully provides a common resource for a development or neighbourhood.
- Parking spaces should be overlooked / viewed by a habitable room of a residential property.

Parking provision for the emerging development proposals has been developed in accordance with the SCC standards.

2.4 Local Policy

2.4.1 Ipswich Local Plan 2018-2036

The Ipswich Local Plan (2018-2036) functions as a key local policy / delivery publication to ensure the council is able to deliver the sustainable growth of housing and employment in the locality. Among the publications core aims are to assist developers by providing 'policy expectations' for future development.

The publication supports a strategic coordinated approach to development, highlighting the impacts and offering proposed mitigation measures concerning Transport in reference to major residential developments such as Ipswich Garden Suburb and the proposed development – Humber Doucy Lane.

Notably, the publication details infrastructure improvements and measures to support the implementation of the proposed development in regard to transport.

The land parcels within Ipswich Borough (23.28 ha) form Local Plan Allocation ISPA4.1 for 449 dwellings and associated infrastructure. Policy ISPA4 states that the following transport measures should be included:

- Highway and junction improvements on Humber Doucy Lane and Tuddenham Road;
- Walking and cycling infrastructure to link the site to key social and economic destinations including the town centre and local services and facilities;
- Public transport enhancements; and
- Appropriate transport mitigation measures that arise from demand created by the development, in line with the ISPA Transport Mitigation Strategy.

There is also notable reference made to sustainable transport linkages between the new development and employment areas, this intended to be achieved through generation of sound Travel Plans.

Other inclusions worthy of note pertaining to the proposed development include smarter choices of travel and reducing car dependence through effective transport implementation.

2.4.2 Suffolk Coastal Local Plan 2020

The Suffolk Coastal Local Plan (SCLP) applies to East/South Eastern portions of the proposed development outside of the Ipswich Borough council boundary. 9.9 ha of the development land fall within East Suffolk forming Suffolk Coastal Local Plan Allocation SCLP12.24 for approximately 150 dwellings. Policy SCLP12.24 states that a TA will be required to identify any necessary improvements to highways and junctions on Humber Doucy Lane and Tuddenham Road.

The SCLP is intended to guide development, define growth expectations in sectors such as housing and provide a set of strategic / non-strategic policies to support sustainable development in the Suffolk Coastal locality.

Neighbourhood Plans are identified in the SCLP as a means of delegating local strategic policy – such as is being currently developed in Rushmere, immediately South East of the proposed development site.

In Sec. 2 Infrastructure, under Policy SCLP2.2, the SCLP lays out a package of mitigation measures, such as the improvement of the A12 and A14 main roads, to offset the expected impact that new residential development in Ipswich is likely to have on local road networks. It is the intention of the mitigation measures listed to reduce vehicle movements in the locality.

Other transport mitigation measures include:

- Implement infrastructure which enables and encourages sustainable forms of transport.
- Quality improvements to bus network
- Review of car parking provision and pricing
- Review of park and ride strategy
- Improvements to key road junctions

The SCLP additionally emphasises the importance of improving linkages between residential developments and employment areas, impact of noise along new transportation networks ensuring transport networks are 'linked' and inter-supporting – e.g. bus networks accessible by bike or on foot.

3 BASELINE CONTEXT

3.1 Site location

Humber Doucy Lane is situated approximately 3 km northeast of Ipswich Town Centre, from the mid-point of the site to the mid-point of the Town Centre. The site comprises three parcels of land to the north and east of Humber Doucy Lane, as shown in Figure 3.1.



Figure 3.1: Site location

Source: Google My Maps data © 2024

The largest, central parcel forms an irregular-shaped agricultural field, extending to approximately 22.5 ha. The northern-most 9.9 Ha portion of the field lies within the administrative area of East Suffolk Council, with the remainder falling within that of Ipswich Borough Council.

Immediately to the north of this parcel, beyond a hedged boundary and an unmade track, lies a smaller, triangular-shaped agricultural field, extending to approximately 2.3 ha, adjoining Tuddenham Road to the west and abutting the East Suffolk Railway Line to the north.

To the south-east of the main land parcel, separated by a narrow strip of land, lies a further, irregular shaped parcel of land extending to approximately 2.73 Ha in area, abutting the hedged boundary to Humber Doucy Lane to the south and the narrow lane of Seven Cottages Lane and Tuddenham Lane to the east and north.

A smaller parcel is located to the south of the Tuddenham Road / Humber Doucy Lane priority junction. All three parcels sum up to 31.66 ha. The majority of land within the red line boundaries is located within Ipswich authority, with 9.7 ha of the biggest parcel located within the East Suffolk District.

3.2 Local highway network

3.2.1 Humber Doucy Lane

Figure 3.2: Humber Doucy Lane facing north



Source: Google Streetview. Image captured: Apr 2023.

Humber Doucy Lane is predominantly a northwest-southeast single carriageway road, connecting to Tuddenham Road to the north and terminating at Playford Road to the south. Humber Doucy Lane is subject to a 30mph speed limit. The road provides access to a number of residential properties, as well as Rushmere St Andrew Village Hall and Rushmere Community Hub towards its junction with Rushmere Road. As a local distributor road with residential frontage access on its the south side, Humber Doucy Lane benefits from ample street lighting and protective bollards located near lay-by parking spaces, as well as segregated footpaths along the majority of the western side of the carriageway. In the vicinity of the proposed main site access, the carriageway is approximately 5.3 - 5.5 m in width.

No formal pedestrian crossings are present within the vicinity of the site. Furthermore, the portion of Humber Doucy Lane between the roundabout with Rushmere Road / The Street Rushmere and the junction with Playford Road lacks adequate pedestrian footpaths, and in some places narrows to approximately 4.8 m in width.

Two bus stops are located immediately north of the crossroad junction of Humber Doucy Lane where it intersects with Seven Cottages Lane and Roxburgh Road at the southern boundary of the Site. 'Roxburgh Road' bus stop comprises a 'Flag and Pole' information point. Two bus stops are located northwards, on the Humber Doucy Lane situated between the Ayr Road and Sidegate Lane. 'Rugby Club' bus stop also comprises one 'Flag and Pole' information point with no shelter. Further detail on bus stop locations and accessibility is provided in Section 4.5

3.2.2 Tuddenham Road



Figure 3.3: Tuddenham Road facing north

Source: Google Streetview. Image captured: Jul 2023.

Tuddenham Road is a main road, linking Ipswich with the satellite village of Tuddenham. The full length of the Tuddenham Road is 1.8 miles (2.9 km) from the south intersecting South Colchester and A1214 Roundabout to Tuddenham village.

With a road width of approximately 5.5 m Tuddenham Road runs along a short portion (approximately 232 m) of the northern most boundaries of the Site, where Humber Doucy Lane terminates at its most northerly point. Approaching from the east, the portion comprises a rail bridge within the national speed limit zone, which becomes a 30 mph zone approximately 26 m before the junction with Humber Doucy Lane. The rail bridge is approximately 6.5 m wide.

At the junction, a private business entrance is situated directly adjacent from Humber Doucy Lane in addition to the entrance of a Veterinary Clinic, approximately 15 m east of Humber Doucy Lane. Other notable accesses include agricultural accesses located immediately west of the rail bridge which access from Tuddenham Road. Tuddenham Road is largely bounded by vegetation in the form of trees, hedges, grass banks and verges of varying width and size. There are no bus stops within the vicinity of the junction with Humber Doucy Lane, with the closest located at Millennium Cemetery Ipswich and The Meadows Montessori High School.. There are no pedestrian footpaths or streetlighting amenity along this portion of the Tuddenham Road.

3.2.3 Seven Cottages Lane



Figure 3.4: Seven Cottages Lane facing east

Source: Google Streetview. Image capture: Apr 2023.

Seven Cottages Lane is a minor road at the southeastern boundary of the Site, intersecting at a crossroads junction with the Humber Doucy Lane and Roxburgh Road. The road has an approximate width of 3.6 m. The length of the road relevant to the southern / eastern boundaries of the Site is approximately 186 m.

Seven Cottages Lane links a minor residential development with the Humber Doucy Lane and terminates at the north, at a junction intersecting Lamberts Lane and Tuddenham Road. Beyond the residential properties to the east of the Site the road is bounded on either side by vegetation, trees, hedges and grass verges of varying width and size.

There is no streetlighting, bus stops, pedestrian footways, protective bollards or parking amenities on the road.

3.2.4 Sidegate Lane and Sidgegate Lane West

Figure 3.5 - Sidegate Lane facing southwest



Source: Google Streetview. Image capture: Sept 2023.

Sidegate Lane is a predominantly residential road linking Colchester Road with Humber Doucy Lane east/west. The road is approximately 6.5 m in width and spans a length of 0.6 Miles (0.9 km). As a predominantly residential fronted street allowing for local distribution of traffic in the area, Sidegate Lane comprises of ample streetlighting, 1.7 - 2.0 m wide pedestrian footpaths and landscaped areas in the form of grass verges, trees and bushes on either side of the road.

Approximately 600 m to the southwest of its junction with Humber Doucy Lane, SIdegate Lane spits into Sidegate Lane West, which continues southwest and links to Colchester Road via a Y-shaped priority-controlled junction, and Sidegate Lane which continues southeast linking to Colchester Road via the Sidegate Lane / Colchester Road roundabout.

Sidegate Lane is subject to a 30 mph speed limit with the exception of a school safety zone with a 20 mph speed limit extending immediately west and east of the Northgate High School for a length of 0.2 Miles (0.3 km) on Sidegate Lane West. The entry and exit of the school safety zone is marked by speed bumps at the western and eastern extents.

There is a total of eight bus stops on Sidegate Lane, split four southbound and four northbound. The two northern most and most southerly stops consist of a bus shelter and 'Flag and Pole' information point. All northbound stops and one southbound stop (opposite Northgate High School) consist of 'Flag and Pole' information point only. A bus turning circle is provided on the southbound carriageway approximately 70 metres south of Humber Doucy Lane and the Site boundary. Further detail on bus stop locations and accessibility is provided in Section 4.5

3.2.5 Inverness Road

Figure 3.6: Inverness Road facing southeast



Source: Google Streetview. Image capture: Sept 2023.

Inverness Road is a 5 m wide residential road which runs in between Humber Doucy Lane to the north and Sidegate Lane to the southeast. Inverness Road is subject to a 30 mph speed limit. As a residential road, Inverness Road comprises of ample streetlighting, 1.6 m wide pedestrian footpaths and landscaped verges.

There are a total of four bus stops – two northbound and two southbound) on Inverness Road comprising 'Flag and Pole' information points. Further detail on bus stop locations and accessibility is provided in Section 4.5

3.2.6 A1214 Colchester Road

Figure 3.7 - Colchester Road facing east



Source: Google Streetview. Image capture: Aug 2023

Colchester Road comprises part of the main A1214 and links between the A1071 / A1214 Roundabout (southeast) and the A1214 Northwest. The full extent of the road is approximately 1.7 miles (2.7 kilometres).

The Colchester Road intersects various roads by way of priority-controlled T / staggered junctions and roundabouts.

Colchester Road is approximately 9-10m wide inclusive of on-carriageway cycle lanes and typically 1.5m wide segregated footways, street lighting and verges (containing grass and other landscaping) on either side of the road.

The road also benefits from active travel infrastructure in the form of a cycle lane on both east and westbound carriageways, running along the full extent from the Rushmere Road intersecting roundabout, and the A1214 roundabout intersecting with Tuddenham Road.

In regard to public transport provision, there are a total eight bus stops along the extent of the Colchester Road comprising (named, location and infrastructure provision) as follows:

- Baptist Church (2), located immediately east of Sidegate Lane West, 'Flag and Pole' information points and laybys
- Colchester Road (1), westbound carriageway, immediately west of the Colchester Road / Sidegate Lane roundabout opposite The Royal George, comprising a 'Flag and Pole' information point with layby.

- Colchester Road (1), eastbound carriageway, immediately east of the Colchester Road / Sidegate Lane roundabout, comprising a 'Flag and Pole' information point with layby.
- Norbury Road (2), east and westbound carriageway, located immediately southeast of Norbury Road, comprising of two 'Flag and Pole' information points and bus stop road markings.
- Crofton Road (2), east and westbound carriageway, located to the northwest of the A1071 Woodbridge Road / A1214 Colchester Road roundabout, comprising of two 'Flag and Pole' information points and bus stop road markings. The westbound stop also includes a shelter.

3.2.7 Rushmere Road

Figure 3.8: Rushmere Road facing southeast



Source: Google Streetview. Image capture Aug 2023.

Rushmere Road is a predominantly residential road linking Humber Doucy Lane and The Street Rushmere in the east to Colchester Road and Woodbridge Road to the south. The carriageway is approximately 6.5 m in width and spans a length of 0.9 miles (1.5 km). As a local/district distributor road with residential frontage access, Rushmere Road comprises of streetlighting, pedestrian footways and landscaped vegetation in the form of grass verges, trees and bushes on either side of the road. Rushmere Road is subject to a 30 mph speed limit.

3.2.8 The Street Rushmere

Figure 3.9: The Street Rushmere facing east



Source: Google Streetview. Image capture Aug 2023.

The Street Rushmere acts as a local/district distributor road. In the vicinity of Humber Doucy Lane, The Street Rushmere is a rural road that becomes residential as it continues east into Rushmere St Andrew. The carriageway is approximately 5 m in width and a segregated footpath is present along the northern edge of the carriageway, separated from the road by a grass verge. The road is subject to a 30 mph speed limit and street lighting is present along the northern edge of the carriageway.

3.3 Public Rights of Way

There are several Public Rights of Way (PRoWs) within the immediate vicinity of the site. Figure 3.10 highlights their locations. The full definitive map of PRoWs from the former county borough of Ipswich from SCC is provided in Appendix 1. Footpaths 45, 49, 48 and 20 are located closest to the site, providing access to settlements and areas to the north of Humber Doucy Lane, such as Tuddenham.



Figure 3.10: Public Rights of Ways (Ipswich)

Source: Suffolk County Council. Contains Ordnance Survey data, 2016

3.4 Accident analysis

Personal Injury Accident (PIA) for the local highway network has been interrogated using data currently published by the DfT for the 5-year period covering the latest published data, 2018-2022. ESRI ArcGIS software has been used to interrogate and map the accident locations and severity within a 250 m radius of the site. An extract of the mapped accidents is provided in Figure 3.11 below.

Figure 3.11: Personal Injury Accidents



Source: ESRI ArcGIS Online with Open Data from GOV.UK, February 2024.

Within the study area, a total of eight accidents occurred between the year 2018 and 2022. Of these eight accidents, one was categorised as 'serious' and seven were categorised as 'slight', none were categorised as 'fatal'.

- 2 accidents 1 serious and 1 slight occurred in 2018;
- 2 accidents both slight occurred in 2019;
- 3 accidents all slight occurred in 2021; and
- 1 accident slight occurred in 2022.

The 'serious' accident that occurred was located on Humber Doucy Lane, to the south of the eastern parcel, between Dumbarton Road and Roxburgh Road involved a car and a goods vehicle (unknown weight), resulting in 3 casualties.

Of the seven 'slight' accidents, one occurred on Tuddenham Road (2021), to the north of its junction with Humber Doucy Lane, three occurred along Humber Doucy Lane (one occurring in each year: 2019, 2021 and 2022) near the Inverness Road and Sidegate Lane junctions, one occurred on Angus Close (2021), two occurred on Renfrew Road (2018 and 2019).

The data demonstrates that there were three accidents associated with the junctions of Humber Doucy Lane with Inverness Road, Sidegate Lane and Tuddenham Road albeit separated several years with driver error as the main causal factor. It is therefore concluded that there are no existing highway safety issues or patterns that would be significantly impacted the development proposals. Notwithstanding, the development access proposals / treatment will help reduce vehicle speeds on Humber Doucy Lane, thus improving safety. Further details are provided in Section 5.3.1.3 of this report.

4 ACCESSIBILITY

4.1 Pedestrian accessibility

The existing site offers moderate accessibility for pedestrians. Humber Doucy Lane bounds the site on the West side to a large extent and benefits from ample street lighting, is subject to a 30 mph speed limit and an unbroken pedestrian footway along its southern edge over the extent of development site (1.7 m wide) boundary opposite. This footway is segregated from the road via grass verges, vegetation, and trees, further improving pedestrian safety.

There is no segregated pedestrian infrastructure from Tuddenham Road to Humber Doucy Lane on the North boundary of the development site.

There is good pedestrian accessibility to / from Humber Doucy Lane towards Colchester Road and Ipswich Town beyond – Sidegate Lane, Ayr Road and Roxburgh Road and other surrounding streets are all subject to 30 mph speed limits, with pedestrian footways on either side which are lit by streetlighting, and in general segregated from the road carriageway by verges where the streetscape width permits. An example of where segregation is not provided is on Humber Doucy Lane between Kinross Road and Rushmere Road / The Street Rushmere roundabout.

4.2 Pedestrian accessibility audit

An audit of the pedestrian infrastructure along routes that would be used by residents of the Proposed Development to access local services and amenities in the surrounding area was undertaken between 9am and 3pm on Tuesday 31 October 2023. Observations on the following six categories were recorded: general information, infrastructure, crossings, safety, traffic and aesthetics and available amenities. A summary of the findings of the audit are organised according to these categories in the following subsections below. The study area is shown in Figure 4.1.



Figure 4.1: Pedestrian accessibility audit study area

Source: Google My Maps. Map data © 2024

4.2.1 General information

The types of land uses were recorded, indicating the area was primarily residential, with a limited number of small commercial sites. Of particular note, discussed in further detail in paragraph 3.2.1, was the absence of footways to the north of Tuddenham Road towards the junction with Humber Doucy Lane (Figure 4.2), the northern end of Humber Doucy Lane towards the junction with Tuddenham Road (Figure 4.3) and also to the southern end of Humber Doucy Lane between the Rushmere Road / Humber Doucy Lane roundabout and the junction with Playford Road (Figure 4.4).

Figure 4.2: Tuddenham Road (north)



Source: RSK, October 2023.

Figure 4.3: Humber Doucy Lane (north)



Source: RSK, October 2023.

Figure 4.4: Humber Doucy Lane (south)



Source: RSK, October 2023.

4.2.2 Infrastructure

The audit revealed the types, widths, conditions, obstructions present and connectivity of the pedestrian infrastructure along each of the audit routes. Although each of the routes had good quality footways present along the route, one of the routes, Humber Doucy Lane, had a footway on only one side of the street for the majority of its length.

The average width of pedestrian infrastructure along each of the routes ranged from 1.5 to 2 m. However in some areas these were narrower, at 1 m, at Playford Road (Figure 4.5) for example, or wider, at 2.5 m on some sections of Colchester Road (Figure 4.6) and Sidegate Lane.





Source: RSK, October 2023.

Figure 4.6: Footpath at Colchester Road



Source: RSK, October 2023.

Minor issues related to infrastructure conditions were noted, including uneven surfaces. However, these were noted as not significant enough to create a barrier for walking, cycling or other forms of mobility such as wheelchairs and prams. The most significant barriers to movement, however, were noted in the temporary obstructions categories. Measures to stop cars parking on grass verges were observed on Sidegate Lane (Figure 4.7) and Renfrew Road (Figure 4.8). This suggests that at certain times of the day, for example school pick-up and drop-off, many cars park on the grass verges, and possibly kerbside. This would be classed as a partial barrier to movement.

Figure 4.7: Measures to stop grass verge parking on Sidegate Lane



Source: RSK, October 2023.

Figure 4.8: Measures to stop grass verge parking on Renfrew Road



Source: RSK, October 2023.

4.2.3 Crossings

The Proposed Development is located on Humber Doucy Lane, a two-way semi-rural road which acts as local/district distributor, used by school children, dog walkers and local residents. Crossings are generally uncontrolled with tactile paving and dropped kerbs provided. During the audit it was noted that no crossing treatment (dropped kerbs and/or tactile paving) are provided at the junctions with the following side roads: Roxburgh Road, Dumbarton Road, Summerfield Close and the western edge of Ayr Road.

Most minor roads in the vicinity of the Proposed Development had some form of crossing infrastructure, such as tactile paving and dropped kerbs.

On the more major routes, such as Colchester Road, controlled crossing by way of traffic signals (Figure 4.9) and pedestrian refuge islands were present. On Sidegate Lane West, a zebra crossing was observed in the vicinity of the school (Figure 4.10).

Figure 4.9: Signalised crossing on Colchester Road



Source: RSK, October 2023.



Figure 4.10: Zebra crossing on Sidegate Lane West

Source: Google Streetview. Image capture: Sept 2023.

4.2.4 Street furniture, road markings and wayfinding

During the audit, the presence of street furniture and signage were recorded. These related to the comfort and legibility of the walking routes. The audit evaluation found that most routes did not have street furniture, e.g. benches, low walls to sit on or public toilets.

On Colchester Road and Sidegate Lane West, street signage and road markings were present, well maintained and clearly visible.

Minimal to no road markings were visible on Rushmere Road (Figure 4.11), the section of Humber Doucy Lane between the side road with Roxburgh Road and 153 Humber Doucy Lane (Figure 4.12), Renfrew Road and Sidegate Lane between Sidegate Lane West and Colchester Road.

Figure 4.11: Lack of road marking on Rushmere Road



Source: Google Streetview. Image capture: Aug 2023.

Figure 4.12: Lack of road markings on a section of Humber Doucy Lane



Source: RSK, October 2023.

4.2.5 Personal safety

Issues of personal safety relate to the auditor's perception of how safe the route felt according to the presence of people in the street, surveillance from surrounding properties and the presence of street lighting. Street lighting was present along every route with some form of pedestrian infrastructure (e.g. dedicated pedestrian footway or in the instance of Humber Doucy Lane south of Rushmere Road to Playford Road, a pedestrian lane on the edge of the carriageway). It should be noted, however, that the audit took place during the day and therefore the perceived quality of the lighting provision was not verified. All walking routes were visible from the majority of surrounding houses.

4.2.6 Road traffic

Traffic safety was evaluated in a number of ways. The presence of traffic management infrastructure and signage, such as speed bumps, chicanes, kerb buildouts and school speed zones, were recorded for each audited route.

Grass verges separate the footways from the carriageway on routes including:

- Southern end of Tuddenham Road,
- Northern end of Sidegate Lane (both sides),
- Renfrew Road (both sides),
- Colchester Road (south side),
- Rushmere Road and
- Northern section of Humber Doucy Lane.

It was noted during discussions at and feedback from the public exhibition events that the perceived high speed of vehicles on Humber Doucy Lane has been identified as a local concern.

At present, any actual issues have not been addressed by the LHA. It was noted during the audit that no traffic safety measures were recorded on the section of Humber Doucy Lane between the Rushmere Road roundabout to the south and the junction with Tuddenham Road to the north. Additionally, the absence of footpaths towards the southern end of Humber Doucy Lane between the Rushmere Road roundabout and the junction with Playford Road was noted.

4.2.7 Aesthetics and amenities

The audit recorded observation relating to the aesthetics and amenities of the routes. These related to the overall attractiveness of the route; whether the route was free of graffiti or discarded rubbish; whether it was free of excessive air pollution; and whether there was any excessive noise. Each of the routes was found to be positive in regard to these factors.

4.3 Access to services

Nearly three-quarters of all journeys in the UK are under five miles in length (Source – National Travel Survey 2022: Mode share, journey lengths and trends in public transport use, DfT December 2023). Shorter distance trips offer the greatest opportunity for changes in travel behaviour. The Chartered Institution of Highways and Transportation (CIHT) publication, Planning for Walking (April 2015), indicates that:

- "Walking neighbourhoods are typically characterised as having a range of facilities within 10 minutes' walking distance (around 800 metres). However, the propensity to walk or cycle is not only influenced by distance but also the quality of the experience; people may be willing to walk or cycle further where their surroundings are more attractive, safe and stimulating" and also,
- "The power of a destination determines how far people will walk to get to it. For bus stops in residential areas, 400 metres has traditionally been regarded as a cut-off point and in town centres, 200 metres (Department of Environment NI, 2000). People will walk up to 800 metres to get to a railway station, which reflects the greater perceived quality or importance of rail services."

CIHT guidance indicates a maximum distance of 2 km is considered reasonable for commuting trips on foot. Basemap's TRACC travel time analysis tool which runs on ESRI's ArcGIS software has been used to assess the accessibility of the development, in regard to amenities within walking distance (up to 2 km) from the site.

Figure 4.13 below indicates walking isochrones (distances) of 500 m, 1 km and 2 km from the site and key destinations that are accessible. A larger scale copy of the figure is provide in Appendix 2.



Figure 4.13: Walking isochrones

Source: Basemap TRACC tool/ESRI ArcGIS. OpenStreetMap , 2024.

Local grocery and convenience shopping is accessible within 1 km of the site (10 mins on foot) Local shopping offering includes the Co-op on Selkirk Road and the Co-op on Colchester Road.

Medical facilities are in moderate proximity of the development site at Humber Doucy Lane, with Ipswich Hospital located 1.2 miles to the south (approximately 30 mins on foot). A GP, dentist and several pharmacies are also located within 2 km of the site, to the south of the site towards Ipswich.

Other services such as a post office and ATM machines are also located within 1 km of the site (10 mins on foot), on Selkirk Road.

The development site benefits from good accessibility to local schools, with primary schools (e.g. Rushmere Hall Primary and St Christopher's Academy) situated within 1 km (10 mins on foot) of the site. Northgate High School situated on Sidegate Lane, is also located less than 1 km from the site.

There is a moderate offering of green and recreational space in the vicinity of the site, such as the Gretna Garden allotments, Dumbarton Road Recreation Ground, Inverness Road Park and Christchurch Park.

4.4 Cycling accessibility

Cycling accessibility to the development site on Humber Doucy Lane is moderate. Figure 4.14 Figure 4.14 illustrates a portion of Ipswich's cycling and walking routes within the vicinity of the site. A full version is provided in Appendix 3.

Humber Doucy Lane benefits from adequate street lighting and segregated pedestrian footways, however there is no segregated cycling infrastructure presented. Positively, Humber Doucy Lane has adequate residential parking infrastructure, in the form of driveways, lay-by parking bays and informal grass verge parking, all of which minimise impact to other road users such as cyclists and reduce risk of potential road hazards (e.g. parking on the road).

Other routes leading from Colchester Road to Humber Doucy Lane lack segregated cycling infrastructure – Sidegate Lane, Ayr Road and Roxburgh Road. However, they benefit from adequate street lighting and residential parking to lower the occurrence of road hazards caused by on-street parking.

There is no dedicated cycling infrastructure to the north of Tuddenham Road. However, on-road cycle lanes are present at the Valley Road / Tuddenham Road roundabout to assist cyclists entering the roundabout.

The nearest accessible urban cycling infrastructure is situated on Colchester Rd / A1214 to the southwest of the development site.





Source: Suffolk County Council. Data shown on map is correct as of 26.09.20.

Figure 4.15, created using Basemap's TRACC tool, indicates destinations that are accessible from the site, using existing cycling infrastructure, within typical cycle distances of 2 km (8 minutes), 5 km (19 minutes) and 8 km (30 minutes). A larger scale copy of the figure is provided in Appendix 2.

Figure 4.15: Cycling isochrones


Source: Basemap TRACC tool/ESRI ArcGIS. OpenStreetMap, 2024.

National Cycle Network (NCN) Routes 51 and 1 are located within an 8 km cycle of the site, however can be used to reach Kesgrave and Chantry from central Ipswich. Desitnations to the north of the site that can be reached within an 8 km cycle include Henley, Witnesham and Grundisburgh.

Many of the facilities (supermarkets, pharmacies, GPs, etc) highlighted in Figure 4.13 can be accessed within a 5 km (19 minute) cycle from the site. Schools are located even closer, accessible within a 2 km (8 minute) cycle.

4.5 Public transport

4.5.1 Bus

The development site at Humber Doucy Lane is moderately accessible by public transport with a total 4 bus stops in the vicinity. The locations of the existing bus stops are shown in Figure 4.13. Two are located immediately north of the crossroads at the southern boundary of the site, where Humber Doucy Lane intersects with Roxburgh Road, two are located northwards on the Humber Doucy Lane situated between Ayr Road and Sidegate Lane (Rugby Club). The bus stop infrastructure for each of the four stops consists of simple 'Flag and Pole' information points with road markings for bus traffic to stop.

Nearby roads in the vicinity of the development site such as Sidegate Lane, Inverness Road and Renfrew Road are moderately to highly accessible to/from central areas via public transport and are within reasonable walking distance of the Humber Doucy Lane.

A summary of the bus services in the vicinity of the Proposed Development is provided in Table 4.1, while the bus routes are illustrated in Appendix 4.

Table 4.1: Bus services

Service	Route	First Bus	Last Bus	Frequency
59 Village Links	lpswich – Rushmere St Andrew	<u>Mon - Sat</u> Dep. Old Cattle Market Bus Station - 09:45	<u>Mon - Sat</u> Dep. Old Cattle Market Bus Station – 15:00	Approx. every hour (Mon-Sat)
		<i>Arr.</i> Rushmere St Andrew – 10:13	<i>Arr.</i> Rushmere St Andrew – 15:28	
6 Rushmere Riders	lpswich – Copleston	<u>Mon – Sat</u> Dep. Tower Ramparts Bus Station – 06:00 Station – 18:10		Approx. every 30 minutes (Mon- Sat)
		A <i>rr.</i> Ipswich Hospital – 06:18	<i>Arr.</i> Ipswich Hospital – 18:31	
		<u>Sun</u> Dep. Tower Ramparts Bus Station – 08:45	<u>Sun</u> Dep. Tower Ramparts Bus Station – 18:45	Approx. every hour (Sun)
		A <i>rr.</i> Ipswich Hospital – 09:02	<i>Arr.</i> Ipswich Hospital – 19:02	
5/5E (evenings only) Foxhall Five	lpswich – Copleston Ipswich – Northgate	<u>Mon - Sat</u> Dep. Tower Ramparts Bus Station – 06:00	<u>Mon - Sat</u> Dep. Tower Ramparts Bus Station – 22:50	Approx. every 15 – 20 minutes during the day and every hour during the evening (Mon – Sat)
	(evenings only)	A <i>rr.</i> Ipswich Hospital – 06:12	pswich Hospital <i>Arr.</i> Woodbridge 12 Road – 23:15	
		<u>Sun</u> Dep. Tower Ramparts Bus Station – 08:00	<u>Sun</u> Dep. Tower Ramparts Bus Station – 22:50	Approx. every 30 minutes during the day and every hour during the evening (Sun)
		<i>Arr.</i> Ipswich Hospital – 08:15	<i>Arr.</i> Woodbridge Road – 23:15	
70/70A Village Links	lpswich - Woodbridge	<u>Mon - Sat</u> Dep. Old Cattle Market Bus Station – 08:30	<u>Mon - Sat</u> Dep. Old Cattle Market Bus Station – 18:00	Approx. every 1 – 2 hours
		<i>Arr.</i> Woodbridge Turban Centre – 09:04	<i>Arr.</i> Woodbridge Turban Centre – 19:00	

11 A/B School	Whitton – Northgate High	<u>Schooldays only</u>	<u>Schooldays only</u>	N/A
	School	Dep. Castle Hill, Meredith Road – 07:25 Dep. Rushmere, St Albans School – 15:25		
		A <i>rr.</i> Rushmere, Northgate School – 08:17	A <i>rr.</i> Castle Hill, BP Garage – 15:38	

Source: National Rail. Correct as of February 2024.

4.5.2 Rail

Ipswich Bus and Train Network is illustrated in Appendix 4.

The closest railway station to the proposed development is located approximately 2 miles northwest of Humber Doucy Lane, located in Westerfield. Westerfield railway station is on a branch line off the Great Eastern Main Line. Westerfield railway station is currently managed by Greater Anglia. Which also operates all trains serving the station.

The typical weekday service operating at Westerfield railway station is summarised in Table 4.2.

Operator	Route	Typical frequency
Greater Anglia	Felixstowe – Trimley – Derby Road – Westerfield - Ipswich	1x per hour in each direction
	Lowestoft – Oulton Broad South – Beccles – Brampton – Halesworth – Darsham – Saxmundham – Wickham Market – Melton – Woodbridge – Westerfield - Ipswich	Limited peak-hours only – full hourly service on Sundays

Table 4.2: Rail services (Westerfield)

Correct as of February 2024

However, the most accessible railway stations to the proposed development, in terms of reaching the station by sustainable transport methods using existing infrastructure (e.g. via cycling or bus), are lpswich railway station and Derby Road railway station.

Ipswich railway station has extensive facilities including self-service ticket machines, ticket counters, a convenience store, two cafes, a multi-storey car park, taxi stand, bus station and ATMs. The whole station is now fully accessible, with lifts having been installed in 2011. There are 12 cycle stands and 70 cycle parking spaces located in the West End car park. A secure cycling parking compound providing 106 spaces is located on Platforms 1 and 2.

Facilities at Derby Road railway station are limited. The station is unstaffed so tickets can be purchased from the ticket machine. There is one cycle stand on Platform 1 (for trains towards Ipswich), just along from the waiting shelter. There are also two cycle stands on Platform 2 (for trains towards Felixstowe), located in between the ramp / steps that lead to / from the platform and former station buildings.

The services operating at Ipswich railway station and Derby Road railway station on a typical weekday are summarised in Table 4.3 and Table 4.4.

Operator	Route	Typical frequency		
Greater Anglia	London Liverpool Street – Colchester – Manningtree – Ipswich – Diss - Norwich	1x per hour in each direction		
	London Liverpool Street – Stratford – Chelmsford – Colchester – Manningtree – Ipswich – Stowmarket – Diss - Norwich	1x per hour in each direction		
	London Liverpool Street – Stratford – Shenfield – Chelmsford – Hatfield Peverel – Witham – Kelvedon – Marks Tey – Colchester – Manningtree - Ipswich	1x per hour in each direction		
	Ipswich – Stowmarket – Bury St. Edmunds – Soham – Ely – March – Manea – Whittlesea – Peterborough	Every two hours in each direction		
	(Harwich International) – Ipswich – Needham Market – Stowmarket – Elmswell – Thurston – Bury St. Edmunds – Kennett – Newmarket – Dullingham - Cambridge	1x per hour in each direction		
	(Harwich International) – Ipswich – Woodbridge – Melton – Wickham Market – Saxmundham – Darsham – Halesworth – Brampton – Beccles – Oulton Broad South - Lowestoft	1x per hour in each direction		
	Ipswich – Westerfield – Derby Road – Trimley – Felixstowe	1x per hour		

Table 4.3: Rail services (lpswich)

Source: National Rail. Correct as of February 2024.

Table 4.4: Rail services (Derby Road)

Operator	Route	Typical frequency
Greater Anglia	Felixstowe – Trimley – Derby Road – Westerfield - Ipswich	1x per hour in each direction

Source: National Rail. Correct as of February 2024.

4.6 Public transport accessibility summary

Figure 4.16 below has been created using the Basemap TRACC travel time analysis tool to assess the accessibility of the development via public transport, for up to approximately 60 minutes journey time. A larger scale copy of the figure is provided in Appendix 2.



Figure 4.16: Public transport isochrones

Source: Basemap TRACC tool/ESRI ArcGIS. OpenStreetMap, 2024.

Central Ipswich, Kesgrave and Witnesham can all be accessed within 30 - 40 minutes from the site via public transport. Bramford, Holbrook, Nacton, Felixstowe, Woodbridge, Melton and Otley can all be accessed within 50 - 60 minutes from the site via public transport.

Westerfield railway station is located within 20 minutes of the site via public transport, whereas Derby Road railway is station is within 30 minutes of the site and Ipswich railway station is within 40 minutes.

The Proposed Development includes a public transport strategy and associated infrastructure improvements to increase the attractiveness of public transport as a viable sustainable alternative to the private car. Details are set out in Section 5.5.

4.7 Benefits of the location of the development site

In summary, the development site at Humber Doucy Lane is moderately accessible on foot and by bicycle. There is a range of amenities and services likely to cater to the new development in reasonable travel distance to/from the site. There are numerous schools (primary / secondary) located in close distance to the site. Additionally, there is a moderate offering of convenience stores, healthcare facilities and postal services in proximity to the site.

There is a lower availability of public transport and cycling infrastructure in the vicinity of the site. There is limited dedicated cycling infrastructure in the surrounding area of the site, with the nearest example on Colchester Rd / A1214. There are a moderate number of bus stops in the vicinity of the development site, however, likely not proportionate to the increased demand reasonably expected from a development of this scale. Additionally, the infrastructure for the bus stops on Humber Doucy Lane are impractical, with no pull lanes or shelters at stops.

The Proposed Development includes a public transport strategy and associated infrastructure improvements to increase the attractiveness of public transport as a viable sustainable alternative to the private car.

5 DEVELOPMENT PROPOSALS

5.1 Description of development

The site at Humber Doucy Lane is located approximately 4 km northeast from Ipswich Town Centre, at the border between the Borough of Ipswich and the District of East Suffolk. The key drivers for the development of Humber Doucy Lane are based on the principles of sustainable cross-boundary development, fulfilling local housing needs arising across the relevant authorities, on the edge of the Ipswich urban area, whilst respecting the East Suffolk vision for its rural areas.

Key requirements from the two Site Allocation policies include:

- Delivery of affordable housing;
- An expectation of 600 homes;
- Provision of a suitable transition to the wider countryside, including contributing to the provision of a Green Trail;
- Separation to surrounding settlements and protection of heritage assets;
- Providing sustainable drainage systems;
- Provision of appropriate community facilities and open space;
- On-site suitable accessible natural greenspace ;
- Access from Humber Doucy Lane and provision of relevant highway / public transport measures; and
- Biodiversity net gain.

The Proposed Development consists of a hybrid planning application seeking: Full Planning Permission for the means of external access/egress to and from the site. Secondly, outline planning permission (with all matters reserved) for a mixed use development for up to 660 dwellings (Use Class C3), up to 400 sq m (net) of non-residential floorspace falling within Use Class E and/or Use Class F2(b), an Early Years facility, and associated vehicular access and highway works, formal and informal open spaces, play areas, provision of infrastructure (including internal highways, parking, servicing, cycle and pedestrian routes, utilities and sustainable drainage systems), and all associated landscaping and engineering works.

5.2 Existing site

The existing site comprises undeveloped land. Up until the adoption of the most recent Local Plans, the land was designated as countryside. There is no existing vehicular access into the site. Existing pedestrian access into the site takes the form of PROWs, detailed in Section 3.3.

5.3 Proposed site

The Proposed Development comprises residential accommodation for up to 660 households, which is in broad accordance with the requirements of the respective Development Plan policies. The existing site is illustrated in Appendix 5.

5.3.1 Access

The Access Strategy for the development is shown in Appendix 6.

5.3.1.1 Pedestrians

Access for pedestrians is proposed from four locations on Humber Doucy Lane. From west to east, the accesses comprise the following:

- Controlled crossing facilities incorporated into the proposed signalised access junction, connecting the proposed segregated cycle / footways within the larger parcel to existing footways on Inverness Road and Humber Doucy Lane;
- A new segregated pedestrian and cycle path running the entire length of the main site parcel frontage from the main site access to Sidegate Lane. This new path will be located behind the existing mature hedgerow;
- A tiger crossing located to the west of Sidegate Lane, connecting the proposed segregated cycle / footways within the main site parcel to the existing shared footpath/cycle way on Humber Doucy Lane and the wider network accessible in the vicinity of the site;
- A controlled crossing connecting the existing shared footpath/cycle way on Humber Doucy Lane to the proposed segregated cycle / footways within the smaller parcel to the east; and
- Pedestrians will also be able to access the smaller parcel to the east via new footpaths provided in the design of the proposed vehicular access to this parcel of land that connect to the internal footpaths.

Additional pedestrian connection points are shown in Appendix 7.

5.3.1.2 Cyclists

Similar to access for pedestrians, access for cyclists is proposed from the same four locations on Humber Doucy Lane. Additional cycle connection points are also shown in Appendix 8.

5.3.1.3 General vehicular traffic

In terms of general vehicular site access, three accesses are proposed. From west to east, the proposed accesses are as follows:

- Priority controlled T-junction onto Tuddenham Road serving only the northernmost development parcel (see Appendix 6 for the proposed layout);
- Signalised junction onto Humber Doucy Lane into the main larger development parcel (see Appendix 6 for the proposed layout); and
- Priority controlled T-junction onto Humber Doucy Lane into the eastern parcel (see Appendix 6 for the proposed layout).

The design of the accesses ensures that intervisibility is provided between drivers, pedestrians and cyclists, offering pedestrian priority and suitable visibility splays for vehicles emerging onto Tuddenham Road and Humber Doucy Lane. An Access and Vehicular Parameter Plan is illustrated in Appendix 9.

5.3.1.4 Buses

Access for the buses forms part of the overall access strategy for the Proposed Development. This will be facilitated via the new proposed signalised site access junction onto Humber Doucy Lane into the main larger development parcel or via a new bus gate which is proposed and located opposite the junction of Sidegate Lane on Humber Doucy Lane. Details are illustrated in Appendix 6. As detailed in Section 1.2, local bus companies have been appraised of the development proposals by the Public Transport Officer of SCC who has been engaged in consultation during the Proposed Development design process. At this stage, it is not known what buses that are currently servicing the routes and stops on Humber Doucy Lane, Inverness Road, Sidegate Lane and Renfrew Road will divert/extend into the site. However, the access proposals and strategy that has been developed in consultation with Officers of SCC, permits flexibility in terms of allowing buses to route through the site. A Public Transport Parameter Plan is provided in Appendix 10.

5.3.1.5 Emergency access

Additional access for emergency vehicles to the main larger development parcel is provided via the proposed bus gate.

5.3.2 Internal site layout

The three new vehicular site access junctions have been designed to be sufficient for the development demand. An internal road loop is being provided in each of the three parcels to facilitate access to individual areas within the site, whilst also providing a suitable route for buses within the main parcel.

The internal road network will provide a suitable hierarchy acknowledging national design criteria to promote enhanced streets, informal streets and pedestrian-priority streets with appropriate active frontage in parts to reinforce a low-speed residential environment. An overarching masterplan concept has been developed which underpins the access and movement strategy by planning for people and in so doing creating places for people, in contrast to planning for cars which has always historically resulted in places dominated by cars.

New pedestrian and cycle routes will be provided within the site, acknowledging local guidance regarding the separation of users where appropriate. These direct and attractive routes will form a separate active travel network within the site which may in part run alongside the vehicular routes. All active travel routes within the site will be appropriately lit, surfaced, be generally overlooked and be of high quality to ensure access on foot and by cycle is maximised, with opportunities to connect to the active travel network at numerous points thereby enabling permeability.

The proposed pedestrian and cycle network comprises of several layers and works for a primary "fast" movement within the road corridors and informal "slow" movement within the green corridors. Primary links include proposed improvements to the footways and a new cycle lane along Humber Doucy Lane, that will run parallel to the road behind the existing hedgerow in order to retain this important natural asset.

Other primary pedestrian and cycle routes will be provided along the spine road and along the section of the road that connects the spine road to the bus gate / emergency access to provide pedestrian and cycle access to Sidegate Lane.

Informal, or leisure routes are proposed to provide links through the green corridors and connect to the existing PRoWs and Quite Lanes. Informal pedestrian and cycle routes along a 'Green Trail' will curve around the development from the western edge, and more informal paths along the site boundary will provide a continuous loop around the site.

5.3.3 Car parking

Residential parking can have a significant impact on landscape and townscape. In line with achievement of quality urban designs principles, parking layouts should be designed into schemes from the outset to ensure that features such as cars, garage doors or cycle stores do not dominate the street scene and that parking spaces are appropriately utilised.

The Proposed Development will deliver car parking in accordance with Policy DM22 of the Ipswich Local Plan and Policy SCLP7.2 of the Suffolk Coastal Local Plan which refer to 2023 SCC standards (Table 5.1) to ensure that a balance is found between ensuring the sufficient parking is provided to meet demand whilst adhering to the principles of sustainable travel by not providing an over-supply of parking.

Use	Vehicle	Cycle	Powered Two-Wheeler Parking	Disabled
	Minimum*	Minimum	Minimum	Minimum
1 bedroom	1 space per dwelling	2 secure covered spaces	N/A	N/A if parking is in curtilage of
2 bedrooms	2 spaces per dwelling**	per dwellings. (Satisfied if garage or		dwelling as Visitor / unallocated.
3 bedrooms	2 spaces per dwelling	secure area is provided within		
4+ bedrooms	3 spaces per dwelling	dwellings to minimum dimensions)		
Visitor / unallocated	0.25 spaces per dwelling (unallocated)	If no garage or secure area is provided within curtilage of dwellings then 2 covered and secure spaces per dwelling in a communal area for residents plus 2 spaces per 8	1 space + 1 per 20 car spaces (for 1 st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	

Table 5.1: Local parking standards

	dwellings for	
	visitors	

*Standards exclude garages under 6m x 3m (internal dimensions) as a parking space but can include under croft parking and car ports providing, they have no other current or potential use.

**Reduction in this figure may be considered with robust and degreed highway mitigation.

Full parking provision for the Proposed Development will be determined at the reserved matter stage. However, the scheme will be designed based on the requirement for reducing off-site impacts of the development. The parking provision will be prepared in accordance with the 2023 SCC standards. Electric vehicle charging points will also be provided which will encourage the use of more environmentally friendly vehicles, as per the 2023 SCC standards.

5.3.4 Cycle parking

As per the 2023 SCC standards, cycle parking will be incorporated into the design of Proposed Development. As set out in Section 7 of the Suffolk Guidance for Parking document, the number of spaces required is expressed as minimum standards to reflect the sustainable nature of this mode of travel and its importance in meeting SCC's commitment to making the county of Suffolk carbon neutral by 2030 and in broad accordance with Local Transport Note 1/20.

Design of the cycle parking will follow the recommendations within the 2023 SCC standards.

5.3.5 Servicing and refuse collection

Servicing and refuse collection would take place on-site. The internal road network in each parcel will be designed to accommodate the movement and turning requirements of servicing and refuse / recycling vehicles, maximising the opportunity to provide the ability for vehicles to enter, turn and exit in forward gear.

5.3.6 Development construction

At this stage, contractors have not yet been appointed and therefore detailed methodology of construction has not yet been determined. However, it is expected that modern methods of construction will be adopted, where possible, to minimise environmental impacts and traffic volumes.

Construction traffic will be managed by the contractor, using a range of management measures to minimise risks and disruption. These will be contained within a Construction Traffic Management Plan (CTMP), which will include, for example, details of working hours, layout of construction areas, routing for traffic and any necessary road closures. It is anticipated that the provision of a draft CTMP will be secured by planning condition and provided as part of the reserved matters.

5.4 Proposed pedestrian and cycling improvements

The development proposals have looked to ensure that the Proposed Development is incorporated into and utilises all available pedestrian and cycling linkages to the wider surrounding area, and that by reducing traffic speeds on Humber Doucy Lane, will ensure that access to the existing education, retail and community facilities is readily and safely accessible by sustainable transport modes.

The main vehicular access road into the site will include a segregated cycle/footpath lined with trees, creating a safe access route that connects to existing PRoWs and supports sustainable transport use.

To increase pedestrian and cyclist safety on Humber Doucy Lane, a segregated foot/cycle path will be provided within the development, separated from the carriageway by the existing hedgerow, both in the main, larger and eastern development parcels.

Furthermore, the proposed signalised access junction and controlled crossings will act as traffic control measures to slow and create breaks in the existing traffic flow on Humber Doucy Lane. The proposed crossings also link to existing footpaths on Humber Doucy Lane to facilitate the safe movement of people southwards towards the existing facilities and amenities.

5.5 Proposed public transport improvements

Reviews of the existing bus infrastructure detailed in Chapters 3 and 4, and responses from local residents who attended the public exhibitions, highlighted that the existing bus stops on Humber Doucy Lane were not accessible or suitable for all, in terms of location and bus stop infrastructure.

As mentioned in Section 5.3.1.4, a new bus gate access into the development is proposed. In addition to this, two bus stops are proposed within the site thus ensuring that all the proposed residential dwellings are within 400m walking distance of a regular bus service. Indicative locations of the proposed bus stops developed in consultation with Officers of SCC, are shown in Appendix 10.

RSK LDE's drawing no. 890695-RSK-ZZ-XX-DR-C-0004-P02. Proposed Access Strategy, Sheet 4 of 6 in Appendix 6 illustrates a proposal to relocate the existing bus stop on Humber Doucy Lane to the southwestern corner of the eastern development parcel to accommodate the proposed access and controlled crossing. A new and adequate section of footway will be constructed at its new location to accommodate the relocated bus stop infrastructure.

6 TRAVEL DEMAND

6.1 Overview

In order to assess the potential impacts of the Proposed Development, the number of trips by all modes generated by residential has been estimated using an industry standard database. This is based on the proposals for up to 660 residential units.

6.2 Trip rates

The TRICS databased (version 7.10.2) has been utilised to derive the likely number of trips expected for the site for the residential development.

Selection criteria for the residential use of the Proposed Development is as follows:

- Land use, 'Residential', subcategory, 'M Mixed Private / Affordable Housing;
- Excluding Greater London, Scotland, Wales, Northern Ireland and Eire;
- 350 to 650 units;
- Weekday surveys; and
- 'Suburban Area, Edge of Town and Neighbourhood Centre' location type.

The surveys were then further sifted to remove sites with high percentages of nonprivately owned units. The TRICS output resulting from this filtering was agreed with Highways Officers from SCC. These trip rates have been calculated per one unit for residential use. A summary of trip rates is shown below in Table 6.1 with the full TRICS output provided in Appendix 11.

Mode	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arrive	Depart	Total	Arrive	Depart	Total
Walk	0.027	0.161	0.188	0.044	0.032	0.076
Cycle	0	0.003	0.003	0.008	0.011	0.019
Car Driver	0.118	0.351	0.469	0.275	0.18	0.455
Passenger	0.178	0.635	0.813	0.44	0.276	0.726
Bus / Tram	0	0.003	0.003	0.001	0.001	0.002
Public Transport	0	0.003	0.003	0.001	0.001	0.001
Total Vehicles	0.154	0.398	0.552	0.335	0.209	0.544

Table 6.1: Trip rate by mode of travel

Contains TRICS 7.10.3 data

6.3 Trip generation

Application of these trip rates to the Proposed Development will generate an estimation of trips associated with the operation of the Proposed Development, as summarised in Table 6.2.

Mode	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arrive	Depart	Total	Arrive	Depart	Total
Walk	18	109	127	30	22	51
Cycle	0	2	2	5	7	13
Car Driver	80	237	317	186	122	307
Passenger	120	429	549	297	186	490
Bus / Tram	0	2	2	1	1	1
Public Transport	0	2	2	1	1	1
Total Vehicles	104	269	373	226	141	367

Table 6.2: Trip generation by mode of travel

Contains TRICS 7.10.3 data

6.4 Traffic Growth

Traffic growth needs to be applied to existing baseline junction traffic count data in order to develop future year traffic scenarios which will be used to test the potential traffic impact of the Proposed Development on junctions on the external road network and whether any infrastructure improvements would be required in order to mitigate those impacts.

Taking the base junction traffic count data and projecting forward to a future year – in the case of the Humber Doucy Lane development proposals and predicted rate of construction, those being 2026 for first occupation of residential dwellings and 2032 for the completion of the full development – has been carried out in a two-step process:

- Step 1 the growth in car traffic on the public roads has been extrapolated using factors derived from the Department for Transport's (DfT) Trip End Model Presentation Programme (TEMPro) software adjusted to account for completions of allocated Local Plan development sites in order to prevent double counting of traffic growth associated with those within the factors used.
- Step 2 the predicted future growth in commercial vehicle trips Light and Heavy Goods Vehicles (LGV and HGVs respectively) – was applied separately, again using DfT data but based on the predicted increase in Billion Vehicle Kilometres on the UK's roads by goods vehicles over time. Data was extracted from the DfT's transport statistics website, specifically for the Eastern England region for all motorway, trunk, A-class and minor roads.

These two steps were applied to the raw data gathered from classified junction traffic counts commissioned in October 2023 to predict the 2026 first occupation and 2032 development completion junction traffic counts to be taken forward to the traffic impact assessment. Further adjustments were required to account for committed developments applicable in these scenario years. Section 7 of this TA report outlines the detail of the traffic impact assessment of the Proposed Development, the test scenarios used in the process and the mitigation required.

6.5 Trip distribution and assignment

To inform the distribution of development trips, the Datashine Commute application was used. This utilises travel to work data from the 2011 Census by mode for a given local either as a place of work or as place of residence. At the time of writing, respective data from the 2021 Census was not available.

The Middle Layer Super Output Area (MSOA) Ipswich 004 was used in the derivation of travel to work data selecting this output area as the place of residence. On selection, the Datashine application interrogated the 2011 Census data and identified the location of the corresponding census output areas in which the places of work of the local residents living in the Ipswich 004 area were located; outputting the information in graphical and tabular form. Appendix 12 contains a summary of the output destinations where existing residents of this area work (as of the 2011 census) and the number of residents working in each output area as a relative percentage. By applying the relative percentage of residents in Ipswich 004 travelling to their respective output area of work to the predicted development car trips determines the distribution of those trips.

Assignment of the vehicle trips generated by the Proposed Development onto the highway network travelling to/from work was derived using Google Maps which provides suggested routes from one location to another which can be as granular as one point on a road to another by either walking, cycling, public transport or car. Where a choice of routes is available information on the length of the route and time taken to travel the route (based on the applicable speed limits along the route) thus allowing for the selection of the quickest route available between any two points. Selection of the start point of a journey from the proposed development to each workplace output area was based on the proposed vehicular access location for each development parcel. The resulting assignment of vehicular trips to specific routes is illustrated in Appendix 13.

7 TRAFFIC IMPACT

7.1 Introduction

In accordance with the TA scoping, it was agreed that a graduated approach would be taken in respect of the assessment of junction performance by, first identifying those locations where the effects of the Proposed Development would be material and, second, undertake further assessment of those junctions.

7.2 Traffic Surveys

Following discussion and agreement with SCC in their capacity as the LHA, it was agreed that the TA would be supported by a number of traffic surveys.

The following junctions were surveyed on Thursday 12th October 2023 by Manual Classified Count (MCC). These are illustrated in Figure 7.1:

- J1 Tuddenham Road / Humber Doucy Lane priority junction;
- J2 Humber Doucy Lane / Inverness Road priority junction;
- J3 Humber Doucy Lane / Sidegate Road priority junction;
- J4 Humber Doucy Lane / Roxburgh Road priority junction;
- J5 Humber Doucy Lane / Dumbarton Road priority junction;
- J6 Humber Doucy Lane / Rushmere Road / The Street Mini-roundabout;
- J7 Sidegate Lane / Sidegate priority junction;
- J8 A1214 Colchester Road / Sidegate Lane priority junction;
- J9 A1214 Colchester Road / Sidegate / Sidegate Lane roundabout;
- J10 A1214 Colchester Road / Renfrew Road priority junction
- J11 A1214 Colchester Road / Rushmere Road roundabout; and
- J12 A1214 Colchester Road / Tuddenham Road Roundabout.

The resultant traffic flows for all junctions are shown in the traffic flow diagrams provided at Appendix 14. These traffic flows have been used for input into the junction capacity assessments.

Figure 7.1: Junctions within study area



7.3 Assessment years and periods

The forecast future years for the assessment of the Proposed Development are 2026 and 2032. This reflects the build out rate of 160 units and/or 200 units per year for 2026 and completion date for the Proposed Development of 660 dwellings for 2032 which assumes the remaining development is completed at the rate of 160 units per year from 2026.

The following committed developments were identified in the EIA Screening submission and included within the appropriate assessment scenarios:

- Red House Park IP/22/00013/OUTFL part of the Ipswich Garden Suburb (IGS): 1,020 dwellings and associated community facilities;
- Fonnereau Village IP/14/00638/OUTFL part of the IGS: 815 dwellings, a new primary school, a district centre, green spaces and a new community centre;
- Adastral Park DC/17/1435/OUT up to 2000 dwellings, employment area, primary local centre, secondary centre, school, green infrastructure, outdoor play areas, sports ground and associated infrastructure;
- Henley Gate IP/16/00608/OUT part of the IGS: 1100 dwellings, new primary school, local centre, 30 ha country park and visitor centre; and
- Westerfield Care Village DC/17/05571 expansion to extant Westerfield House residential care home.

A summary of the AM and PM peak hour traffic flows for each development were taken from the TA for Red House Park (Appendix F), which had investigated these sites in its own cumulative assessment and had collated data from the respective TAs.

The periods for assessment consist of the weekday AM and PM peak hours, which represents the commuter peaks and thus the periods when the combination of background and the development-related traffic would be at its highest.

Traffic flow diagrams are provided in Appendix 14. The following selection of traffic flow diagrams provide a summary of the derivation of the traffic impact assessment test scenarios:

- 2023 Survey Data (AM) & (PM) (Figures 7.1 and 7.2);
- 2026 Data + 2026 Committed Development (AM) & (PM) (Figures 7.9 and 7.10);
- 2026 Data + 2026 Committed Development + 2026 Development Flows @ 160 per annum (AM) & (PM) (Figures 7.19 and 7.20);
- 2026 Data + 2026 Committed Development + 2026 Development Flows @ 200 per annum (AM) & (PM) (Figure 7.21 and 7.22);
- 2032 Data + 2032 Committed Development (AM) & (PM) (Figures 7.11 and 7.12); and
- 2032 Data + 2032 Committed Development + 2032 Development Flows @ Full Build Out (AM) & (PM) (Figures 7.23 and 7.24).

The detailed junction capacity assessment presented in this Section considers the operation of off-site junctions for the above scenarios, and the proposed access junctions under 2026 Baseline + Development Scenarios (160 units and 200 units) and 2032 Baseline + Full Development Scenario.

7.4 Sifting criteria

A threshold assessment has been carried out identify the offsite road network junctions that will be used by vehicle trips generated by the Proposed Development which will require detailed capacity assessment to determine their future operation and potential mitigation. Comparison of the predicted baseline traffic flows (including committed development) on each approach to a junction against the predicted total traffic flows on the same approaches including the predicted traffic flows from the development is carried out and presented as a relative percentage increase in traffic flow. The relative percentage increase in traffic flow is compared against accepted thresholds and any junction approach where the increase in traffic breaches the threshold triggers the requirement to take that junction forward for detailed capacity assessment. The trigger thresholds which have been adopted for the Proposed Development assessment is as follows:

- Any junction surveyed on the A1214 Colchester Road in the agreed scope which is forecast to experience a 5% increase in traffic on any approach; and
- Any junction surveyed Humber Doucy Lane in the agreed scope which is forecast to experience a 10% increase in traffic on any approach.

The result of the threshold assessment has 'sifted in' the following junctions which have been taken forward for detailed capacity assessment summarised in the following subsections:

- J1 Tuddenham Road / Humber Doucy Lane;
- J2 Humber Doucy Lane / Inverness Road
- J3 Humber Doucy Lane / Sidegate Road
- J4 Humber Doucy Lane / Roxburgh Road
- J5 Humber Doucy Lane / Dumbarton Road
- J6 Humber Doucy Lane / Rushmere Road / The Street Mini-roundabout

- J11 A1214 Colchester Road / Rushmere Road Roundabout
- J12 A1214 Colchester Road / Tuddenham Road Roundabout

7.5 Detailed junction testing

The transport planning software Junctions 9 has been used to model roundabout and priority junctions, while LinSig V3 has been used to model signalised junctions. All modelling outputs for the tested scenarios are provided at Appendix 15.

The performance of a priority-controlled junction or roundabout is measured using the statistic Ratio of Flow to Capacity (RFC).

RFC considers the amount of traffic that flows through a given approach on the junction as a ratio of the available capacity of the approach. The available capacity is a function of the geometrical layout and the amount of traffic circulating on the roundabout passing a given junction approach / entry. A predicted 'practical' RFC of 0.85 (85%) is considered an acceptable coefficient for a roundabout junction design, where congestion is likely to begin to occur. An RFC of 1.00 is the theoretical point at which this congestion is more likely to occur regularly during the assessment period/scenario.

At signalised junctions' capacity is measured by the Degree of Saturation (DoS), with a practical DoS being 90%. An indication of the overall spare capacity at the junction is also given by the Practical Reserve Capacity (PRC). 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 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.

Queues in Junctions 9 are reported in terms of the maximum forecast queue during the modelled period (in vehicles), while queues in LinSIg are reported in terms of the Mean Maximum Queue (MMQ) in PCUs during the modelled period.

7.6 Junction assessment results

7.6.1 Points of development access

Three vehicular points of access are proposed to serve the Proposed Development and their design and operational performance have been considered in the context of the forecasted traffic flows outlined in Section 7.3.

7.6.1.1 Tuddenham Road Priority Access Junction

A multi-modal access point is provided off Tuddenham Road, in the form of a simple priority junction. This access provides connectivity to/from the Proposed Development's smaller parcel serving approximately 49 dwellings, therefore has been excluded from the detailed assessment.

7.6.1.2 Humber Doucy Lane Priority Access Junction – Eastern Parcel

A multi-modal access point in a form of a priority-controlled T-junction onto Humber Doucy Lane into the eastern parcel. For the purposes of a simple assessment, it is assumed that this access will serve approximately 68 dwellings. In terms of the capacity of this junction, the following Table 7.1 shows that there would be both minimal delay and queuing resulting from its operation under all tested scenarios.

	AM Peak			PM Peak			
Movement	Queue (Veh)	Delay (s)	RFC	Queue Delay (s) (Veh)		RFC	
	2	2026 Baselin	e + Develop	ment (160)			
Site Access – Humber Doucy Lane	0.0	6.76	0.01	0.0	0.00	0.00	
Humber Doucy Lane (E) – Site Access/HDL (W)	0.0	5.14	0.00	0.00	5.09	0.01	
	2	2026 Baselin	e + Develop	ment (200)			
Site Access – Humber Doucy Lane	0.0	7.03	0.01	0.0	0.00	0.00	
Humber Doucy Lane (E) – Site Access/HDL (W)	0.0	5.14	0.00	0.00	5.09	0.01	
		2032 Base	eline + Devel	lopment			
Site Access – Humber Doucy Lane	0.1	7.88	0.06	0.0	6.75	0.03	
Humber Doucy Lane (E) – Site Access/HDL (W)	0.0	5.15	0.01	0.00	4.94	0.03	

Table 7.1 – Humber Doucy Lane Priority Access Junction

7.6.1.3 Humber Doucy Lane Signalised Access – Main Parcel

A multi-modal access point in a form of a signal-controlled T-junction onto Humber Doucy Lane into the main parcel. For the purposes of a simple assessment, it is assumed that this access will serve approximately 543 dwellings.

In terms of the capacity of this junction, the following Table 7.2 shows that there would be spare capacity and minimal queuing resulting from its operation under all tested scenarios.

		AM Pe	eak	PM Peak					
Link	Lane Description	Deg of Sat (%)	MMQ	Deg of Sat (%)	MMQ				
	2026 Baseline + Development (160)								
1/1	Humber Doucy Lane (N) – Left Ahead Right	56.0	5.6	40.3	3.9				
3/1 + 3/2	Humber Doucy Lane (S) – Right Ahead Left	50.8	4.8	43.6	4.1				
7/1	Inverness Road – Ahead Left Right	2.4	0.1	2.4	0.1				
2/1	Spine Road – Right Left Ahead	13.3	0.7	9.3	0.4				
	2026 Base	line + Develo	pment (200))					
1/1	Humber Doucy Lane (N) – Left Ahead Right	56.2	5.6	41.0	4.1				
3/1 + 3/2	Humber Doucy Lane (S) – Right Ahead Left	51.2	4.8	44.3	4.2				
7/1	Inverness Road – Ahead Left Right	2.4	0.1	2.4	0.1				
2/1	Spine Road – Right Left Ahead	16.8	0.9	11.6	0.5				
	2032 Ba	aseline + Deve	elopment						
1/1	Humber Doucy Lane (N) – Left Ahead Right	62.9	6.6	49.5	5.0				
3/1 + 3/2	Humber Doucy Lane (S) – Right Ahead Left	58.2	5.6	54.5	5.0				
7/1	Inverness Road – Ahead Left Right	2.4	0.1	2.4	0.1				
2/1	Spine Road – Right Left Ahead	56.6	3.6	38.7	1.8				

Table 7.2 – Humber Doucy Lane Signalised Access Junction

7.6.2 Off-site junction assessment

7.6.2.1 Junction 1 – Tuddneham Road / Humber Doucy Lane – Priority Junction

The Tuddenham Road / Humber Doucy Lane junction is a 3-arm priority arrangement and Table 7.3 summarises the junction operation under all aforementioned scenarios. A full copy of the junction modelling output files is contained in Appendix 15.

Table 7.3 – 1	Tuddenham	Road /	Humber	Doucy	Lane -	Priority	Junction
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		AM Peak			PM Peak				
Movement	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC			
	2023 Baseline								
Humber Doucy Lane – Tddenham Rd (NB)	0.5	13.30	0.35	0.3	12.24	0.21			
Humber Doucy Lane (E) – Tddenham Rd (SB)	1.2	22.98	0.56	1.6	24.35	0.63			
Tddenham Rd (NB) – Tuddenham Rd / Humber Doucy Lane	0.3	6.37	0.19	0.1	5.41	0.09			
		20	26 Baseline						
Humber Doucy Lane – Tddenham Rd (NB)	0.6	13.84	0.36	0.3	12.73	0.22			
Humber Doucy Lane (E) – Tddenham Rd (SB)	1.3	24.02	0.57	1.7	25.49	0.64			
Tddenham Rd (NB) – Tuddenham Rd / Humber Doucy Lane	0.3	6.40	0.19	0.1	5.43	0.09			
	2	2026 Baselin	e + Develop	ment (160)					
Humber Doucy Lane –	0.7	15.54	0.42	0.3	13.80	0.25			

Tddenham Rd (NB)						
Humber Doucy Lane (E) – Tddenham Rd (SB)	1.5	26.50	0.60	1.9	27.80	0.66
Tddenham Rd (NB) – Tuddenham Rd / Humber Doucy Lane	0.4	6.52	0.21	0.2	5.62	0.12
	2	2026 Baselin	e + Develop	ment (200)		
Humber Doucy Lane –	0.7	16.04	0.43	0.4	14.06	0.26
Tddenham Rd (NB)						
Humber Doucy Lane (E) – Tddenham Rd (SB)	1.5	27.22	0.61	1.9	28.26	0.67
Tddenham Rd (NB) – Tuddenham Rd / Humber Doucy Lane	0.4	6.55	0.21	0.2	5.66	0.13
		20	32 Baseline			
Humber Doucy Lane – Tddenham Rd (NB)	0.7	15.80	0.40	0.3	14.38	0.25
Humber Doucy Lane (E) – Tddenham Rd (SB)	1.6	27.75	0.62	2.0	29.12	0.68
Tddenham Rd (NB) – Tuddenham Rd / Humber Doucy Lane	0.4	6.50	0.20	0.2	5.45	0.10
		2032 Base	line + Devel	opment		
Humber Doucy Lane –	2.6	41.50	0.74	0.9	26.61	0.48

Tddenham Rd (NB)						
Humber Doucy Lane (E) – Tddenham Rd (SB)	3.4	59.69	0.80	3.5	4904	0.80
Tddenham Rd (NB) – Tuddenham Rd / Humber Doucy Lane	0.5	7.10	0.27	0.4	6.34	0.22

7.6.2.2 Junction 3 – Sidegate Road / Humber Doucy Lane – Priority Junction

The Sidegate Road / Humber Doucy Lane junction is a 3-arm priority arrangement and Table 7.4 summarises the junction operation under all aforementioned scenarios. A full copy of the junction modelling output files is contained in Appendix 15.

		AM Peak			PM Peak	
Movement	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
		20	23 Baseline			
Sidegate Road - Humber Doucy Lane (SB)	0.1	7.13	0.07	0.1	6.88	0.08
Sidegate Road - Humber Doucy Lane (NB)	0.2	11.55	0.20	0.2	10.56	0.16
Humber Doucy Lane - Sidegate Road / Humber Doucy Lane (NB)	0.2	5.06	0.13	0.1	5.12	0.09
		20	26 Baseline			
Sidegate Road -	0.1	7.17	0.07	0.1	6.87	0.08

Table 7.4 – Sidegate Road / Humber Doucy Lane - Priority Junction

Humber Doucy Lane (SB)						
Sidegate Road - Humber Doucy Lane (NB)	0.2	11.71	0.20	0.2	10.58	0.16
Humber Doucy Lane - Sidegate Road / Humber Doucy Lane (NB)	0.2	5.07	0.13	0.1	5.11	0.09
	2	2026 Baselin	e + Develop	ment (160)		
Sidegate Road - Humber Doucy Lane (SB)	0.1	7.23	0.07	0.1	6.98	0.08
Sidegate Road - Humber Doucy Lane (NB)	0.3	12.08	0.21	0.2	10.91	0.16
Humber Doucy Lane - Sidegate Road / Humber Doucy Lane (NB)	0.3	5.00	0.14	0.2	5.09	0.09
	2	2026 Baselin	e + Develop	ment (200)		
Sidegate Road - Humber Doucy Lane (SB)	0.1	7.25	0.07	0.1	7.01	0.09
Sidegate Road - Humber Doucy Lane (NB)	0.3	12.14	0.21	0.2	11.01	0.16
Humber Doucy Lane - Sidegate Road / Humber Doucy Lane (NB)	0.3	4.97	0.14	0.2	5.09	0.09
		20	32 Baseline			

Sidegate Road - Humber Doucy Lane (SB)	0.1	7.28	0.07	0.1	7.01	0.08
Sidegate Road - Humber Doucy Lane (NB)	0.3	12.10	0.21	0.2	10.93	0.17
Humber Doucy Lane - Sidegate Road / Humber Doucy Lane (NB)	0.3	5.09	0.14	0.2	5.13	0.09
		2032 Base	line + Devel	opment		
Sidegate Road - Humber Doucy Lane (SB)	0.1	7.59	0.08	0.1	7.54	0.10
Sidegate Road - Humber Doucy Lane (NB)	0.3	14.05	0.24	0.2	12.62	0.20
Humber Doucy Lane - Sidegate Road / Humber Doucy Lane (NB)	0.4	4.86	0.18	0.2	5.08	0.11

7.6.2.3 Junction 4 – Roxburgh Road / Humber Doucy Lane / Seven Cottages Lane – Priority Junction

The Sidegate Road / Humber Doucy Lane junction is characterised as a 4-arm priority crossroad arrangement and Table 7.5 summarises the junction operation under all aforementioned scenarios. A full copy of the junction modelling output files is contained in Appendix 15.

Table 7.5 – Roxburgh Road / Humber Doucy Lane / Seven Cottages Lane - Priority Junction

Movement	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
		20	23 Baseline			
Roxburgh Road - Humber Doucy Lane (SB) / Seven Cottages Ln	0.0	6.30	0.01	0.0	6.44	0.02
Roxburgh Road - Humber Doucy Lane (NB) / Seven Cottages Ln	0.0	8.98	0.02	0.0	8.70	0.01
Humber Doucy Lane (NB) - Roxburgh Road/ Humber Doucy Lane (SB) / Seven Cottages Ln	0.0	5.08	0.00	0.0	4.96	0.01
Seven Cottages Ln - Roxburgh Road/ Humber Doucy Lane (SB) / Humber Doucy Lane (NB)	0.0	9.89	0.03	0.0	0.00	0.00
Humber Doucy Lane (SB) - Roxburgh Road/ Humber Doucy Lane (NB) / Seven Cottages Ln	0.0	4.73	0.01	0.0	5.12	0.00
		20	26 Baseline			
Roxburgh Road - Humber Doucy Lane (SB) /	0.0	6.32	0.01	0.0	6.45	0.02

Seven Cottages Ln						
Roxburgh Road - Humber Doucy Lane (NB) / Seven Cottages Ln	0.0	9.03	0.02	0.0	8.73	0.01
Humber Doucy Lane (NB) - Roxburgh Road/ Humber Doucy Lane (SB) / Seven Cottages Ln	0.0	5.07	0.00	0.0	4.95	0.01
Seven Cottages Ln - Roxburgh Road/ Humber Doucy Lane (SB) / Humber Doucy Lane (NB)	0.0	9.94	0.03	0.0	0.00	0.00
Humber Doucy Lane (SB) - Roxburgh Road/ Humber Doucy Lane (NB) / Seven Cottages Ln	0.0	4.72	0.01	0.0	5.11	0.00
	2	2026 Baselin	e + Develop	ment (160)		
Roxburgh Road - Humber Doucy Lane (SB) / Seven Cottages Ln	0.0	6.36	0.01	0.0	6.54	0.02
Roxburgh Road - Humber Doucy Lane (NB) / Seven Cottages Ln	0.0	9.23	0.02	0.0	8.94	0.01

Humber Doucy Lane (NB) - Roxburgh Road/ Humber Doucy Lane (SB) / Seven Cottages Ln	0.0	5.07	0.00	0.0	4.89	0.01
Seven Cottages Ln - Roxburgh Road/ Humber Doucy Lane (SB) / Humber Doucy Lane (NB)	0.0	10.21	0.03	0.0	0.00	0.00
Humber Doucy Lane (SB) - Roxburgh Road/ Humber Doucy Lane (NB) / Seven Cottages Ln	0.0	4.63	0.01	0.0	5.09	0.00
	2	2026 Baselin	e + Develop	ment (200)		
Roxburgh Road - Humber Doucy Lane (SB) / Seven Cottages Ln	0.0	6.38	0.01	0.0	6.57	0.02
Roxburgh Road - Humber Doucy Lane (NB) / Seven Cottages Ln	0.0	9.28	0.02	0.0	9.00	0.01
Humber Doucy Lane (NB) - Roxburgh Road/ Humber Doucy Lane (SB) /	0.0	5.07	0.00	0.0	4.87	0.01

Seven Cottages Ln						
Seven Cottages Ln - Roxburgh Road/ Humber Doucy Lane (SB) / Humber Doucy Lane (NB)	0.0	10.28	0.03	0.0	0.00	0.00
Humber Doucy Lane (SB) - Roxburgh Road/ Humber Doucy Lane (NB) / Seven Cottages Ln	0.0	4.61	0.01	0.0	5.08	0.00
		20	32 Baseline			
Roxburgh Road - Humber Doucy Lane (SB) / Seven Cottages Ln	0.0	6.40	0.01	0.0	6.49	0.02
Roxburgh Road - Humber Doucy Lane (NB) / Seven Cottages Ln	0.0	9.12	0.03	0.0	8.83	0.01
Humber Doucy Lane (NB) - Roxburgh Road/ Humber Doucy Lane (SB) / Seven Cottages Ln	0.0	5.05	0.00	0.0	4.92	0.01
Seven Cottages Ln - Roxburgh Road/ Humber Doucy Lane (SB) /	0.0	10.08	0.03	0.0	0.00	0.00

Humber Doucy Lane (NB)						
Humber Doucy Lane (SB) - Roxburgh Road/ Humber Doucy Lane (NB) / Seven Cottages Ln	0.0	4.69	0.01	0.0	5.10	0.00
		2032 Base	line + Devel	opment		
Roxburgh Road - Humber Doucy Lane (SB) / Seven Cottages Ln	0.0	6.62	0.01	0.0	6.90	0.02
Roxburgh Road - Humber Doucy Lane (NB) / Seven Cottages Ln	0.0	10.08	0.03	0.0	9.82	0.01
Humber Doucy Lane (NB) - Roxburgh Road/ Humber Doucy Lane (SB) / Seven Cottages Ln	0.0	5.04	0.00	0.0	4.65	0.01
Seven Cottages Ln - Roxburgh Road/ Humber Doucy Lane (SB) / Humber Doucy Lane (NB)	0.0	11.38	0.03	0.0	0.00	0.00
Humber Doucy Lane (SB) - Roxburgh Road/ Humber	0.0	4.34	0.01	0.0	4.98	0.00

Doucy Lane (NB) /			
Seven Cottages Ln			

7.6.2.4 Junction 5 – Dumbarton Road / Humber Doucy Lane – Priority Junction

The Dumbarton Road / Humber Doucy Lane junction is a 3-arm priority arrangement and Table 7.6 summarises the junction operation under all aforementioned scenarios. A full copy of the junction modelling output files is contained in Appendix 15.

Table 7.6: Sidegate Road / Humbe	r Doucy Lane - Priority Junction
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	AM Peak			PM Peak					
Movement	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC			
2023 Baseline									
Dumbarton Road - Humber Doucy Lane (SB)	0.0	5.48	0.01	0.0	5.53	0.01			
Dumbarton Road - Humber Doucy Lane (NB)	0.1	10.47	0.09	0.1	9.66	0.07			
Humber Doucy Lane (SB) - Dumbarton Road / Humber Doucy Lane (NB)	0.0	4.65	0.02	0.0	5.16	0.01			
		20	26 Baseline			L			
Dumbarton Road - Humber Doucy Lane (SB)	0.0	5.50	0.01	0.0	5.54	0.01			
Dumbarton Road - Humber Doucy Lane (NB)	0.1	10.53	0.09	0.1	9.70	0.07			
Humber Doucy Lane	0.0	4.64	0.02	0.0	5.15	0.01			

(SB) - Dumbarton Road / Humber Doucy Lane (NB)						
		2026 Baselin	e + Develop	ment (160)		L
Dumbarton Road - Humber Doucy Lane (SB)	0.0	5.53	0.01	0.0	5.62	0.01
Dumbarton Road - Humber Doucy Lane (NB)	0.1	10.79	0.09	0.1	9.96	0.07
Humber Doucy Lane (SB) - Dumbarton Road / Humber Doucy Lane (NB)	0.0	4.55	0.02	0.0	5.13	0.01
	2	2026 Baselin	e + Develop	ment (200)		
Dumbarton Road - Humber Doucy Lane (SB)	0.0	5.54	0.01	0.0	5.64	0.01
Dumbarton Road - Humber Doucy Lane (NB)	0.1	10.87	0.09	0.1	10.02	0.07
Humber Doucy Lane (SB) - Dumbarton Road / Humber Doucy Lane (NB)	0.0	4.53	0.02	0.0	5.12	0.01
		20	32 Baseline			
Dumbarton Road - Humber Doucy Lane (SB)	0.0	5.54	0.01	0.0	5.58	0.01
Dumbarton Road -	0.1	10.77	0.10	0.1	9.85	0.07

Humber Doucy Lane (NB)							
Humber Doucy Lane (SB) - Dumbarton Road / Humber Doucy Lane (NB)	0.0	4.61	0.02	0.0	5.14	0.01	
2032 Baseline + Development							
Dumbarton Road - Humber Doucy Lane (SB)	0.0	5.69	0.01	0.0	5.92	0.01	
Dumbarton Road - Humber Doucy Lane (NB)	0.1	12.06	0.11	0.1	11.06	0.08	
Humber Doucy Lane (SB) - Dumbarton Road / Humber Doucy Lane (NB)	0.0	4.28	0.02	0.0	5.02	0.01	

7.6.2.5 Junction 6 – Rushmere Road / Humber Doucy Lane / The Street – Mini-roundabout

The Rushmere Road / Humber Doucy Lane / The Street junction is a 4-arm miniroundabout and Table 7.7 shows how the junction will operate under all aforementioned scenarios. A full copy of the junction modelling output files is contained in Appendix 15.

	AM Peak			PM Peak			
Arm	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	
2023 Baseline							
1 – Humber Doucy Lane (NB)	0.1	3.43	0.07	0.1	3.34	0.11	

2 – Rushmere Road	0.4	7.25	0.29	0.2	6.52	0.18		
3 – Humber Doucy Lane (SB)	0.6	5.68	0.38	0.3	4.27	0.21		
4 – The Street	0.5	7.12	0.35	0.4	5.83	0.29		
2026 Baseline								
1 – Humber Doucy Lane (NB)	0.1	3.48	0.08	0.1	3.37	0.12		
2 – Rushmere Road	0.4	7.39	0.29	0.2	6.59	0.18		
3 – Humber Doucy Lane (SB)	0.6	5.77	0.39	0.3	4.30	0.22		
4 – The Street	0.6	7.24	0.36	0.4	5.89	0.29		
	2	026 Baseline	+ Develop	ment (160)				
1 – Humber Doucy Lane (NB)	0.1	3.58	0.09	0.1	3.43	0.12		
2 – Rushmere Road	0.4	7.58	0.31	0.3	6.92	0.22		
3 – Humber Doucy Lane (SB)	0.7	6.13	0.43	0.3	4.40	0.23		
4 – The Street	0.6	7.59	0.37	0.4	6.02	0.30		
	2	026 Baseline	+ Develop	ment (200)				
1 – Humber Doucy Lane (NB)	0.1	3.60	0.09	0.1	3.44	0.12		
2 – Rushmere Road	0.4	7.61	0.31	0.3	7.00	0.23		
3 – Humber Doucy Lane (SB)	0.8	6.22	0.44	0.3	4.52	0.24		
4 – The Street	0.6	7.68	0.37	0.4	6.06	0.30		
2032 Baseline								
1 – Humber Doucy Lane (NB)	0.1	3.55	0.09	0.1	3.43	0.12		
2 – Rushmere Road	0.4	7.63	0.31	0.2	6.75	0.19		
3 – Humber Doucy Lane (SB)	0.7	5.97	0.41	0.3	4.37	0.22		

4 – The Street	0.6	7.56	0.38	0.4	6.04	0.31		
2032 Baseline + Development								
1 – Humber Doucy Lane (NB)	0.1	4.02	0.11	0.2	3.72	0.15		
2 – Rushmere Road	0.6	8.48	0.37	0.5	8.51	0.34		
3 – Humber Doucy Lane (SB)	1.3	8.00	0.56	0.4	4.83	0.30		
4 – The Street	0.8	9.45	0.44	0.5	6.64	0.33		

7.6.2.6 Junction 11 – Rushmere Road / A1214 – Roundabout

The Rushmere Road / A1214 junction is a 4-arm roundabout and Table 7.8 shows how the junction will operate under all aforementioned scenarios. A full copy of the junction modelling output files is contained in Appendix 15.

	AM Peak			PM Peak					
Arm	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC			
		2023	3 Baseline	1					
1 - Rushmere Rd (WB)	0.3	6.33	0.26	0.3	6.24	0.24			
2 - A1214 (NB)	2.3	10.46	0.70	4.7	19.08	0.83			
3 - Rushmere Rd (EB)	0.4	6.76	0.26	0.6	8.55	0.36			
4 - A1214 (SB)	3.4	14.74	0.78	3.5	15.20	0.78			
		2026	6 Baseline						
1 - Rushmere Rd (WB)	0.4	6.47	0.26	0.3	6.33	0.24			
2 - A1214 (NB)	2.4	10.94	0.71	5.0	20.46	0.84			
3 - Rushmere Rd (EB)	0.4	6.90	0.27	0.6	8.76	0.37			
4 - A1214 (SB)	3.7	15.77	0.79	3.7	15.89	0.79			
2026 Baseline + Development (160)									
1 - Rushmere Rd (WB)	0.4	6.61	0.28	0.3	6.40	0.25			
2 - A1214 (NB)	2.5	11.17	0.72	5.1	20.89	0.85			
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3 - Rushmere Rd (EB)	0.4	7.14	0.29	0.6	8.95	0.39			
4 - A1214 (SB)	3.7	15.93	0.79	3.7	16.22	0.80			
	2	026 Baseline	+ Develop	ment (200)					
1 - Rushmere Rd (WB)	0.4	6.64	0.28	0.3	6.42	0.25			
2 - A1214 (NB)	2.5	11.21	0.72	5.2	20.96	0.85			
3 - Rushmere Rd (EB)	0.4	6.95	0.28	0.6	9.03	0.39			
4 - A1214 (SB)	3.7	15.93	0.79	3.8	16.34	0.80			
	2032 Baseline								
1 - Rushmere Rd (WB)	0.4	6.82	0.28	0.4	6.69	0.26			
2 - A1214 (NB)	2.8	12.37	0.74	7.0	27.57	0.89			
3 - Rushmere Rd (EB)	0.4	7.27	0.29	0.7	9.57	0.40			
4 - A1214 (SB)	4.5	18.92	0.83	4.8	19.84	0.83			
2032 Baseline + Development									
1 - Rushmere Rd (WB)	0.5	7.55	0.35	0.4	7.02	0.30			
2 - A1214 (NB)	3.1	13.73	0.76	7.7	30.53	0.90			
3 - Rushmere Rd (EB)	0.3	4.18	0.20	0.9	10.64	0.46			
4 - A1214 (SB)	4.7	19.80	0.83	5.3	22.23	0.85			

Under 2032 Baseline + Development traffic flow conditions, the junction is predicted to operate within the limits of practical capacity for a roundabout junction, with a maximum RFC of 0.90 being experienced during the PM peak hour, with a corresponding queue of 7.7 vehicles. It is considered that the junction performance under all the scenarios is acceptable. As such there is no requirement to consider additional mitigation measures at this location.

7.6.2.7 Junction 12 – Tuddenham Road / A1214 Colchester Road / Valley Road – Roundabout

The Tuddenham Road / A1214 Colchester Road / Valley Rod junction is a 4-arm roundabout and Table 7.9 shows how the junction will operate under all aforementioned scenarios. A full copy of the junction modelling output files is contained in Appendix 15. The following results are based on the existing roundabout geometry.

	AM Peak			PM Peak					
Arm	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC			
	1	202	3 Baseline	9					
1 - Colchester Rd	0.3	4.47	0.22	0.4	5.03	0.26			
2 - Tuddenham Rd (NB)	5.4	19.96	0.85	4.9	18.45	0.83			
3 - Valley Rd	0.4	6.33	0.28	0.5	6.76	0.34			
4 - Tuddenham Rd (SB)	3.1	13.40	0.76	5.2	21.12	0.84			
		202	6 Baseline	e					
1 - Colchester Rd	0.3	4.64	0.23	0.4	5.24	0.28			
2 - Tuddenham Rd (NB)	7.4	26.32	0.89	7.4	26.35	0.88			
3 - Valley Rd	0.4	6.63	0.29	0.6	7.24	0.36			
4 - Tuddenham Rd (SB)	4.0	16.22	0.80	7.0	27.41	0.88			
	2026 Baseline + Development (160)								
1 - Colchester Rd	0.3	4.77	0.25	0.4	5.31	0.28			
2 - Tuddenham Rd (NB)	8.0	28.41	0.89	7.6	27.25	0.89			
3 - Valley Rd	0.4	6.77	0.30	0.6	7.32	0.36			
4 - Tuddenham Rd (SB)	4.1	16.71	0.81	7.9	30.66	0.89			
2026 Baseline + Development (200)									
1 - Colchester Rd	0.3	4.79	0.25	0.4	5.33	0.29			
2 - Tuddenham Rd (NB)	8.1	28.86	0.89	7.7	27.57	0.89			
3 - Valley Rd	0.4	6.79	0.30	0.6	7.35	0.36			
4 - Tuddenham Rd (SB)	4.1	16.79	0.81	8.2	31.69	0.90			

Table 7.9 - Tuddenham Road / A1214 Colchester Road / Valley Road- Roundabout

2032 Baseline								
1 - Colchester Rd	0.4	5.19	0.26	0.4	5.93	0.31		
2 - Tuddenham Rd (NB)	24.4	80.44	0.97	87.8	260.64	1.04		
3 - Valley Rd	0.5	7.49	0.33	0.7	8.76	0.42		
4 - Tuddenham Rd (SB)	9.8	36.15	0.91	45.8	155.33	1.01		
2032 Baseline + Development								
1 - Colchester Rd	0.5	5.88	0.35	0.5	6.11	0.35		
2 - Tuddenham Rd (NB)	51.0	162.93	1.01	115.2	343.47	1.06		
3 - Valley Rd	0.5	8.06	0.35	0.7	9.11	0.43		
4 - Tuddenham Rd (SB)	12.9	46.97	0.94	117.6	373.90	1.07		

The results indicate that the junction operates within its capacity under 2023 Baseline traffic conditions, with a maximum RFC of 0.85 being reported during both the AM peak hours with an associated maximum queue of 5.4. A review of the outcome of future year scenarios indicates that the performance of the junction continues to exceed the limits of capacity, with the highest RFC of 1.07 being experienced during the PM peak hour, with an associated maximum queue of 117.6 vehicles in 2032 Baseline + Development Scenario.

Under the 2026 Baseline + Development (160 and 200) and 2032 Baseline + Development traffic conditions, the above test results indicate worsening of conditions compared the corresponding 2026 and 2032 Baseline situation.

A supplementary (sensitivity test) technical note prepared by Vectos for the IGS, Red House Park committed development (Planning Application: 22/00013/OUTFL) Transport Assessment discussed the analysis of geometric layout revisions proposed as part of the IGS to the Valley Road roundabout provided by SCC (Drawing: 4228-SK-04 attached in Appendix 16). The proposed geometric changes to the roundabout have been applied and tested using the 2026 Baseline + Development (160 & 200), 2032 Baseline and 2032 Baseline + Development Scenarios.

Table 7.10 shows how the junction will operate under the aforementioned scenarios. A full copy of the junction modelling output files is contained in Appendix 15.

Table 7.10 - Tuddenham Road / A1214 Colchester Road / Valley Road- Roundabout Proposed Layout

AM Peak PM Peak

Arm	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC		
2026 Baseline + Development (160)								
1 - Colchester Rd	0.3	4.79	0.25	0.4	5.34	0.29		
2 - Tuddenham Rd (NB)	7.8	27.66	0.89	7.4	26.56	0.89		
3 - Valley Rd	0.4	5.60	0.26	0.5	5.97	0.31		
4 - Tuddenham Rd (SB)	1.8	7.39	0.65	2.5	9.38	0.71		
	2	026 Baseline	+ Develop	ment (200)				
1 - Colchester Rd	0.3	4.82	0.26	0.4	5.36	0.29		
2 - Tuddenham Rd (NB)	7.9	28.09	0.89	7.5	26.86	0.89		
3 - Valley Rd	0.4	5.62	0.26	0.5	5.99	0.31		
4 - Tuddenham Rd (SB)	1.8	7.40	0.65	2.5	9.48	0.72		
		2032	2 Baseline					
1 - Colchester Rd	0.4	5.23	0.26	0.5	6.07	0.32		
2 - Tuddenham Rd (NB)	23.1	76.28	0.97	83.6	248.47	1.04		
3 - Valley Rd	0.4	6.11	0.29	0.6	6.95	0.36		
4 - Tuddenham Rd (SB)	2.7	9.79	0.73	4.1	13.83	0.81		
2032 Baseline + Development								
1 - Colchester Rd	0.5	5.93	0.35	0.6	6.53	0.36		
2 - Tuddenham Rd (NB)	47.5	152.27	1.01	110.6	329.55	1.06		
3 - Valley Rd	0.4	6.51	0.30	0.6	7.17	0.37		
4 - Tuddenham Rd (SB)	3.0	10.52	0.75	5.6	18.10	0.85		

The results indicate that the junction will operate in excess of its practical capacity under 2026 Baseline + Development (200) traffic conditions, with a maximum RFC of 0.89 being reported during both the AM and PM peak hours with an associated maximum queue of 7.9 and 7.5 vehicles, respectively but still remains within its operational capacity.

Testing of the proposed IGS improvement measures prove sufficient for the 2026 Baseline + Development traffic conditions when compared to the existing layout for the 2026 Baseline Scenario.

Testing of the proposed measures proves insufficient in alleviating the predicted junction performance even to the levels predicted without the Proposed Development being built in 2032 Baseline and 2032 Baseline + Development traffic conditions and the junction will operate in excess of its capacity.

It is predicted that under 2032 Baseline and 2032 Baseline + Development traffic conditions the junction will experience maximum RFC of 1.01 and 1.06 with associated maximum queues of 47.6 and 110.6 vehicles, respectively. Therefore, operating in excess of its capacity.

It is anticipated that further improvements will be required to the junction in future even without the Proposed Development.

8 SUMMARY AND CONCLUSIONS

8.1 Summary

RSK have been commissioned by Barrat David Wilson Homes and Hopkins Homes to provide transport and highways advice in relation to the proposed residential development at land north of Humber Doucy Lane with associated infrastructure.

The site benefits from Local Plan Allocations for around 600 residential units with local centre, school, early years nursery and associated infrastructure. The development spans over two sites (approximately 31.52 ha in total) north of Humber Doucy Lane. The larger land parcel straddles two administrative bodies – East Suffolk Council and Ipswich Borough Council – which is allocated in the respective local plans for residential use with associated infrastructure.

The proposed development will consist of up to 660 dwellings (Use Class C3), up to 400 sq m (net) of non-residential floorspace falling within Use Class E and/or Use Class F2(b), an Early Years facility, and associated vehicular access and highway works, formal and informal open spaces, play areas, provision of infrastructure (including internal highways, parking, servicing, cycle and pedestrian routes, utilities and sustainable drainage systems), and all associated landscaping and engineering works. The latest masterplan has been the subject of discussions with Officers from East Suffolk Council, Ipswich Borough Council and the Local Highway Authority Suffolk County Council.

The site location can be considered as having access to a range of sustainable travel options. The facilities included as part of the proposed development, Travel Plan, public transport improvements and pedestrian and cycle initiatives would seek to provide a cohesive living environment where mobility occurs in the way envisaged by planning policy. The consequence is also minimal reliance on, and effects of, private car travel.

The public transport accessibility of the site will be enhanced by the provision of a bus gate and dedicated bus stops within the site. Opportunities exist to consider other forms of shared transport as part of the Travel Plan for the site.

The site is designed to be well connected to the existing highway network and local amenities. In terms of general vehicular site access, three accesses are proposed. From west to east, the proposed accesses are as follows:

- Priority-controlled junction onto Tuddenham Road serving only the north development parcel;
- Traffic signalised controlled junction onto Humber Doucy Lane serving the main development parcel; and
- Priority-controlled junction onto Humber Doucy Lane serving the eastern development parcel.

Main access for pedestrians is proposed from four locations on Humber Doucy Lane. From west to east, the accesses comprise the following:

 A controlled crossing facility incorporated into the proposed signalised junction, connecting the proposed segregated cycle / footways within the larger parcel to existing footways on Inverness Road and Humber Doucy Lane;

- A tiger crossing at the location of the proposed bus gate, connecting the proposed segregated cycle / footways within the larger parcel to the existing shared footpath/cycle way on Humber Doucy Lane;
- A controlled crossing connecting the existing shared footpath/cycle way on Humber Doucy Lane to the proposed segregated cycle / footways within the smaller parcel to the east; and
- Pedestrians will also be able to access the smaller parcel to the east via new footpaths provided in the design of the proposed vehicular access to this parcel of land that connect to the internal footways and paths.

Similar to access for pedestrians, main access for cyclists is proposed from the same four locations on Humber Doucy Lane.

The internal road network will provide a suitable hierarchy acknowledging national design criteria to promote enhanced streets, informal streets and pedestrian-priority streets with appropriate active frontage in parts to reinforce a low-speed residential environment.

New pedestrian and cycle routes will be provided within the site. These direct and attractive routes will form a separate active travel network within the site which may in part run alongside the vehicular routes. All active travel routes within the site will be appropriately lit, surfaced, be generally overlooked and be of high quality to ensure access on foot and by cycle is maximised, with opportunities to connect to the active travel network at numerous points thereby enabling permeability.

Junction capacity assessments have been undertaken for seven external highway network junctions. These assessments demonstrate that in the assessment scenario year of 2032 with predicted background traffic growth, committed development generated traffic and predicted traffic generated by the completed Proposed Development, Junctions 1, 3, 5, 6 and 11 will continue to operate within capacity. Furthermore, all the proposed access junctions operate within capacity with significant reserve capacity. Detailed analysis of Junction 12 demonstrates that it currently operates with several approaches exceeding their practical capacity. The application of predicted traffic growth and committed development concludes that those impacts will increase significantly with approaches exceeding their operational capacity (1.0 or 100%) without mitigation. This situation is only exacerbated further with the addition the predicted traffic generation from the Proposed Development.

Testing of mitigation measures proposed for the Valley Road roundabout (Junction 12) in support of the IGS, details of which were extracted from a supplementary technical note on sensitivity testing prepared for the Red House Development Transport Assessment (Planning Application:22/00013/OUTFL), indicates that the junction will operate in excess of its practical capacity under 2026 Baseline + Development (160 & 200) traffic conditions (with maximum RFC of 0.89) showing only slight worsening when compared to the 2026 Baseline traffic conditions before the proposed improvements are implemented but still within operational capacity.

When tested under 2032 Baseline and 2032 Baseline + Development traffic conditions, the proposed mitigation is insufficient in alleviating the predicted junction performance even to the levels predicted without Proposed Development (traffic growth plus committed developments, including the IGS).

Junction 12 will operate in excess of its capacity under 2032 Baseline traffic conditions, with predicted maximum RFC at 1.04 in the PM. Therefore, further improvements to the junction might be required even without the Proposed Development being built.

8.2 Conclusions

Capacity analysis of offsite junctions demonstrate that the majority will continue to operate within capacity with future traffic growth, committed development traffic and predicted vehicle traffic associated with the Proposed Development. The Valley Road roundabout is predicted to exceed capacity on a couple of approaches with just future traffic growth and committed development traffic flows. Addition of traffic generated by the Proposed Development increases the impact on approaches to the junction which are predicted to be operating in excess of operational capacity in 2032 with committed developments. Improvements will be required to the junction in future even without the Proposed Development.

The Proposed Development masterplan considers access for all modes of transport within a travel hierarchy with pedestrian access as the priority cascading to cycling, public transport and lastly the private car. It seeks to minimise traffic impacts through the provision of high-quality pedestrian, cycle and public transport infrastructure within the site to support the Proposed Development and provide high quality connections to the existing external sustainable transport networks. Furthermore, the proposed vehicle access strategy has been developed to reduce traffic speeds with a new signal-controlled access junction, improvements to pedestrian and cycle connectivity with new segregated foot and cycle ways on the north side of the road along the site frontages and controlled crossings on Humber Doucy Lane thus improving non-motorised road user safety.

Taking account of all of the above including proportionate mitigation of the Valley Road roundabout it is concluded that the Proposed Development is in a sustainable location and there are no grounds for refusal of planning permission in terms of access, traffic and transport.