

Project number: 21129

Subject: Transport, access and sustainability appraisal

Date: 7th March 2025

File name: 21129D2a

1 Introduction

1.1 Background

- 1.1.1 Lime Transport has been appointed by Cala Homes to prepare a technical note in support of the allocation of a site off Water Lane in Melbourn, within Cambridgeshire County Council, for a residential development of approximately 100 dwellings.

1.2 Site location

- 1.2.1 The site is situated within Melbourn in the south-west of Cambridgeshire and is located 1.6km south of the A10 and 11km west of the M11 motorway. Travel distances to the towns and cities surrounding the site are approximately:

- Royston – 5km to the south-west
- Duxford – 13km to the east
- Cambridge City Centre – 19km to the north-east
- Letchworth Garden City – 23km to the south-west

- 1.2.2 The location of the site is shown in **Figure 1.1** below.



Figure 1.1 Site location

1.3 Purpose of the report

- 1.3.1 The purpose of this report is to consider the connectivity of the site in terms of accessibility by walking, cycling and public transport to local facilities and amenities; advise on the most appropriate access arrangements to serve the proposed development; identify any impact on the surrounding highway network and recommend any mitigation measures that may be required to support the allocation of the site.

1.4 Structure of the report

- 1.4.1 Following this introductory section, this report is structured as follows:

- Section 2 sets out the travel characteristics for existing residents in the area, including method of travel to work and key commuting destinations and car-free journeys.
- Section 3 sets out the potential access arrangements for vehicles and pedestrians.
- Section 4 estimates the likely trip generation for the proposed uses on site as well as the likely assignment and distribution of development generated trips.
- Section 5 outlines potential mitigation measures to reduce the transport impact and increase the sustainability of the candidate site.

2 Travel characteristics and sustainability

- 2.1.1 Based on Census data (the site falls within the MSOA018 area), the main mode of travel to work for existing residents in the area is by car with approximately 71% of existing residents in the area commuting by car as driver (and a further 4% travelling as a passenger), with the next most common mode being walking (approximately 9%).

- 2.1.2 The key commuting destinations for sustainable modes of travel are:

- Walking/cycling – within Melbourn and Cambridge City Centre
- Bus – within Melbourne (and the wider MSOA018 area) and Cambridge City Centre
- Train – Central London and Cambridge City Centre

- 2.1.3 The commuting destinations by car are shown in **Figure 2.1** below and include:

- Within Melbourne – 16%
- Cambridge City Centre – 16%
- Royston – 13%
- Bassingbourn – 4%

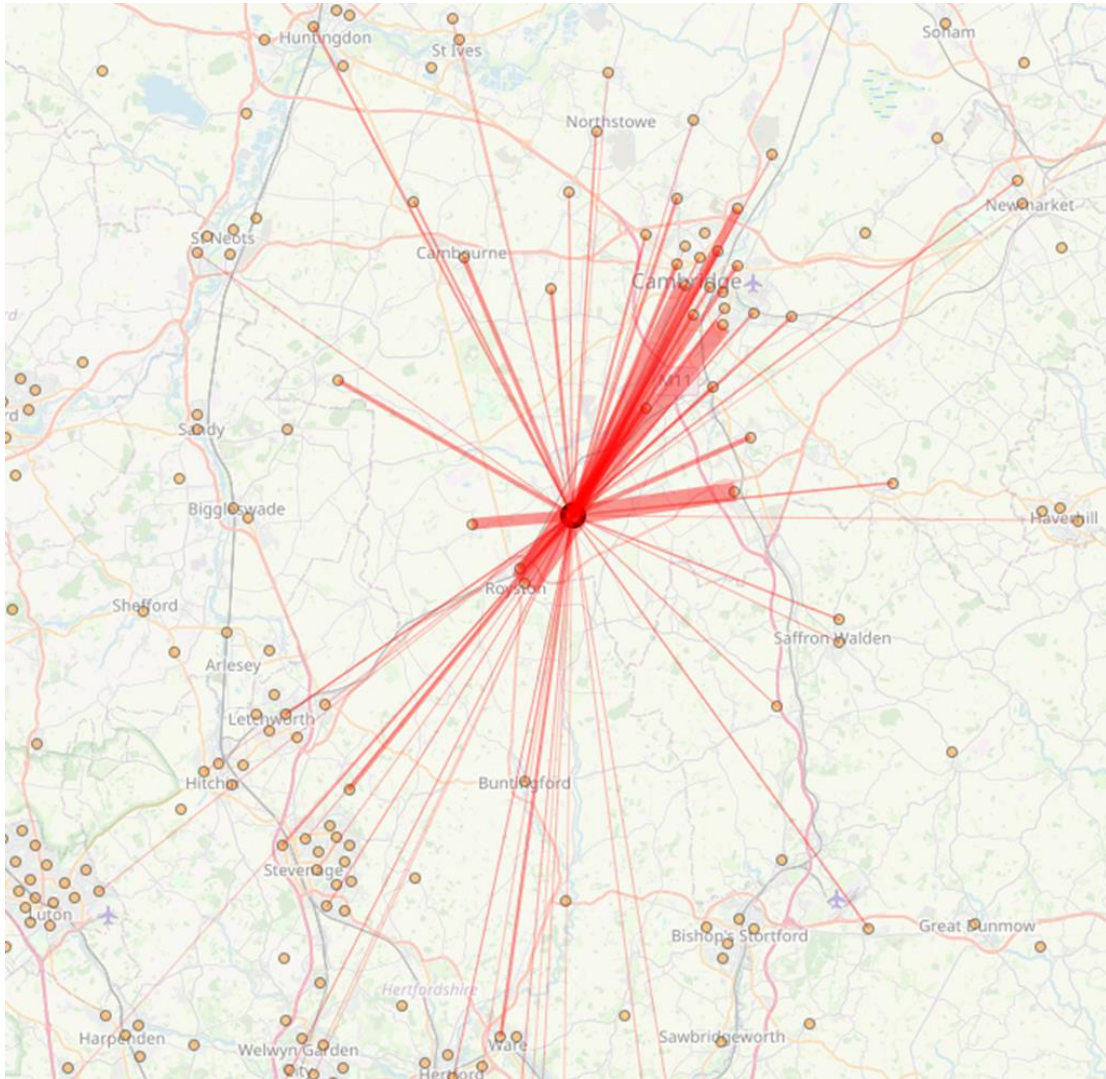


Figure 2.1 *Commuting destinations by car*

2.1.4 It is anticipated that the vehicle trips will be dispersed over the local streets, with the assignment of development traffic based on Google maps routeing.

2.1.1 The assignment of development traffic is summarised below and illustrated in **Figure 2.2** below.

- **Route A (56%)** – North along Water Lane and west along Back Lane, before heading west along Royston Road, and onto the A10 for eastbound and westbound traffic towards Cambridge and Hertfordshire.
- **Route B (16%)** – North along Water Lane and east along Orchard Road, then north along Mortlock Street, for traffic heading towards Melbourn High Street and Meldreth.
- **Route C (29%)** – North along Water Lane and east along Beechwood Avenue, south along New Road, for traffic heading eastbound along the A505 towards Uttlesford, St Edmundsbury, Forest Heath and some areas within Cambridge and South Cambridgeshire.

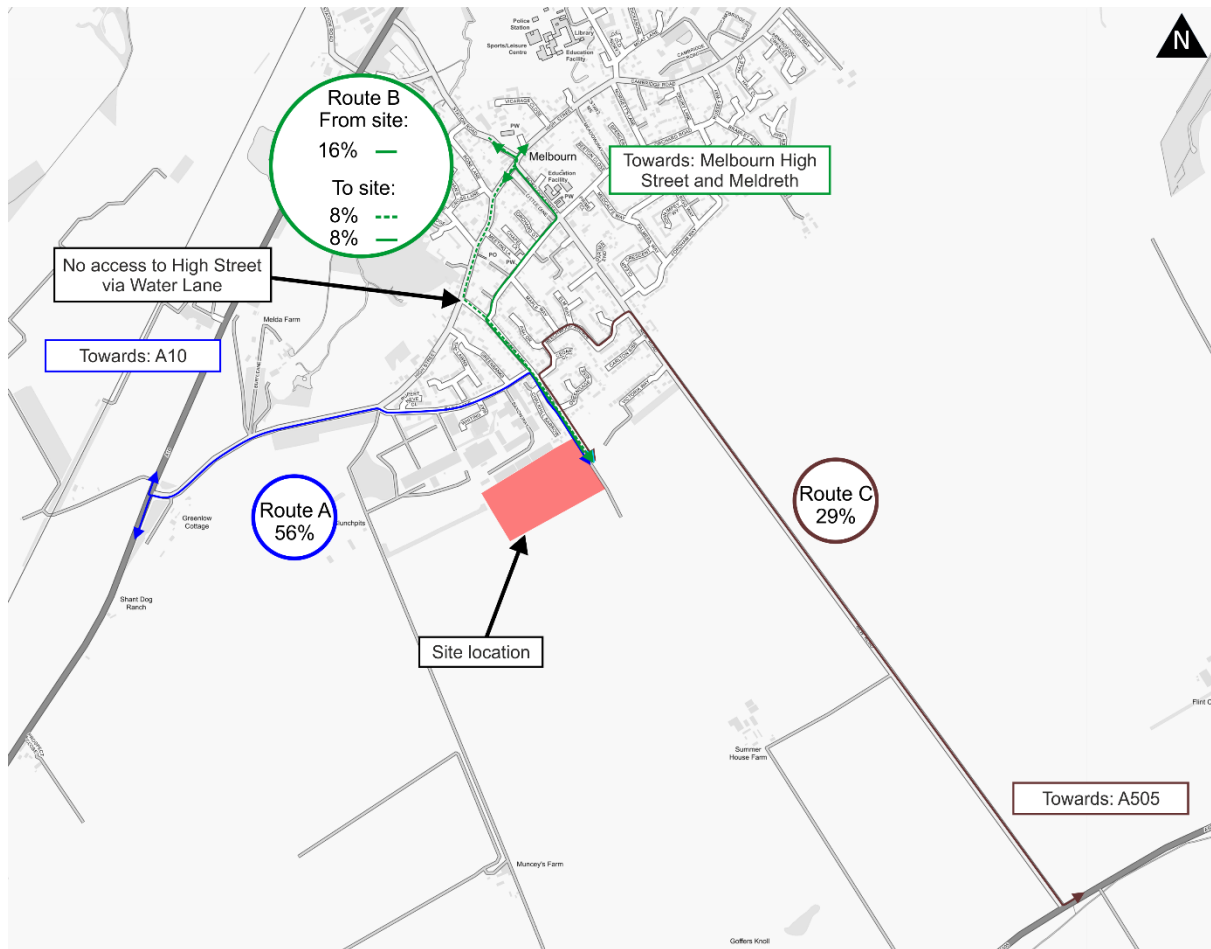


Figure 2.2 Assignment of development generated trips

- 2.1.2 It is likely that trips for other purposes (shopping, education, leisure and personal business) are typically shorter than commuting trips and more likely to be within Melbourn and hence, more likely to be by sustainable modes. In addition, there is a proportion of car commuting trips within Melbourn, which could be carried out by sustainable travel modes.

2.2 Sustainability of the site's location

Walking

- 2.2.1 The site is well located to access public transport services, including bus and train. There are a number of day-to-day facilities within Melbourn located locally within walking distance.
- 2.2.2 The Chartered Institution of Highways and Transportation (CIHT) 'Providing for Journeys on Foot' indicates that the desirable walking distance for commuting and school journeys is 500m, the acceptable walking distance is 1km, and 2km is the preferred maximum.
- 2.2.3 The CIHT guidelines also indicate that the desirable walking distance for 'elsewhere', including local amenities is 400m, the acceptable walking distance is 800m and 1.2km is the preferred maximum.
- 2.2.4 Local facilities available within a 20-minute walk and cycle of the site are shown on **Figure 2.3** below. Facilities within a 20-minute walking distance include:

- Employment/industrial area (500m)
- Pub/restaurant (600m)
- Bus stops on High Street (650m-800m)
- Places of Worship (800m-1km)
- Enterprise Car Club space (950m)
- Healthcare facilities (950m)
- Stockbridge Meadows wildlife park (950m)
- Primary School (960m)
- Playground/green space (960m)
- Food store (1.1km)
- Community centre (1.3km)
- Library (1.4km)

2.2.5 Meldreth train station is approximately 2.5km away (approximately 30-minute walk) and town centre facilities within Royston can be reached within a 20-minute cycle.

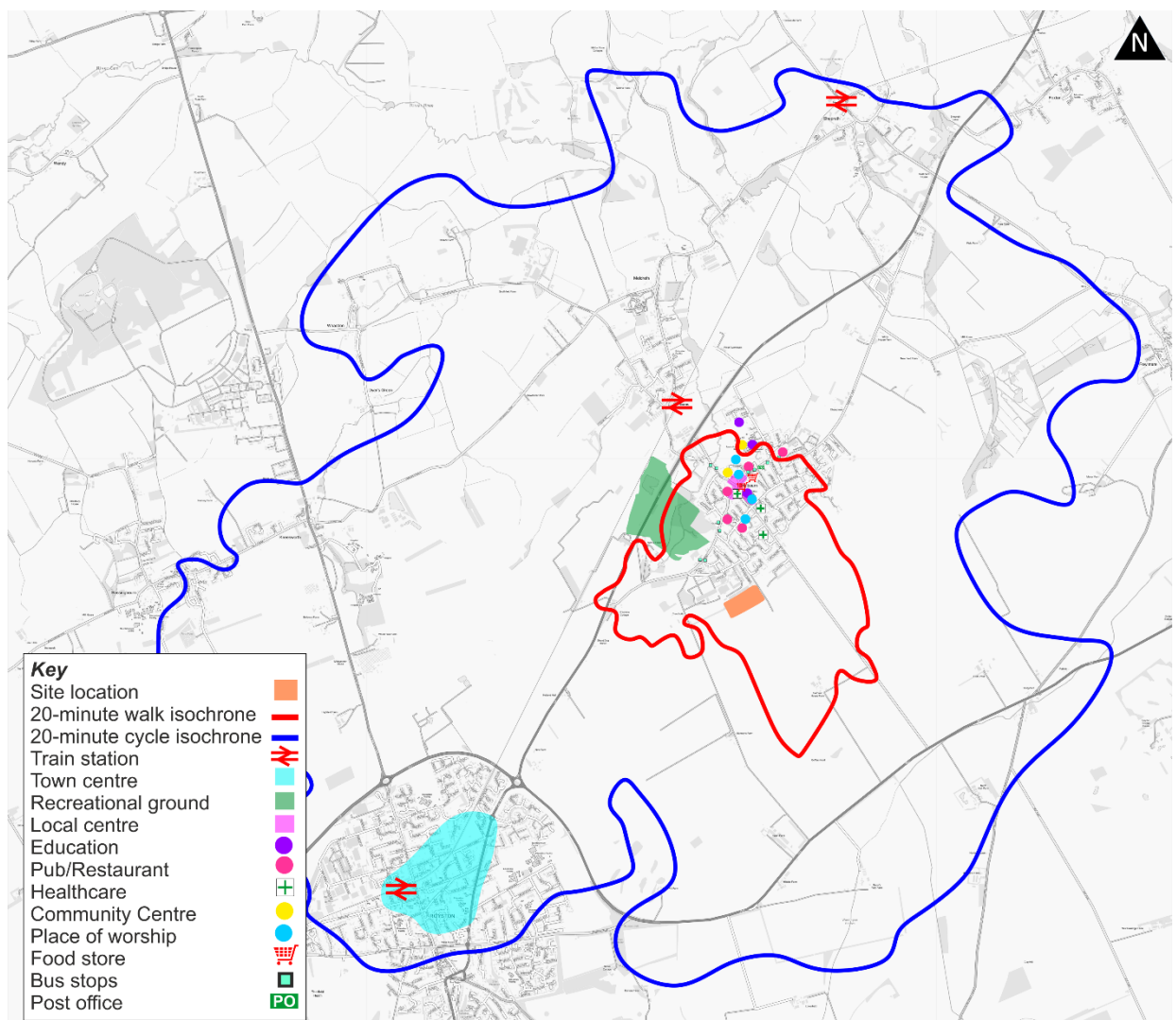


Figure 2.3 20-minute walk and cycle isochrones

Cycling

- 2.2.6 Melbourn has recently benefitted from the Melbourn Greenways project, which is being led by the Greater Cambridge Partnership. The Greenways project aims to improve pedestrian and cycling infrastructure along a 12-mile long route for walkers and cyclists between the villages of Melbourn, Meldreth and Shepreth and provides connectivity to Cambridge in the north and Royston to the south. To date, this work has included the provision of a new high-quality, safe and segregated pedestrian and cycle route from Station Road in Melbourn to Meldreth Railway Station.
- 2.2.7 The planned is illustrated in **Figure 2.4** below.
- 2.2.8 Currently, 13% of residents commute to Royston via car and 16% commute to Cambridge City Centre by car, provision of cycling routes as part of the Melbourn Greenway will make cycling a more attractive mode of travel to these key employment areas, thereby reducing car use.

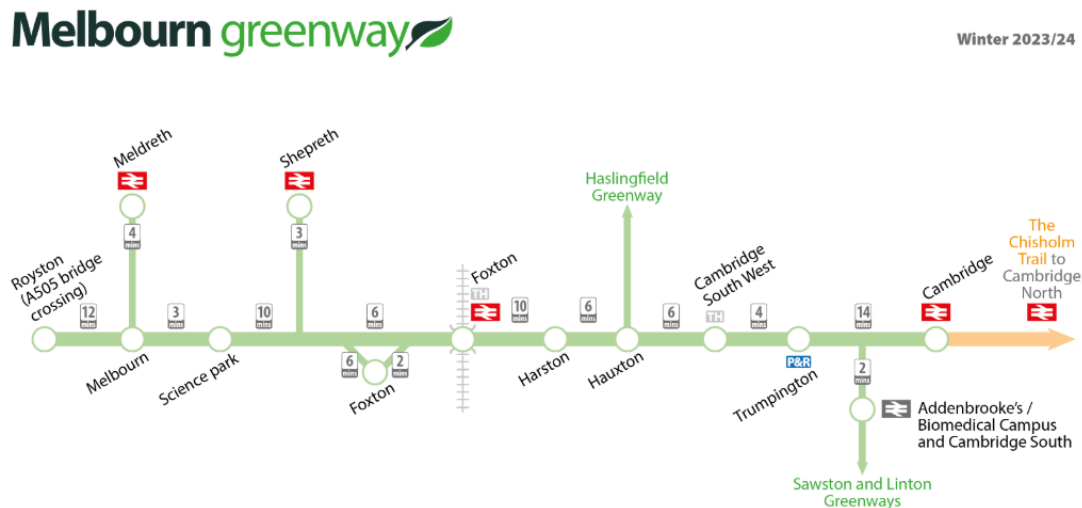


Figure 2.4 Melbourn Greenway

- 2.2.9 A shared use (off-road) local cycle route runs along the north-western edge of Cambridge Road, approximately 2km to the north-east of the site. This route connects to a short section of lightly trafficked on-road cycle route, before reaching a shared use (off-road) route along the northern side of the A10, approximately 3.5km to the north-east of the site. This route provides access to Cambridge City Centre, via Foxton and Harston.
- 2.2.10 The closest National Cycle Network (NCN) route is route 11, located approximately 13km to the east of the site. This route travels through Cambridge City Centre.
- 2.2.11 It can be seen from the figure above that there are a number of amenities located within a 20-minute walk and cycle of the site that combine a range of services to accommodate residents' day to day needs.

Bus services

2.2.12 In terms of access to public transport infrastructure, there are bus stops located a short distance from the site along High Street (shown on Figure 2.3). Both are served by routes 17 and 26:

- Falconer Court bus stop – 650m northwest of the site
- Back Lane bus stop – 800m northwest of the site.

2.2.13 These routes provide connections to Cambridge, Royston, and Guilden Morden with regular connections throughout the day (1 service per day for the 17 service, and 8 services per day for the 26 service).

Rail services

2.2.14 The closest railway station is Meldreth Station, located approximately 2.5km walk north of the site along High Street. The station is accessible by bus (route 26) with a bus journey time of approximately five minutes. Meldreth station provides frequent connections to Royston, Cambridge and London Kings Cross.

2.2.15 Royston railway station is located approximately 5km to the south-west of the site. The station is accessible by bus (route 26) with a bus journey time of approximately 15 minutes. Royston station provides frequent connections to Royston, Cambridge, London Kings Cross, Brighton and Kings Lynn.

2.2.16 The journey time from Meldreth to Cambridge City Centre is approximately 17 minutes, and the journey time to Central London is approximately 1 hour.

2.2.17 The cycling distance from the site to Meldreth station is 10 minutes. 20 bicycle spaces are provided at this station, making cycling an attractive option for commuting residents. The journey time for those commuting via sustainable modes to Central London is less than 90 minutes.

Car clubs

2.2.18 Car clubs are considered an attractive alternative to car ownership in places with good connectivity to public transport and local facilities. They provide residents with access to a car whilst releasing them of the financial and maintenance burdens of owning one.

2.2.19 Car clubs provide the following benefits:

- Relieve parking pressures within the area;
- Reduce the reliance on the private motor-vehicle by residents;
- Provide an attractive and convenient alternative to owning a car;
- Cost effective for those that drive fewer than 8,000 miles per year; and,
- Act as a catalyst to use sustainable modes of travel.

2.2.20 Enterprise is the current car club operator within Melbourn, with vehicles in the following locations:

- One vehicle on Hyacinth Drive, 1km to the east of the site
- One vehicle on Lavender Lane, 1.3km to the east of the site.

Highway network

2.2.21 A description of the local highway network is contained in **Table 2.1** below.

Table 2.1 Description of local highway network

Description	
Water Lane (between High Street and Greengage Rise)	
Description	Water Lane is a single carriageway road fronted by residential dwellings and provides no vehicle exit onto High Street to the north.
Width	Generally, 5.5m along the length of the carriageway, narrowing to 4m along the one-way section of the carriageway (north of the junction Orchard Road).
Speed limit	30mph
Street lighting	Yes
Pedestrian facilities	Pedestrian footways are provided along the eastern side the carriageway along the length of the carriageway to the junction with Orchard Road and on the western side from Chalkhill Barrow to Orchard Road.
Bus route	No
Character	Residential street frontage along both sides of the carriageway providing access to residential cul-de-sacs and Saxon Way Industrial Estate along Back Lane.
On-street parking	No parking restrictions
Back Lane	
Description	Single carriageway access road providing a vehicle route from the High Street to Water Lane.
Width	5.5m
Speed limit	30mph
Street lighting	Yes
Pedestrian facilities	Pedestrian footway along the northern side of the carriageway, which connects from Water Lane to Greenbanks. Greenbanks has footways along both sides of the carriageway, which connects to High Street to the north.
Bus route	No
Character	Rural single carriageway providing vehicle access to residential cul-de-sacs, Saxon Way Industrial Estate and Water Lane to the east.
On-street parking	No parking restrictions.
High Street	
Description	Single carriageway local access road through the town of Melbourn, which connects to the A10 to the east and west.
Width	Approximately 6m
Speed limit	30mph
Street lighting	Yes
Pedestrian facilities	Pedestrian footways are provided along both sides of the carriageway adjacent to Greenbanks residential cul-de-sac.
Bus route	Yes
Character	Residential street with residential and commercial street frontage along both sides of the carriageway.
On-street parking	No parking restrictions.

2.3 Traffic surveys

2.3.1 Traffic and speed surveys were carried out in the surrounding highway network (between 28th February and 6th March 2025) which show that traffic flow and speeds are generally low across the network. The busiest weekday was observed to be Wednesday 5th March and peak hour traffic flows and 85th percentile speeds are as follows:

- Water Lane – peak hour traffic flows of 35-45 vehicles and speeds of approximately 23-24mph (see paragraph 3.3 below)
- Beechwood Avenue – peak hour traffic flows of 120-130 vehicles and speeds of 20-22mph
- Orchard Road - peak hour traffic flows of 100-120 vehicles and speeds of approximately 22mph
- Back Lane – peak hour traffic flows of 180-200 vehicles and speeds of 20-30mph

2.3.2 The results of the surveys demonstrate that the use of the highway network is low and there is ample capacity to accommodate the development without impacting on highway capacity or safety.

3 Proposed access arrangements along Water Lane

3.1 Land ownership and public rights along Water Lane

3.1.1 Water Lane, south of its junction with Greengage Rise, is currently a track, which is a public Byway Open to all Traffic (BOAT) of 30 feet in width (9.1m). As such it forms part of Cambridgeshire's highway network.

Highway Land

3.1.2 Highway land details have been acquired from Cambridgeshire and are included in **Appendix A**. It can be seen that highway land extends across the full width of Water Lane north of the junction with Greengage Rise. South of the junction with Greengage Rise, a BOAT runs along the lane to approximately 50m south-east of the south-eastern corner of the site. The width of this BOAT is 30 feet (9.1m). This has been confirmed in correspondence with Asset Information Definitive Map Officer. The extent of highway land and the BOAT are shown in **Appendix B**. This assumes that the BOAT is 30 feet wide (9.1m) based around the centre-line of the lane.

3.2 Access arrangements

3.2.1 It is proposed to provide access to the development via Water Lane. One point of access is proposed for this development, which is considered appropriate for approximately 100 dwellings and in accordance with Cambridgeshire Design Guide. It is proposed to redesign the southern section of Water Lane by altering the priority at the junction of Water Lane and Greengage Rise. This design reflects the expected change in major and minor flows as a result of the proposed development.

3.2.2 Proposals for the access design south on Water Lane (including the redesign of the priority at Greengage Rise) are shown in **Appendix C**.

3.2.3 This includes the provision of a 5.5m wide carriageway and one 2m footway on the western edge of the carriageway, as per discussions with Cambridgeshire Highways in 2017/18.

- 3.2.4 The pedestrian footway will include an informal crossing point located north of the junction with Greengage Rise. This will provide safe and suitable access for pedestrians, ensuring that crossing manoeuvres are kept to a minimum and visibility between pedestrians and vehicles at the crossing point is good.
- 3.2.5 Whilst it is usual to provide footways on both sides of a carriageway, it should be noted that in this location, there are no streets or facilities that can be accessed from the eastern side (between Greengage Rise and the proposed site access) as this side of the lane is bounded by open fields and hedgerows. It does not connect to any footpaths or PRoWs. This was accepted by Cambridgeshire Highways.
- 3.2.6 Since these discussions, Cambridgeshire has updated its Design Guide (2023), which sets the requirements for a minor estate road as a 5m carriageway. There is sufficient width to accommodate a 5.5m width carriageway, however, this could be reduced to 5m. In addition, there is scope to provide a 3m shared cycle/footway instead of a 2m footway on the western side, or to include two 2m footways, albeit there is no desire line for pedestrians on the eastern side. The detail of the access arrangement would be developed with Cambridgeshire Highways as part of the planning process to determine the most suitable arrangement.

3.3 Visibility splays

- 3.3.1 The speed limit on Water Lane is 30mph. However, the required visibility splays are based on the results of a week-long automatic traffic counter speed surveys. These surveys were undertaken on Water Lane in March 2025 (28th February and 6th March), and observed the following 85th percentile speeds:

- Northbound – 22.8mph
- Southbound – 24.2mph

Required visibility splay

- 3.3.2 Based on Manual for Streets Table 7.1 the required visibility splays at the revised junction of Water Lane and Greengage Rise are set out below:
- To the south (northbound traffic) – 29m
 - To the north (southbound traffic) – 32m
- 3.3.3 The required visibility splays can be achieved within highway land and the BOAT as shown in Appendix C.

4 Likely trip generation

4.1 Introduction

- 4.1.1 As outlined above, it is proposed to redevelop the site to provide up to 100 residential dwellings (with mixed private/affordable housing). This section of the report estimates the likely volume of trips generated by the proposed allocation.

4.2 Residential dwellings

- 4.2.1 The predicted number of vehicle movements has been based on the TRICS (v.7.11.4) trip generation database and is set out in **Table 4.1** below.

Table 4.1 Vehicle trips – residential

Time period	Arrival trip rate	No. of arrivals	Depart trip rate	No. of departs	Total trip rate	Total no. of movements
Total persons						
8am-9am	0.217	22	0.72	72	0.937	94
5pm-6pm	0.423	42	0.198	20	0.621	62
7am-9pm	3.172	317	3.27	327	6.442	644
Pedestrians						
8am-9am	0.042	4	0.096	10	0.138	14
5pm-6pm	0.026	3	0.02	2	0.046	5
7am-9pm	0.375	38	0.402	40	0.777	78
Cyclists						
8am-9am	0.002	0	0.008	1	0.01	1
5pm-6pm	0.005	1	0	0	0.005	1
7am-9pm	0.031	3	0.036	4	0.067	7
Public transport users						
8am-9am	0.001	0	0.033	3	0.034	3
5pm-6pm	0.027	3	0.002	0	0.029	3
7am-9pm	0.098	10	0.1	10	0.198	20
Vehicles						
8am-9am	0.146	15	0.346	35	0.492	49
5pm-6pm	0.27	27	0.124	12	0.394	39
7am-9pm	1.952	195	1.991	199	3.943	394

- 4.2.2 It can be seen from the table above, that the proposed allocation could generate up to 49 vehicle movements in the AM peak, 39 vehicle movements in the PM peak, with a total of 394 vehicle movements throughout the day.
- 4.2.3 Of these vehicle trips, it is likely that there will be approximately 11 delivery trips (approximately 22 vehicle movements), primarily between 10am and 2pm and after 7pm. The majority of these deliveries will be by small vans or cars, with approximately two deliveries per day by a larger vehicle.
- 4.2.4 The vehicle trips will be dispersed across the street network around the site and it is likely that the impact on the highway network will be minimal.

5 Improving the sustainability of the site

- 5.1.1 The impact of the proposed development could be reduced through the implementation of robust residential travel plan measures as well as the provision of the design and mitigation measures set out below.

5.1.2 Recent guidance by the Urban Transport Group sets out the four foundations to improve the sustainability of suburban developments. Developments on the edge of towns tend to have an interdependent relationship with surrounding town centres, are primarily residential, low density, low rise and favoured by families with children.

5.1.3 Based on these characteristics, and in order to reduce the impact of the development on the surrounding area, it is recommended that the following approach improves the sustainability of the development by reducing the need to travel and providing access to more sustainable modes of travel.

- **Accessing more of what you need locally** – recommend the following:
 - incorporating local facilities in the development (community uses, etc)
 - providing good pedestrian connections to existing facilities, particularly to the north, along High Street. It is recommended that consideration be given to providing a pedestrian connection to Victoria Way to the east of the site, which would improve access to the car club spaces located within the Kingley Grove development.
 - design homes for work from home (study, high quality digital infrastructure)
- **Family friendly transport choices** – incorporate the following:
 - pedestrian/cycle routes throughout the development
 - low traffic neighbourhoods and pedestrian priority streets to ensure streets radiating off the principal street have a low level of traffic movements
 - mobility hub (which could include car club, bike rental (including cargo and e-bikes), etc)
 - excellent cycle parking (easily accessible and provide for e-bikes and cargo bikes).
- **Gentle densification around transport infrastructure** – create denser development around the access to the site, in the area with the shortest distances to facilities within the surrounding area.
- **Reliable, convenient connections to Cambridge City Centre and Royston** – large proportion of existing residents in the area commute to Cambridge City Centre (16%) and Royston (13%) by car. Promote frequent and extended hours of service for public transport services, including bus services to the rail station, to cater for commuter journeys. It is recommended funding is provided for bus service 26, which provides connectivity to Meldreth station, Royston and Cambridge City Centre, to improve frequency and extend hours of operation.

5.1.4 In order to promote travel by sustainable modes, parking provision should be provided to meets the needs of future residents whilst using land efficiently and not providing excessive levels of parking. The current indicative residential parking standards outlined in Policy TI/3 of the South Cambridgeshire Local Plan (2018) require two spaces per dwelling (with one space allocated within the curtilage), with additional provision for visitors if required. The following principles will encourage sustainable travel:

- Higher levels of well-located, safe and secure cycle parking, so that cycle parking is as easy to access as the private car. The Council requires a minimum of one space per bedroom.
- Lower levels of allocated parking with more parking being unallocated for more efficient and flexible use.

- Provision of a mobility hub, which could include a car club so that car ownership can be reduced, particularly for the second car in a family that may be used more occasionally.

5.1.5 Based on 2021 Census data, car ownership within the area is 1.59 cars/vans per household. It is anticipated that this will be lower for residents of the proposed allocation, through the implementation of the design and mitigation measures outlined above.

5.2 Summary

5.2.1 The site is located in a sustainable location with access to a number of facilities for day-to-day living within a 20-minute walk, including school, community facilities, green space and convenience stores. Bus stops are located along the High Street and the train station is a 30-minute walk away. The development of the Melbourn Greenway will improve connectivity for pedestrians and cyclists.

5.2.2 Development proposals will be supported by a Transport Assessment setting out the impacts and stressing the importance of sustainable transport as the primary means of access and movement to, from and within the site. Any necessary mitigation will be agreed with South Cambridgeshire District Council and Cambridgeshire County Council.

5.2.3 The development will deliver enhancements to sustainable travel and connectivity including improvements to walking and public transport infrastructure. The development layout will be designed to promote walking and cycling.

5.3 Conclusion

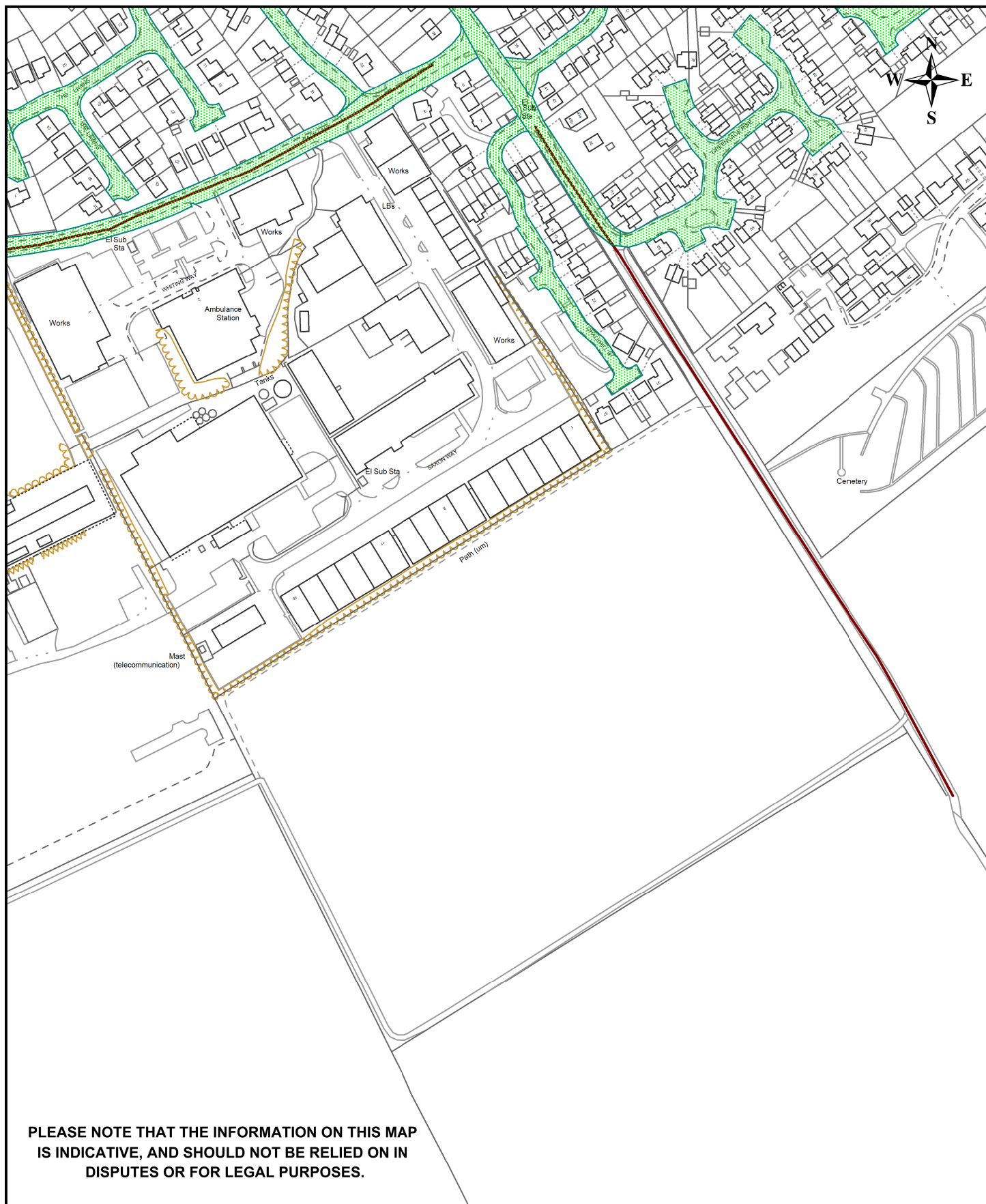
5.3.1 In conclusion, it is considered that the site is sustainably located and with suitable mitigation measures, particularly to support sustainable travel, there will be no unacceptable impacts on highway safety and the impact on the surrounding highway network will not be severe. The proposals will, therefore, be in accordance with the National Planning Policy Framework (paragraphs 115 to 118) and the site is suitable for allocation.

Appendices



Appendix A





Scale: 1:3000

Date: 13/06/2019

By: Ft305

Highway boundary plans are determined using Ordnance Survey mapping at a scale of 1:1250 or 1:2500. Please refer to Ordnance Survey's Statement of accuracy when comparing with a site survey

Legend

Public highway (green)



Public Footpath (purple)



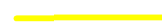
Public Bridleway (green)



Byway Open to All Traffic (brown)

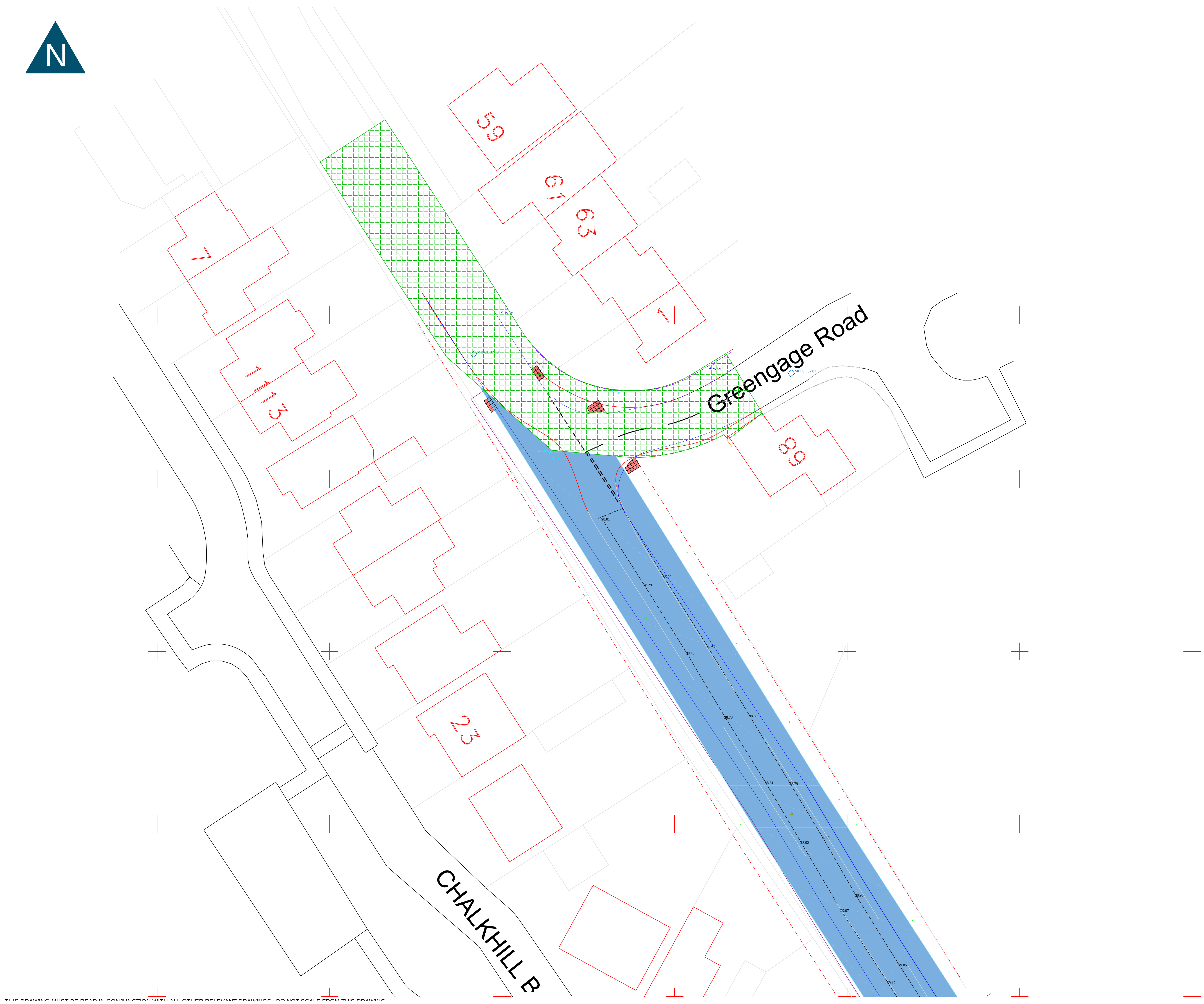


Parish boundary (yellow)



Appendix B





BOAT (assumed position) - 30ft wide

Highway land

GENERAL NOTES
1. This drawing to be read in conjunction with all relevant civil engineering drawings.
LEGEND



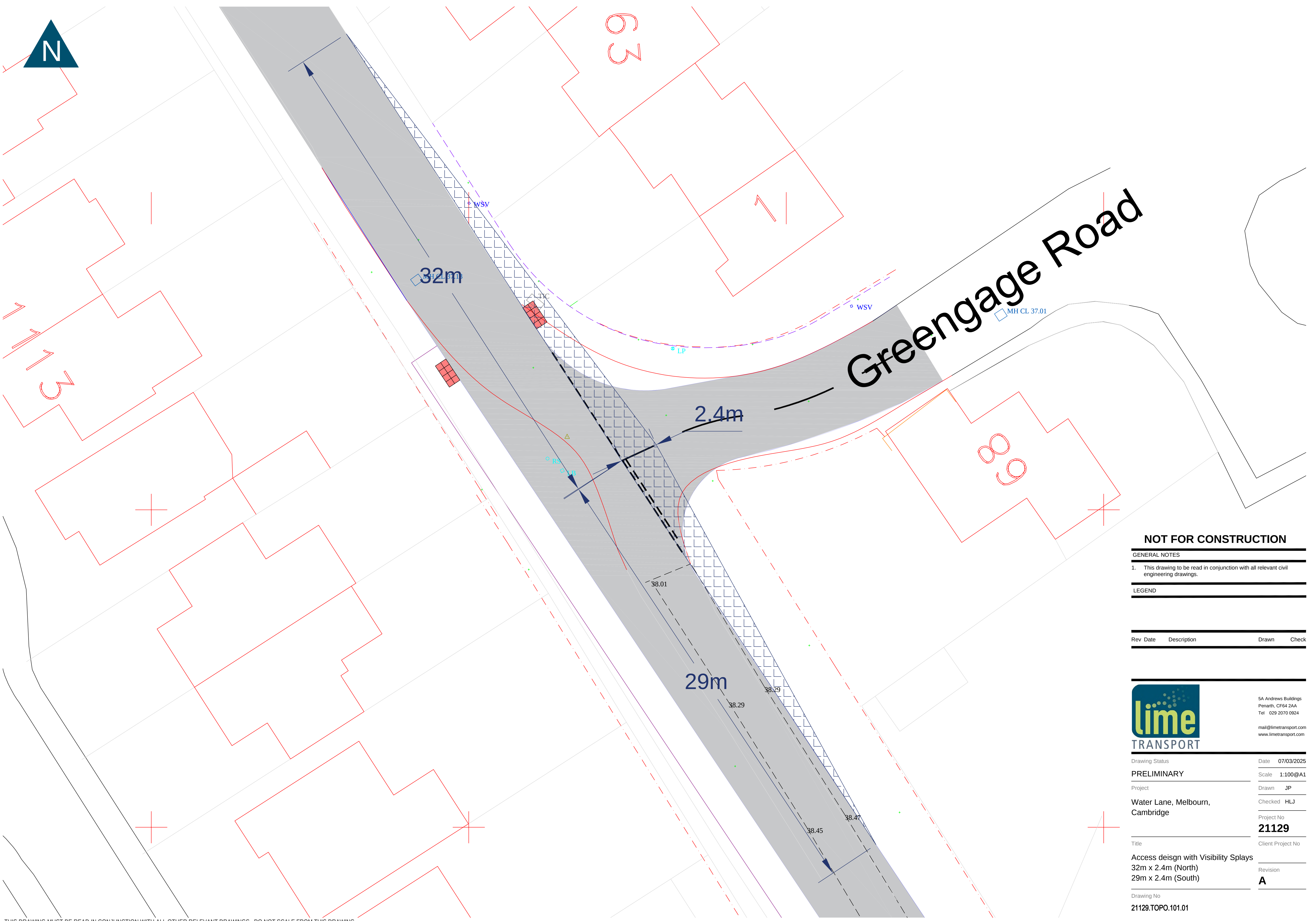
5A Andrews Buildings
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THIS DRAWING MUST BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS. DO NOT SCALE FROM THIS DRAWING.

Appendix C





NOT FOR CONSTRUCTION

GENERAL NOTES

- 1. This drawing to be read in conjunction with all relevant civil engineering drawings.

LEGEND

Rev	Date	Description	Drawn	Check
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Drawing Status	Date	07/03/2025
PRELIMINARY	Scale	1:100@A1
Project	Drawn	JP
Water Lane, Melbourn, Cambridge	Checked	HLJ
	Project No	21129
	Client Project No	
Access deisgn with Visibility Splays 32m x 2.4m (North) 29m x 2.4m (South)	Revision	A
Drawing No		
21129.TOPO.101.01		