

Chapter 9: Traffic, Transport and Access

Land off Duke's Park, Woodbridge

ENVIRONMENTAL STATEMENT

November 2015

9.1 INTRODUCTION

- 9.1.1 This chapter describes the assessment of the traffic-related impacts on the surrounding highway and local road network associated with the Project. It considers Government policy at both national and local level that is relevant to the Project.
- 9.1.2 It also provides a description of the baseline conditions and details the assessment methodology and significance criteria that have been used to assess the potential impacts. Impacts are assessed for the construction phase; operational and cumulative scenarios, and mitigation measures, are detailed as necessary. It has been written by Hydrock Consultants Limited.
- 9.1.3 This chapter is not intended to be read as a standalone assessment and reference should be made to the other chapters within the ES.
- 9.1.4 It is proposed that a detailed Traffic Management Plan [TMP] will be prepared as a condition of the planning consent. This will contain detailed traffic and transport information relating to the construction phase of the Project.
- 9.1.5 General information relating to the local highway network, pedestrian and cycle accessibility, proximity to local services and amenities, schools, employment, retail and leisure opportunities are considered in detail within the Transport Assessment [TA] and Travel Plan [TP] associated with the Project. The TA and TP are included as **Appendix 9.1** and **9.2** respectively.

9.2 METHODOLOGY

- 9.2.1 This chapter follows the assessment methodology set out in the document 'Guidelines for the Environmental Assessment of Road Traffic, 1994', published by the Institute of Environmental Management and Assessment [IEMA]. This document will be referred to as the 'IEMA Guidelines' throughout the remainder of this chapter.
- 9.2.2 The assessment methodology in this chapter accords to the IEMA Guidelines. The following types of impacts have been assessed where the traffic impact criteria may be breached:
- Severance;
 - Driver delay;
 - Pedestrian delay;
 - Pedestrian amenity;
 - Fear and intimidation; and
 - Accidents and safety.
- 9.2.3 The assessment has been informed through pre-application discussions with the Economy, Skills and Environmental department at Suffolk County Council.
- 9.2.4 The assessment has also been informed by a comprehensive site audit, the aim of which was to gather baseline information, observe traffic movements at critical local junctions, and verify the modelling outputs.
- 9.2.5 The supporting Transport Assessment provides all the relevant background traffic data and a detailed analysis of the operational performance of the study network.

- 9.2.6 The study network's junctions have been assessed for future operation and capacity in 2025 future year. The results of these assessments have informed the need for off-site highway mitigation measures.
- 9.2.7 The assessment has included an evaluation of the traffic generated by consented developments in the vicinity of the site.
- 9.2.8 The Transport Assessment for the development assessed the local highway network for the 2025 future year. An additional growth factor was applied to predict traffic flows for this year, which accounts for general committed developments in the area.
- 9.2.9 The TEMPro database was used to increase the 2014 traffic flows to 2015 and 2025. In addition, specific committed development schemes have been included separately within the assessment, as outlined within the Eastern Ipswich Plan Area, as follows:
- 95 dwellings on land occupied by Woodbridge Town Football Club. A planning application has not yet been submitted for this proposed development; however, it has been included within this assessment due to the proximity to the development site and for the purposes of robustness.
 - DC/14/0991/OUT Land north of Woods Lane, Melton, Suffolk – an outline planning application for up to 180 dwellings, all matters reserved except for access. This application has been approved.
 - C/09/0555 Adastral Park – refurbishment of Adastral Park and development of adjoining land to provide: up to 60,000m² employment floor space (B1); erection of 2,000 dwellings; mixed use local centre; education provision; hotel; energy centre; public park and other. This application is currently pending and, therefore, the development is not yet committed; however, for robustness, it has been considered within this assessment.
 - C/10/1906 Land south of Main Road, Martlesham – erection of 180 dwellings with access off Main Road. This application has been approved and is therefore committed within this assessment.
 - C/13/0806 East Anglia Offshore Wind One underground cabling between Bramford and Bawdsey. This application has been approved. During the construction phase, it is acknowledged that some vehicles will be generated; however, once construction is complete, only a small number of vehicle trips would be generated for maintenance purposes. As such, this application is not considered further within this assessment.
 - DC/14/0715/OUT Land to Rear of Cedar House to provide 10 residential dwellings. Due to the size of the development and the distance from the proposed site, the TEMPro growth factors are sufficient to take into account the impact of the development.
- 9.2.10 It is understood that public consultation has taken place in association with the proposed residential development at Woodbridge Town Football Club. However, no information could be found on Suffolk Coastal District Council's planning portal. Notwithstanding, the development has been considered as committed within this assessment for the purposes of robustness and to enable the cumulative impact of the development and committed developments to be assessed. The traffic flows have been calculated using the TRICS database, and distributed onto the surrounding highway network using the turning proportions at each of the junctions.

- 9.2.11 For the remaining committed developments, the transport assessments have been downloaded from Suffolk Coastal District Council's website and the development flows extracted. The junctions impacted by each of these developments are:
- Woodbridge Town Football Club – all junctions within the study area have been included within this assessment.
 - Land north of Woods Lane, Melton – A12 / Ipswich Road and Thoroughfare / St Johns Street / Lime Kiln Quay Road junctions only.
 - Adastral Park – all junctions within the study area have been included within this assessment.
 - Land south of Main Road, Martlesham – site access / Top Street; Ipswich Road / Top Street; Ipswich Road / site access; and Ipswich Road / Old Barrack Road / California junctions.
- 9.2.12 Hazardous loads, whilst listed within the IEMA Guidelines, have not been assessed as they will not be required during construction or operational phases of the Project. The remaining headings in the IEMA Guidelines are discussed in the other chapters within the Environmental Impact Assessment, including noise and vibration, air quality, visual effects and ecology.
- 9.2.13 The IEMA Guidelines set out two rules that should be used to establish whether an environmental assessment of traffic effects should be carried out:
- Rule 1: Include road links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and
 - Rule 2: Include any other specifically sensitive areas where traffic flows have increased by 10% or more.
- 9.2.14 In this instance, it is considered that the Project is not located within a particularly sensitive area, so the 30% threshold should apply.
- 9.2.15 Where the predicted increase in traffic flows is lower than the thresholds, the IEMA Guidelines suggest that the significance of the effects can be stated to be negligible and further detailed assessments are not warranted.

9.3 PLANNING POLICY CONTEXT

National Planning Policy Framework (March 2012)

- 9.3.1 NPPF sets out the Government's policies for delivering sustainable development through the planning system. Local authorities are required to take these policies into account when formulating local development plans and when determining planning applications.
- 9.3.2 NPPF's overarching theme is that there is a presumption in favour of sustainable development. Local authorities are required to determine planning applications favourably where they accord with the development plan. Where there are no current development plan policies in place, applications should be approved unless they create any adverse impacts that are likely to *"significantly and demonstrably outweigh the benefits"* when assessed against NPPF as a whole.
- 9.3.3 In the context of transport, NPPF guides decision makers to apply the following key principles:
- Encourage development that balances the transport system in favour of sustainable modes, recognising the policies and measures required will vary according to location;
 - Encourage solutions that support reductions in greenhouse gas emissions and congestion; and
 - Provide strategies for the provision of viable infrastructure as required to support sustainable development, working with neighbouring authorities where necessary.
- 9.3.4 NPPF states that all developments generating significant movement should be supported by a Transport Assessment or Transport Statement. Schemes generating significant movement should also be accompanied by a Travel Plan.
- 9.3.5 Plans and decisions should then take into account whether:
- Opportunities for sustainable transport have been taken up as a means of reducing infrastructure requirements;
 - Safe and sustainable access can be provided for all; and
 - Improvements can be undertaken within the transport network that cost-effectively limit the significant impacts of the scheme.
- 9.3.6 NPPF states clearly that development should only be refused or prevented where the residual cumulative impacts of the scheme are severe. The TA demonstrates that the Project will not have a severe impact on the surrounding highway network.
- 9.3.7 As in previous national guidance, there is a requirement to ensure that any development generating significant movements is located where it can be accessed by sustainable transport modes. Priority should be given to walking, cycling and public transport, whilst conflicts between vehicles and vulnerable road users should be minimised through effective layout design.
- 9.3.8 Having regard to the above objectives, the proposed site access strategy includes measures to connect the site with the adjacent community and sustainable travel network. The TA considers the accessibility of the site by all modes of transport, and proposes a layout and access strategy that seeks to maximise the use of sustainable modes of transport such as public transport, walking and cycling.

Travel Plans, Transport Assessments and Statements in Decision-Taking (March 2014)

- 9.3.9 In March 2014, the Department for Communities and Local Government [DCLG], in conjunction with the Department for Transport [DfT], released advice on when transport assessments and statements are required and what they should contain, which is intended to assist stakeholders in determining whether an assessment may be required. If so, the level and scope of the assessment is identified.
- 9.3.10 The advice reflects current Government policy, prompting 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.

Local Planning Policy**Suffolk County Council's third Local Transport Plan, 2011 - 2026**

- 9.3.11 A key policy objective for Suffolk County Council [SCC] is promoting and aiding economic resilience and private sector led growth through the current period of downturn, placing Suffolk in a position to emerge strongly as the economy recovers. Suffolk and Norfolk have joined together in the New Anglia Local Enterprise Partnership, and will be working with other neighbouring Local Enterprise Partnerships to push forward business led economic growth. In the Local Transport Plan, SCC attempts to show how transport will play its part in supporting and facilitating future sustainable economic growth by:
- maintaining (and in the future improving) transport networks;
 - tackling congestion;
 - improving access to jobs and markets; and
 - encouraging a shift to more sustainable travel patterns.
- 9.3.12 The key ambition is to support the local economy, attract world class businesses and support and develop the local workforce, in the context of a shift towards a low carbon economy. This will help residents to achieve a high quality of life and create stronger and more self-reliant communities. While improving the local economy, the plan will help make Suffolk:
- a healthier, safer place to live and work;
 - improve the level of educational attainment; and
 - reduce the impact of harmful emissions.

Suffolk County Council's Core Strategy and Development Management Policies

- 9.3.13 The Core Strategy and Development Management Policies sets out the vision and strategy for development in the district to 2027. The document forms part of the Development Plan for the district, and outlines
- 9.3.14 In respect of transport, the Core Strategy outlines the objectives to:
- To work with partners and developers to provide an integrated and well managed transport system (both within and beyond the Districts boundaries), that meets the needs of residents and businesses including minimising the need to travel by private car, making the most of opportunities for freight to be moved by means other than road, and

ensuring that improvements are made to public transport and to the local foot and cycle networks, particularly where they provide access to local facilities.

- To secure at an appropriate time any identified necessary improvements to the transport network where this is required to support the scale and distribution of new housing and employment development, as set out in the Settlement Hierarchy.
- To continue to recognise that the nature of the district is such that use of motor vehicles will remain important within the rural areas, and reflecting this in standards of provision for off-road parking. At the same time, supporting innovative approaches to the provision of public transport across these more rural areas to help address the problem of rural isolation.
- To work with others, particularly the highways agencies and neighbouring local authorities to identify longer term solutions which may be necessary to help ensure that both the A12 and A14 are able to continue to operate as strategic routes.

9.4.15 The work undertaken to achieve these objectives will contribute to ensuring that jobs, shopping, leisure facilities and services are accessible by public transport, walking and cycling, thereby helping to reduce CO2 emissions and encouraging a healthier lifestyle. The policies therefore have twin objectives to support and promote more sustainable transport choices, whilst managing traffic movements on the strategic highway network.

9.4 SUPPLEMENTARY PLANNING DOCUMENTS

Manual for Streets (March 2007 and September 2010)

- 9.4.1 Manual for Streets supersedes Places Streets and Movement and Design Bulletin 32. It should be used where 85th percentile monitored traffic speeds are less than 37mph.
- 9.4.2 The manual outlines a number of first principles in respect of what a street is for, outlining five principle functions, namely:
- Place;
 - Movement;
 - Access;
 - Parking; and
 - Drainage and utilities.
- 9.4.3 The sense of place encompasses a number of characteristics, including local distinctiveness, visual quality and human interaction. Of the five functions, place and movement are considered the most important in determining the character of streets. As such, they should be considered together as opposed to in isolation.
- 9.4.4 In new developments, Manual for Streets highlights that locations with a relatively high place function would be those where people are likely to gather and interact with each other, such as the town centre.
- 9.4.5 In the design process, Manual for Streets highlights that the design of a scheme should follow the user hierarchy shown in Table 9.1 below.

Table 9.1: User Hierarchy (taken from Table 3.2 of MfS, March 2007)

Consider First	Pedestrians
	Cyclists
	Public transport users
	Specialist service vehicles (e.g. emergency services, waste etc.)
Consider Last	Other motor vehicles

Other Policies / Guidelines Reviewed

- 9.4.6 Various walking distances are quoted in the Institute of Highways and Transportation's [IHT's] 'Guidelines for Providing for Journeys on Foot'. Table 9.2 provides the recommended walking distances within various contexts.

Table 9.2: Suggested Acceptable Walking Distances

	Town Centre (m)	School / Commuters (m)	Elsewhere (m)
Desirable	200	500	400
Acceptable	400	1,000	800
Preferred Maximum	800	2,000	1,200

9.5 BASELINE CONDITIONS

- 9.5.1 The site comprises an agricultural field. The site is located to the southwest of the town centre of Woodbridge, just on the edge of the urban area. The site is bounded by Duke's Park and other residential dwellings to the east, a railway line to the south, Top Street and independent businesses towards the west / northwest, and Ipswich Road to the north.
- 9.5.2 Woodbridge is a town in the county of Suffolk, East Anglia. The centre of the town lies approximately 13km from the coast, and is within the administrative authority of Suffolk County Council.
- 9.5.3 Ipswich Road is subject to a 30mph speed restriction, with a footway provided on the northern side of the carriageway. It runs in a southwest to northeast direction, from its roundabout junction with the A12 to the mini-roundabout at Cherry Tree Road. At the mini-roundabout, Ipswich Road continues as Cumberland Street and Station Road, routing through the town centre.
- 9.5.4 Ipswich Road forms a roundabout junction with Top Street approximately 150m east of the A12 roundabout and travels in a southwest direction to Martlesham.
- 9.5.5 At the southeast boundary of the site lies Sandy Lane. Sandy Lane is a two-way residential road that is subject to a 30mph speed limit. Sandy Lane forms a priority junction with Ipswich Road to the northeast of the site.
- 9.5.7 Additional access to the site can be gained via a gated access off Top Street, immediately to the southwest of the Top Street / Ipswich Road roundabout.
- 9.5.8 Traffic data has been obtained using manual turning count surveys, undertaken in 2014, at the following junctions:
- A12 / Ipswich Road roundabout;
 - Ipswich Road / Top Street roundabout;
 - Ipswich Road / Old Barrack Road / California staggered crossroads junction;
 - Ipswich Road / Sandy Lane priority junction;
 - Ipswich Road / Cherry Tree Road / Medical Centre roundabout;
 - Ipswich Road / Station Road / Cumberland Street priority junction;
 - B1438 / Thoroughfare / St. Johns Street staggered crossroads junction.
- 9.5.9 Automatic traffic counters [ATCs] were also undertaken along Ipswich Road, Sandy Lane and Top Street for a week long period in April 2014. All ATCs were undertaken in both directions.

- 9.5.10 The traffic survey results have been growthed to 2015 (to enable like-for-like traffic flows to be identified) and a full development future year assessment of 2025. The growth factors have been identified using TEMPRO.
- 9.5.11 Within the Transport Assessment, a traffic impact assessment has been carried out for the weekday morning (08:00-09:00) and evening (17:00-18:00) peak hours. All associated survey count data, as well as the associated flow diagrams for the study network, are contained within the Transport Assessment.

Bus

- 9.5.12 To support the development proposals, two new bus stops will be provided along Ipswich Road. The westbound bus stop will be situated adjacent to the convenience store, whilst the eastbound bus stop will be located on the opposite side of the carriageway with a pedestrian island to facilitate access. The bus stops will be located within 400m of each of the dwellings and will therefore provide an attractive travel option for residents. The stops will be served by the existing bus services which operate along Ipswich Road, including the 62, 71, 72 and 173, and will therefore provide access to Woodbridge town centre, Sudbourne, Saxmundham, Ipswich and Old Felixstowe. The design of the stops will be agreed with Suffolk County Council as part of the detailed planning application.
- 9.5.13 The nearest bus stops are located just past the Ipswich Road / Old Barrack Road / California staggered junction. These stops are approximately 450m northeast of the site from the proposed main access on Ipswich Road. Further stops are available on Top Street, Old Barrack Road, Newingham Avenue and Warren Hill Road. Table 9.3 summarises the service timetables of the buses which stop closest to the site.

Table 9.3: Bus Timetable Summary

Service No.	Route	Monday - Friday					Saturday	
		First	AM Peak	PM Peak	Last	per day	Peak	per day
62	Saxmundham – Woodbridge	10:24	0	0	18:39	7	-	-
63 / 64 / 65 / 65B	Aldeburgh – Woodbridge - Ipswich	06:54	2	2	20:26	25	2	23
	Ipswich – Woodbridge – Aldeburgh	06:53	2	2	19:41	25	2	22
71 / 72	Sudbourne – Ipswich	07:43	0	1	17:17	3	0	3
	Ipswich – Sudbourne	09:21	0	1	17:47	4	0	2
173	Felixstowe – Woodbridge	08:58	1	1	17:52	5	1	5
	Woodbridge – Felixstowe	07:38	0	1	17:13	6	1	5
Total			5	8	-	75	6	60

- 9.5.14 The buses that serve the stops on Ipswich Road are the 71, 72, 73A, 121, 173 and the 972. The 972 runs once a day on schooldays only.

Rail

- 9.5.15 Woodbridge is the nearest railway station to the site, located approximately 2km away from the Ipswich Road site access and therefore within walking distance of the development site. The location of the railway station will also provide opportunities for linked sustainable trips by bus and bicycle to more regional and national destinations.
- 9.5.16 The main service at Woodbridge operates between Ipswich and Lowestoft every hour. There is 1 train per day which connects Harwich International and the Stena Line ferry to Hoek van Holland.
- 9.5.17 The main route through Woodbridge calls at the following stops:
- (Harwich International) Ipswich - Westerfield - Woodbridge - Melton - Wickham Market - Saxmundham - Darsham - Halesworth - Brampton (Request Stop) - Beccles - Oulton Broad South - Lowestoft

Road Traffic Collisions

- 9.5.18 Road traffic collision data for the five year period to 2014 has been obtained from Suffolk County Council and is provided within the Transport Assessment.
- 9.5.19 The data identifies that there has been one slight accident to the northeast of the site on Ipswich Road, and five at the nearby A12 / Ipswich Road roundabout.
- 9.5.20 One fatal accident has occurred in the last 5 years on the A12 / Seckford Golf Course road junction, where a vehicle attempting to turn right from the Golf Course road to travel southbound along the A12 collided with a motorcyclist heading northbound up the A12. The cause of the collision was attributed to driver error.
- 9.5.21 The supporting information also clarifies that the majority of accidents which have occurred in the surrounding area have been caused by driver error.
- 9.5.22 There does not appear to be a pattern or common cause with the accidents that have taken place surrounding the site. Analysis of the overall accident data indicates that the local highway network would not in itself appear to be a cause of the accidents. The development proposals are unlikely, therefore, to have a detrimental impact on the accident rate in the area.

9.6 POTENTIAL EFFECTS

- 9.6.1 The following types of impacts have been assessed where the traffic impact criteria may be breached:
- Severance;
 - Driver delay;
 - Pedestrian delay;
 - Pedestrian amenity;
 - Fear and intimidation; and
 - Accidents and safety.

Significance Criteria

- 9.6.2 The IEMA Guidelines discuss sensitive areas in relation to changes in traffic conditions. Table 9.4 summarises the receptor sensitivity criteria that have been used for this assessment.

Table 9.4: Receptor Sensitivity

Receptor Sensitivity	Receptor Type
Substantial	Receptors of greatest sensitivity to traffic flows: schools, colleges, playgrounds, accident black spots, retirement homes and roads without footways that are used by pedestrians
Moderate	Traffic flow sensitivity receptors: congested junctions, doctors' surgeries, hospitals, shopping area with roadside frontage, roads with narrow footways and recreation facilities
Minor	Receptors with some sensitivity to traffic flow: places of worship, public open space, listed buildings, tourist attractions and residential areas with adequate footway provision
Negligible	Receptors with low sensitivity to traffic flows

- 9.6.3 Table 9.5 summarises the criteria that has been used to determine the magnitude of impacts.

Table 9.5: Magnitude of Impact Criteria

Impact	Magnitudes of Impact			
	Negligible	Minor	Moderate	Substantial
Severance	Change in total traffic or HGV flows of less than 30%	Change in total traffic or HGV flows of 30-60%	Change in total traffic or HGV flows of 60-90%	Change in total traffic or HGV flows over 90%
Driver Delay	Change in journey time of less than 30 secs	Change in journey time of 30 secs – 1 mins	Change in journey time of 1 min – 2 mins	Change in journey time of more than 2 mins
Pedestrian Delay	Change in total traffic or HGV flows of less than 30%	Change in total traffic or HGV flows of 30-60%	Change in total traffic or HGV flows of 60-90%	Change in total traffic or HGV flows over 90%
Pedestrian & Amenity	Change in total traffic or HGV flows of less than 30%	Change in total traffic or HGV flows of 30-60%	Change in total traffic or HGV flows of 60-90%	Change in total traffic or HGV flows over 90%
Fear & Intimidation	Change in total traffic or HGV flows of less than 30%	Change in total traffic or HGV flows of 30-60%	Change in total traffic or HGV flows of 60-90%	Change in total traffic or HGV flows over 90%
Accidents & Safety	Change in total traffic or HGV flows of less than 30%	Change in total traffic or HGV flows of 30-60%	Change in total traffic or HGV flows of 60-90%	Change in total traffic or HGV flows over 90%

Significance of Effects Criteria

- 9.6.4 The significance of the effect is judged on the relationship of the magnitude of impact to the assessed sensitivity of the receptor. Table 9.6 provides a matrix of significance.

Table 9.6: Significance of Effects

Sensitivity of Receptor	Magnitude of Impact			
	Negligible	Minor	Moderate	Substantial
Negligible	Negligible	Negligible	Negligible	Minor
Minor	Negligible	Negligible	Minor	Moderate
Moderate	Negligible	Minor	Moderate	Substantial
Substantial	Minor	Moderate	Substantial	Substantial

- 9.6.5 Potential effects are therefore of negligible, minor, moderate or substantial significance. Moderate and substantial significance effects are considered to be significant in terms of EIA guidance.

9.7 PROJECT DESIGN & MITIGATION MEASURES

- 9.7.1 The Project design is set out in both the EIA Parameters Plan and Chapter 2: Development Proposals.
- 9.7.2 The Project will provide a site layout designed in accordance with current best practice to accommodate the needs of pedestrians and cyclists.

Construction Traffic Mitigation

Demolition and Construction

- 9.7.3 A Traffic Management Plan will be served by condition and therefore will be provided to support the proposed development at the full application stage. Within the Traffic Management Plan, there will be measures which will seek to reduce the impact of construction traffic on the local highway network. Such measures will include set times when HGVs can access the site, wheel washes, parking strategies for construction workers and other initiatives to minimise the impact of the Project.
- 9.7.4 Due to the nature of the area surrounding the site, this report includes consideration of potential nuisance relating to the movement of HGVs by road. This will take into account working hours, noise, vibration, dust, odour and debris or mud on the highway. These are summarised below:
- The contractor will be responsible for ensuring that traffic to and from the site adheres to the agreed routes. This will be carefully monitored by the Engineer and / or Project Manager throughout the contract to ensure traffic nuisance is not inadvertently caused.
 - The contractor will be required to schedule HGV traffic to minimise the number of vehicles waiting to enter the site at any one time. Reasonable space on site to minimise queuing or waiting of HGVs outside the site boundary will be provided.
 - All deliveries will be undertaken within approved hours. The normal operational hours of the site will be 07:00-19:00 Monday to Friday, and 07:00-13:00 on Saturday. No material

imports or other site operations will be carried out on a Sunday, public or bank holiday without prior written approval of the planning authority.

9.7.5 The contractor will be responsible for managing noise and vibration levels at the site. Mitigation measures may include, but are not limited to:

- Use of well-maintained vehicles and equipment; and
- Vibrations and noise from vehicle and plant movements to and from the site will be managed through enforcement of the designated site access point and travel routes.

9.7.6 The contractor will constrict operations in a manner which:

- Minimises dust and odour generation through the use of enclosed handling and off-loading facilities.
- Minimise dust carried beyond the periphery of the site through regular cleaning of roadways.
- Mud, litter and debris are minimised.

EMBEDDED MITIGATION

9.7.7 This section describes the measures which have been 'embedded' into the development.

9.7.8 The main vehicle access off Ipswich Road will include 2m footways on both sides of the carriageway, which will tie into the existing footways on the surrounding highway network. The access off Top Street will provide a shared surface route, enabling pedestrians to share the road space. The access junctions therefore facilitate pedestrian access.

9.7.9 Car parking will be provided in line with Suffolk County Council's car parking standards, outlined within Suffolk County Council's Guidance for Parking (2014). These standards are minimum standards, with the number of spaces allocated to dwellings based on the accessibility of the site by public and sustainable transport, proximity to local services, and tenure of prospective residents.

9.7.10 The nature of the development, providing residential dwellings and a convenience store, reduces the need to travel to and from the site to access the convenience store. By providing this facility within an acceptable walking distance of the dwellings, the number of trips generated by the site will be minimised.

Mitigation Measures

Operational Traffic Mitigation

- 9.7.11 The proposed development will provide a site layout designed in accordance with current best practice to accommodate pedestrians and cyclists. A copy of the development framework plan is provided within the planning submission.
- 9.7.12 A travel plan has been developed and submitted in support of the planning application and seeks to promote the use of modes of transport other than single-occupancy car. It sets out a variety of initiatives to manage the plan and minimise the impact of the development on the highway network. A summary of the measures included are set out below:
- Appointment of a Travel Plan Coordinator for the Project;
 - Provision of cycle parking;
 - Development of a residents welcome pack, providing information on the sustainable transport options available from the site;
 - Promotion of car sharing;
 - Travel notice boards, providing sustainable travel information;
 - Distribution of public transport timetables and maps; and
 - Distribution of walking and cycling maps.
- 9.7.13 The travel plan will be monitored for a period of five years from first occupation at the site. The success of the travel plan will be monitored and reviewed by the appointed Travel Plan Coordinator and the Council.
- 9.7.14 Should the travel plan measures, initiatives and targets be unsuccessful, alternative measures will be implemented to meet the agreed targets. The travel plan will reduce the environmental impact below the levels assessed.
- 9.7.15 The pedestrian and cycle improvements described above will contribute to encouraging sustainable travel behaviour and will support the implementation of the travel plan at the site. The provision of the convenience store will contribute towards minimising the number of vehicle trips to and from the site.

9.8 ASSESSMENT OF EFFECTS

Landscape Effects

Demolition and Construction Effects

- 9.8.1 The Project is anticipated to be built out over a 5 year period. Construction traffic will include the movement of workers associated with the construction of infrastructure and individual plots along with the movement of material in the form of importing or exporting material.
- 9.8.2 An assessment has been undertaken based on the findings detailed within the TRICS Research Report on Construction Traffic (JMP, February 2008). The report provides an indicative estimate of construction vehicle movements based on the estimated value of a specific project. The report

sets out that a total of 29.4 one-way trips are associated with construction per £100,000 of project value.

- 9.8.3 For the purpose of this assessment, the project value is estimated at approximately £56.25m. It assumes a 5 year construction period, with an average construction phasing of approximately 50 dwellings per annum.
- 9.8.4 Based on the above development cost, this would generate circa 16,538 HGV trips in total during the entire construction period.
- 9.8.5 From the TRICS Research Report, assuming a 5 year construction period, it is estimated that the Project would attract an average of 14 one-way construction vehicles per day. Inevitably, some days will have a higher number of HGVs accessing the site than others.
- 9.8.6 The TRICS report indicates that approximately 20 percent of construction trips are made by cars or light goods vehicles, with 80 percent HGV traffic. Construction and delivery vehicles would route to the site via Ipswich Road to the north.
- 9.8.7 The traffic generated by construction traffic will equate to a 0.09 percent increase in daily 24-hour traffic flows, which is considered to be a **negligible** impact.

Residual Effects

- 9.8.8 Two access points would be provided into the site, off Ipswich Road and Top Street.
- 9.8.9 From an initial screening with respect to the operational period and to establish the road links to be considered within this EIA chapter, the assessment criteria of a 30% increase in flows has been used for the roads.
- 9.8.10 The annual average daily traffic flows for the 2025 base + committed and 2025 base + committed + development traffic flows are compared and set out in Tables 9.7 to 9.14 below.

Table 9.7: Significance of Effects – Links

Road	2025 Base + Committed		2025 Base + Committed + Development		Percentage increase / decrease	
	Total vehicles	Heavies	Total vehicles	Heavies	Total vehicles	Heavies
Ipswich Road	19942	251	20436	256	2.5%	2.0%
Top Street	19689	394	19822	395	0.7%	0.3%

Table 9.8: A12 / Ipswich Road Junction

Link	2025 Base + Committed		2025 Base + Committed + Development		Percentage increase / decrease	
	Total vehicles	Heavies	Total vehicles	Heavies	Total vehicles	Heavies
Ipswich Road	6176	186	6598	191	6.8%	2.7%
A12 South West	26187	1394	26552	1397	1.4%	0.2%
A12 North East	26761	1224	26802	1224	0.2%	0%

Table 9.9: Ipswich Road / Top Street Junction

Link	2025 Base + Committed		2025 Base + Committed + Development		Percentage increase / decrease	
	Total vehicles	Heavies	Total vehicles	Heavies	Total vehicles	Heavies
Ipswich Road East	8866	162	9260	166	4.4%	2.5%
Ipswich Road West	7722	186	8128	190	5.3%	2.2%
Top Street	6900	81	6983	81	1.2%	0

Table 9.10: Old Barrack Road / Ipswich Road / California Junction

Link	2025 Base + Committed		2025 Base + Committed + Development		Percentage increase / decrease	
	Total vehicles	Heavies	Total vehicles	Heavies	Total vehicles	Heavies
Ipswich Road East	6262	81	6376	82	1.8%	1.2%
California	349	8	349	8	0%	0%
Ipswich Road West	10371	186	10491	188	1.2%	1.1%
Old Barrack Road	2975	89	2975	89	0%	0%

Table 9.11: Ipswich Road / Sandy Lane Junction

Link	2025 Base + Committed		2025 Base + Committed + Development		Percentage increase / decrease	
	Total vehicles	Heavies	Total vehicles	Heavies	Total vehicles	Heavies
Ipswich Road East	6816	81	6930	82	1.7%	1.2%
Sandy Lane	938	32	938	32	0%	0%
Ipswich Road West	7746	162	7866	163	1.5%	0.6%

Table 9.12: Ipswich Road / Cherry Tree Road / Medical Centre Junction

Link	2025 Base + Committed		2025 Base + Committed + Development		Percentage increase / decrease	
	Total vehicles	Heavies	Total vehicles	Heavies	Total vehicles	Heavies
Ipswich Road East	7249	122	7364	123	1.6%	0.8%
Cherry Tree Road	546	0	546	0	0%	0%
Ipswich Road West	9405	251	9525	252	1.3%	0.4%
Medical Centre	884	16	884	16	0%	0%

Table 9.13: Ipswich Road / Cumberland Street / Station Road Junction

Link	2025 Base + Committed		2025 Base + Committed + Development		Percentage increase / decrease	
	Total vehicles	Heavies	Total vehicles	Heavies	Total vehicles	Heavies
Ipswich Road	8793	219	8913	220	1.4%	0.5%
Cumberland Street	505	0	515	0	1.9%	0%
Station Road	7263	154	7366	155	1.4%	0.6%

Table 9.14: Lime Kiln Quay Road / Thoroughfare / St Johns Street Junction

Link	2025 Base + Committed		2025 Base + Committed + Development		Percentage increase / decrease	
	Total vehicles	Heavies	Total vehicles	Heavies	Total vehicles	Heavies
Lime Kiln Quay Road	6298	122	6394	122	1.6%	0%
Thoroughfare South	167	0	167	0	0%	0%
St Johns Street	4634	73	4657	73	0.5%	0
Thoroughfare North	7262	154	7342	155	1.1%	0.6%

9.8.11 Once the development is completed, the local highway network will be required to accommodate the traffic generated by the Project.

9.8.12 The percentage increase in traffic flows from the development are low. The development will therefore have a negligible impact on traffic flows along both Ipswich Road and Top Lane, and at each of the junctions considered.

9.8.13 The junction modelling assessments set out in the Transport Assessment have demonstrated that, with the addition of development-related traffic, there would be a **negligible** impact on the junction's level of performance.

Severance

9.8.14 As described above, the traffic flows for the Project are predicted to increase traffic flows but only by a small amount. This is considered to have a **negligible** impact on severance at each of the junctions considered within this assessment.

Driver Delay

9.8.15 The traffic flows along Ipswich Road and Top Street are low both prior to and with the Project in place. The Project will have a **negligible** impact on driver delay.

Pedestrian Delay

9.8.16 Ipswich Road has a base two-way traffic flow of 991 and 1,100 vehicles in the AM and PM peak hours, which increases to 1,050 and 1,194 respectively with the development in place. Taking these traffic flows into account, the highway will experience minimal pedestrian delay and the impacts can be considered **negligible**.

9.8.17 The increase in traffic flows at each of the junctions considered would have a **negligible** impact on pedestrian delay.

Pedestrian Amenity

- 9.8.18 The increase in traffic flows at each of the junctions considered within the assessment will result in a **negligible** impact on pedestrian amenity.
- 9.8.19 Notwithstanding, the pedestrian routes are to be improved in and around the site, including between Sandy Lane and Top Street. Under the development proposals, footways will be provided at the Ipswich Road site access which will link into the existing pedestrian infrastructure along Ipswich Road.
- 9.8.20 The Top Street access will provide a shared surface route and will provide access to a smaller number of executive properties. The shared surface route will enable pedestrians to safely share the road space. The layout of the site will include provision for pedestrians, including footways alongside each of the highways within the site. This will result in a **betterment** to the existing pedestrian infrastructure within the vicinity of the site.
- 9.8.21 As such, considering the negligible increase in vehicle movements and improved pedestrian infrastructure on these links, the impacts can be considered **positive**.

Fear and Intimidation

- 9.8.22 A pedestrian's level of fear and intimidation can be established by the volume of traffic, as shown in Table 9.5. As previously identified, the percentage increase in vehicle movements at each of the junctions is negligible. As such, there will be a **negligible** impact on fear and intimidation.
- 9.8.23 The development will provide pedestrian footways at the Ipswich Road access into the Project. A shared surface route will be provided at the Top Street access, which will provide access to a smaller number of executive dwellings. Both accesses will link into the pedestrian infrastructure along the surrounding highway network.
- 9.8.24 This will result in an improvement to the existing pedestrian infrastructure surrounding the site. The overall effect of the Project on fear and intimidation is therefore considered to be **positive**.

Accidents and Safety

- 9.8.25 A review of the road traffic collision data is provided earlier in this chapter. The review concludes that there is no reason to suggest that accidents will increase or safety will be compromised as a result of construction or development traffic. The impacts on these links can be considered **negligible**.
- 9.8.26 The access junctions are designed in accordance with current design standards. As such, there is no reason to suggest that accidents will increase or safety will be compromised as a result of construction traffic.
- 9.8.27 The impact of the Project on the local highway network in terms of accidents and safety can therefore be considered **negligible**.

9.9 CUMULATIVE EFFECTS

- 9.9.1 The transport assessment considers the cumulative impact of the Project and the following committed developments within the vicinity of the site:
- Woodbridge Town Football Club – 95 dwellings;
 - Land north of Woods Lane, Melton – 180 dwellings;

- Adastral Park – up to 2000 dwellings, 60,000m² employment floor space, mixed use local centre, education provision, hotel, energy centre and public park; and
- Land south of Main Road, Martlesham – up to 180 residential dwellings.

9.9.2 These developments have been considered alongside the proposed development within the assessment.

9.10 STATEMENT OF EFFECTS

9.10.1 This chapter has considered the environmental effects of the Project in terms of transport and access. Table 9.15 summarises the potential impacts and effects of the Project, alongside the mitigation measures.

Table 9.15: Summary of Potential Impacts and Effects

Description	Effect	Mitigation Measures	Nature of Effect	Geographic Scale	Significance
Severance	Negligible	Travel plan	Permanent	Local	Minor
Driver delay	Negligible	Travel plan	Permanent	Local	Minor
Pedestrian delay	Negligible	Travel plan Pedestrian route improvements	Permanent	Local	Minor
Pedestrian and amenity	Negligible	Travel plan Pedestrian route improvements Mixed use nature of site	Permanent	Local	Minor
Fear and intimidation	Negligible	Travel plan Access junctions designed to appropriate standards	Permanent	Local	Minor
Accidents and safety	Negligible	Travel plan Access junctions designed to appropriate standards	Permanent	Local	Minor

- 9.10.2 It concludes that the location of the site provides opportunities for future residents to access local services on foot or by bicycle. It also concludes that the site is located within reasonable walking distance of the bus services which provide access to a wider range of services and employment opportunities. The location of the site therefore provides opportunities for all residents to access key local destinations and minimise car dependency.
- 9.10.3 The effects of the construction phase over a short-term period is considered to be of negligible significance, although mitigation will be provided in the form of a Traffic Management Plan to reduce the impacts of the construction phase.
- 9.10.4 Overall, it is forecast that the development would have a negligible impact on traffic flows at the junctions considered within the assessment.
- 9.10.5 It is concluded that the development proposals are acceptable in highways and transportation terms. There are no highways or transportation related reasons upon which a refusal of the planning application for the proposals would be justified.

9.11 GLOSSARY

- 9.11.1 **Footway:** a path or track for pedestrians.
- 9.11.2 **HGV:** heavy goods vehicle.
- 9.11.3 **Highway:** any public road or other public right of way on land.
- 9.11.4 **TEMPro:** Trip End Model Presentation Programme, used to identify growth factors to be applied to traffic flows to gain future year traffic flow forecasts.
- 9.11.5 **Traffic Management Plan:** a document which outlines a range of initiatives to manage and mitigate the impact of construction traffic associated with a new development.
- 9.11.6 **Transport Assessment:** a comprehensive and systematic process which sets out the transport issues relating to the proposed development.
- 9.11.7 **Transport Statement:** a less comprehensive process which sets out the transport issues relating to smaller developments.
- 9.11.8 **Travel Plan:** a package of options and initiatives designed to encourage sustainable travel options and reduce dependence on travel by single occupancy car.
- 9.11.9 **Travel Plan Coordinator:** the person responsible for the implementation of travel plan initiatives.