

# Land North of Tuttle Lane East, Wymondham

Land Promotion Transport Site Appraisal

March 2018

## Quality information

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Introduction

01

# 1. Introduction

## 1.1 Background

AECOM have been appointed by Welbeck Strategic Land III Ltd to provide transport planning advice in relation to a site, known as the Land to the North of Tuttle Lane East (reference GNLP006), submitted as part of the Call for Sites for the Greater Norwich Local Plan (GNLP).

Following submission, the site was reviewed as part of the Housing and Economic Land Availability Assessment (HELAA) and considered to be 'suitable'. As part of the consultation process which follows the HELAA, further evidence regarding the site is being provided to demonstrate the site's suitability to accommodate a number of dwellings which would form part of the GNLP housing supply.

This report sets out to demonstrate the site's suitability in terms of connectivity to the existing walking, cycling and public transport facilities as well as local amenities and facilities. Further to this, access locations to the site and the capacity of the junctions in the vicinity site have been reviewed to establish if there are any constraints to the development coming forward.

## 1.2 Report Structure

The remaining sections of this report are set out as follows:

- Section Two provides a brief description of the site's existing location and the development proposals;
- Section Three sets out a review of the sustainable transport network, including the existing and future facilities for pedestrians, cyclists and public transport users;
- Section Four discusses the existing highway network and vehicular access to the site;
- Section Five sets out a review of safety for the local highway network;
- Section Six describes the methodology undertaken to generate and distribute traffic identified for the site;
- Section Seven provides a review of the capacity of the junctions local to the development site and sets out proposals identified to increase capacity; and
- Section Eight provides a summary and conclusion for the report.

Site Location,  
Description and  
Development  
Proposals

02

## 2. Site Location, Description and Development Proposals

### 2.1 Introduction

This section describes the site's location and existing use. The proposals for future development at the site are also set out.

### 2.2 Site Location and Description

The development site covers circa 55ha of land currently used for agriculture purposes and is located to the north of Tuttlles Lane East in Wymondham, which forms the site's southern boundary. Melton Road provides the western boundary whilst the northern and eastern boundaries are defined by further agriculture land. The site itself is relatively flat in terms of topography and will connect with other already consented residential developments located on the northern side of Wymondham such as that at Wymondham Rugby Club.

The site location is illustrated on Figure 1 below.

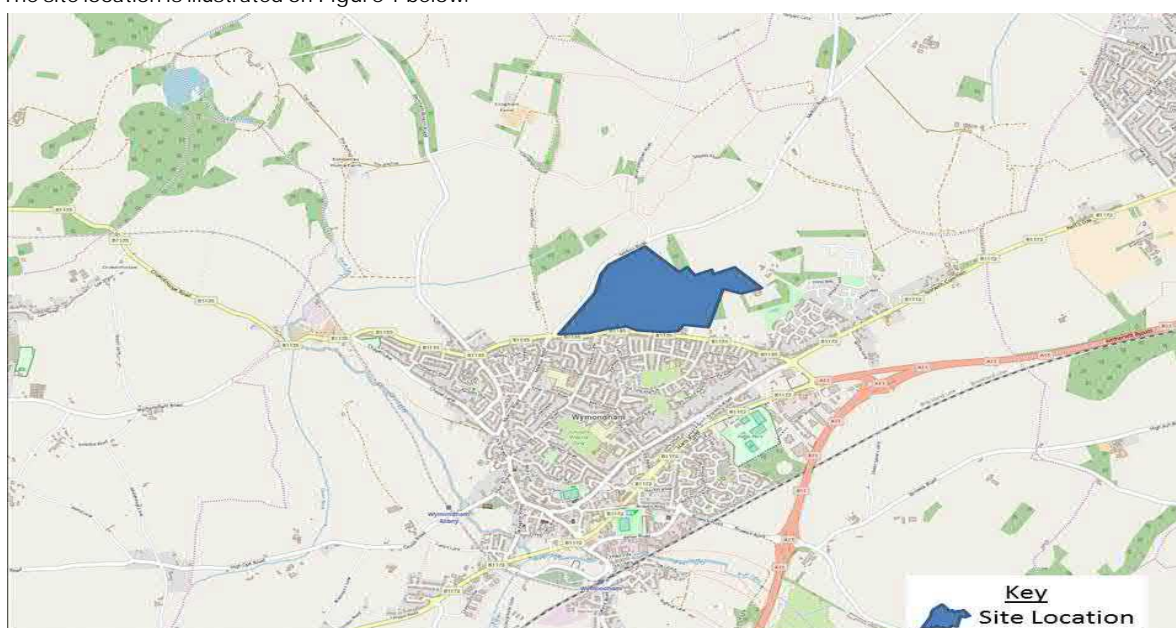


Figure 1. Site Location Plan

The site is currently accessed from Tuttlles Lane East at the junction with Finderne Drive. There are no formal pedestrian or cyclist facilities within site or along the site's boundaries with Melton Road or Tuttlles Lane East. The site accommodates an existing Public Right of Way between Melton Road and Tuttlles Lane East.

Tuttlles Lane East is fronted by residential development to the south and east of the development site and the site represents a natural extension of the urban residential area of Wymondham.

The connectivity of the site is discussed later in this report.

### 2.3 Development Proposals

The development proposals comprise a sustainable urban extension to Wymondham and it is proposed that it could cater for a residential led mixed use development with approximately 1,000 dwellings. Further to the dwellings, sufficient land is available to provide associated public open space, community uses, infrastructure and a primary school. Vehicular access to the development is proposed from Tuttlles Lane East with the primary access comprising a roundabout in place of the existing priority junction between Tuttlles Lane East and Finderne Drive. A second point of access would be provided from Tuttlles Lane East for use by emergency vehicles and potentially as a second priority controlled access.

A proposed masterplan for the development is included at Appendix A.



The masterplan illustrates how the layout of the site could be provided such that it acts as a natural extension to the existing urban area to the south and that consented to the east.

The size of the site and the greenfield nature ensures that the site is capable of delivering an efficient layout which is compliant with national guidance in the form of Manual for Streets (MfS). This would ensure that road widths are sufficient to cater for the vehicles which would require access to the development and that there is a strong emphasis on provision for sustainable modes such as walking, and cycling.

The layout of the site is proposed such that the school and amenities are located toward the south-western corner of the site. This would ensure that the school is provided within reasonable walking and cycling distance, not only of the residential dwellings which make up the proposed development but also those dwellings already located to the south of Tuttle Lane East, increasing the connectivity with the existing urban area and the likelihood for journeys to be made by modes other than the private car.

The site access arrangements and likely development impacts are discussed in later sections.

Sustainable  
Transport Network  
Review

03

### 3. Sustainable Transport Network Review

#### 3.1 Introduction

This section sets out a review of the sustainable transport network in the vicinity of the site and discusses how accessible the site is without recourse to the private car.

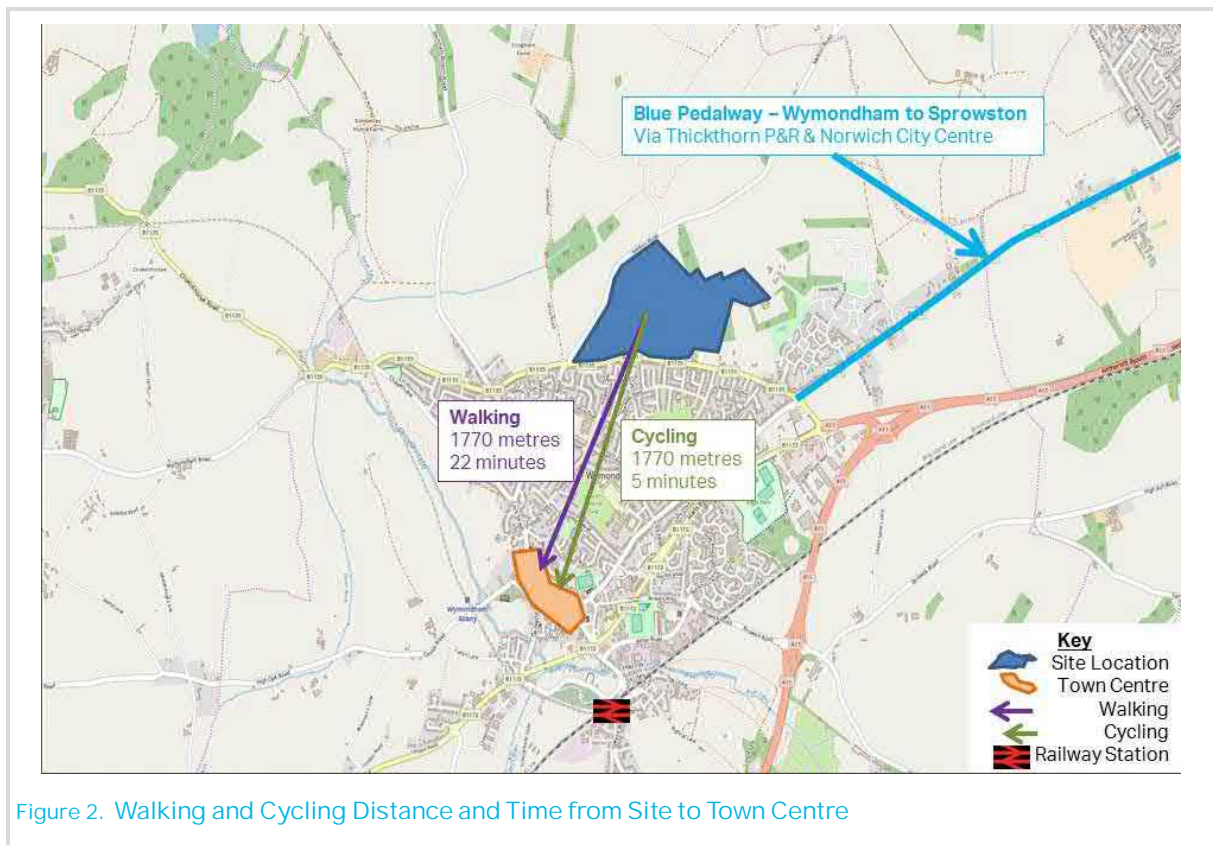
#### 3.2 Connectivity

A plan illustrating the site's connectivity with the sustainable transport network and the local amenities and facilities, is included at Appendix B. The plan highlights the site's location in relation to nearby facilities and amenities as well as the provision for pedestrians, cyclists and public transport users. A summary of the facilities and links available from the site are set out in the following paragraphs.

##### 3.2.1 Walking and Cycling

At present, no footway is provided along Melton Road or the northern side of Tuttle Lane East however a footway is provided along the southern side which is lit and well maintained. Footways are provided alongside a number of residential roads which run in a broad north to south direction off Tuttle Lane East. These routes are lightly trafficked and provide good connectivity to nearby facilities, amenities, the town centre and the railway station which are all within reasonable walking distance of the site.

Figure 2 below illustrates the location of the site in relation to the town centre, along with the walking and cycling times it takes to undertake the journey between the two locations. The distance and times represent the fastest journey times along established routes between the centre of the development site and Wymondham town centre. The times and distance have been derived through the use of Google route planning software available on Google Maps. This illustrates that the town centre is highly accessible by those travelling by bicycle and for those walking with journey times of approximately five minutes for those cycling and less than 30 minutes for those walking.



A public right of way, linking Tuttles Lane East with Melton Road, is present across the western element of the site. This would be retained as part of any development proposals.

A Toucan crossing facility is provided on Tuttles Lane East some 350 metres east of the site's eastern boundary. The development site frontage along Tuttles Lane East extends some 1,000 metres, providing sufficient space to provide further crossing points to reach the existing footway on the southern side facilitating access to amenities and facilities to the south of the site without recourse to the private car.

As shown on the Connectivity Plan included at Appendix B, limited cycling facilities are provided along Tuttles Lane East with the nearest cycle facility provided in the form of a shared footway / cycleway between Estelle Way and the roundabout with Norwich Road and Norwich Common. This facility could be extended along the length of the site frontage to further encourage cycling. The roads to the south of Tuttles Lane East are residential in nature and are therefore highly conducive to cycling. These roads provide connection to the town centre and railway station as well as other facilities and amenities within the town.

Future improvements to the cycle network in the vicinity of the site include the extension of the existing shared footway / cycleway facility provided on Tuttles Lane East near to Estelle Way, which is being delivered as part of the redevelopment of the rugby club site on Tuttles Lane East.

Norfolk County Council (NCC) are currently in the process of providing a 3.3 kilometre long shared footway / cycleway facility between Thickthorn Interchange and Tuttles Lane East along the B1172. This will create a new path linking to existing facilities at either end of the new path and form part of the Blue Pedalway, a cycle link between Sprowston and Wymondham, via Norwich city centre. This cycle route will also provide for cycle access to Thickthorn Park & Ride where high frequency services are provided to Norwich City. This new facility will be easily accessible, and will provide greater cycle links to Norwich, increasing the likelihood of trips being made by cycle.

Further improvements to cycling infrastructure could be provided along Tuttles Lane East with shared footway / cycleway facilities incorporated into the site design such that it connects with the existing facility encouraging trips to be made by bicycle and reducing the need to use the private car. These improvements would act as an extension of the existing facility and the new cycle link to Norwich providing an excellent footway / cycleway link between the site and Norwich city centre.

The existing facilities, future improvements by others, as well as the possibilities provided by the development would result in an excellent enhancement of facilities for pedestrians and cyclists such that greater use of these modes is made.

### 3.2.2 Bus

There are a number of existing bus stops located within a reasonable walking distance of the site which are served by highly frequent services over the course of the day. These services pass along the site frontage but at present no bus stops are provided on the site frontage to Tuttles Lane East. Those bus stops nearest the site are located on Melton Road, Hewitt's Lane and Sheffield Road, which are within a short walk of the site. The services using these stops are summarised in Table 1 below.

Table 1. Bus Services Serving the Nearest Bus Stops to the Development Site

Service	Route Description	Weekday	Saturday	Sunday	Operator
6	Watton – Norwich	Every 60 minutes	Every 60 minutes	No Service	Konectbus
13	Shipdham - Watton	1 per day	No Service	No Service	Konectbus
9	Silfield – NNUH	Every 120 minutes	No Service	No Service	Konectbus
13A	Attleborough – Norwich	2 per day	3 per day	3 per day	First
13B	Attleborough – Norwich – Spixworth	1 per day	1 per day	Every 60 minutes	First
14	Wymondham – Dussindale Drive	Every 30 minutes	Every 30 minutes	Every 60 minutes	First
15	Wymondham – Blofield Heath	Every 60 minutes	Every 60 minutes	No Service	First
15A	Wymondham – Lingwood	Every 60 minutes	Every 60 minutes	No Service	First

Source: Traveline South East

This demonstrates that there are a number of highly frequent services using the bus stops within walking distance of the site, therefore encouraging trips to be made by bus reducing the impact of the development on the local highway network. The site is therefore well located to encourage trips by bus.

Services using those stops nearest the site provide links to the town centre, although within a reasonable walking distance, and the railway station. Further to this these services provide links with Norwich, Hethersett, Attleborough, Watton and Dereham therefore acting as an excellent alternative to the private car for journeys to other centres. The location of the stops in relation to the site and the services operating from the stops are shown on the Public Transport Plan included at Appendix B.

Thickthorn Park & Ride is also within a 22 minute cycle of the proposed site and will be situated along the Blue Pedalway. The Park and Ride provides services every 15 minutes to Norwich City Centre.

In terms of future provision, a Bus Rapid Transit (BRT) route has been identified within the Norwich Area Transport Strategy (NATS) along Norwich Road in Wymondham. Links to this route could be provided from the site through the re-direction of existing services through the development which is of sufficient size and scale to cater for bus services. Providing bus stops on the site frontage to Tuttlles Lane East and enabling bus services to travel through the development site will further increase the viability of bus travel for residents therefore reducing the reliance on the private car and the development's impact on the local highway network.

### 3.2.3 Rail

Wymondham railway station is located approximately 2.4 kilometres south of the site and can be easily accessed by a number of modes including bus and cycle, where some 28 cycle parking spaces are provided at present. Journeys between the site and station by car can be made without utilising the existing constrained junctions on the network with alternative routes available to reach the 90 car parking spaces which are available. The station is situated on the Norwich to Liverpool line where services are available to the end locations as well as intermediate stations such as Ely, Cambridge, Peterborough and Nottingham. The station has pay phones and a café however access for those with disabilities to Platform 2 (westbound) is limited as no step free access is provided.

Services from the station generally run every hour in either direction however between 08:00 and 09:00 hours and 17:00 and 18:00 hours, an additional service is provided in each direction increasing the frequency to two per hour.

The limited access for those with disabilities and buggies etc. to Platform 2 has been raised by the local Member for Parliament (MP) George Freeman as well as being identified in an update to the NATS as an issue which needs resolving.

Frequent services from the station ensure that travel by train is an attractive alternative especially for journeys to Norwich for those residing at the development site therefore reducing the reliance on the private car. Mode share data from the 2011 Census suggests that rail use by those living in Wymondham was relatively low with only 1% of residents using the service. There is however the possibility that as the wider road network becomes more constrained and parking provision becomes more constrained in Norwich, greater uptake in rail use will be made.

## 3.3 Connectivity to Existing Amenities and Facilities

There are a number of existing amenities and facilities shown on the Connectivity Plan included at Appendix B. Table 2 below sets out the distances from the site and the sustainable mode of transport which could be utilised to reach the amenity and facility identified.

Table 2. Distance to Amenities and Facilities and Mode of Sustainable Transport

Facility / Amenity	*Distance	Mode
Nearest Primary School	325 metres	Walking / Cycling
Community Centre	500 metres	Walking / Cycling
Public House	500 metres	Walking / Cycling
Local Shops	500 metres	Walking / Cycling

Facility / Amenity	*Distance	Mode
Nearest Dentist	975 metres	Walking / Cycling
Nearest High School	975 metres	Walking / Cycling
Foodstore (Waitrose)	975 metres	Walking / Cycling
Police Station	1100 metres	Walking / Cycling
Leisure Centre	1500 metres	Walking / Cycling
Garage	1500 metres	Walking / Cycling
Nearest Doctors	1600 metres	Walking / Cycling
Foodstore (Morrisons)	1600 metres	Walking / Cycling
Town Centre	1950 metres	Walking / Cycling / Bus
Railway Station	2400 metres	Cycling / Bus

\*Measured from centre of site frontage on Tuttle Lane East

The information set out in Table 2 demonstrates that the site is within a reasonable walking and cycling distance of a majority of the existing facilities and amenities located within Wymondham, including the town's largest employer, Norfolk Constabulary, as well the large retail opportunities, highlighting that the site is well located in the town to encourage trips by alternative modes to the private car therefore reducing impact on the local road network.

### 3.4 Summary

The above paragraphs summarise how well connected the proposed development site is with existing facilities and amenities in Wymondham. The site is located within reasonable walking distance of a number of facilities and amenities and accessible through well maintained and lit walking routes. A number of walking and cycling routes are provided from Tuttle Lane East through the residential areas to the south reducing the reliance on the private car for journeys.

Well served bus stops are located within walking distance of the site whilst the railway station is accessible by bicycle and bus.

The existing and proposed connections ensure that the use of sustainable modes of transport for journeys to work, retail and schools are possible therefore reducing the reliance on the private car and the potential impact of the proposed development on the local road network.

Vehicular Access

04

## 4. Vehicular Access

### 4.1 Introduction

This section sets out how the site is currently accessed, future access possibilities and existing constraints on the highway network.

### 4.2 Existing and Future Vehicular Access

At present access to the site is provided from a number of points along the Tuttlles Lane East frontage. Accesses are provided in the form of dropped kerbs and, generally, lead directly into the site.

Of the two roads which bound the site, it is considered likely that access would be provided from Tuttlles Lane East as this road is already urban in nature and has a posted speed limited of 40 mph unlike Melton Road which is rural in nature and is subject to the national speed limit of 60 mph.

To assist in ensuring that safety remains a key priority of the scheme, the existing 30 mph zone could be extended west of the frontage to the site. This would also be beneficial for pedestrians and cyclists travelling between the site and the facilities and amenities to the south.

The extensive frontage along Tuttlles Lane East, some 1,000 metres, and the favourable topography will ensure that design requirements for accesses along the Tuttlles Lane East frontage will be easily achievable. The existing unimpeded view in both directions ensures that visibility requirements for a 40 mph road can be achieved.

The design of the site accesses would be defined following preparation of a Transport Assessment at planning submission stage, once capacity requirements are fully quantified. It is proposed that two points of access be provided onto Tuttlles Lane East. The primary access would most likely form a fourth arm to the existing priority junction with Finderne Drive. This junction would be upgraded to a roundabout. A second access point would be provided further west along Tuttlles Lane East in the form of a three armed priority junction. This would serve as a vehicular access or emergency access only depending on capacity requirements. If required there is sufficient frontage to allow for road widening to support a right turn lane but in the interests of maintaining low vehicle speeds at this location it is not expected that one would be provided.

The site is situated such that a number of vehicular routes are available to the east, west and through Wymondham to access the A11 and areas to the south. Tuttlles Lane East forms the B1135, which provides vehicular access to the site, connects with the B1172 (both to the east and west) providing access to the A11. The A11 is a Trunk Road which provides the key route between Norwich to Cambridge, the Midlands and south towards London. The A11 also connects with the A47 which serves Great Yarmouth, Kings Lynn and Peterborough. This ensures that access to the strategic road network from the site is good and there are many opportunities for traffic from the site to be diluted across the road network due to the route choices available.

### 4.3 Existing Highway Network Constraints

A review of Transport Assessments prepared for recent developments located near to the development site identifies that, in the future, parts of the network are predicted to operate close to or at capacity. The junctions local to the site where capacity issues were identified by other developments, or are known through AECOM's experience, are:

- B1135 Tuttlles Lane East / Norwich Road / B1172 Norwich Common / B1135 four-arm roundabout;

This junction was identified for improvement as part of recent developments and NCC have implemented a capacity improvement scheme to cater for current consented growth in Wymondham. There is further potential to manage traffic flow at this location through the implementation of traffic signals but there are other options which could be implemented in the first instance such as reducing traffic demand by targeting a lower car driver mode share in the area through supporting sustainable travel options.



- B1135 / B1172 Harts Farm Road / Falconers Close four-arm roundabout;

Issues experienced at this junction relate to blocking back problems from the adjacent B1135 Tuttlles Lane East / Norwich Road / B1172 Norwich Common / B1135 four-arm junction and the proximity to Waitrose at times impacts on the effectiveness of operation. This junction in isolation is not predicted to suffer capacity problems in the near future and the recent improvements at the B1135 Tuttlles Lane East / Norwich Road / B1172 Norwich Common / B1135 four-arm roundabout have alleviated problems.

- A47 / A11 junction, known as Thickthorn Interchange:

Whilst this junction has long been acknowledged as a constraint to traffic growth, a number of committed improvements have been identified for implementation by local permitted developments. These are being progressed through discussions with the highway and planning authorities. Furthermore this junction has been identified for improvement under as part of £15.1 billion investment to improve journeys on England's major A roads and motorways. A scheme to upgrade the junction to a high quality interchange including free-flow links in both directions between the A11 and the A47 eastern link is being progressed through the Development Consent Order (DCO) process. The proposals for improvements to the Thickthorn Interchange are at an advanced stage with work to improve the junction likely to start in 2020/2021. The proposals are designed to cater for a 30% increase in traffic up to 2036. The junction will therefore be more than able to cater with the traffic associated with the proposed development.

It is clear that these existing constraints are being addressed through improvements which have been carried out, or are planned to address existing problems.

In terms of the strategic road network the improvements planned will allow for further growth in this area and the need for substantial further capacity improvements is unlikely, but this would be assessed in detail at planning stage.

Equally the development site is positioned such that other routes are available. Alternative routes to the A11 are available via the B1172 and Browick Road. The A47 can be accessed via Melton Road and Little Melton. Access to other locations such as Dereham and Watton can be provided using Tuttlles Lane West.

Safety Review

05

## 5. Safety Review

### 5.1 Introduction

This section of the report sets out a review of safety in terms of the local highway network.

### 5.2 Accident Review

A review of the accident records held on the Crashmap website for the last five year period for the highway network in the vicinity of the site has been undertaken.

Table 3 below sets out the number and severity of accidents which have occurred in the vicinity of the site. This confirms that a total of 12 accidents occurred in the area reviewed; with the majority being slight in terms of severity and that no accidents which resulted in a fatality have occurred.

Table 3. Accident Severity by Location

	Location	Accident Severity			Total
		Slight	Serious	Fatal	
1	B1135 Tuttlles Lane East / Melton Road (South)	0	1	0	1
2	B1135 Tuttlles Lane East / Melton Road (North)	1	0	0	1
3	B1135 Tuttlles Lane East / Garden Centre Access	0	1	0	1
4	B1135 Tuttlles Lane East (nr Estelle Way)	3	0	0	3
5	B1135 Tuttlles Lane East (nr Greenland Ave)	1	0	0	1
6	B1135 Tuttlles Lane East / Norwich Road / Norwich Common	3	0	0	3
7	Melton Road (nr Wramplingham Lane)	0	2	0	2
	Total	8	4	0	12

Source: Crashmap.com

On the basis of the above, it is not considered that highway safety is an existing issue which would be exacerbated by the development proposals. However as part of any transport related document which is prepared to accompany a planning application, a detailed review of the accident data available from the local authority would be undertaken.

# Trip Generation and Distribution

# 06

## 6. Trip Generation and Distribution

### 6.1 Introduction

This section of the report sets out the potential level of trips by all modes which could be generated by the proposed development and how they could be distributed onto the local road network.

### 6.2 Trip Generation

In order to establish the level of vehicular trips considered likely to be generated by the proposed development, reference has been made to the TAs prepared for nearby consented developments. The residential element of the adjacent Rugby Club development, which was the mostly consented, utilised the vehicular trip rates set out in Table 4.

Table 4. Vehicular Trip Rates - Weekday

Mode	Trip Rates Per Dwelling					
	AM Peak (0800-0900)			PM Peak (1700-1800)		
	Arrival	Departure	Two-Way	Arrival	Departure	Two-Way
Vehicles	0.180	0.634	0.814	0.422	0.247	0.669

Source: Transport Assessment for Rugby Club Redevelopment, Create Consulting, 2014

These trip rates were derived from a survey taken at a nearby residential development and are representative of mode choice in Wymondham at the time of the survey. As this was the most recent development to receive consent, it is considered appropriate to apply these rates to proposed number of dwellings which the development site could provide. This results in the number of vehicular trips as set out in Table 5 below.

Table 5. Vehicular Trip Generation - Weekday

Mode	Trip Generation (1,000 Dwellings)					
	AM Peak (0800-0900)			PM Peak (1700-1800)		
	Arrival	Departure	Two-Way	Arrival	Departure	Two-Way
Vehicles	180	634	814	422	247	669

Although the development could generate the level of vehicular trips set out in Table 5 above, not all of these trips would reach the road network external to the site. The scale of the proposals are such that they include a primary school and local centre, as such a proportion of trips generated in the peak hours which would be travelling to the on-site facilities such as the school and local centre. According to the National Travel Survey results for 2016, only 27% of trips are for commuting and business purposes, with the remaining 73% for personal trips such as education, escorting, leisure and shopping. With the site's connectivity with the facilities and amenities in Wymondham, there is significant scope to reduce the level of vehicular trips the site could generate through the use of more sustainable modes of transport.

A review of the data from the 2011 Census enables a mode share for Wymondham to be derived. The resulting mode share, applicable to the development site, is set out in Table 6.

Table 6. Census 2011 Mode Share (Wymondham)

Mode	Percentage
Rail	1%
Bus	7%
Taxi	0%
Motorcycle	2%
Car Driver	70%
Car Passenger	5%
Cycle	5%
Pedestrian	10%
Total	100%

Source: NomisWeb

This demonstrates that the most commonly chosen mode of transport to work for residents of Wymondham is to drive, most likely due to the high level of service experienced on the local highway network and highlights high potential for reducing car driver mode share in Wymondham for existing and future trips.

A review of a mode share from the 2011 Census for Bury St Edmunds, which is a similarly located town, adjacent to the strategic road network and has a small but well served railway station identifies that 63% of residents travel by car as the driver. This therefore suggests that for Wymondham there are significant opportunities to further reduce car use especially as Wymondham, unlike Bury St Edmunds, benefits from excellent bus links with Norwich, which is the predominant location for those living in Wymondham.

The increasing levels of traffic congestion in Norwich and generally, along with the ongoing investment in sustainable transport infrastructure in the area will work together to support mode shift from car use in Wymondham for existing and future trips.

The proposed site location provides strong access to sustainable modes of transport for journeys within Wymondham and to wider destinations. NCC requires Travel Plans to be implemented at developments across the county. A well-structured Travel Plan promoting the highly accessible nature of the development site would be implemented. Within NCC's guidance a target mode shift of 18% from car driver to more sustainable modes is applicable to developments located in the Norwich policy area, which covers Wymondham. Implementation of a well-funded Travel Plan at this already highly accessible site would be expected to result in mode shares as set out of Table 7 below.

Table 7. Anticipated Future Mode Share (Wymondham)

Mode	Percentage
Rail	2%
Bus	12%
Taxi	0%
Motorcycle	2%
Car Driver	52%
Car Passenger	8%
Cycle	8%
Pedestrian	16%
Total	100%

Taking these factors into account the development site would be expected to result in car driver trips generated by the development as set out in Table 8 below.

Table 8. Anticipated Car Driver Trips

Mode	Development Trips					
	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Car Driver	134	471	605	314	184	498

### 6.3 Trip Distribution

A review of the Census 2011 Journey to Work Origin Destination data suggests that some 62% of trips would be required to travel east towards Norwich. This is the desire line for which sustainable transport choices such as bus, rail, cycle and ride, car sharing and cycling are strongest. For the remaining car driver trips making this trip, there are multiple points of access to the A11 at Wymondham with access from the junctions with B1135, B1172 London Road and Browick Road available.

Further to this some 19% of trips to work remain within Wymondham car driver trips should be limited given the accessibility of the area by foot, cycle and bus.

The plan included at Appendix B illustrates the local network however Figure 3 below illustrates the site's location and how trips are likely to be distributed. The development is well located such that residual traffic can utilise a number of different routes and the primary demand for movement to Norwich can be diluted across a range of modes.

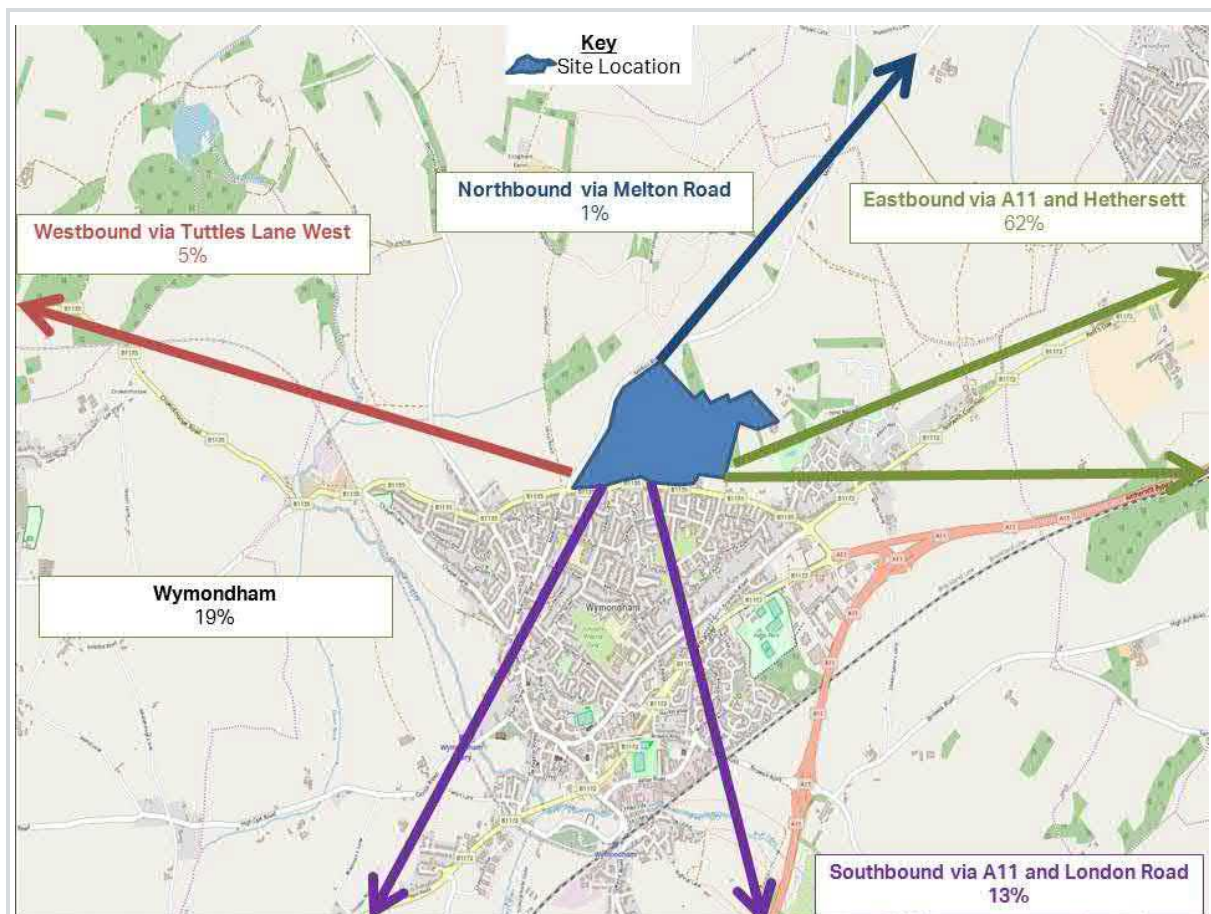


Figure 3. Trip Distribution Based on 2011 Census Origin Destination Data

# Capacity Review

07



## 7. Mitigation

### 7.1 Introduction

This section of the report provides a review of the likely mitigation requirements associated with the proposed development and the deliverability of those requirements.

### 7.2 Sustainable Travel

Given the site location in close proximity to schools, services, jobs and sustainable links to other major centres, it is anticipated that focussing on sustainable transport promotion in the first instance is the most appropriate way to approach development mitigation.

In order for the development to come forward it is anticipated that the following mitigation may be required:

- Improvements to the pedestrian and cycle network along Tuttle Lane East such that proposed provision and existing provision are linked. This would include extending the cycle and footway provision along the northern side along the site frontage;
- Provision of additional crossing facilities on Tuttle Lane East for pedestrians and cyclists;
- Provision of new bus stops along development frontage to Tuttle Lane East;
- Potential provision of bus facilities within the site;
- Provision of enhanced facilities at nearby bus stops;
- Investment in additional cycle parking at Wymondham Railway Station or Thickthorn Park & Ride;
- Implementation of a Travel Plan for all aspects of the proposed development; and,
- Investment in local travel planning in the nearby residential areas to support generalised mode shift in Wymondham.

### 7.3 Highway Network Mitigation

The highway network constraints local to the proposed development were discussed in Chapter 4 with the following junctions identified:

- B1135 Tuttle Lane East / Norwich Road / B1172 Norwich Common / B1135 four-arm roundabout;
- B1135 / B1172 Harts Farm Road / Falconers Close four-arm roundabout; and
- A47 / A11 junction, known as Thickthorn Interchange.

It is clear that these existing constraints are being addressed through improvements which have been carried out, or are planned to address existing problems.

Previously identified schemes to part signalise the B1135 Tuttle Lane East / B1172 Norwich Road / Norwich Common junction may need to be re-examined as part of a detailed transport assessment of the development proposals in the context of managing future traffic movements, but not before the potential distribution of trips across other modes, and other routes is fully taken into account.

In terms of the strategic road network the improvements planned will allow for further growth in this area and the need for substantial further capacity improvements is unlikely, but this would be assessed in detail at planning stage.

In addition to the proposals for the Thickthorn Interchange, NCC and Highways England (HE) are proposing improvements at locations slightly further afield which will further increase the capacity at Thickthorn Interchange. This includes the extension of the Norwich Distributor Road (NDR) to the west linking with the A47 whereby traffic currently travelling through Thickthorn Interchange from the west to reach destinations to the north of Norwich will use the NDR therefore reducing traffic and pressure at Thickthorn.

## 7.4 Development Mitigation Deliverability

It is considered that the above improvements to the site are readily deliverable and could assist significantly in mitigating the development impacts.

# Summary and Conclusions

08

## 8. Summary and Conclusions

The proposed development site is located to the north of Tuttle Lane East in Wymondham, with potential to provide up to 1,000 new dwellings, a school and local centre. Access to the site is proposed from two separate accesses from Tuttle Lane East. The site is located such that it is a natural north-western extension to the existing and planned residential areas of Wymondham.

The development site is provided with good links to existing facilities and amenities within Wymondham, with all services within a reasonable walking or cycling distance along existing routes conducive to both modes. The site proposals include a primary school, and existing primary and high schools are within walking and cycling distance of the site.

19% of Wymondham residents remain in Wymondham for jobs, reducing the need for car travel out of Wymondham. The quantum of development is also large enough to further support internalisation of trips relating to the local centre and proposed school.

Well served bus stops are located within reasonable walking distance of the site. Frequent routes serving Wymondham and other local towns such as Watton, Dereham and Attleborough as well as excellent links to Norwich pass along the site frontage. Many of these bus services will benefit from planned and ongoing improvements to the bus network, including a Bus Rapid Transit (BRT) route which has been identified within the Norwich Area Transport Strategy (NATS) along Norwich Road in Wymondham. There is potential for additional stops on Tuttle Lane East along the site frontage.

The proposed site would be linked to the proposed extension of the Blue Pedalway linking Wymondham with Sprowston via Norwich city centre. The Blue Pedalway will also link the development site with Thickthorn Park and Ride from which bus services to Norwich are provided every 15 minutes.

The development site is also within a reasonable cycling distance of Wymondham railway station.

Given the links to sustainable modes of transport, the use of the private car should not be the first mode of choice for residents of the development therefore limiting the impact of the development on nearby constrained junctions. The high level of car driver trips of 70%, for journeys to work from Wymondham recorded in the 2011 Census, is expected to reduce significantly given the changes on the local transport network. Any future development in this area should be designed to a significantly higher sustainable transport mode shares given the facilities available.

The provision of two site access points on Tuttle Lane East is feasible given the extensive site frontage and good forward visibility. A four armed roundabout would replace the existing T-junction between Tuttle Lane East and Finnerne Drive. A secondary/emergency access would be provided in the form of a priority T junction further west along Tuttle Lane East.

The development site is situated such that there are a number of routes for those travelling by car to access the A11 and wider highway network. The site location will allow the dilution of impacts across the road network but the recently improved B1135 Tuttle Lane East / Norwich Road / Norwich Common four-arm roundabout is a local network constraint which may require some form of signalisation to manage future traffic movements.

The Thickthorn Interchange between A11 and A47 is a long standing local network constraint which will be addressed as part of a major scheme being delivered by the HE. Construction of the major scheme is planned to commence in 2022. The proposed scheme has been identified to cater for growth up to 2036.

In order for the development to come forward it is anticipated that the following mitigation may be required:

- Improvements to the pedestrian and cycle network along Tuttle Lane East such that proposed provision and existing provision are linked. This would include extending the cycle and footway provision along the northern side along the site frontage;
- Provision of additional crossing facilities on Tuttle Lane East for pedestrians and cyclists;
- Provision of new bus stops along development frontage to Tuttle Lane East;
- Potential provision of bus facilities within the site;
- Provision of enhanced facilities at nearby bus stops;

- Investment in additional cycle parking at Wymondham Railway Station or Thickthorn Park & Ride;
- Implementation of a Travel Plan for all aspects of the proposed development;
- Investment in local travel planning in the nearby residential areas to support generalised mode shift in Wymondham; and,
- Potential signalisation of the B1135 Tuttles Lane East / Norwich Road / Norwich Common four-arm roundabout.

These measures are all deliverable and in keeping with the scale of the development proposals. As such it is considered that the development site can cater for a significant number of dwellings required as part of the housing supply for the GNLP and is accessible by sustainable modes to the existing nearby facilities and amenities and to key employment centres.

## Appendix A - Proposed Site Layout





- EXISTING**
- Site boundary
  - Drains / ponds
  - Woodland & hedgerows
  - PROW
- PROPOSED**
- Site access
  - Main roads
  - Secondary roads
  - Buffer planting
  - POS
  - GI corridors
  - Developable area
  - Recreational route
  - Children play area NEAP/LEAP (400m walkable distance)
- SuDS**
- Drain/swale
  - Attenuation basin / Lower point

Rev.	Date	Details
1	18.02.19	Update alternative basins graphic

GENERAL  
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 All dimensions to be checked on site.  
 This plan is to be read with all accompanying documentation.  
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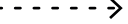





**WELBECK LAND**  
**LAND AT TUTTLES LANE**  
**LANDSCAPE ANALYSIS**  
**MASTER PLAN STRATEGY**

	Job Code: 41766	SB Contract Number: 100017734
Project Name: Date: 18.02.19	Drawn By: MS	Checked By: JC
Drawing Number: UDS417666-A3-0102		Revision: B






- EXISTING**
-  Site boundary
  -  Drains / ponds
  -  Woodland & hedgerows
  -  PROW
- PROPOSED**
-  Site access
  -  Main roads
  -  Secondary roads
  -  Buffer planting
  -  POS
  -  GI corridors
  -  Developable area/Primary school
  -  Recreational route
  -  Children play area NEAP/LEAP (400m walkable distance)
- SuDS**
-  Drain/swale
  -  Attenuation basin / Lower point

Rev.	Date	Details
1	18.02.19	Update alternative basins graphic

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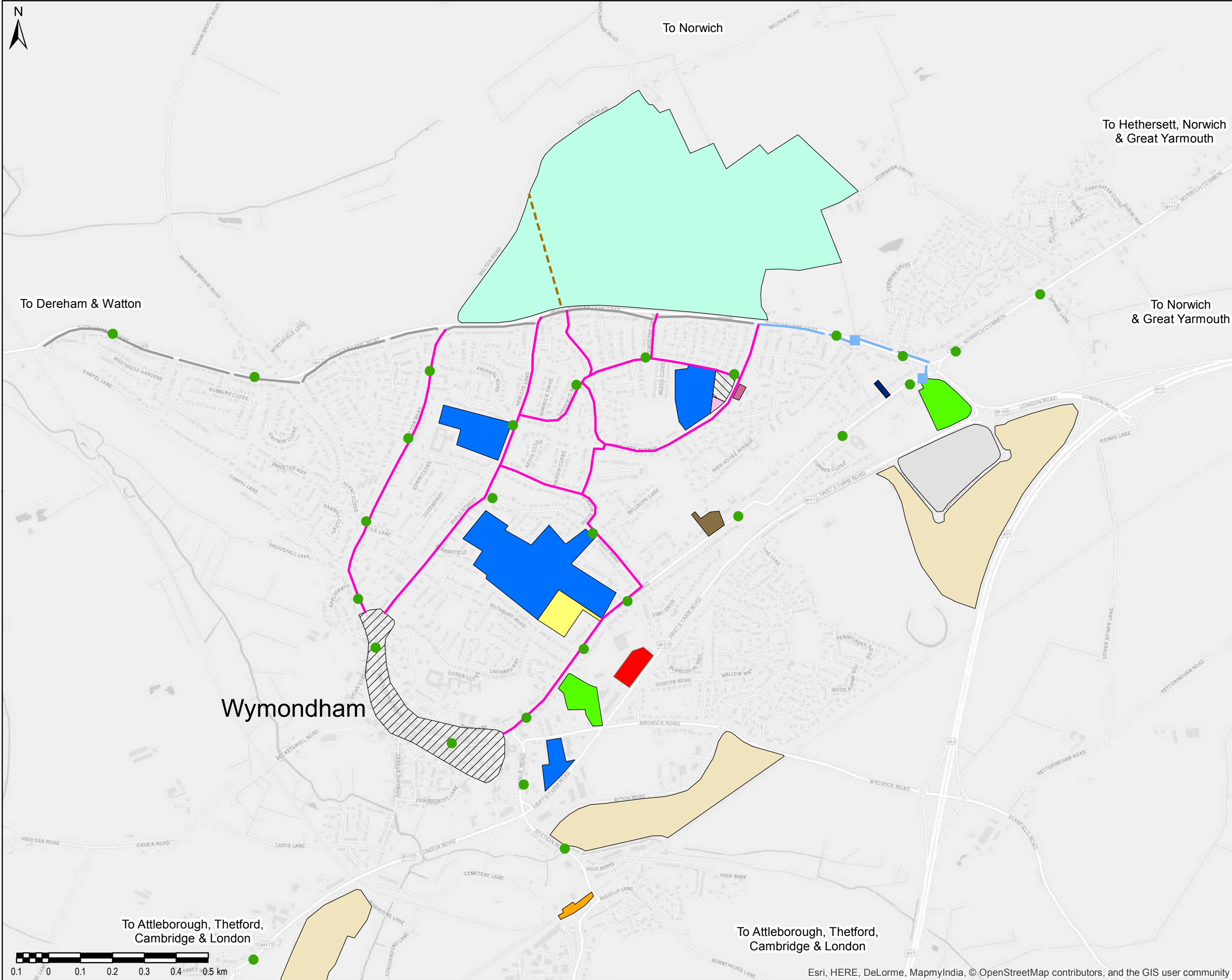


WELBECK LAND  
 LAND AT TUTTLE LANE  
 LANDSCAPE ANALYSIS  
 MASTER PLAN STRATEGY

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Drawing Number: UDS417666-A3-0102		Revision: B



## Appendix B – Connectivity Plan



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**LEGEND**

- Toucan Crossing
- Bus Stop
- Pedestrian Route to Town Centre
- Footway
- Shared Footway & Cycleway
- Public Right of Way
- Development Site
- Town Centre
- Local Centre
- Community Centre
- Dentist
- Employment Area
- Garage
- Leisure Centre
- Medical Centre
- Police Headquarters
- Public House
- Railway Station
- School
- Supermarket

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Purpose of Issue **FINAL**

Client **WELBECK STRATEGIC LAND III LTD**

Project Title  
**LAND NORTH OF TUTTLES LANE EAST, WYMONDHAM**

Drawing Title  
**WYMONDHAM SITE LOCATION**

Drawn TJ	Checked CB	Approved BC	Date 26/02/2018
AECOM Internal Project No. 60562750		Scale @ A3 1:11,000	

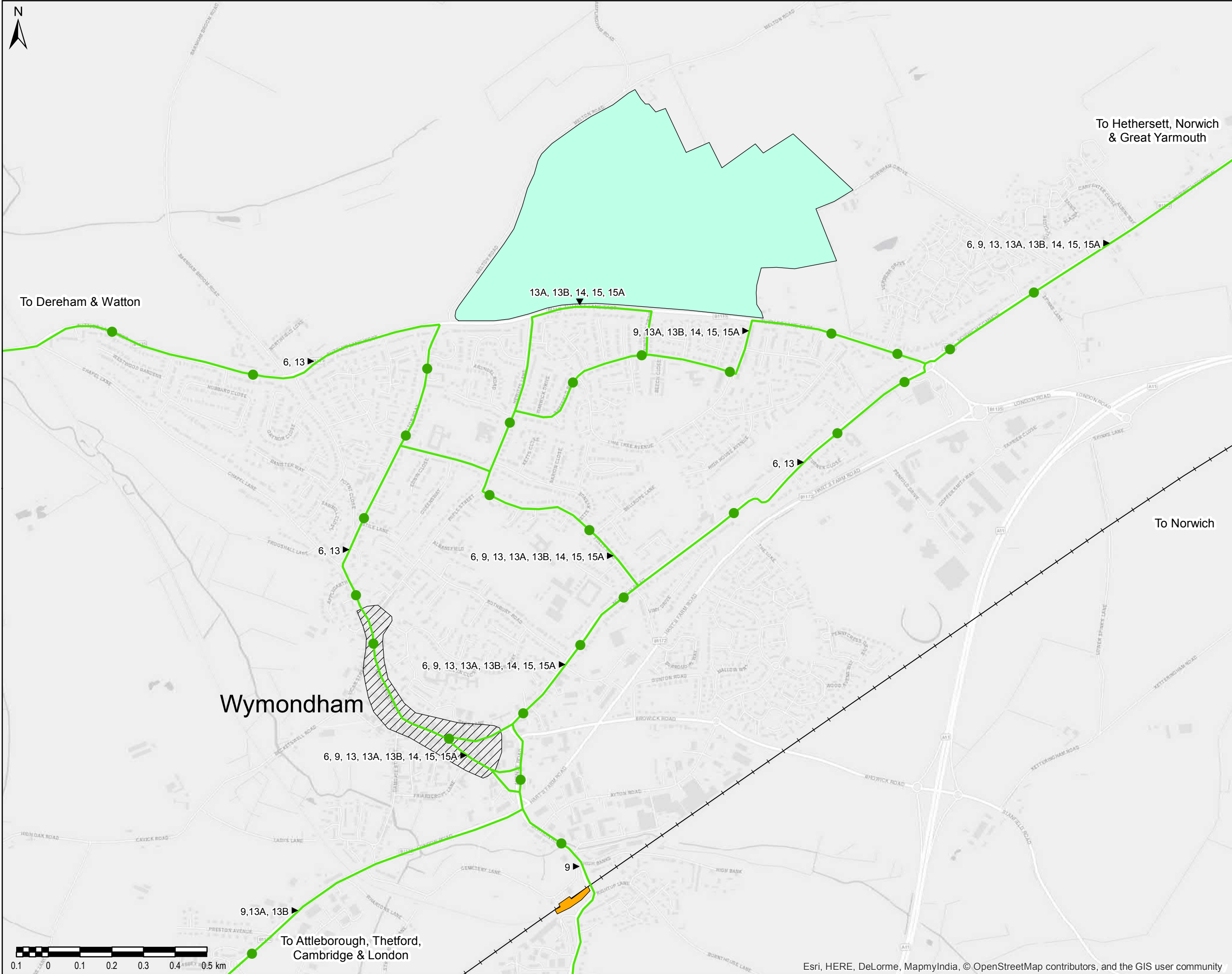
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Drawing Number <b>FIGURE 1</b>	Rev <b>01</b>
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- LEGEND**
- Bus Stop
  - ▶ Bus Route Numbers
  - Bus Route
  - Development Site
  - Town Centre
  - Railway Station
  - Railway Line

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Purpose of Issue  
**FINAL**

Client  
**WELBECK STRATEGIC LAND III LTD**

Project Title  
**LAND NORTH OF TUTTLES LANE EAST, WYMONDHAM**

Drawing Title  
**WYMONDHAM PUBLIC TRANSPORT NETWORK**

Drawn TJ	Checked CB	Approved BC	Date 26/02/2018
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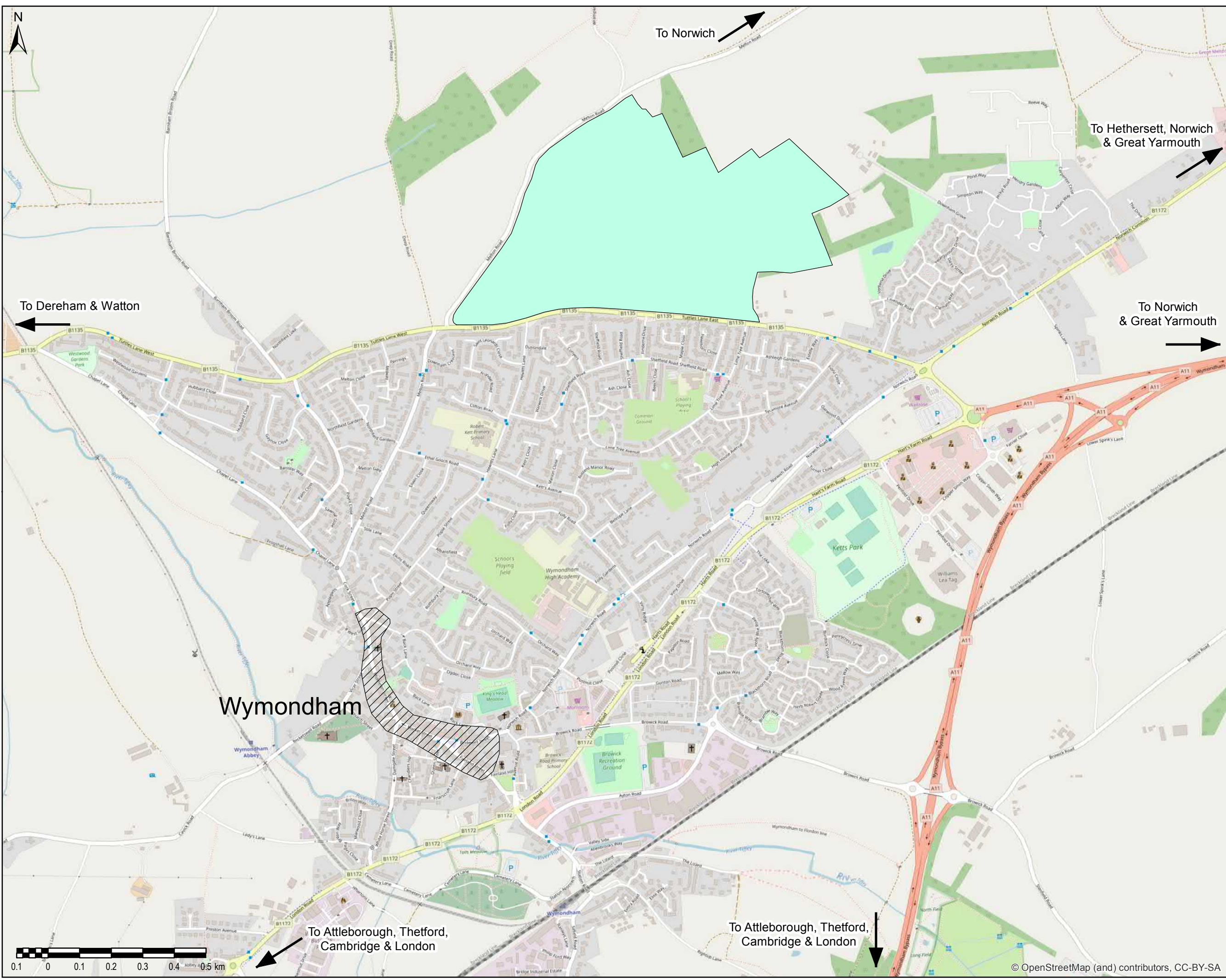
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Drawing Number <b>FIGURE 2</b>	Rev <b>01</b>
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**LEGEND**

- Development Site
- Town Centre
- A Road
- B Road

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Purpose of Issue  
**FINAL**

Client  
**WELBECK STRATEGIC LAND III LTD**

Project Title  
**LAND NORTH OF TUTTLES LANE EAST, WYMONDHAM**

Drawing Title  
**WYMONDHAM ROAD NETWORK**

Drawn TJ	Checked CB	Approved BC	Date 23/02/2018
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Drawing Number <b>FIGURE 3</b>	Rev <b>01</b>
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