

Transport Technical Note

Project Name: Papworth Everard, Cambridgeshire
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Project Manager: TM

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Papworth Everard, Cambridgeshire

1 Introduction

Sweco UK Ltd have been commissioned on behalf of Bloor Homes to undertake a desk-top review of two transport infrastructure schemes that have the potential to improve the future transport accessibility of the proposed development at Papworth Everard. The two schemes are:

- A428 Black Cat to Caxton Gibbet Scheme; and
- East West Rail Project

2 A428 Black Cat to Caxton Gibbet Scheme

This is a Nationally Significant Infrastructure Project (NSIP) which will deliver an improvement to the A428 between St Neots and Caxton Gibbet – which is the only stretch of single carriageway between the M1 near Milton Keynes and Cambridge. The eastern extent of the scheme, including the Caxton Gibbet junction, is located around 1.6km to the south of Papworth Everard.

The scheme is being delivered by National Highways (formerly Highways England) and is programmed to be completed by 2025/2026. The scheme is currently going through the Development Consent Order (DCO) process at the planning stage, currently awaiting feedback from the Examining Authority.

The objective of the scheme is to improve travel between Cambridge, Bedford and Milton Keynes. According to National Highways, approximately 23,500 vehicles travel between Cambridge and Caxton Gibbet daily, and travellers along this route regularly experience congestion and delays.

2.1 Proposed Improvements

The proposal involves upgrading the route between the Black Cat roundabout and Caxton Gibbet roundabout – including a new dual carriageway and junction improvements.

Figure 2.1 shows the route of the proposed scheme. The existing single carriageway road is shown with a green line and the proposed dual carriageway road is shown with an orange line.

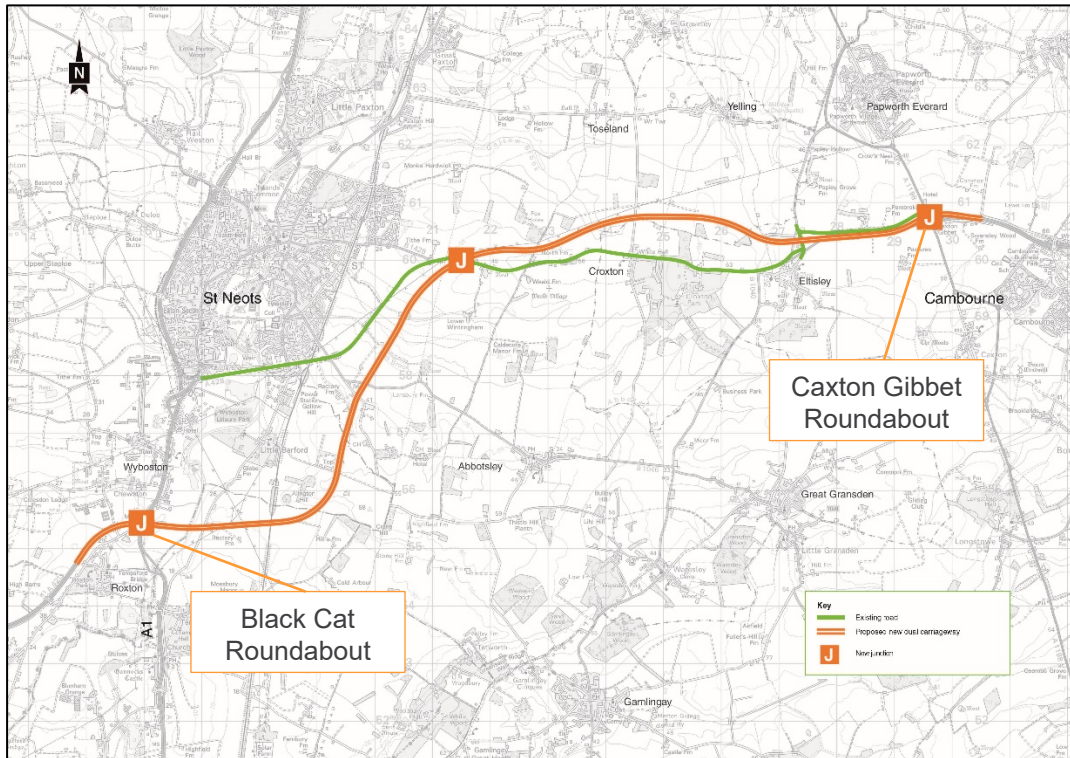


Figure 2.1 – Map of Proposed A428 Scheme Route
 (Source: <https://highwaysengland.co.uk/our-work/a428-black-cat-to-caxton-gibbet/about-the-scheme/>)

The scheme will deliver the following improvements:

- A new three tier junction at Black Cat roundabout.
- New junctions at Caxton Gibbet and Cambridge Road connecting the new carriageway and the A428.
- A New link at Roxton Road connecting Wyboston and Chawston.
- New bridges at Roxton Road, Barford Road and Toseland Road, providing travel over the new dual carriageway.
- New bridges providing travel over the River Great Ouse and East Coast Main Line railway.
- Additional support on new and existing routes for pedestrians, cyclists, and horse riders including safe crossing points and reconnections for disputed rights of way.
- Retention of existing A428 stretch between St Neots and Caxton Gibbet and connecting local roads.
- Retention of existing bus stops along A1.
- Improved access to side roads at Chawston, Wyboston and Eltisley.
- Improved connections to St Neots and St Neots Train Station.

2.2 Projected Benefits

According to National Highways, the projected transport benefits of the scheme are predicted to be as follows:

- Journey times along the route will be reduced by over a third during peak hours.
- Addition of new dual carriageway will increase capacity and help support economy and growth.
- Reduction of approximately 4,000 cars from using local roads to avoid delays, thus reducing congestion in other areas.
- New infrastructure allows for safer and more accessible travel for walkers, cyclists and horse riders.

In terms of benefit to the Papworth Everard residential scheme – our previous Transport Statement based on 175 dwellings predicted that there would be 137 two-way vehicle trips generated by the development during the AM peak hour and 93 two-way vehicle trips generated during the PM peak hour and that 30% of this development traffic would use the A428. The Black Cat to Caxton Gibbet improvement scheme would certainly provide further highway capacity and benefit to car drivers and other transport users on the A428 – although from a highway capacity point of view it should be noted that Cambridgeshire County Council highway authority previously raised no objection to the 175 dwelling scheme on transport grounds – therefore we do not consider the Black Cat to Caxton Gibbet improvement scheme to be one of the keys in unlocking the development site.

3 East West Rail Project

The East West Rail (EWR) Project aims to re-establish a rail link between Cambridge and Oxford and improve connectivity between East, Central, South and West England. Figure 3.1 displays the current proposed railway links and connected stops between Oxford and Cambridge.

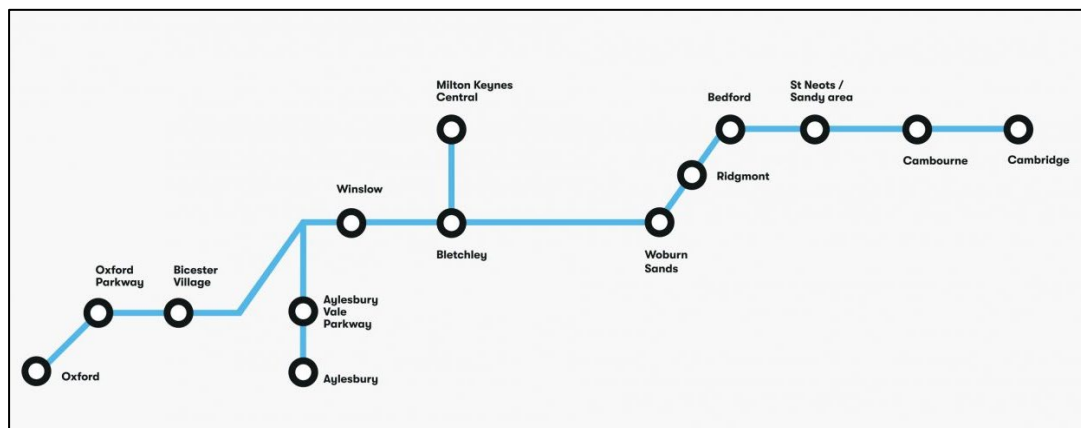


Figure 3.1 – East West Rail Project Links

(Source: <https://www.networkrail.co.uk/running-the-railway/railway-upgrade-plan/key-projects/east-west-rail/>)

3.1 Proposal

The proposal consists of the construction of a new railway link between Oxford and Cambridge which will provide connections to other towns and villages including Milton Keynes and Aylesbury.

From the EWR Annual Report 2021, construction is broken down into three 'connection' stages as follows:

3.1.1 Connection Stage 1 (anticipated completion by 2025):

This stage features upgrading and constructing a new rail link between Oxford to Bletchley and Milton Keynes.

Phase 1 of this stage was completed in December 2016 which featured the upgrading of the rail connection between Oxford and Bicester, and the addition of a new rail section connecting Oxford Parkway and Bicester.

Phase 2 of this stage is under construction and aims to upgrade existing and closed sections to provide a link from Bicester to Bletchley and Milton Keynes. This also includes upgrades to Bletchley Station, a new station to be built at Winslow and a potential link to Aylesbury pending Government confirmation. See Figure 3.2 for the locations of Phase 1 & 2 of Stage 1.

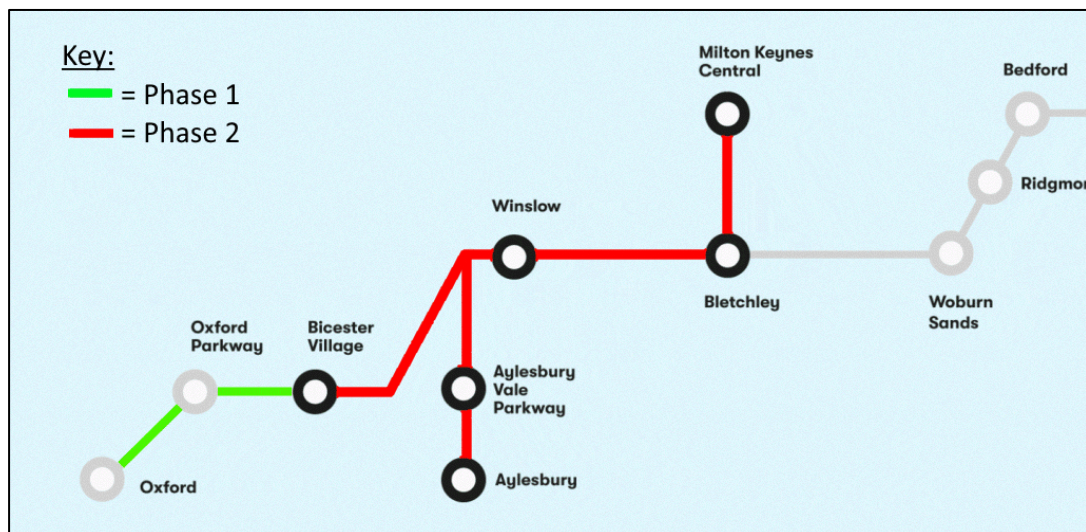


Figure 3.2 – Connection Stage 1, Phase Locations

(Source: <https://www.networkrail.co.uk/running-the-railway/railway-upgrade-plan/key-projects/east-west-rail/>)

3.1.2 Connection Stage 2 (anticipated completion by 2028):

This stage features the upgrading and development of track between Bletchley and Bedford to help provide a reliable connection to support two trains per hour between Oxford and Bedford. This additionally includes full remodelling/refurbishment of Bedford Station.

3.1.3 Connection Stage 3 (anticipated completion by 2030):

The final connection stage aims to complete the entire route from Oxford to Cambridge via the development of the stretch of rail from Bedford to Cambridge. The designs for Connection Stages 2 & 3 are in consideration with the 2021 Spending Review and unlocking further Government funding.

3.2 Projected Benefits

The predicted transport benefits of the EWR are anticipated to be as follows:

- Simple access to additional locations along links with reduced journey times.
- Access for direct routes without the need to travel to London, thus reducing travel times and unnecessary congestion to/from London terminals.
- Faster connection to major centres of economic activity and growth such as Aylesbury, Milton Keynes, Bedford, Bicester, Oxford, Reading and Science Vale UK (south Oxfordshire).
- Potential decrease in car journeys leading to a reduction in carbon emissions and traffic congestion.

In terms of benefit to the Papworth Everard residential scheme, the EWR link would provide enhanced public transport accessibility – although the nearest station, Cambourne, would be located beyond a reasonable walking distance of the site. There are currently two station location and route alignment options being considered at Cambourne – as shown on the screen shot included as Figure 3.3. The X3 bus currently provides a service between Papworth and Cambourne – which provides an approximate hourly service frequency and a 22 minute journey time.

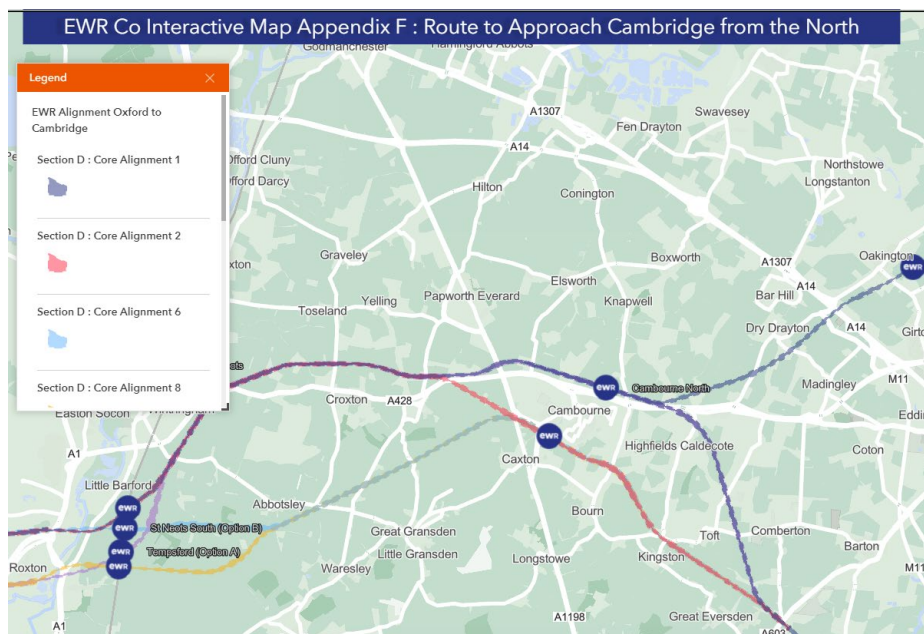


Figure 3.3 – EWR Route Alignment Options at Cambourne
Source: <https://eastwestrail.co.uk/consultation/consultation-maps>

4 Transport Response to Site Review

Transport comments have been provided on the site as part of the Council's Housing and Employment Land Availability Assessment (HELAA). An extract from the HELAA containing the transport comments is provided in **Appendix A**.

Table 4.1 provides a transport response to each comment.

TABLE 4.1 – SITE ASSESSMENT REVIEW RESPONSE

Issue	Council's Assessment	Council's Comment	Sweco Response
Site Access	Red	<p>The proposed site does not have a direct link to the adopted public highway. If over 100 dwellings two points of access are required to accord with the advice of the Cambridgeshire Fire and Rescue.</p> <p>No possibility of creating a safe access.</p>	<p>The proposed site has a direct link to the Ridgeway which is adopted public highway – this is shown on a plan received from Cambridgeshire County Council in Appendix B. Ridgeway connects to Wood Lane and the wider highway network. A secondary emergency vehicle only access is also proposed on the Ridgeway. Both are shown within the MLM Transport Statement of April 2018 (ref: 619410-MLM-ZZ-XX-RP-TP-0001-R04) that was submitted as part of planning application S/1783/18.</p> <p>The vehicle access strategy has been agreed with Cambridgeshire County Council as Highway Authority.</p> <p>Based on the above, Sweco's modified RAG assessment for 'Site Access' is Green.</p>
Transport and Roads	Amber	<p>The applicant will have to consider development impacts with and without the Highways England Black Cat to Caxton gibbet highways scheme. The A428 corridor is congested towards Cambridge and cannot accommodate the large level of growth this site is proposing. It is anticipated that this site will be heavily car dominated which the Highway Authority cannot support.</p> <p>A high sustainable mode share would be essential to allow this site to be developed. This applicant will need to consider mass transit solutions (i.e.</p>	<p>The scope of the highway assessment was previously agreed with Cambridgeshire County Council (CCC) as part of MLM's previous Transport Statement dated April 2018. The position agreed with CCC as part of this Transport Statement was that the results of the earlier transport modelling work undertaken in support of the 2015 planning application remain valid. In summary, following capacity assessment of off-site junctions, it was agreed with CCC that there would not be a significant traffic impact at off-site junctions as a result of the proposed development and 'No Objection' was raised by CCC on transport grounds.</p> <p>The transport modal share sourced from the 2011 Census included within the approved Framework Residential Travel Plan dated April 2018 is as follows:</p> <ul style="list-style-type: none"> • Car Driver: 76% • Car Passenger: 4% • Rail: 4% • Underground / Metro: 0% • Bus: 3% • Motorcycle: 1% • Taxi: 0% • Walk: 10%

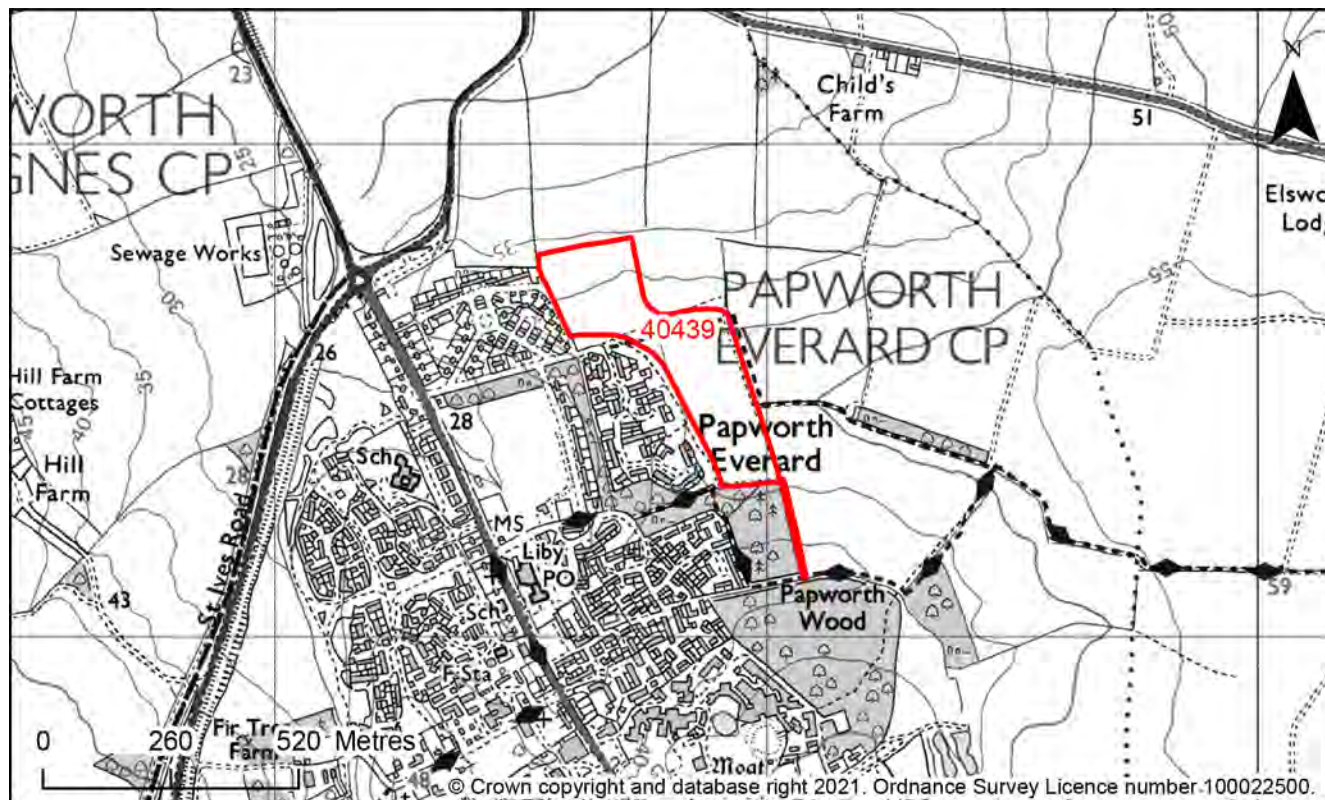
Issue	Council's Assessment	Council's Comment	Sweco Response
		<p>how it could tie in with planned sustainable corridor investment).</p> <p>The current cycle mode share Cambourne is low. A direct walking and cycling link connecting to St Neots and Cambourne will be expected. There is potential to improve the Bridleway routing through Elsworth.</p> <p>The applicant should be aware of some local major accident clusters located at the A428/St Neots Road/B1040 junction and at the A428 Caxton Gibbet junction.</p> <p>Any potential impact on the functioning of trunk roads and/or local roads could be reasonably mitigated.</p>	<ul style="list-style-type: none"> • Cycle: 2% • Other: 0% <p>The package of transport infrastructure improvements agreed with CCC as part of the 2015 Transport Statement is summarised below – refer to Section 5 of the TS for more detail:</p> <ul style="list-style-type: none"> • Improvements to existing Public Rights of Way both on and off site. • Improvements to the Papworth to Caxton Gibbet Roundabout Cycle Route. • Improvements to local pedestrian facilities. • Improvements to the existing bus service X3. • Provision of real time information at the Wood Lane / Ermine Street junction bus stop. • Complimentary six month bus ticket for every household. • Residential Travel Plan. <p>Mass transit solutions were not discussed or agreed with CCC as being necessary as part of agreed transport planning work undertaken previously.</p> <p>Regarding accidents, a post-application Technical Note (ref: 619410-MLM-ZZ-XX-RP-TP-0004-R01) prepared by MLM in July 2018 included an assessment of accident data from the most recent available 60 month period up to October 2017 sourced from CCC. It was subsequently agreed with CCC that the conclusions drawn from the 2015 TA remained valid – which was that there is no recognisable pattern of accidents that could be exacerbated by the proposed development nor is there any pattern that could affect the safety of vulnerable road users. We are able to review the conclusions agreed previously by undertaking an assessment of up-to-date road traffic accident data from a more recent time period prior to the start of the Covid-19 pandemic.</p>

Appendix A – Extract from HELAA – Transport Review

Land to the east of Ridgeway and Old Pinewood Way, Papworth Everard, CB23 3GU

Site Reference: 40439

Map 583: Site description - Land to the east of Ridgeway and Old Pinewood Way, Papworth Everard



Site Details

Criteria	Response
Site area (hectares)	8.90
Parish or Ward	Papworth Everard CP
Greenfield or previously developed land	Greenfield
Category of site	Dispersal: Villages
Category of settlement	Within or adjacent to Minor Rural Centre
Current or last use	Agricultural land/building
Proposed development	Residential, Market and affordable housing, Key worker housing, Custom or self build housing, Education, Public open space, Recreation and leisure
Proposed employment floorspace (m ²)	-

Proposed housing units	175
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Site Assessment Summary

Criteria	Outcome
Suitable	Red
Available	Green
Achievable	Green

Site Assessment

Suitable (Outcome = **Red**)

Issue	Assessment	Comments
Adopted Development Plan Policies	Amber	Primarily outside Development Framework Within or Partially within 400m of the District Boundary
Flood Risk	Amber	Flood zone: Wholly in Flood Zone 1 Surface water flooding: 1% lies in a 1 in 1000 year event
Landscape and Townscape	Red	NCA 88 Bedfordshire and Cambridgeshire Claylands District Area The Western Claylands The site is typical of the landscape character. Landscape Character Assessment (2021) Landscape Character Area - 4A: Croxton to Conington Wooded Claylands Development upon this site would have a significant adverse impact to the landscape character, views and visual amenity. It would be an encroachment into the landscape and an urbanisation of the rural countryside. Wide, local and amenity views are high due to undulating nature of topography and lack of gappy intervening vegetation. Even with a reduction in residential numbers with landscape mitigation measures the harm would still be adverse, permanent, and incongruous with the rural landscape characteristics

Issue	Assessment	Comments
Biodiversity and Geodiversity	Amber	<p>Within 200m of a SSSI</p> <p>Within 400m of an Ancient Woodland</p> <p>All new housing developments will require assessment of increased visitor pressure on nearby SSSI, and all non-householder planning applications will require consultation with Natural England. The southern tip of the site lies adjacent to the Papworth Wood SSSI and, therefore, assessment will be required and Natural England consultation sought. There are GCN records in the northeast of the sight which will require survey and probable mitigation. There are no apparent priority habitats within the site; however, there are grasslands, hedges, and wooded boundaries on site that are likely to have ecological value.</p> <p>Development of the site may have a detrimental impact on a designated site, or those with a regional or local protection but the impact could be reasonably mitigated or compensated.</p>
Open Space / Green Infrastructure	Green	<p>Within 50m of a Semi-Natural Green Space</p> <p>Site is not on protected open space designation. Any impact of the proposed development could be reasonably mitigated or compensated.</p>
Historic Environment	Green	<p>Development of the site would have either a neutral or positive impact, but importantly not have a detrimental impact on any designated or non-designated heritage assets.</p>
Archaeology	Amber	<p>Bronze Age, Iron Age and Roman settlement is recorded in the area.</p>
Accessibility to Services and Facilities	Amber	<p>Distance to Primary School: Greater than 450m and Less than or Equal to 1,000m</p> <p>Distance to Secondary School: Greater than 2,000m</p> <p>Distance to Healthcare Service: Less than or Equal to 720m</p> <p>Distance to City, District or Rural Centre: Greater than 2,000m</p> <p>Distance to Local, Neighbourhood or Minor Rural Centre: Greater than 720m and Less than or Equal to 2,000m</p>

Issue	Assessment	Comments
		<p>Distance to Employment Opportunities: Greater than 1,800m</p> <p>Distance to Public Transport: Less than or Equal to 450m</p> <p>Distance to Rapid Public Transport: Greater than 1,800m</p> <p>Distance to proposed Rapid Public Transport: Greater than 1,800m</p> <p>Distance to Cycle Network: Greater than 1,600m</p> <p>Adequate accessibility to key local services, transport, and employment opportunities</p> <p>Proposed development would not require delivery of accompanying key services</p>
Site Access	Red	<p>The proposed site does not to have a direct link to the adopted public highway. If over 100 dwellings two points of access are required to accord with the advice of the Cambridgeshire Fire and Rescue.</p> <p>No possibility of creating a safe access.</p>
Transport and Roads	Amber	<p>The applicant will have to consider development impacts with and without the Highways England Black Cat to Caxton Gibbet highways scheme. The A428 corridor is congested towards Cambridge and cannot accommodate the large level of growth this site is proposing. It is anticipated that this site will be heavily car dominated which the Highway Authority cannot support.</p> <p>A high sustainable mode share would be essential to allow this site to be developed. The applicant will need to consider mass transit solutions (i.e. how it could tie in with planned sustainable corridor investment).</p> <p>The current cycle mode share Cambourne is low. A direct walking and cycling link connecting to St Neots and Cambourne will be expected. There is potential to improve the Bridleway routing through Elsworth.</p> <p>The applicant should be aware of some local major accident clusters located at the A428/St Neots Road/B1040 junction and at the A428 Caxton Gibbet junction.</p> <p>Any potential impact on the functioning of trunk roads and/or local roads could be reasonably mitigated.</p>

Issue	Assessment	Comments
Noise, Vibration, Odour and Light Pollution	Green	The site is capable of being developed to provide healthy internal and external environments in regard to noise / vibration/ odour/ Light Pollution after careful site layout, design and mitigation.
Air Quality	Green	Site does not lie within an AQMA. Minimal traffic impact on AQMA.
Contamination and Ground Stability	Amber	Previous agricultural land use. Potential for historic contamination, conditions required.

Further constraints

Issue		Comments
Constraints to development	-	Agricultural Land Classification: 100% Grade 2 Public Right of Way is on or crosses the site
Strategic Highways Impact	Amber	Within Highways England Zone 9 - A428 Capacity for growth but with potential constraint to local road network at Madingley
Employment	-	-
Green Belt – Assessment of Harm of Green Belt Release	-	Parcel ID: -

Available (Outcome = Green)

Question	Response
Is the site controlled by a developer or landowner who has expressed an intention to develop?	The site was submitted by the landowner and/or site promoter who has confirmed that the site is available for development in the timescales indicated.
Are there known legal or ownership impediments to development?	No

Question	Response
Is there planning permission to develop the site?	No relevant recent planning history
When will the site be available for development?	0-5 Years

Achievable (Outcome = Green)

Question	Response
Is there a reasonable prospect that the site will be developed?	The land has been promoted by the landowner and or developer and is known to be available for development. The site has a low existing use value and residential development is likely to be economically viable at an appropriate density.

Development Potential

Capacity and Delivery	Response
Estimated dwellings per hectare	20
Estimated dwelling units	175
Estimated employment space (m ²)	-
Estimated start date	0-5 Years
Estimated annual build-out rate (pa)	40-75
Development completion timescales (years)	6-10 Years

Appendix B – Plan of Adopted Public Highway



Scale: 1:2500
 Date: 17/04/2015
 By: Ryan Baker

Legend	
Public highway (green)	