

# Mead Realisations Ltd

Lynchmead Farm  
Weston-super-Mare

Transport Assessment

April 2019

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## Contents

<b>1</b>	<b>INTRODUCTION.....</b>	<b>1</b>
<b>2</b>	<b>SUSTAINABILITY AND ACCESSIBILITY.....</b>	<b>3</b>
	Site and Location.....	3
	Access.....	4
	Sustainable Travel.....	4
	Walking.....	4
	Cycling.....	6
	Bus.....	7
	Rail.....	7
	Local Highway Network.....	8
	Highway Safety.....	8
<b>3</b>	<b>POLICY CONTEXT.....</b>	<b>10</b>
	National Planning Policy Framework (NPPF).....	10
	West of England Joint Local Transport Plan.....	11
	North Somerset Local Plan.....	11
	North Somerset Housing and Economic Land Availability Assessment.....	12
<b>4</b>	<b>DEVELOPMENT PROPOSALS.....</b>	<b>13</b>
	Access Strategy.....	13
	Parking Strategy.....	14
<b>5</b>	<b>TRIP GENERATION AND TRANSPORT IMPACT.....</b>	<b>15</b>
	Proposed Trip Generation.....	15
	Existing Travel Behaviour.....	16
	Transport Impact.....	17
	Sustainable Travel Impact.....	18
	Traffic Impact.....	21
<b>6</b>	<b>SUMMARY AND CONCLUSION.....</b>	<b>24</b>

## Figures

Figure 2.1	- Site Location Plan
Figure 2.2	- Local Facilities Plan
Figure 2.3	- PRow Bridleway Map
Figure 5.1	- Datashine Commute Graph for North Somerset 015
Figure 5.2	Pedestrian and Cycle Routes

## Appendices

<b>Appendix A:</b>	<b>Masterplan</b>
<b>Appendix B:</b>	<b>Scoping Response</b>
<b>Appendix C:</b>	<b>Traffic Surveys</b>
<b>Appendix D:</b>	<b>Access Design</b>
<b>Appendix E:</b>	<b>TRICS Outputs</b>
<b>Appendix F:</b>	<b>Traffic Flow Diagrams</b>
<b>Appendix G:</b>	<b>Modelling Outputs</b>

# 1 INTRODUCTION

## Background

- 1.1 Vectos has been appointed by Mead Realisations Ltd to prepare a Transport Assessment (TA) and Travel Plan (FTP) in relation to a planning application for the development of land at Lynchmead Farm, Weston-super-Mare.
- 1.2 It is proposed that the site be developed to house 75 residential dwellings, which would provide a natural extension to the suburban area around Weston-super-Mare and the village of Worle. The development would contribute to the need for 20,985 new dwellings by 2026 in North Somerset, as identified in the Local Plan. The site layout is provided at **Appendix A**.
- 1.3 This report reviews the current transport conditions at the site, sets out its place within the context of national and local policy and provides a forecast of the potential trip characteristics at the site.

## Scoping

- 1.4 Pre-application scoping advice for the proposed development was received from North Somerset Council in January 2018. A copy of the scoping note is provided at **Appendix B**. The advice on the subject of transport is summarised as follows:
  - A comprehensive Transport Assessment should be provided in support of any planning application for the proposed development;
  - Details of site access arrangements should be provided with capacity assessment. It should be demonstrated that site accesses can accommodate refuse, servicing and delivery vehicles with tracking plots;
  - A stage 1 / 2 Road Safety Audit will be required to support the application;
  - Impact on local highway junctions should be assessed, including the A370 / Wick Road junction and the Queen's Way / Bristol Road junction;
  - The impact on the existing shuttle working scheme on Ebdon Road must all be taken into consideration;
  - A Non-Motorised User Audit should be completed to ensure that pedestrian provision is identified and enhanced where necessary. There is particular concern over footway provision on the northern side of Ebdon Road;

- Parking should be provided in accordance with North Somerset's standards; and
- A Travel Plan should be provided.

1.5 Each of the above points is addressed within this report.

1.6 The remainder of this report is structured as follows:

- **Section 2** – Sustainability and Accessibility – sets out the existing conditions at the site and reviews accessibility by all modes of transport;
- **Section 3** – Policy Context – reviews relevant transport planning policy documents;
- **Section 4** – Development Proposals – outlines the proposals for the site, including site usage and access arrangements;
- **Section 5** – Trip Generation and Transport Impact – sets out the anticipated multi-modal trip characteristics of the proposed development and examines the impact of the site on the local mobility networks;
- **Section 6** – Framework Travel Plan – sets out the strategy for encouraging sustainable travel amongst future residents; and
- **Section 7** – Summary and Conclusion.

## 2 SUSTAINABILITY AND ACCESSIBILITY

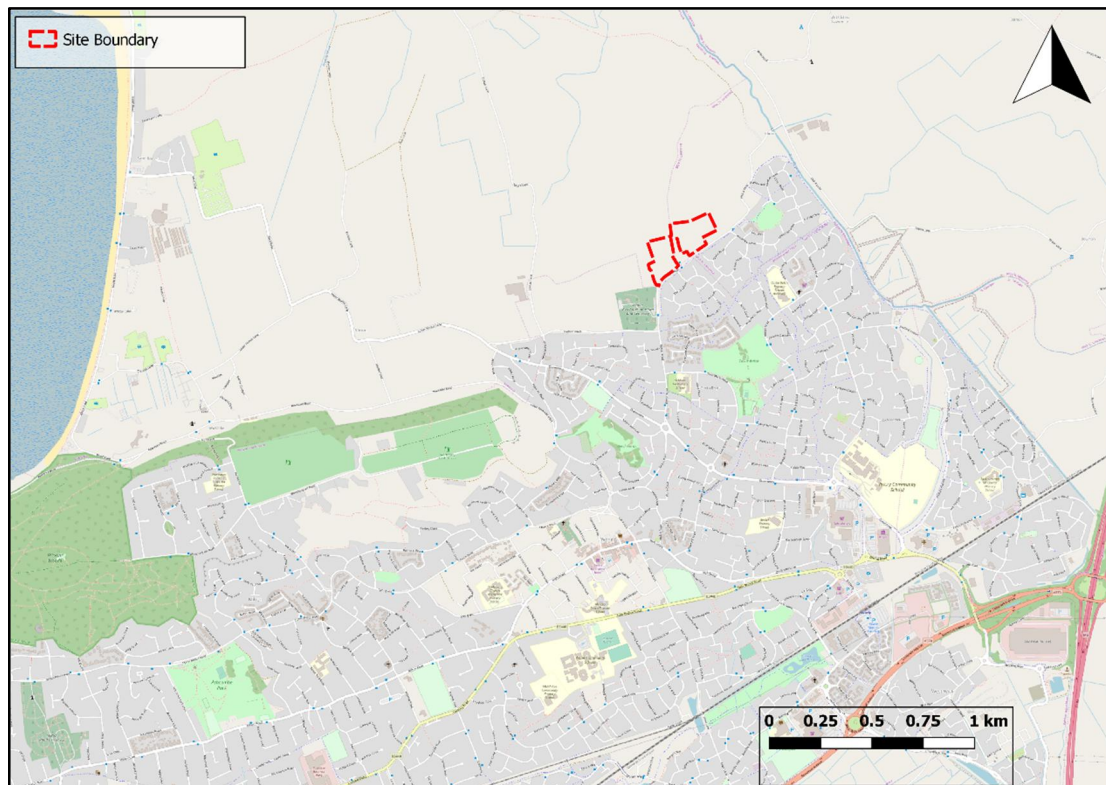
### Introduction

- 2.1 This section outlines the existing situation and transport conditions within the vicinity of the site, with a focus on the quality and extent of provision for sustainable travel.

### Site and Location

- 2.2 The development site is located at the northern edge of Worle, approximately 2km north of the centre of Worle and 5km northeast of Weston-super-Mare. It is bordered by Ebdon Road and a small number of private dwellings to the south, and agricultural land surrounds all other sides.
- 2.3 The site location is shown in **Figure 2.1** in its local context.

**Figure 2.1 – Site Location Plan**



- 2.4 The site stands at approximately 10.04 hectares and is mostly occupied by undeveloped farmland. Within the red line boundary there is also a recycling centre and car park occupying a total of 0.35 hectares.

## Access

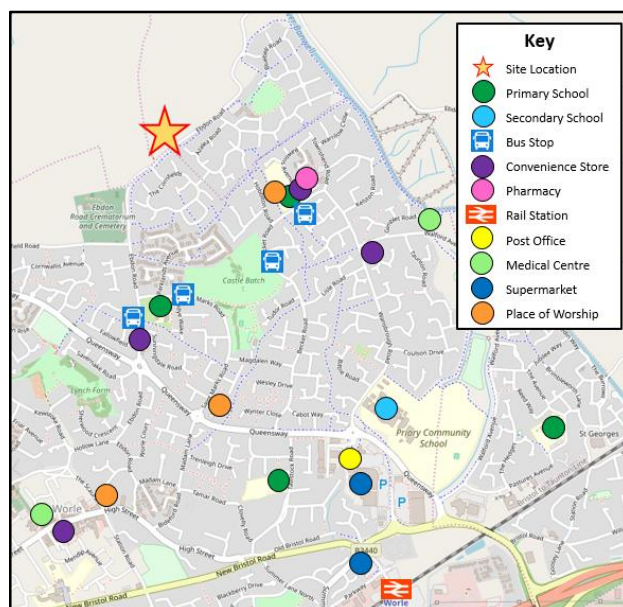
- 2.5 There is currently no access point from the site onto the local highway network. The proposed site would introduce two accesses to the south onto Ebdon Road, which would cater for vehicles, pedestrians and cyclists.

## Sustainable Travel

### Walking

- 2.6 The proposed development site will connect directly to the local footway network, via a footpath along the southern side of Ebdon Road. This is segregated from the highway by a wide, grassed verge, and is largely overlooked by residential frontage. The path benefits from street lighting which lines the highway.
- 2.7 The residential estates to the south of Ebdon road provide connecting shared footway/cycleways. These give routes to variety of local services and facilities within the urban area between the development site and the local centres of Worle and Weston-super-Mare. **Figure 2.2** shows a selection of the amenities available within the locality of the site. **Table 2.1** presents the distances of facilities from the site, and gives approximate walking and cycling times.

**Figure 2.2 – Local Facilities Plan**





**Table 2.1 – Walking and Cycling Times to Local Facilities**

Service	Facility	Distance (m)	Walking Time (mins)	Cycling Time (mins)
<b>Education</b>	Castle Batch Primary School	900	11	3
	St Mark's Primary School	800	10	3
	Becket Primary School	1700	20	6
	Worle Village Primary School	1700	20	6
	Priory Community (Secondary) School	1800	21	7
<b>Bus Stop</b>	Castle Batch School	750	9	3
	Castle Batch	900	11	3
	St Marks School	650	8	2
<b>Rail Station</b>	Worle	2500	30	9
<b>Healthcare</b>	Riverbank Medical Centre	1400	17	5
	Lloyds Pharmacy	1000	12	4
	Worle Health Centre	1800	21	7
<b>Convenience Store</b>	Tesco Express	1000	12	4
<b>Community / Leisure</b>	Library and Childrens' Centre	1900	23	7
	Post Office	2000	24	8
	Castle Batch Community Centre	1200	14	5
	Flex Fitness Gym	1900	23	7
	Lloyds Bank	1600	19	6
<b>Place of Worship</b>	Worle Baptist Church	900	11	3

- 2.8 From the development site, primary education can be reached within a 10-minute walk, and secondary education is within a 21-minute walk. Amenities such as a convenience store, a medical centre, a bank and a community centre are within a 20-minute walking distance.
- 2.9 The pedestrian routes to these destinations are predominantly through residential areas, which are well-lit and have high quality, well-maintained footpaths on one or both sides of the road.
- 2.10 There are no existing Public Rights of Way within the site boundary. However, a bridleway exists in the area which arcs through agricultural land to the north of the site, leading from Ebdon Farm in the east to Myrtle Farm in the west. This path is shown in **Figure 2.3**.

Figure 2.3 – PRoW Bridleway Map



## Cycling

- 2.11 Cycling is one of the most efficient ways to travel, in terms of number of people per area of carriageway. There is good provision for cycling in the vicinity of the site, in the form of the shared footway/cycleways through the residential areas to the south of Ebdon Road. This includes a pathway parallel to Ebdon Road, which is protected from the carriageway by verges or hedges.
- 2.12 Sustrans' National Cycle Network Route 33 runs between Worle and Weston-super-Mare, and can be joined within 1.6km from the development site on a traffic-free route. Route 33 continues southwards from Weston-super-Mare to Burnham-on-Sea and Bridgewater.
- 2.13 North Somerset Council has an interactive online map of maintained cycle routes across the district. This depicts traffic-free cycle routes which link Ebdon Road to Worle's local centre and continue into Weston-super-Mare.
- 2.14 It can be seen from **Table 2.1** that both primary and secondary education sites are accessible within a 7-minute cycle of the development site. Healthcare services, a variety of shops and the Worle rail station can all be reached by bike within 10 minutes.

2.15 Overall, it can be concluded that the site is highly accessible by active modes of travel.

### **Bus**

2.16 The closest bus stops to the Lynchmead Farm site are located at St Mark's School, approximately 650m from the site, and at Castle Batch School, approximately 750m from the site. Those at St Mark's School westbound, and in both directions at Castle Batch School, benefit from shelters and timetable information. The eastbound stop at St Mark's School has a traditional flag and pole arrangement with timetable information.

2.17 The bus stops are serviced by the frequent number 7 in both directions, which runs from Worle to Oldmixon via the centre of Weston-super-Mare. The journey to Weston-super-Mare takes approximately 25 minutes.

2.18 On weekdays, services begin at 0628 towards Oldmixon and 0655 in the opposite direction, with the final services at 2259 and 2330 respectively. The typical frequency of these services during the day is one per 15 minutes in each direction.

2.19 On Saturdays a similar level of service is sustained, beginning slightly later but continuing to run until the same late times as on weekdays. On Sundays, buses typically run every 20 minutes throughout the day and early evening.

2.20 Overall, this is a good level of bus service provision, and would present a real choice of travel mode for future residents of the proposed development.

### **Rail**

2.21 Worle rail station is located in Worle itself, approximately 2.5km from the development site. This is only 9 minutes' journey from the site by bicycle, and the station provides 78 sheltered cycle parking stands, which are monitored by CCTV. Further facilities at station include a ticket office, refreshment facilities and ticket machines.

2.22 Direct trains from the station travel to Weston-super-Mare, Bristol Temple Meads, Cardiff Central and Taunton, amongst other destinations. The journey times and approximate frequencies of these services are shown in **Table 2.2**.

**Table 2.2 – Rail Services from Worle**

<b>Destination</b>	<b>Approximate Journey Time</b>	<b>Typical Frequency</b>
<b>Bristol Temple Meads</b>	27 minutes	2 per hour
<b>Weston-super-Mare</b>	7 minutes	2 per hour
<b>Taunton</b>	43 minutes	1 per hour
<b>Cardiff Central (direct services only)</b>	1 hour 30 minutes	1 per hour

### **Sustainable Travel**

- 2.23 It is not the purpose of transport planning to protect the convenience of the car commuter, but rather it is to facilitate the efficient and convenient movement of people. The travel habits of individuals are changing and gravitating towards a desire to minimise inconvenience. There is a shift away from the ideology that travel must be habitual, and towards a desire for flexibility and choice in travel options, in which technology plays an important role.
- 2.24 Sustainable travel provides a wide range of alternatives to the private car, and should be promoted and enhanced. It strengthens communities by promoting social inclusion, as well as having financial and environmental advantages. In particular, there are a variety of health benefits associated with active travel.

### **Local Highway Network**

- 2.25 The vehicular site accesses will be onto Ebdon Road, a single carriageway with traffic calming measures in the form of footway build-outs, which narrow the road to a single lane. Ebdon Road is subject to a 30mph speed limit. Adjacent to the southern boundary of the site there is a three-arm roundabout, onto which a fourth arm is proposed as one of the site accesses. Ebdon Road forms the western and eastern arms. The southern arm, The Cornfields, is a minor street leading into a residential area. Two minor priority junctions allow access to existing residential and industrial units which are adjacent to the site boundary.

### **Highway Safety**

- 2.26 The website 'crashmap.co.uk' has been consulted to examine records of road collisions over the latest five years of available data, 2013 – 2017. Over this period these have been two

incidents on Ebdon Road in the vicinity of the site, both of which were classified as ‘slight’ in severity.

- 2.27 The first of these occurred in 2014, approximately 50m to the west of the three-arm roundabout. This involved a single vehicle. The other accident took place in 2015 approximately 500m to the east of the roundabout and involved two vehicles.
- 2.28 There are no patterns or clusters of collisions in the area around the site, and therefore there are no evident deficiencies in highways design, in terms of safety concerns.

### Traffic Surveys

- 2.29 To understand how the traffic at the site flows throughout the day and during morning and afternoon peak times, an ATC and MCC were both undertaken between 6<sup>th</sup> February and 12<sup>th</sup> February 2019.
- 2.30 A Manual Classified Count (MCC) was undertaken at the site at two junctions. The first MCC site was undertaken at Ebdon Road/Queen’s Way roundabout. The second MCC site was undertaken at Ebdon Road/The Cornfields roundabout, directly south of the proposed site location. The MCC was undertaken on a neutral day (Wednesday 6<sup>th</sup> February). The results of the MCC showing the flow of traffic at the two junctions during the AM and PM peaks (0800-0900 and 1700-1800) are presented at **Appendix C**. The busiest flow of traffic was observed from Queen’s Way (East) to Ebdon Road (South) during the AM peak.
- 2.31 An Automatic Traffic Survey (ATC) was undertaken at the site over the course of 7 days, beginning on 6<sup>th</sup> February 2019 and ending on the 12<sup>th</sup> February 2019. The ATC found that 5% of all northbound vehicles through the survey site were HGVs, southbound HGVs accounted for 7% of all traffic. **Table 2.3** summarises the key data observed from the ATC. The results of the ATC are provided at **Appendix C**.

**Table 2.3: ATC Results**

	Northbound	Southbound	Two way
<b>AM Peak Flow</b>	200	182	382
<b>PM Peak Flow</b>	193	190	383
<b>Average Speed (mph)</b>	27.5	29.0	-
<b>85% Percentile Speed (mph)</b>	33.5	33.2	-

### 3 POLICY CONTEXT

3.1 This TA has been written to accord with transport-related policy at national, regional and local levels. The overarching ideologies throughout these documents is that of sustainable travel and reducing reliance on the personal car.

#### **National Planning Policy Framework (NPPF)**

3.2 The current version of the NPPF was published in February 2019, and sets out the Government's planning policies for England.

3.3 The NPPF places sustainable development at the heart of the decision-making process. The core principles behind the planning for and delivery of such development are identified, and the key overarching policies are set out in paragraphs 7 to 10 in terms of defining sustainable development, and paragraphs 11 to 14 with respect to the delivery of sustainable development.

3.4 Section 9 of the NPPF covers promoting sustainable transport and how the impact of development should be considered from the transport perspective. The five main considerations in terms of transport are given in paragraph 102, including that *"opportunities to promote walking, cycling and public transport use are identified and pursued"*.

3.5 Paragraph 108 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; and*
- *any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree"*.

3.6 The NPPF also highlights the idea that applications for 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"* in

paragraph 110. This effectively sets out a hierarchy to be followed, whereby sustainable travel is prioritised over use of the private car.

- 3.7 This modern approach reflects changing priorities and attitudes towards travel and mobility. The proposed development at Lynchmead Farm adheres to this approach and is in line with national transport policy.

### **West of England Joint Local Transport Plan**

- 3.8 The third Joint Local Transport Plan (JLTP) for the West of England Partnership area sets out the 15 year vision for transport provision within the area comprising Bristol City, B&NES, South Gloucestershire and North Somerset.

- 3.9 This vision is supported by five key goals:

- Reduce carbon emissions;
- Support economic growth;
- Promote accessibility;
- Contribute to better safety, security and health; and
- Improve quality of life and a healthy natural environment.

- 3.10 The document sets out additional information about how the Councils seek to achieve these goals, including additional information on specific schemes and on ways of promoting more sustainable travel. The Council's Travelwest website provides important information about the progress of schemes and assists journey planning by residents.

- 3.11 The overall attitude of the JTLTP is forward-thinking, and recognises that in the period up to 2026 implementation must be seen in the context of a fast-moving world with changing technology and lifestyles.

### **North Somerset Local Plan**

- 3.12 The Local Plan for North Somerset consists of a number of documents, which together guide development choices and decisions in the authority area. The key document for planning is the Core Strategy, which was adopted in 2012 and presents the long-term objectives for North Somerset up to 2026. It takes a high-level approach to this vision, giving strategic policies to cover a wide range of topics.

- 3.13 One of the priority objectives of the Strategy is to *“improve accessibility through the delivery of major transport schemes and local improvements to ensure that, particularly in Weston-super-Mare, Clevedon, Nailsea and Portishead, people are encouraged to make more sustainable transport choices”*.
- 3.14 Another key objective covers the delivery sustainable housing development to meet housing needs, through the provision of a minimum of 20,985 homes by 2026. The proposed development would contribute directly to meeting this need.
- 3.15 A policy framework is laid out in the Core Strategy, and transport-related matters are raised in a number of policies. In particular, Policy CS1: Addressing Climate Change and Carbon Reduction states that *“developments of 10 or more dwellings should demonstrate a commitment to maximising the use of sustainable transport solutions, particularly at Weston-super-Mare. Opportunities for walking, cycling and use of public transport should be maximised through new development ... emphasising the aim to provide opportunities that encourage and facilitate modal shift towards more sustainable transport modes”*.
- 3.16 Furthermore, Policy CS10: Transportation and Movement dictates that *“development proposals that encourage an improved and integrated transport network and allow for a wide choice of modes of transport as a means of access to jobs, homes, services and facilities will be encouraged and supported”*.
- 3.17 The proposed housing development is in a sustainable location, and will therefore be conducive to a modal shift away from use of the private car and towards more sustainable travel modes. It is therefore in line with the relevant policy context.

### **North Somerset Housing and Economic Land Availability Assessment**

- 3.18 The HELAA was carried out in 2014, and identified the land at Lynchmead Farm as a potential opportunity to contribute towards North Somerset’s housing need. The capacity was identified as 236 dwellings over a gross area of 7.87 hectares.



## 4 DEVELOPMENT PROPOSALS

### Development

- 4.1 The development proposals are for 75 residential dwellings which will form an extension of the suburban area around Worle and Weston-super-Mare. The dwellings will be an appropriate mix of size and tenure, and will be complemented by associated development including roads and open spaces. The proposed masterplan is provided at **Appendix A**.
- 4.2 According to the North Somerset Strategic Housing Land Availability Assessment in 2018, the site has potential for up to 236 dwellings, although this quantum of development is not being proposed in the current application.

### Access Strategy

- 4.3 Entry for all modes of travel, including vehicles, cyclists and pedestrians, will be provided through two accesses onto Ebdon Road on the site's southern boundary. This will be cohesive with the desire lines for active travel movement from the development, as the majority of destinations for pedestrian and cycling trips will be southwards, towards the developed areas of Weston-super-Mare and Worle.
- 4.4 The western access is proposed to be delivered through the construction of a fourth arm to the existing roundabout between Ebdon Road and The Cornfields. A scale drawing of the proposed arrangement is provided at **Appendix D**. The proposed eastern access is a priority junction off Ebdon Road, to be located approximately 120m west of the roundabout with The Cornfields. **Appendix D** gives a scale drawing of this junction.
- 4.5 The access junctions have been designed in accordance with relevant standards and traffic speeds as set out in **Table 2.3**
- 4.6 Pedestrian access will be provided on both accesses with a footpath connecting the two accesses along the site frontage. A pedestrian crossing is proposed on the eastern arm of the mini roundabout as this is the only location the scheme can connect to the existing footpath provision within the adopted highway. This is conveniently located on a key pedestrian desire line between the site and key services and facilities.

## Parking Strategy

- 4.7 Parking will be provided in accordance with local policy. North Somerset Council's supplementary planning document 'Parking Standards' sets out minimum numbers of car and cycle parking spaces for new residential developments with 2 or more dwellings. These are given in **Table 4.1**.

**Table 4.1 – Car and Cycle Parking Standards per dwelling**

<i>Number of Bedrooms</i>	<b>Min. Number of Car Parking Spaces</b>	<b>Required Number of Cycle Parking Spaces</b>
<b>1</b>	1.5	1
<b>2/3</b>	2	2
<b>4+</b>	3	2

## 5 TRIP GENERATION AND TRANSPORT IMPACT

### Development

5.1 This section presents an assessment of the likely trip characteristics of the proposed development, for all modes of travel. In the context of relevant transport policy, the focus should be on accommodating the movement of people and providing safe and efficient active travel routes to key local facilities, rather than simply on traffic.

### Proposed Trip Generation

5.2 The development proposals are for 75 dwellings. An assessment of the likely trip generation for this quantum of development has been undertaken, in order to estimate the potential impact of the development on the local mobility networks.

5.3 Appropriate vehicular trip rates have been obtained from the TRICS database. The following parameters were used as selection criteria to achieve the most appropriate trip rates for the proposed development:

- Land Use – Residential;
- Sub Land Use Category – Houses Privately Owned;
- Location – UK (excluding Greater London, Northern Ireland and Scotland);
- Location type – Edge of Town and Suburban Area; and
- Location sub-category – Residential Zone.

5.4 Although the size and tenure of the proposed houses is yet to be determined, trip rates for privately owned houses have been used as these tend to be higher, and therefore provide a robust assessment for the potential effects of the development.

5.5 The forecast vehicular trip rates for weekday peak hours are presented in **Table 5.1**. The TRICS output files are provided at **Appendix E**. Applying these trip rates to the proposed 75 dwellings gives a forecast trip generation as shown in **Table 5.2**.

**Table 5.1 – Vehicular Trip Rates, per dwelling**

Time	Arrivals	Departures	Total
08:00-09:00	0.128	0.371	0.499
17:00-18:00	0.334	0.145	0.479

**Table 5.2 – Vehicular Trip Generation**

Time	Arrivals	Departures	Total
08:00-09:00	10	28	37
17:00-18:00	25	11	36

*\*Table may be subject to small rounding errors*

- 5.6 In total, the proposed development is forecast to generate up to 37 vehicular movements on the local highway network at its peak hour.

### Existing Travel Behaviour

- 5.7 The travel behaviour of residents in the vicinity of the site has been analysed to determine existing travel characteristics. 2011 Census data has been queried to ascertain the method of travel to work for mid super output area (MSOA) North Somerset 015, which covers the suburban area of Worle immediately to the south of the proposed development site.
- 5.8 The resultant mode split is shown in **Table 5.3**. An adjusted mode split, to discount working from home, is also displayed in the table. Private Vehicle refers mainly to trips by car but also includes those by motorcycle and taxi.

**Table 5.3 – Method of Travel to Work, MSOA North Somerset 015**

Mode of Travel	Mode Split	Adjusted Mode Split
Train	3%	3%
Bus	5%	5%
Private Vehicle	74%	77%
Car Passenger	6%	7%
Bike	2%	2%
Walk	5%	6%
Other	0%	0%
Work from Home	4%	--
Total	100%	100%

- 5.9 The trip characteristics of the proposed site are likely to be very similar to those of MSOA North Somerset 015, and therefore this mode split is judged to be appropriate for the purpose of assessing the impact of the development.
- 5.10 Extrapolating from the previously established vehicular traffic flows, the adjusted mode split results in a multi-modal trip generation as presented in **Table 5.4** below.

**Table 5.4 – Multi-Modal Trip Generation**

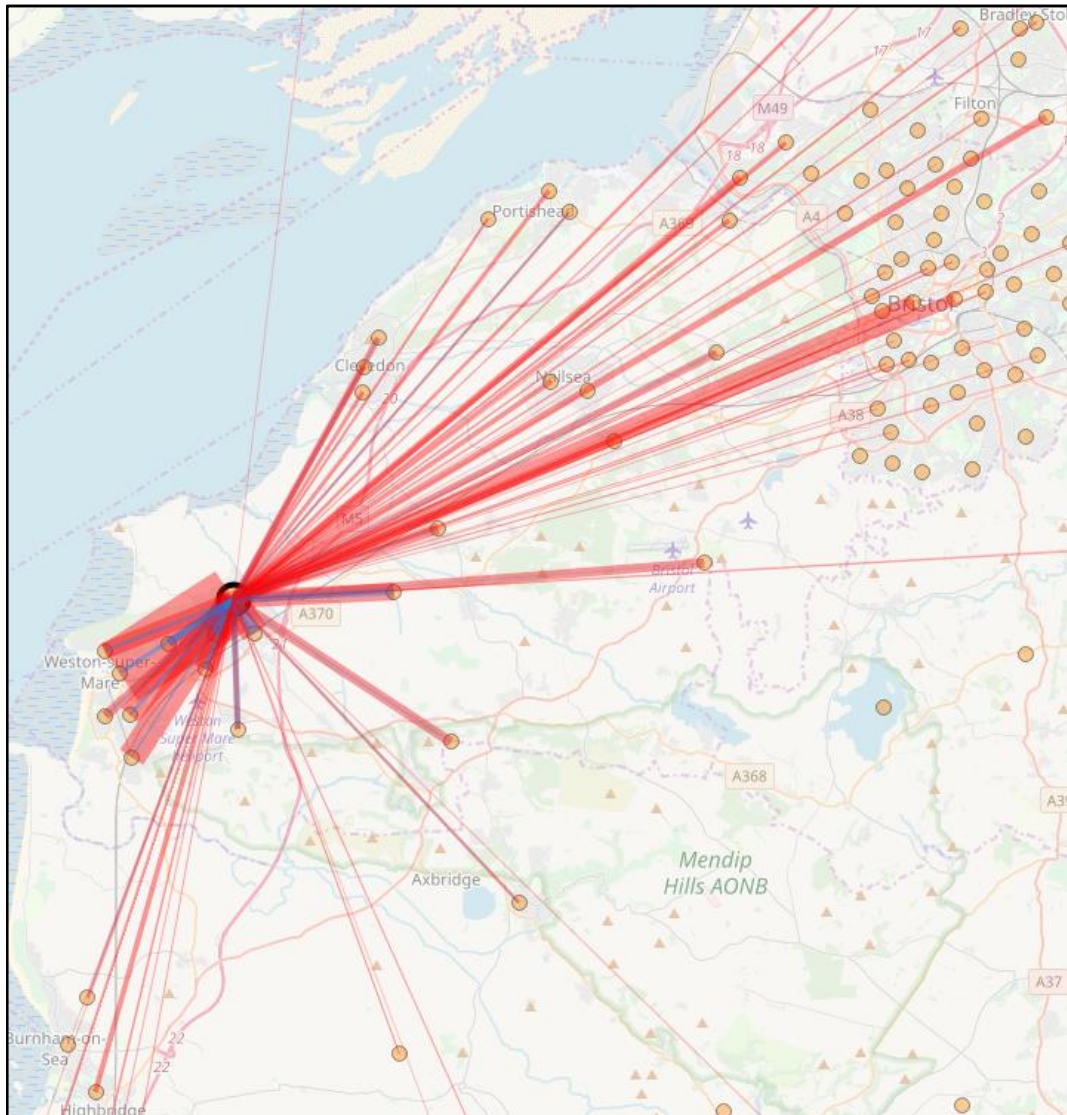
	AM (08:00-09:00)			PM (17:00-18:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Train	0	1	1	1	0	1
Bus	1	2	2	2	1	2
Private Vehicle	10	28	37	25	11	36
Car Passenger	1	2	3	2	1	3
Bike	0	1	1	1	0	1
Walk	1	2	3	2	1	3
Other	0	0	0	0	0	0
<b>Total</b>	<b>12</b>	<b>36</b>	<b>48</b>	<b>32</b>	<b>14</b>	<b>46</b>

*\*Table may be subject to small rounding errors*

## Transport Impact

- 5.11 **Table 5.4** gives an overview of the likely peak hour trip generation for the proposed development, for all modes of travel.
- 5.12 The site is well-located in terms of opportunities for travel by sustainable modes. It lies within a 10-minute walk of primary education and a 21-minute walk of secondary education, which is ideal to encourage trips for such purposes to be made on foot, by bike or by scooter. Therefore, the actual proportion of trips by active modes of travel is likely to be higher.
- 5.13 **Figure 5.1** below provides a pictorial representation of 2011 census data for the workplace of residents of MSOA North Somerset 015. This is indicatively shown; however, it is clear that a large proportion of commuters work in the central areas of Weston-super-Mare. There are high quality active travel links between the site and Weston-super-Mare, alongside frequent bus provision. Together, this presents a key opportunity to promote sustainable travel habits amongst future residents.
- 5.14 A significant number of residents also commute to Bristol and other destinations to the northeast such as Yatton and Nailsea. There are strong rail connections to these towns, which present a genuine option for convenient travel by public transport.

**Figure 5.1 – Datashine Commute Graph for North Somerset 015**



## Sustainable Travel Impact

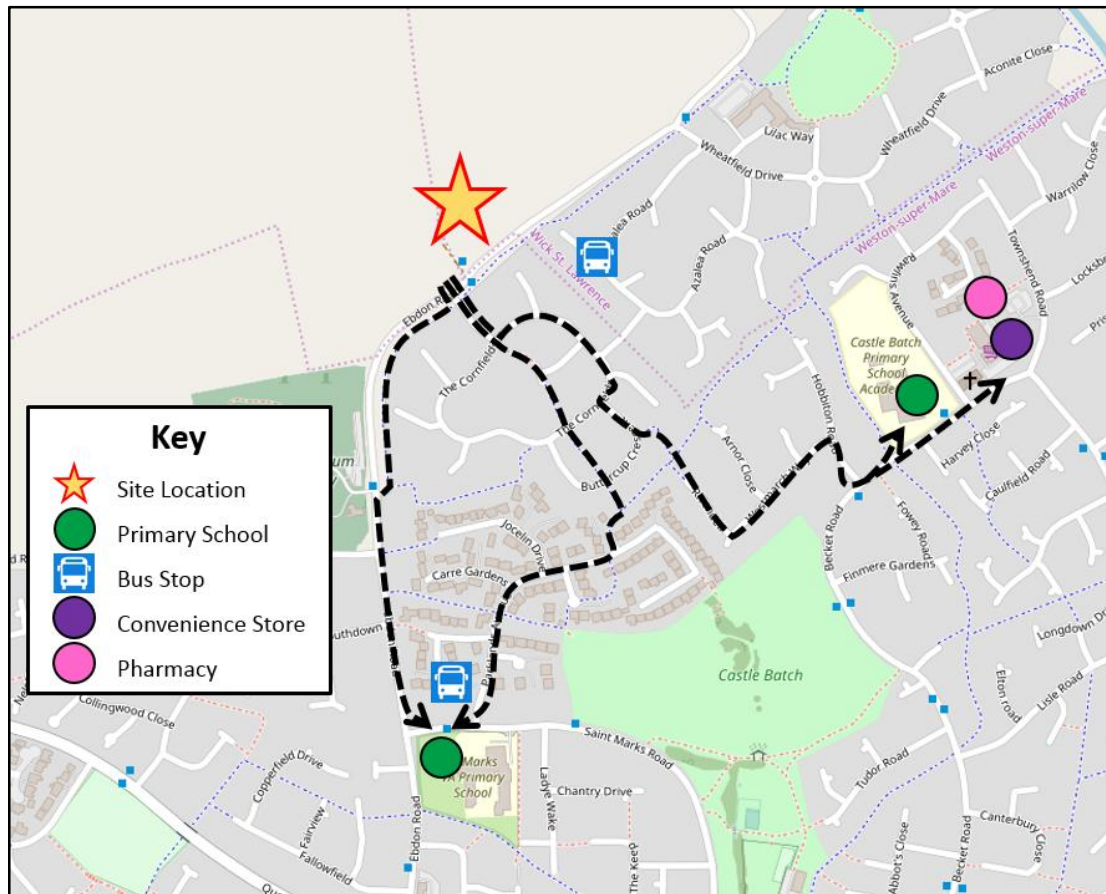
### Non-Motorised User Routes

5.15 The key routes for non-motorised users to and from the development site have been audited to determine their suitability for pedestrians and cyclists. The key characteristics taken into consideration are:

- Footpath availability and width;
- Cycleway availability;
- Street lighting; and
- Facilities for the mobility impaired.

5.16 The routes analysed include those to the nearest primary schools, bus stops, pharmacy and convenience store, all within 1km of the proposed development. These routes are depicted in **Figure 5.2**.

**Figure 5.2 – Pedestrian and Cyclist Routes**



5.17 All identified key destinations are to the south of the site, and therefore require crossing of Ebdon Road. The site access proposals include a 2m footway along the northern side of Ebdon Road which will link the two accesses. At the roundabout access, crossing facilities for pedestrians will be provided in the form of dropped kerbs with tactile paving on both the access arm and the eastern arm of Ebdon Road. The eastern arm will also have a pedestrian island. Altogether, these proposals provide a safe and convenient way for trips on foot or by bike to be made from the site.

5.18 The eastern route leads to the Castle Batch Primary school, Castle Batch bus stops, a Tesco Express and a Lloyds Pharmacy. This primarily runs through an area of quiet, residential streets to the south of Ebdon Road. The streets throughout this area typically have wide footways on both sides of the carriageway and street lighting is provided throughout.

Between some of the housing areas, shared cycleway/footways are also present. Dropped kerbs are prevalent at intersections.

- 5.19 There are two routes to St Mark's Primary School its bus stops, one of which covers only residential areas of the same type as described above. The other route follows Ebdon Road with the first 250m along a segregated cycleway / footway set behind a hedgerow on the southeastern side. Following this, a dropped kerb with tactile paving allows Ebdon Road to be crossed. The remainder of the route is along Ebdon Road with footpaths on one or both sides of the carriageway, and a pedestrian island to allow crossings. This road is well-lit and overlooked by residential frontage. Dropped kerbs with tactile paving are present at each intersection.
- 5.20 Altogether, the routes for non-motorised users present a range of high-quality options for journeys from the proposed development to be made by means other than the private car.

### **Walking and Cycling Capacity**

- 5.21 In the peak hour for development trips, there would be an additional 3 movements on foot and 1 movement by bicycle. The existing pedestrian and cycling networks have ample capacity to safely absorb this number of additional journeys.
- 5.22 In reality, the numbers of trips made by active modes may be slightly higher than those stated, due to the site's high potential for sustainable travel and the fact that bus users will likely walk to reach their bus stops. However, it is clear that the mobility networks around the site are of sufficient quality and quantity to accommodate more trips.

### **Public Transport**

- 5.23 It is anticipated that the proposed development would lead to two extra trips by bus in the peak hours. As discussed in **Section 2** of this report, there is ample bus provision in the vicinity of the proposed development. At 08:00-09:00 and 17:00-18:00, there are 4-5 bus services to / from Worle and the anticipated impact of one extra passenger on every other bus would be imperceptible.
- 5.24 It is also anticipated that the proposed development will generate one movement by train in each peak hour. Worle station, as discussed in **Section 2**, provides two services per hour to Weston-super-Mare and to Bristol Temple Meads. This is sufficient to enable commuting and



leisure trips by rail, and the addition of one additional passenger in the peak hour would be unnoticeable.

## Traffic Impact

- 5.25 The above assessment demonstrates that in the AM peak hour, the development could generate an additional 28 outbound and 10 inbound vehicle movements. In the PM peak hour, an additional 11 outbound and 25 inbound vehicular movements would be added to the local highway network.
- 5.26 **Appendix F** sets out the traffic flows used for assessing the impact of the development.
- 5.27 This level of traffic corresponds to roughly an extra vehicle movement every one to two minutes in peak hours, which is a low level of impact. This change in traffic would be likely to go unnoticed by existing road users. Furthermore, the actual vehicular demand is anticipated to be lower, as trip purpose has not been fully accounted for in this assessment and no allowance has been made for the implementation of a Travel Plan.
- 5.28 Given the scale of development, it is deemed unnecessary to use a strategic transport model for capacity assessment of existing junctions. Each site access will be modelled using Junctions 9 software which is an industry standard tool and which will enable a judgement to be made on the traffic impact of a development of this scale. The major local junctions upon which the proposed development may impact have been considered individually, and modelled using Junctions 9 software where appropriate.
- 5.29 Baseline traffic flows for 2019 have been obtained from the MCC surveys discussed in **Section 2** of this report. The future year baseline has been calculated according to TEMPro growth factors for 2019 to 2024. It is judged inappropriate to include any additional assumptions of committed development, as TEMPro takes into account the general forecast quantum of development within the area for the coming years.
- 5.30 Traffic associated with the proposed development has been distributed onto the network in line with proportions observed in the MCCs of existing traffic.

### Western Site Access (Roundabout)

- 5.31 The western site access will take the form of a fourth, north-facing arm to the existing 3-arm roundabout between Ebdon Road and The Cornfields. It has been assessed by means of an ARCADY assessment, the output for which is given at **Appendix G**, with a summary in **Table 5.5**.

**Table 5.5 – ARCADY Output, Western Site Access**

	AM			PM		
	Max Delay (s)	Max RFC	Network Residual Capacity	Max Delay (s)	Max RFC	Network Residual Capacity
<b>2019 Base</b>	7.34	0.33	155%	8.19	0.41	113%
<b>2024 Growth</b>	7.71	0.37	134%	8.75	0.44	95%
2024 + Development	7.86	0.38	126%	9.32	0.48	81%

- 5.32 It is clear that this junction will operate well within capacity even with added development traffic. The maximum modelled delay in either peak hour is under 10 seconds and in all scenarios the residual capacity of the 4 arm roundabout is above 80%.

### Eastern Site Access

- 5.33 The eastern access will be a simple priority junction onto Ebdon Road. This has been modelled using PICADY software. The results are summarised in **Table 5.6** and can be seen in full at **Appendix G**.

**Table 5.6 – PICADY Output, Eastern Site Access**

	AM			PM		
	Max Delay (s)	Max RFC	Network Residual Capacity	Max Delay (s)	Max RFC	Network Residual Capacity
<b>2024 + Development</b>	8.71	0.02	319%	5.16	0	577%

- 5.34 It is clear that this junction will operate well within capacity. The maximum modelled delay in either peak hour is under 9 seconds, which will not have a material impact on the flow of traffic along Ebdon Road.

### **Queen's Way / Ebdon Road**

- 5.35 The roundabout between Queen's Way and Ebdon Road lies approximately 750m south of the development site. It is forecast that the development would increase traffic at this junction by 33 during the AM peak hour and 32 during the PM peak hour prior to the implementation of a Travel Plan. This constitutes an impact of 1.7% during the AM peak hour and 1.9% during the PM peak hour against 2024 forecast flows.
- 5.36 Given the level of additional vehicle trips and proportional impact, no further assessment is considered necessary as this level of additional traffic (circa 1 vehicle every 2 minutes) would not be noticeable.

### **A370 / Wick Road and Queen's Way / Bristol Road**

- 5.37 The pre-application scoping advice from North Somerset County Council indicated that the priority junction between A370 and Wick Road, and the signalised junction between Queen's Way and Bristol Road, should also be assessed for capacity.

#### Queens Way / Bristol Road Junction

- 5.38 The peak hour traffic distribution indicates that at most 15 vehicles per hour will use roads east of the Queen's Way / Ebdon Road roundabout. This level of traffic would be diluted by the time it reaches the Queens Way / Bristol Road junctions as there are numerous side roads along the route between the Queens Way roundabout and the Queens Way / Bristol Road junction. The traffic impact at this junction would be lower than 15 vehicle trips during peak hours.
- 5.39 Assuming an upper limit of 15 vehicle trips, this reflects approximately 1 vehicle every 4 minutes, an impact which would be imperceptible to users of the junction. On this basis, it is deemed unnecessary to perform a modelling assessment of this roundabout.

#### A370 / Wick Road Junction

- 5.40 In each peak hour, there are at most 5 new trips to the east of the proposed development site, and therefore at most 5 additional vehicular movements will be introduced at the A370 / Wick Road junction in any given hour. This level of traffic would have a negligible effect on the operation of the junction. No modelling work is required for this junction.

## 6 FRAMEWORK TRAVEL PLAN

### Introduction

- 6.1 The NPPF defines a Travel Plan as “*a long-term management strategy for an organisation or site that seeks to deliver sustainable transport objectives and is regularly reviewed*”. As per the pre-application advice from NSCC for this scheme, a Travel Plan is required and is set out as below.
- 6.2 The overarching aim of the Travel Plan for Lynchmead Farm is to reduce the number of single occupancy vehicle trips made by residents. A greater take-up of sustainable travel will minimise the impact of the development on the local highway network.
- 6.3 To achieve this, various measures can be implemented to incentivise and encourage trips to instead be made by sustainable travel modes, and also to reduce the need to travel in the first instance.

### Organisation

- 6.4 A Travel Plan Coordinator (TPC) will be identified to oversee the implementation of the plan. The TPC will work with North Somerset Council to ensure the effective implementation of the plan, to ensure that there is the greatest possible opportunity to achieve its aim.

### Measures

- 6.5 The Travel Plan for the proposed development will include a number of measures aimed at encouraging sustainable travel to and from the proposed development. The measures which are deemed suitable for Lynchmead Farm are:
- The provision of a Sustainable Travel Information Pack to each new homeowner;
  - Promotion of local walking and cycling routes;
  - Promotion of public transport links;
  - Promotion of car sharing opportunities; and
  - A contribution of £120 per dwelling to the council for sustainable travel initiatives.

## **7 SUMMARY AND CONCLUSION**

### **Summary**

- 7.1 Vectos has been commissioned by Mead Realisation Ltd to prepare a Transport Assessment in support of the planning application at Lynchmead Farm, Weston-super-Mare. This TA has been written in compliance with relevant transport policy at national and local levels.
- 7.2 The development proposals are for a total of 75 dwellings. Access will be provided to the south of the site onto Ebdon Road, in two locations. The development provides two accesses which are safe and appropriate.
- 7.3 The site is highly suitable for such development, as it is accessible by all modes of travel and its location presents a genuine choice of sustainable travel modes. There is excellent potential to encourage sustainable mobility habits in future residents from the outset.
- 7.4 An assessment of the potential trip generation of the development proposals has been undertaken, which determines that the site could generate up to 37 vehicular movements per hour on the local highway network.
- 7.5 This low level of impact will not have a significant effect on the operation of the local highway network. Therefore, there is no good reason to object to the proposed development on transport grounds.

### **Conclusion**

- 7.6 The development will not result in a severe residual cumulative impact and as such there is no reason on transport grounds to refuse this application.

## FIGURES



# **APPENDIX A**

## **Masterplan**



## **APPENDIX B**

### **Scoping Response**

## **APPENDIX C**

### **Traffic Surveys**

# **APPENDIX D**

## **Access Design**

# **APPENDIX E**

## **TRICS**

## **APPENDIX F**

### **Traffic Flow Diagram**

## **APPENDIX G**

### **Modelling Outputs**