MOTT MACDONALD

Cambourne to Cambridge Better Bus Journeys

Park and Ride Study

1 September 2017

Cambridgeshire County Council

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Executive Summary

Greater Cambridge is undergoing a period of rapid growth with significant planned development in coming years. This planned growth will contribute towards increasing traffic levels and congestion on the A428/A1303 corridor between Cambourne and Cambridge City Centre.

The Cambourne to Cambridge Better Bus Scheme has been developed in an attempt to improve the bus infrastructure along the A428 Corridor and mitigate the impacts of future development by providing fast frequent and reliable high quality public transport alternatives to the car. Park & Ride is an opportunity to intercept many car journeys and for the journeys to be completed by bus into the most congested parts of the city. Park & Ride is a proven approach to reduce the impacts of congestion particularly where end to end public transport journeys may not be viable (e.g. from distant locations). As such it forms a key part of the local transport policy as a means to encourage more sustainable transport choices. The siting of a potential Park & Ride site is essential in terms of maximising the benefit of Park & Ride by encouraging usage and ensuring efficient operation of bus services. Park & Ride sites are large with potential impacts on the immediate surrounds and as such the location of such sites must also be fully assessed in terms of environmental impact and the impact on local communities.

The Greater Cambridge Partnership requires a review of Park & Ride sites along this Cambourne to Cambridge Corridor. This study is in two stages – Stage 1 shortlisting, and Stage 2 specific site evaluation.

Stage 1 Summary

Building upon previous studies, workshops, and stakeholder engagement, this study assessed nine indicative site locations against a range of criteria (covering social, economic, environmental and transport) that were agreed with the Greater Cambridge Partnership.

At the Stage 1 assessment, options were appraised using a qualitative methodology. The appraisal was carried out by qualified and experienced professionals, using objective comparisons and, where possible, recognised methodologies.

As the alignment of potential future bus infrastructure interventions along the corridor are still being developed, no definitive assessment has been made on the impact on traffic issues of the combination of the Park and Ride and bus infrastructure, or the resultant economic benefits.

Generally, the corridor can be considered as offering three broad areas of search for a proposed new site, for which the transport and environmental assessment for a Park & Ride site have been considered in more detail in Stage 2. These are:

1. A western, outer, area with potential sites including 6, 7 and 8 (all close to Cambourne);
2. A central area, which includes site 5 (Scotland Farm); and
3. An eastern, inner, area around Madingley Mulch (sites 1, 2, 3 and 4).

Having undertaken this initial review, our findings for Stage 1 were as follows:

- The options to the west, (sites 6,7,8) which are less environmentally constrained perform better. Of these sites 6 and 7 perform best and are similar. We believe site 6 at Bourn Airfield is preferable to site 7 because of the potential interaction with future adjacent development although this cannot yet be assessed as no development master plan is in place.

- Site 5 enjoys direct A428 access via a grade separated roundabout, although access to any future bus route is less clear. It is less environmentally constrained than some of the sites further to the east.
- Sites 1 to 4 are closer to a SSSI, the American Cemetery, and are in a prominent location, likely to be visible from part of the City of Cambridge, and other sensitive areas. As such these sites, which in transport operational terms may prove preferable once modelling work is completed, score less well on environmental issues. The sites to the south, further from the SSSI, particularly site 3, which is on an existing waterworks, and site 4 at Crome Lea Farm score most strongly.

Stage 1 Recommendations

Pending the results of the transport modelling, our recommendation was to proceed with 5 options. These are Sites 3 (waterworks site), 4 (Crome Lea Farm), 5 (Scotland Farm) and 6 (Bourn Airfield), for reasons outlined above, together with Site 0 (expansion of Madingley Road Park and Ride). Although Site 0 scores poorly because it adds no new connectivity, does not relieve the A1303, and would not provide as much capacity as the other sites, it would provide significant value to the M11 corridor and, as such, should still be considered.

This selection of options provided a comprehensive comparison of the alternatives at Stage 2 and enabled a robust and objective review drawing on new traffic data which considered interaction with bus infrastructure options, more detailed site layouts, and greater consideration of potential mitigation measures.

Stage 2 Summary

Having undertaken further research and development, the following initial conclusions have been drawn and the two sites which merit further consideration and greater understanding of wider opinion through public consultation are Scotland Farm and the Waterworks. Of these, both have strengths and weaknesses. Scotland Farm has less visual impact on the wider countryside but is in close proximity to a small number of existing houses just north of the site on Scotland Road which would be impacted. The Waterworks is already developed in places and there is existing development activity with existing associated visual impact relating to a radio mast and nearby street-lighting. Scotland Farm is less well connected to the proposed off-line busway. Both sites lie in the Green Belt but with Scotland Farm being located to the edge of the Green Belt and being partly bounded by existing built development. The Waterworks site is predicted to be more heavily used than Scotland Farm so offers greater potential transport benefits and opportunities for park and cycle to the city centre, particularly in conjunction with an off-road busway with high quality cycling facilities.

Whilst the sites have not been assessed alongside the potential bus infrastructure alignments in the area, it is felt that either of these sites provides flexibility on the choice of alignment, although this will need to be considered as part of the ongoing scheme development.

Bourn Airfield is considered less desirable than Scotland Farm given the likely pressure which would be put on the St Neots Road and the roundabouts connecting to the A428 by the proposed residential development. It is also further from a junction with the strategic road network. Modest parking provision for cyclists and disabled drivers adjacent to bus stops within the development itself, and potentially additional parking to meet local needs, would be desirable to maximise the use of the busway by residents, and to reduce external trip-making, but the additional pressure of traffic arriving from elsewhere generated by the Park and Ride would not be helpful when considered cumulatively against the impact of the development itself.

With regard to Bourn Airfield it is also noted that the requirement in the emerging Local Plan to potentially include a Park and Ride facility as part of the Bourn Airfield new settlement may be removed from the proposed allocation if the Council's further proposed modifications reflecting the position of the busway scheme at the time are confirmed by the Examination Inspector.

Having regard to the transport disbenefits of Bourn Airfield compared with Scotland Farm, it is proposed that land at Bourn Airfield is excluded from further assessment.

Crome Lea scores less well than the Waterworks site and has been rejected on that basis. Specifically it has a larger effect on the landscape and visual impact of the two sites and is located in closer proximity to the SSSI. It is also located to the east of the Madingley Mulch roundabout and provides less relief to the A1303.

Glossary of Key Terms

Catchment Area: In this specific instance, an area within which a scheme will take effect.

Conservation Area: An area designated under Section 69 of the Planning (Listed Buildings and Conservation Areas) Act 1990 as being of special architectural or historic interest and with a character or appearance which is desirable to preserve or enhance.

Context: The setting of a site or area, including factors such as traffic, activities and land uses as well as landscape and built form.

Countryside: The rural environment and its associated communities.

Cumulative Impact: The summation of effects that result from changes caused by a development in conjunction with other past, present or reasonably foreseeable actions.

Effect: The consequence of the change to the baseline environment, or impact, on the environmental receptor or particular value or sensitivity.

Element: A component part of the landscape (for example, roads, hedges, woods).

Enhancement: Landscape improvement through restoration, reconstruction or creation.

Environment: Our physical surroundings including air, water and land.

Form: The layout (structure and urban grain), density, scale (height and massing), appearance (materials and details) and landscape of development.

Gross Value Added: A measure of the economic productivity of an area.

Heritage Asset: A building, monument, site, place, area or landscape of historic value.

Landform: Combination of slope and elevation that produce the shape and form of the land.

Landscape: The character and appearance of land, including its shape, form, ecology, natural features, colours and elements and the way these components combine. Landscape character can be expressed through landscape appraisal, and maps or plans. In towns ‘townscape’ describes the same concept.

Landscape Character: The distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how this is perceived by people. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement. It creates the particular sense of place of different areas of the landscape.

Landscape Feature: A prominent eye-catching element, for example, wooded hilltop or church spire.

Landscape Quality: Based on judgements about the physical state of the landscape, and about its intactness, from visual, functional, and ecological perspectives. It also reflects the state of repair of individual features and elements which make up the character in any one place.

Landscape Resource: The combination of elements that contribute to landscape context, character and value.

Landscape Sensitivity: The extent to which a landscape can accept change of a particular type and scale without unacceptable adverse effects on its character.

Land Use: The primary use of the land, including both rural and urban activities.

Layout: The way buildings, routes and open spaces are placed in relation to each other.

Magnitude: A combination of the scale, extent and duration of an effect.

Methodology: The specific approach and techniques used for a given study.

Mitigation: Measures, including any process, activity or design to avoid, reduce, remedy or compensate for adverse landscape and visual effects of a development project.

Modal shift: A shift from one transport type to another, e.g. road travel to rail travel.

Movement: People and vehicles going to and passing through buildings, places and spaces. The movement network can be shown on plans, by space syntax analysis, by highway designations, by figure and ground diagrams, through data on origins and destinations or pedestrian flows, by desire lines, by details of public transport services, by walk bands or by details of cycle routes.

Openness: A general absence of development in a landscape.

Permanence: A change to the landscape that will remain over time.

Receptor: Physical landscape resource, special interest of viewer group that will experience an effect.

Resilience: The ability of a scheme to accommodate foreseen and unforeseen circumstances.

Scalability: The ease by which a scheme, in this case the Park & Ride, can be expanded to meet growing demand.

Scale: The impression of a building when seen in relation to its surroundings, or the size of parts of a building or its details, particularly as experienced in relation to the size of a person. Sometimes it is the total dimensions of a building which give it its sense of scale: at other times it is the size of the elements and the way they are combined. The concept is a difficult and ambiguous one: often the word is used simply as a synonym for ‘size’.

Scenario: A picture of a possible future.

Strategic View: The line of sight from a particular point to an important landmark or skyline.

Sustainability: The principle that the environment should be protected in such a condition and to such a degree that ensures new development meets the needs of the present without compromising the ability of future generations to meet their own needs.

TAG: The DfT’s Transport Appraisal Guidance (often referred to as WebTAG)

Topography: A description or representation of artificial or natural features on or of the ground.

Townscape: Physical and social characteristics of the built and unbuilt urban environment and the way in which those characteristics are perceived. The physical characteristics are expressed by the development form of buildings, structures and space, whilst the social characteristics are determined by how the physical characteristics are used and managed.

Tranquillity: A state of calm or quiet.

Vista: An enclosed view, usually a long and narrow one.

Visual impact: Change in the appearance of the landscape as a result of development. This can be positive (i.e. beneficial or an improvement) or negative (i.e. adverse or a detraction).

Wayfinding: The means by which travellers are signed towards a destination.

Zone of Theoretical Visibility (ZTV): Computer mapping process which calculates areas from which a feature of a certain height is theoretically visible.

1 Introduction

1.1 Aim of the Study

Mott MacDonald has been commissioned by The Greater Cambridge Partnership to undertake a high-level assessment of potential Park & Ride sites on the A428 Cambourne to Cambridge Corridor. The purpose of this report is to identify a shortlist of locations for Park & Ride and assess each of these site options in terms of their impacts, benefits and deliverability in order to recommend the most suitable options.

1.2 Background and Context

The Cambridge to Cambourne Better Bus Journeys Scheme objective is to deliver new high quality public transport infrastructure to achieve improved connectivity and reduced congestion between residential and employment areas and improve quality of life.

This connectivity and reduced congestion is key to delivering growth in Cambridge and South Cambridgeshire in line with the Greater Cambridge Partnership objectives. The western area of the city, and existing and proposed new settlements to the west, contain both housing and employment development areas which will generate increased demand on the transport network. The Local Transport Plan (LTP), the Transport Strategy for Cambridge and South Cambridgeshire (TSCSC), and the Cambridge and South Cambridgeshire Submitted Local Plans envisage enhanced transport infrastructure by non- car modes to provide sustainable transport links to address this increased demand. Without this planned mitigation, this growth will have an adverse effect on highway congestion levels and journey times affecting quality of life and potentially constraining further growth.

This scheme therefore seeks to deliver a high quality public transport solution which:

- Delivers the integrated planning and transport strategy as set out in the local planning and transport policies;
- Achieves modal shift from cars to public transport and active modes, such as walking and cycling;
- Provides segregated congestion free capacity for buses as part of an integrated public transport network;
- Connects current and potential major employment sites in and on the edge of the city (including Cambridge Science Park, University West Cambridge site, North West Cambridge, the Cambridge Biomedical Campus / Addenbrooke's Hospital); Bourn and Cambourne;
- Removes or reduces the need for private transport for travelling in and out of the city centre;
- Intercepts car traffic into Cambridge from the A428 and routes that feed into it;
- Provides high quality public transport, defined as frequent, fast and reliable journeys;
- Is compatible with emerging proposals from the linked Western Orbital scheme, which is being considered as part of a separate study and integrated with other emerging City Deal proposals such as City Centre Access Study incorporating demand management measures; and
- Improves quality of life and environmental sustainability in Greater Cambridge.

Quality is defined as the extent to which infrastructure can deliver 'fast, frequent and reliable' public transport journeys and therefore provide a genuine alternative to the private car. This

reflects the LTP policy objectives for transport improvements along the corridor. The LTP also sets out the objective of providing the right infrastructure on corridors to encourage commercial operators to provide high quality services.

The CIHT Park and Ride Guidance Note is based on a survey of local authorities operating P&R services and discusses the key considerations in the development of a successful service. It suggests sites should ideally be located on or adjacent to the strategic road network or on radial routes. A Park & Ride service needs to be attractive in its facilities and costs, providing fast, frequent and reliable inbound and outbound bus services. Bus priority measures may also need to be considered to increase reliability. Route lengths need to be carefully coordinated and designed, incorporating a limited number of intermediate stops conveniently located at popular locations. The provision of a consistent and frequent bus service needs to be maintained throughout the day.

Several assessments have been conducted prior to this report to identify suitable Park and Ride Locations in the area. This study is intended to be part of the on-going project that revisits work previously undertaken and to provide a robust and comprehensive review of the options. This report documents Stage 1 of the study and guides the shortlisting of options, whilst Stage 2 assesses the shortlisted options in greater detail and presents recommended options, which subject to Board approval will form part of a planned public consultation in the Autumn of 2017.

1.3 Stage 1 Approach

The purpose of this stage of the report was to review and re-appraise work completed in previous studies and set out the shortlisting of options for a Park and Ride site between Cambourne and Cambridge including broad locations and areas of search for those outer Park & Ride options. These options have then been assessed relative to applicable criteria and reviewed prior to the more detailed second stage of this Study.

1.4 Stage 2 Approach

The purpose of the second stage of the study is to further analyse the recommended options from Stage 1 against more detailed criteria, including:

- Site Access
- Noise Impact
- Air Pollution Impact
- Biodiversity Impact
- Archaeological and Historical Asset Impacts
- Flooding and Drainage Issues
- Green Belt and Planning Policy Review

The full results of these tasks have been presented and a recommendation on which site should be carried forward to full design stage has been made.

1.5 Report Structure

The report is structured as follows.

- Chapter 2 reviews the Park and Ride (Park & Ride) work undertaken to date and provides supporting information as to the rationale for providing a Park & Ride site between Cambourne and Cambridge (serving the whole St Neots Cambridge corridor).

- Chapter 3 formulates a list of options based upon previous studies and new work carried out to identify a long list of potential locations which could meet the scheme requirements.
- Chapter 4 provides a high-level options assessment through the use of INSET, a Mott MacDonald decision support toolkit. This includes the development of assessment criteria and a full appraisal of the identified options against these criteria. Recommendations are made for Stage 2 of the assessment.
- Chapter 5 introduces Stage 2 and describes the changes that have been made to the Stage 1 assessment.

1.6 Stakeholder Engagement

During both stages of the assessment, workshops were held with the Local Liaison Forum to obtain their views and opinions.

The principle outcomes of these workshops are discussed further on in the report and records of these meetings can be found in Appendix N.

2 Review of Work to Date

2.1 Introduction

This section examines project progress to date and the outcome of the public consultation held in 2015. This considers responses to the public consultation from a range of stakeholder groups as well as all studies previously undertaken regarding potential Park and Ride sites to the west of Cambridge. A summary of the key outcomes of work completed to date is provided at the end of the chapter, informing the rationale for further appraisal work which formed the basis for this study.

2.2 Public Consultation

In October/ November 2015 a public consultation was undertaken on the Cambourne to Cambridge route options. A Park & Ride located near Madingley Mulch roundabout consistent with that illustrated in the City Deal Executive Board Report of June 2015 was presented. The location of the potential sites was included in questions about the scheme. The following sites were presented:

- Madingley Mulch North East (site adjacent to SSSI north of A1303);
- Madingley Mulch North West (often referred to as Park Farm); and
- Madingley Mulch South (often referred to as Crome Lea Farm and the waterworks site).

Questions were also included about the bus corridor routes serving these sites. A brief description of the route options is included in Appendix B.

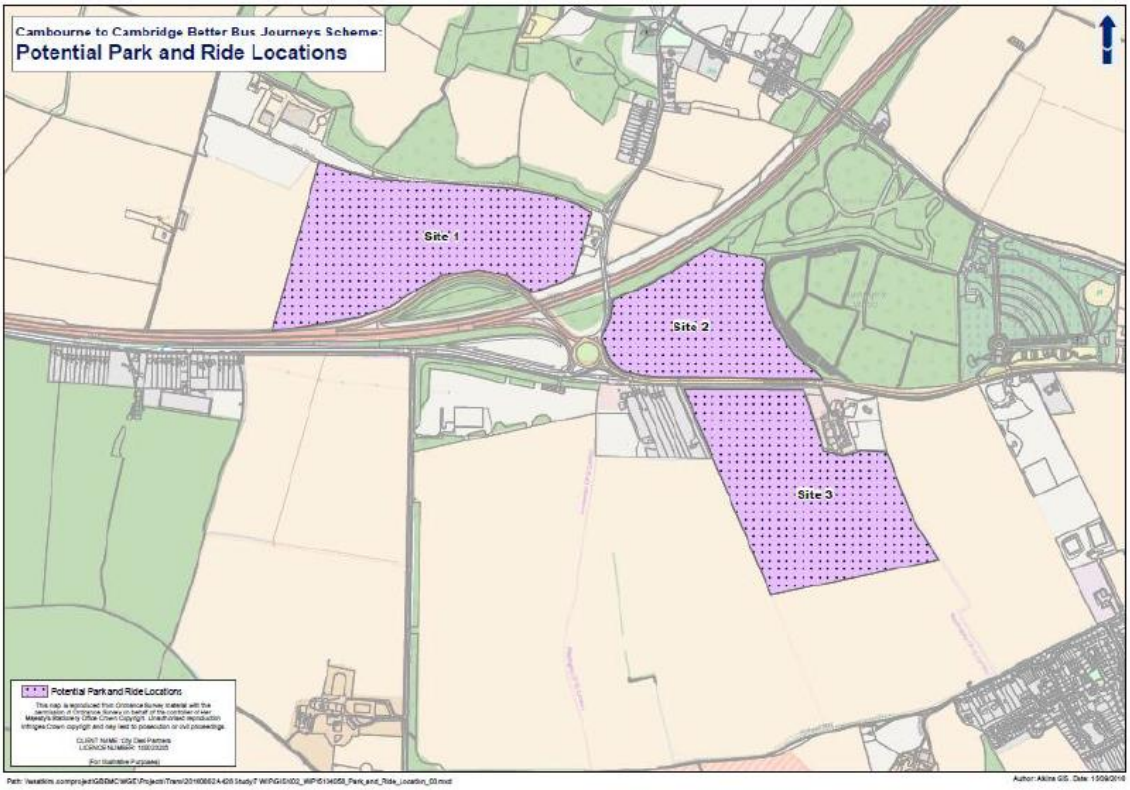
The Executive Board Report of March 2016 made mention of a significant number of responses to the potential location of the proposed Park & Ride site. All of the route options included a Park & Ride at Madingley Mulch roundabout as this was assessed as the best strategic location. Results from the public consultation are as follows:

- 46.1% expressed no preference for a specific location at Madingley Mulch roundabout for a Park & Ride site.
- For those who expressed a preference:
  - north west of the roundabout received 22% support;
  - 17% preferred to the south; and
  - 9% preferred the north east.

A site adjacent to Madingley Mulch roundabout was considered suitable based on the nature of the predicted congestion around Cambridge, and the balance between access and operating costs. It was considered that a site at Madingley Mulch would alleviate capacity constraints at the existing Madingley Road Park and Ride site.

A series of locations at Madingley Mulch roundabout were considered feasible as set out in the plan in Figure 1 below.

Figure 1: Madingley Mulch Potential Park & Ride Locations



Source: Greater Cambridge City Deal Executive Board (October 2016)

Additional comments received included concerns on the environmental and traffic impacts of a Park & Ride around Madingley Mulch as well as proposals for alternative sites such as closer to Cambourne at Scotland Farm.

2.2.1 Public/Stakeholder Engagement Responses- CambridgeBOLD Report

A report was prepared by CambridgeBOLD (a community group) in November 2015 summarising the key points raised by the public and stakeholders during consultation in relation to why Madingley Mulch roundabout was not considered a suitable site, as well as reasons to justify the location of a site at Scotland Farm. CambridgeBOLD are a Residents' Stakeholder Group who look to provide "a bold approach to Cambridge's transport problems" through proposals and public action.

The key points from this report are outlined below:

Justifications cited for siting a Park & Ride site at Scotland Farm:

- *Good connectivity to the A428, St Neots Road, Dry Drayton, Hardwick*
- *Cycle/foot access to and from Hardwick via blue bridge and Dry Drayton via existing Public Rights of Way (PROW)*
- *Site can accommodate a hotel to encourage layover trip making*
- *Site to include convenience store for site users*
- *Coach layover – for long distance services*
- *Referred to as a Transport Hub*

Why Madingley Mulch roundabout was not considered suitable by CambridgeBOLD:

- *The roundabout is very busy, with a difficult layout*
- *It is too close to Madingley Hill, a traffic congestion hot-spot many drivers look to avoid*
- *It is too far from the largest centre of population in the immediate area, i.e. Hardwick*
- *Long-distance traffic coming along the A428 from the west (e.g. from Milton Keynes, Bedford or St Neots) exits the A428 unnecessarily late; it would be better if such traffic could be captured earlier*
- *Long-distance traffic coming along the A14 from the east (e.g. from Newmarket, Bury St Edmunds, Felixstowe etc) can't exit to Madingley Mulch, but it can continue on the A428 and exit at Scotland Road*
- *Madingley Mulch is too small an area to become a true public 'Transport Hub' (i.e. not enough room for a hotel, petrol station, shop, public toilets etc)*
- *The area is very sensitive, being at the top of Madingley Hill, with its important views and location*
- *Worry about the effect of car emissions, as they enter/exit a Park & Ride and park their cars, on the ecology of Madingley Old Wood, a Site of Special Scientific Interest (SSSI)*
- *There would be too much harmful impact on the nearby villages of Madingley and Coton.*

2.3 Review of Work Undertaken to Date

This section examines the studies that have previously been undertaken with regard to Park & Ride sites to the west of Cambridge.

The documents summarised in this section include:

- Madingley Road / A428 Corridor Study: Options Appraisal Report, June 2014
- TN01: Park & Ride Site Locations Technical Note, June 2016
- City Deal Joint Assembly and Executive Board recommendations, October 2016
- A428 Cambourne to Cambridge Better Bus Journeys – Landscape and Planning Appraisal, January 2017, Atkins
- Cambourne to Cambridge Better Bus Journeys – Park and Ride Location Study, April 2017, Atkins

2.3.1 Madingley Road / A428 Corridor Study: Options Appraisal Report (Atkins, 2014)

The study prioritises the section between Caxton Gibbet and Cambridge but also considers options between Caxton Gibbet and St Neots. The study area is defined as the A428 Corridor between St Neots and Cambridge.

Key aim of the study to identify ways of:

"Providing a congestion free public transport scheme serving the corridor including new developments, in order to avoid an increase in current congestion levels and public transport journey times".

Options packages to improve the A428 Corridor were generated and refined through a series of workshops and assessments and considered a range of factors, with this process summarised as:

- initial brainstorming; 21 individual elements combined to generate 34 packages
- initial sifting; refining the groups of elements into revised options

- workshop to further evaluate the options and three additional options added to the shortlist
- more detailed option assessment process which sifted the shortlist to five recommended options.

Options to be taken forwards were:

- Park & Ride at Caxton Gibbet, a segregated bus route via Cambourne and Bourn Airfield and an eastbound nearside bus lane on Madingley Road
- Park & Ride at Madingley Mulch, signalisation of Madingley Mulch roundabout and an eastbound nearside bus lane on Madingley Rise and Madingley Road
- A segregated bus route via Cambourne and Bourn Airfield, with services then running via a new junction with the A428 or St Neots Road to Madingley Mulch roundabout, signalisation of Madingley Mulch roundabout, a nearside eastbound bus lane on Madingley Rise and Madingley Road and potential intermediate Park & Ride at Bourn Airfield
- A segregated bus route via Cambourne and Bourn Airfield and a nearside eastbound bus lane on Madingley Road
- Park & Ride at Madingley Mulch and segregated offline bus route south of Madingley Rise and Madingley Road

All options were assumed to cost in excess of £20m, with no low cost alternative being identified.

2.3.2 TN01: Park & Ride Site Locations Technical Note (June 2016)

Following the Atkins study in 2014, further work was undertaken surrounding the various route options in combination with a Park & Ride site at Madingley Mulch Roundabout.

In June 2016, a Park and Ride technical note (TN01) was produced by Atkins which reviewed the potential locations to serve the Cambourne to Cambridge Better Bus Scheme based on analysis of a range of criteria. Rather than just focusing on a Park & Ride site at Madingley Mulch, TN01 assessed four locations for a Park & Ride site including the investigation of a transport hub at the following locations:

- Madingley Mulch roundabout
- Scotland Farm
- North of Cambourne
- Transport Hubs at:
  - Cambourne
  - Bourn
  - Between Highfields and Caldecote.

The TN01 investigated each potential site in turn with respect to rationale, potential capacity and access arrangements. The information related to these sites as reported is summarised in the table below:

Table 1: Summary of information reported in TN01

	Madingley Mulch	Scotland Farm	North of Cambourne	Transport Hubs
Rationale	The congestion within the peak periods typically begins in the area around Madingley Mulch roundabout. This location is also suitable for connecting bus services to other employment hubs around Cambridge including the city centre. The Madingley Mulch location lends itself to good balance between access and operating costs.	Put forward by stakeholders with the intention of earlier interception of traffic along the A428.	Put forward by stakeholders due to the potential for earlier interception of traffic on the A428, and proximity to Cambourne.	It is understood that the proposal for the creation of transport hubs at these sites would provide 'facilities similar to a train station'. A series of smaller Park & Ride sites is considered to provide earlier interception of traffic and additional facilities would provide further incentive for users to switch modes to access the centre of Cambridge.
Potential Capacity:	In excess of 370,000sqm with room for extension.	The site cannot present multiple alternatives as there are constraints such as the A428 and Scotland Road and other land uses around Hardwick Junction.	Two sites located north of Cambourne could provide a Park & Ride site extending between 10,300m² and 94,000m². The smaller of the sites is constrained by the junction itself, but the larger of the two is open fields so has room for expansion.	No specific sites identified but it is estimated that the capacity of the transport hubs could vary between 85,000m² and 90,000m². All sites would likely provide a lower level of capacity than at Madingley Mulch.
Access Arrangements	Requires reconfiguration of the roundabout in some form.	Potential new arm from roundabout junction resulting in more land take and reducing the area of the site.	It is likely that the A428 would require reconfiguration to accommodate dedicated accesses.	No specific access arrangements proposed but there would likely be a requirement for the reconfiguration of several junctions in the area.
Site Suitability	Good accessibility from the adjacent highway network.	Reduction in accessibility to local road network such as Church Lane and Long Road.	Located close to Cambourne so accessible for walking and cycling trips. Reduction in accessibility to local road network such as Church Lane and Long Road.	Could be accessible for walking and cycling trips, but there would be a reduction in accessibility from the road network compared to a site further east.
Environmental/Transport impacts	Landscape character will need to be considered with potential mitigation measures such as screening considered. It is expected that the majority of users will already be on the corridor but there may be diverted trips to the corridor from other areas.	The landscape character would need to be reviewed. With respect to transport, the future growth in the area is likely to make traffic movements on the Hardwick junction worse and therefore would have a knock-on effect to the on-line buses using the Park & Ride site.	The landscape character would need to be reviewed. Locating the site further west along the A428 offers the possibility of reducing congestion through earlier interception of vehicles, but driver behaviour suggests that fewer vehicles would use the facility if they cannot see a	The landscape character would need to be reviewed. Locating the site further west along the A428 offers the possibility of reducing congestion through earlier interception of vehicles, and in addition, the impact of the hubs would be further limited due to the requirement for users to use the old

	Madingley Mulch	Scotland Farm	North of Cambourne	Transport Hubs
			queue or congestion on the A428.	A428 (St Neots Road)
Operating Costs	Operating costs would perform better than sites further from Cambridge.	Operating costs are likely to be higher at this location due to the additional distance the buses would have to travel as opposed to the Madingley Mulch site.	Operating costs are likely to be higher at this location due to the additional distance the buses would have to travel as opposed to the Madingley Mulch site.	Operating costs are likely to be higher at this location due to the additional distance the buses would have to travel as opposed to the Madingley Mulch site.

Source: TN01

The TN01 concluded that a Park and Ride site situated close to Madingley Mulch roundabout would be the most suitable location, as it would offer a good balance between congestion free access, high capture of patronage, and lower operating costs.

2.3.3 Parish Council Responses

Following the submission of the Park & Ride TN01, responses have been received from local parish councils relating to the siting of a new Park and Ride site. Coton Parish Council has not submitted a formal response to the proposed location of the Park and Ride sites but have been minded to support CambridgeBOLD, which itself supports the Park and Ride location at Scotland Farm. Responses from Madingley and Dry Drayton Parish Councils are summarised below.

Madingley

- Firm evidence should be provided that a Park and Ride site is required to support the scheme
- A Park and Ride at Bourn Airfield or Cambourne would be better than one located at Madingley Mulch
- Scotland Farm is the preferred site due to the impacts on congestion and existing access to the site reducing environmental impacts.

Dry Drayton

- Rejects the proposed building of a Park and Ride site at Scotland Farm/A428 and can see no benefit to residents of Dry Drayton
- Such siting would have the potential of diverting even more traffic off the A14 through Dry Drayton thus having a detrimental effect on the village
- Significant impacts for Scotland Road residents.

2.3.4 City Deal Joint Assembly and Executive Board recommendations, October 2016

Following the 2015 public consultation and subsequent technical appraisal, the City Deal and Executive Board report, which is based on the accompanying Option Assessment Report and Strategic Outline Business Case recommended a Catchment Area and Park & Ride (Park & Ride) location. It also sought authority to develop a ‘specific route alignment’ within that Catchment Area, using the Transport Appraisal Guidance (TAG) approach, together with an associated new Park & Ride site, both for public consultation in Summer 2017.

This formed part of the proposed scheme for the provision of better bus journeys between Cambourne and Cambridge in accordance with the Greater Cambridge City Deal vision and the City Deal Agreement.

The Executive Board report recommended a segregated route between Cambourne and Cambridge, with a Park & Ride near the Madingley Mulch roundabout be included for a Full Outline Business Case assessment alongside a lower cost on-road comparitor, as it was deemed that this best meets the strategic objectives of the City Deal and the City Deal Agreement, given the wider economic benefits.

2.3.5 A428 Cambourne to Cambridge Better Bus Journeys – Landscape and Planning Appraisal, January 2017, Atkins

Following the preparation of options assessment work for Cambourne to Cambridge Better Bus Journeys, in July 2016 it was recognised that there were a number of planning and environmental concerns within and around the corridor including:

- Its Green Belt location;
- Visibility from residential properties and public rights of way;
- Its position on elevated ground from which prominent buildings within Cambridge are visible;
- Proximity to conservation areas;
- Proximity to the American Cemetery which is a Grade I Registered Park and Garden; and
- Relevant design guidance to be considered as the project progresses.

The Landscape and Planning Appraisal reported on the constraints, opportunities and sensitivities of these themes, including the level of compliance with local, regional and national planning policy and design guidance.

Landscape constraints include:

- Landscape Character;
- Landscape Designations, e.g. Parks and Gardens, Conservation Areas and Country Parks;
- Notable Landscape Features, e.g. Woodland and Orchards;
- Topography;
- Tranquillity;
- Night Lights;
- Viewpoints; and
- Visual Receptors (Residential / Recreational / Transport / Commercial).

Following that work, the City Deal Chief Executive confirmed that work undertaken to date to assess potential sites near Madingley Mulch roundabout, as instructed by the Executive Board in October 2016, had raised issues which meant that a wider search of new potential locations would now be commissioned, hence the need for this study. In parallel a Local Liaison Forum proposal for a new 'on road' bus scheme (known as Option 6) was developed including a Park & Ride at Scotland Farm. This new option was agreed by Executive Board to be included in the wider ongoing assessment work of the Full Outline Business case for the scheme.

2.3.6 Cambourne to Cambridge Better Bus Journeys – Park and Ride Location Study, April 2017, Atkins

Atkins were commissioned by Greater Cambridge City Deal (GCCD) to undertake further appraisal on the location of the proposed Park and Ride (Park & Ride) site near Madingley Mulch roundabout, including a review of the proposed Scotland Farm location. Following the October 2016 report on selecting a preferred option for further analysis, as instructed by the Board, a direct comparison between Park & Ride Location 4 (a site to the east of Madingley Mulch roundabout), Location 1 to the north west of the roundabout and a Park & Ride site at Scotland Farm was commissioned. This report identified potential environmental concerns. This has required additional assessment and comparison on a first principles basis. Consequently a whole corridor review of all Park & Ride options along the Cambourne to Cambridge corridor is being undertaken. Phase 1 of this corridor review has identified and scored the most feasible sites for a Park & Ride location.

Three sites were considered in this study:

- Scotland Farm: to the north of the A428 and east of Scotland Road
- Madingley Mulch: site to the east of Madingley Mulch Roundabout, to the north and south of Madingley Road
- Madingley Mulch: site to the north of the A428 and Madingley Mulch Roundabout.

The three sites were reviewed using the following criteria:

- Alignment and Catchment;
- Preferred route;
- Trip capture;
- Journey Times;
- Distance from City Centre;
- Access for all users; and
- Site capacity.

The Atkins study recommended Madingley Mulch Site 4 to the east of Madingley Mulch Roundabout (Crome Lea Farm) is considered as the location for the proposed Park & Ride site as it was deemed to provide a more favourable location with respect to:

- Being located on the preferred busway route;
- It is within a mile of both the A428 and M11 corridors;
- Has a greater catchment for existing Park & Ride users;
- Has a good strategic fit with respect to Local Policies;
- It was also deemed to present a greater opportunity for multiple modes of travel to and from Cambridge including by foot and cycle.

Madingley Mulch site 1 to the north of the A428 and Madingley Mulch Roundabout scored equal to Site 4 in all respects bar:

- Route compatibility with options – site is 660m offline from preferred route option.
- Policy compliance – Site has good proximity to road network, is further from city, and not visually present on the A428.

It should be noted that the Scotland Farm site, scored lower than the Madingley Mulch sites in this assessment. Scotland Farm scored lower with regard to:

- Size / Capacity – 1,438 spaces
- Catchment – 64% transfer trips from Madingley Mulch
- Facilities for Park and Cycle – Does not provide opportunity for parking and cycling to the city centre
- Not as compatible with preferred routing option - 400m from preferred route option
- Relocation of patronage – Likely to capture 63% of trips currently using A428 corridor to access Madingley Road Park & Ride
- Policy compliance - Good proximity to road network, further out from the city, not visually present on A428.

2.4 Outcomes of Previous Studies and Supporting Information

Previous work has indicated that a proposed Park and Ride site in proximity to Madingley Mulch roundabout (particularly Crome Lea Farm field - Site 4) is the most suitable location, whilst responses from public and stakeholder consultation tend to refer to the Scotland Farm location for a potential site.

However, previous work and recommendations received significant levels of opposition from local councillors and members of the public resulting in the Greater Cambridge Partnership decision to review appraisals and identify potential new sites in search of suitable locations.

Public responses to previous studies raised concerns over the social and environment impacts of sites located in close proximity to residential areas and sensitive areas of land and the process of selecting sites in reaction to these impacts.

2.5 The Need for Further Appraisal

Although a number of studies have been carried out in the process of selection, the presentation of Park & Ride options to public and stakeholders and sites identified needs to be reconsidered in order to gain acceptance, where possible, from the public and stakeholders. Therefore, this study aims to provide a fresh outlook on the identification of potential Park and Ride sites between Cambourne and Cambridge which will be identified through a robust evidence base that takes into account the key issues raised by members of the public during consultation and through further engagement undertaken during this study. Consequentially some of the sites assessed within this report have not been assessed previously or shown at public consultations during the previous studies undertaken.

3 Stage 1 Park and Ride Options

3.1 Identification of sites

The area of search for sites was between Caxton Gibbet and Madingley Mulch. This is consistent with the Cambridge and South Cambridgeshire Transport Strategy which lists provision of an outer Park & Ride on A428 between Cambourne and A1303 as a public transport intervention. Further, a site west of Caxton Gibbet would not effectively intercept traffic from settlements including Papworth Everard and Godmanchester.

Sites were identified according to the following suitability factors:

- Land is potentially available;
- Site is adjacent to the A428;
- There is potential for good access to the site from the A428; and
- Site has the ability to accommodate potential demand.

3.2 Summary of Park and Ride Sites to be Assessed

Following consideration of previous studies, the following locations have been selected for appraisal. The location of these sites is shown in Figure 2 below and a larger plan is also included in Appendix A. A brief location summary is also given for each site.

- 0 – The existing Madingley Road Park and Ride site: The site is an existing Park & Ride site in a western suburb of Cambridge. The Park & Ride was built 20 years ago and so is well known and utilised. There is little scope for lateral expansion but it would be possible to consider double- or multi-decking.
- 1 - Madingley Mulch North East (site adjacent to SSSI north of A1303): The site is in South Cambridgeshire, between the A1303, A428 and the Madingley Mulch roundabout. It is located on the highest contour of the Madingley Ridge and is currently an arable field, sloping down to the north and adjacent to Madingley Wood.
- 2 - Madingley Mulch North West (often referred to as Park Farm): The site is in South Cambridgeshire, between the A428 and Madingley. Currently an arable field, it shares a wooded boundary with Madingley Hall.
- 3 - Madingley Mulch South West (often referred to as water works site): The site is in South Cambridgeshire, south of the St Neots Road and A1303. It is located on the highest contour of the Madingley Ridge and is currently a mixture of a Waterworks, and an arable field in an open landscape, sloping down to the south.
- 4 - Madingley Mulch South East (often referred to as Crome Lea): The site is in South Cambridgeshire, south of the St Neots Road and A1303. It is located on the highest contour of the Madingley Ridge on what is currently an arable field in an open landscape, sloping down to the south.
- 5 - Scotland Farm: The site is in South Cambridgeshire, between the eastbound slip road to the A428 and Scotland Road, Madingley. It is on the highest contour of the Madingley Ridge and is currently an open arable field sloping down to the east.
- 6 - Bourn Airfield: The site is located within the existing Bourn Airfield boundary, to the south of the A428 and between the settlements of Highfields, Caldecote and Cambourne.

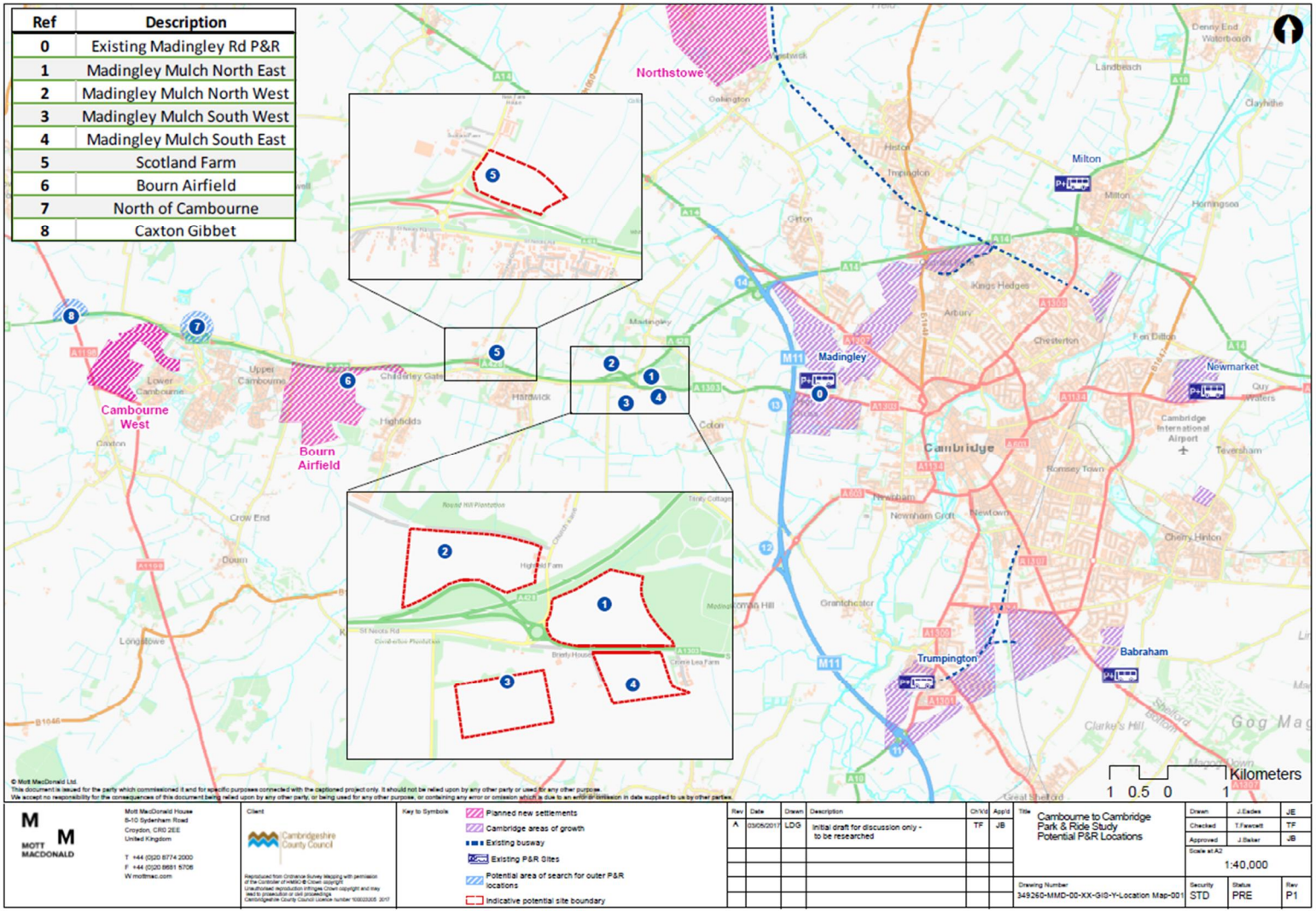
- 7 - North of Cambourne: The site is situated in an existing arable field located on St Neots Road, north of the A428 and Cambourne. The site is on a slightly lower contour of the Madingley Ridge, lower than the A428 and Cambourne to the south.
- 8 - Caxton Gibbet: The site is located at the A428 and A1198 junction, on arable fields.

All sites had previously been considered in preceding studies. No suitable sites were identified that had not previously been considered.

The longlist of options was presented to the Local Liaison Forum and no further alternatives were suggested.

None of the potential site layouts or access arrangements were developed in any detail for this Stage 1 report. For the shortlisted sites recommended at the end of Stage 1, outline layouts and access arrangements have been provided in order to analyse the full appraisals at Stage 2.

Figure 2: Stage 1 - Location of Park and Ride sites identified for appraisal



4 Stage 1 Options Assessment

4.1 Summary

A robust process has been used in this study to recommend a shortlist of potential locations for a Park & Ride to serve the St Neots to Cambridge corridor. This section outlines the process undertaken in order to arrive at recommendations. Assessment criteria have been developed in line with the key issues raised throughout stakeholder engagement, including a workshop with the Local Liaison Forum, which will be scored to ensure the most important factors have due influence on the outcome of the appraisal.

4.2 Methodology

The methodology for assessing the suitability of the nine Park & Ride options for Stage 1 includes:

- A multi-criteria assessment using INSET – based on key criteria agreed with stakeholders. No weighting of criteria (i.e. making a judgement that any given criterion should carry more weight than another) has been carried out to date.

4.3 Introduction to INSET

Mott MacDonald's Investment Sifting and Evaluation Tool (INSET) is a bespoke information management and decision support toolkit with high functionality that builds on the principles of DfT's EAST (Early Assessment and Sifting Tool). This decision support toolkit has been developed in-house by Mott MacDonald, drawing on standard tools for comparing scheme options, primarily DfT's EAST, and adds additional functionality to these existing tools to support the evaluation of different options for large-sale investments and investment programmes. Crucially, this tool enables:

- 'Active' sifting of scheme options in real-time, supporting meetings, workshops and face-to-face engagement with a tool that can be used to facilitate discussions
- The consideration of multiple economic scenarios as sifting and evaluation progresses through manipulation of criteria weighting, to enable project teams to discuss 'what if' issues as schemes are developed
- The assessment of potential scheme 'packaging'. INSET can assess one option against another and can also explore the merit of schemes being developed in isolation or as part of a package.

This tool therefore offers a robust method of assessing options against relevant criteria to ensure selection of the most appropriate option in terms of costs, deliverability and its benefits.

INSET utilises the assessment criteria detailed below to systematically test and appraise options appropriate to each stage of the assessment. The assessment was conducted objectively by a group of Mott MacDonald staff with expertise in each field and who have a wide breadth of experience working on similar schemes in Cambridge and elsewhere.

4.4 Development of Assessment Criteria

Criteria were organised into three key themes:

- High Level Theme – Policy Alignment

- Intermediate Theme – Benefits
- Operational Theme – Deliverability

Criteria and subcriteria were then developed within these key themes, which are discussed further below.

4.4.1 High Level Theme – Policy Alignment

This theme assessed the impacts on and considerations given to local and regional policy, with each option being scored against three key criteria. This gave a snapshot of how the options would be expected to perform relative to this theme.

- Alignment with the Greater Cambridge Greater Peterborough Enterprise Partnership (GCGPEP) Ambitions

The GCGPEP is aiming for the area to be a UK exemplar for digital connectivity, and a business growth hub to support economic growth in the wider region. The GCGPEP should also respond to existing pressure for the growth and retention of businesses in the area by facilitating the provision of additional innovation and incubator space, removing skills barriers to continued economic growth. In order to deliver upon these objectives, the area must have a transport network for an economically vital high growth area, particularly considering the new developments currently in process, such as the Alconbury Weald Enterprise Campus and Cambridge Science Park.

- Alignment with the Greater Cambridge City Deal Transport Vision

The City Deal Transport Vision for Cambridge is that of a city which is easy to travel into, out of and around, with strong links to the rest of South Cambridgeshire by public transport and active modes. Traffic levels should also be reduced and maintained in order to ease congestion in the city centre and surrounds.

- Alignment with Published Plans, including:
  - Draft Local Plan for Cambridge (2014)
  - Draft Local Plan for South Cambridgeshire (2014)
  - Cambridgeshire Local Transport Plan 2011 – 2031
  - Transport Strategy for Cambridge and South Cambridgeshire (TSCSC) (2014)

4.4.2 Intermediate Theme - Benefits

This theme assessed the general benefits that each option could be expected to deliver, with each option scored against four key criteria relevant to this theme.

- Transport Benefits, e.g. journey time improvement, improved interchange between modes, ability to accommodate forecasted patronage, connectivity with public transport, private vehicles, walking and cycling routes. At this stage, it is assumed that all options can provide a sufficiently fast, frequent, and reliable service, as that is a function of operation rather than site selection. Any difference in the ability to provide these benefits will be reflected in the scoring.
- Passenger Experience, e.g. high levels of safety, provision of shelters, positive impact on the mobility impaired and improved wayfinding
- Wider Economic Benefits including Gross Value Added and positive impact on areas of deprivation

- Environmental and Social Issues, e.g. noise levels, impact on Green Belt, air quality, limited visual impact, capital and operational carbon emissions, ecological, heritage impact and ground conditions.

Environmental / Landscape appraisals were conducted to a higher level of detail than other assessments at this stage, as these were deemed to be a crucial area of the wider site assessment process. The results of these assessments are included in Appendices D and E.

4.4.3 Operational Theme - Deliverability

This theme assessed the deliverability considerations that would have to be given to each option, and their level of deliverability. This was scored against four key criteria detailed below.

- Planning Issues, e.g. land acquisition required, interaction with planned developments, impact on current land uses, public and business acceptability
- Engineering Issues, e.g. impact on the local road network during construction
- Operational and Capital Costs
- Scalability and Resilience.

4.4.4 Stakeholder Engagement on Criteria

Through discussions at a technical meeting and workshop with the Local Liaison Forum held as part of this Study on 14th June 2017, several key issues were raised as being critical. These are listed below.

- Green Belt
- Community and heritage
- Access / connectivity
- Visual impact and landscape
- Journey times
- Transport modal shift
- Congestion
- Noise
- Traffic through villages.

In order to demonstrate how these critical issues are considered within the INSET assessment, the relevant criteria/subcriteria the issues have been appraised under are set out in the table below. More detailed records of the workshop can be found in Appendix N.

Table 2: How Key Issues Will Be Considered Through Assessment Criteria

Key Issue Addressed / Rationale for use in assessment	Criteria / Subcriteria
Green Belt Land	Green Belt land, Impact on society
Community and heritage	Impact on society, Historic environment
Access/Connectivity	Various subcriteria under 'Alignment with the Greater Cambridge City Deal Transport Vision' and 'Transport Benefits)'
Heritage and landscape	Historic environment, Landscape/Townscape
Journey times (end to end including interchange)	Transport Benefits
Transport modal shift	Not explicitly appraised at Stage 1 – transport network modelling carried out to assess this at Stage 2.
Congestion	Congestion
Noise	Noise
Traffic through villages	Not explicitly appraised at Stage 1 – transport network modelling carried out to assess this at Stage 2. Secondary effects (unintended consequences) can have more impact than primary effects (which may appear to be intuitive).
Public acceptability	Public acceptability

Source: Mott MacDonald

4.4.5 Constraints Mapping

Key constraints on the potential sites were identified and interrogation of information and published data. These have been mapped and are presented in Appendix C. The constraints identified include:

- Noise and Air Quality Receptors
- Ecological Constraints
- Heritage and Archaeological Constraints
- Ground Conditions: Hydrological Constraints
- Social and Community Effects

4.5 Appraisal

4.5.1 Approach

For the Stage 1 assessment, options have generally been appraised using a qualitative methodology. The appraisal has been carried out by suitably qualified and experienced professionals, using objective comparisons and recognised methodologies where possible. Options have typically been assessed against each criterion on a seven-point scale, measuring impact compared to the existing situation. Impact can be beneficial (in which case the impact gains a positive score) or adverse (whereby the impact is given a negative score). If there will be no (or negligible) impact, the impact is assessed as neutral. The scoring system is shown below in Table 3.

Table 3: Scoring System

Effect	Score
High Positive	3
Medium Positive	2
Low Positive	1
Neutral	0
Low Negative	-1
Medium Negative	-2
High Negative	-3

The appraisal for each option and each criterion has been recorded for objective comparison, with the scores for Stage 1 detailed in Table 4 below.

A more detailed justification for these scores are located in Appendix F and Appendix G.

Table 4: Stage 1 Option Scores

Number	Name	1A. High Level Theme – Policy Alignment	1B. Intermediate Theme - Benefits	1C. Operational Theme - Deliverability	Average
		Final score (-3 to 3 scale)	Final score (-3 to 3 scale)	Final score (-3 to 3 scale)	
0	Existing Madingley Road Park and Ride	0.76	0.27	-0.20	**0.27**
1	Madingley Mulch North East (site adjacent to SSSI north of A1303)	1.09	0.90	-0.98	**0.34**
2	Madingley Mulch North West (often referred to as Park Farm)	1.09	0.95	-0.98	**0.36**
3	Madingley Mulch South West (often referred to as water works site)	1.09	1.06	-0.73	**0.48**
4	Madingley Mulch South East (often referred to as Crome Lea)	1.09	0.92	-0.73	**0.43**
5	Scotland Farm	1.02	1.06	-0.60	**0.49**
6	Bourn Airfield	1.09	1.16	-0.50	**0.58**
7	North of Cambourne	1.21	1.15	-0.60	**0.58**
8	Caxton Gibbet	1.14	1.08	-1.23	**0.33**

Source: Mott MacDonald

4.5.2 Summary of Stage 1 Findings

An initial appraisal has been undertaken based on outlines of potential development and some broad assumptions with regards to form. As the bus infrastructure options are still being developed, no definitive assessment has been made on the impact on traffic issues of the combination of the proposed Park & Ride and bus route, or the resultant economic benefits. These issues have been assessed more comprehensively in Stage 2.

Generally, the corridor can be considered as offering three broad areas of search for a proposed new site, for which the transport characteristics and suitability for a Park & Ride site will need to be considered in more detail. These are:

1. A western, outer, area with potential sites including 6, 7 and 8 (all close to Cambourne);
2. A central area, which includes site 5 (Scotland Farm); and
3. An eastern, inner, area around Madingley Mulch (sites 1, 2, 3 and 4)

Having undertaken this initial review, our findings are as follows:

- The options to the west, (sites 6,7,8) which are less environmentally constrained perform better. Of these sites 6 and 7 perform best and are similar. We believe site 6 is preferable to site 7 because of the potential interaction with future adjacent development which cannot yet be assessed as no development master plan is in place. Site 7 is also not noted in the South Cambridgeshire Local Plan as a potential site, unlike site 6.
- Site 5 enjoys direct A428 access via a grade separated roundabout, although access to any future bus route is less clear. It is less environmentally constrained than some of the sites further to the east.
- Sites 1 to 4 are closer to a SSSI, the American Cemetery, and are in a prominent location, likely to be visible from part of the City of Cambridge, and other sensitive areas. As such these sites, which in transport operational terms may prove preferable once modelling work is completed, score less well on environmental issues. The sites to the south, further from the SSSI, particularly site 3, which is on an existing Waterworks, and site 4 score most strongly.

4.6 Recommendations

Pending the results of the transport modelling, our recommendation is to proceed with 5 options. These are Sites 3, 4, 5 and 6, for reasons outlined above, together with Site 0. Although Site 0 scores poorly because it adds no new connectivity, does not relieve the A1303, and would not provide as much capacity as the other sites, it would provide significant value to the M11 corridor and, as such, should still be considered.

This selection of options will provide a comprehensive comparison of the alternatives and enable a robust and objective review drawing on new traffic data which considers interaction with bus route options, more detailed site layouts, and greater consideration of potential mitigation measures. This is provided in Stage 2.

5 Stage 2 Option Assessment

5.1 Methodology

Following the Stage 1 assessment, conceptual site layouts have been developed by Skanska for each of the sites which have been brought forward to the Stage 2 Assessment. These can be found in Appendix H. The layouts are indicative only at this stage of assessment and further development and public consultation would be carried out as part of the Full Outline Business Case for the scheme on the sites selected for final shortlisting to provide the most suitable layout prior to detailed design. For the only outer location being considered in stage 2, an indicative site has been identified to the purposes of testing.

Traffic modelling information has also been received from Atkins. This is explained in more detail in section 5.2.1 below.

Updated Green Belt information has also been received which confirms that the existing Madingley Road Park & Ride site is located within the revised Green Belt. As such drawings have been updated accordingly and can be found in Appendix I.

To accompany the Landscape and Visual Impact assessment, maps showing zones of theoretical visibility of future Park & Ride facilities have been produced.

The information outlined above is described in more detail in the following chapters.

The Stage 1 findings have been reviewed against this new information and the INSET model has been updated. Details of the INSET system and how it is derived from DfT guidance can be found in section 4.3. The same themes and assessment criteria have been used that were developed for Stage 1, as described in Chapter 4. Weightings for each of the criteria have been kept as equal for the purposes of the Stage 2 Assessment.

5.2 Appraisal

5.2.1 Traffic and Transport

Traffic data was provided to Mott MacDonald by Atkins for the year 2031, in the form of various future scenarios modelled for the A428 and A1303 between the Caxton Gibbet roundabout and the city of Cambridge. These scenarios were:

- Do Minimum
  - No improvements
- Do Something
  - Created to reflect the City Centre Strategy
  - Not considered in this report as does not include Park and Ride sites
- Bus Infrastructure Option 1
  - Improvement to existing bus services
  - Eastbound bus lane along the A1303 between the Madingley Mulch roundabout and Lady Margaret Street
  - New Park and Ride site at Madingley Mulch roundabout (Crome Lea)
- Bus Infrastructure Option 3

  - New offline segregated bus route running south of the A428 between Cambourne and the Madingley Mulch roundabout via Bourn Airfield, then running north of Coton and parallel to the A1303 to Grange Road via a new bridge over the M11. A connection will also be made at the end of the route to the West Cambridge University site.
  - New Park and Ride site at Madingley Mulch roundabout (Crome Lea)
- Bus Infrastructure Option 3a
  - New offline segregated bus route running south of the A428 between Cambourne and the Madingley Mulch roundabout via Bourn Airfield and the old A428 alignment, then running north of Coton and parallel to the A1303 to Grange Road via a new bridge over the M11. A connection will also be made at the end of the route to the West Cambridge University site.
  - New Park and Ride site at Madingley Mulch roundabout (Crome Lea)
- Bus Infrastructure Option 6
  - New tidal bus lane along the A1303 between the Madingley Mulch roundabout and High Cross, open to eastbound vehicles in the AM peak and westbound vehicles in the PM peak as a general rule.
  - New Park and Ride site at Scotland Farm

No output figures from this data are given in this report as, has been explained above, the modelled scenarios do not refer only to Park & Ride sites – to which this report solely pertains – but bus routes and junction signalisation also.

Nevertheless, the data does give an insight into how the network will operate with Park and Ride sites in place at Crome Lea and Scotland Farm (Sites 4 and 5 respectively in this Study). A summary of the model outputs is provided below:

Developing a Park & Ride at Scotland Farm rather than Madingley Mulch could significantly reduce traffic of the A1303 east of Scotland Farm by around 40-50%, and also reduce traffic on the A428 east of Scotland Farm by around 10%.

Flows of local roads adjacent to either the Scotland Farm or Madingley Mulch sites could lead to modest increases in traffic on local roads (ie Scotland Road in the case of Scotland Farm and Long Road in the case of Madingley Mulch sites). The absolute levels of traffic would remain relatively low, but the potential for rat-running needs to be recognised and managed through mitigation measures such as signing and traffic calming solutions at the detailed design stage, and monitored after scheme opening in order to ensure that any residual problems are addressed.

5.2.2 Environment

The environmental scoring has been reviewed as part of the Stage 2 assessment and constraints plans updated with the more defined site boundaries following production of the site layouts.

Following a review of the Stage 1 scoring, using the proposed layouts and access arrangements, the following scores have been altered:

- Site 0 (Existing Madingley Mulch Park & Ride)
  - Water Quality/ Surface Water (changed from 0 to -1) – due to an existing pond being removed which may be home to newts.

- Site 3 (Waterworks)
  - Biodiversity (changed from -2 to -3) – Due to Tree Preservation Orders being present within the access route.
- Site 4 (Crome Lea)
  - No changes.
- Site 5 (Scotland Farm)
  - Biodiversity (changed from 0 to -2) – Due to Tree Preservation Orders being present within the access route and loss of woodland to the south west of the site.
- Site 6 (Bourn Airfield)
  - Noise (changed from 0 to -2) – Due to site location being near to residential dwellings.
  - Biodiversity (changed from -2 to -3) – Due to Tree Preservation Orders being present within the bus access route, and bat boxes and reptile habitats being located to the north of the site.
  - Impact on Society (changed from 0 to -2) – Reflecting ongoing concerns raised locally

Further details of this assessment can be found in Appendix J.

5.2.3 Landscape and Visual Impact

A landscape and visual impact appraisal was carried out as part of Stage 1 and this can be found in Appendix E. This appraisal is still considered relevant to the Stage 2 assessment.

This review is a draft appraisal of the landscape and visual impacts of constructing and operating a new Park & Ride on sites 0 - 8. It is not a full landscape and visual impact assessment (LVIA) and therefore it does not comply with the Landscape Institute's methodology for LVIA, but was informed by it. The appraisal is not intended to represent a detailed assessment of a final designed scheme. It is accepted that impacts can - in practice - be avoided or mitigated through design approaches. However at the option assessment stage, early high level comparisons based on 'worst case scenarios' do offer meaningful guides to decision makers on potential differentials between the options.

In order to complement this appraisal, drawings indicating the Zone of Theoretical Visibility (Viewshed) analysis have been provided which indicate from where the site could in theory be seen. These drawings show the affected area in year 1 and year 15, assuming a 7.5m high planting screen around the perimeter of the site.

Viewshed areas are based on a lighting column height of 8m, and a viewing eye height of 1.6m. These drawings can be found in Appendix K. Drawings provided by Atkins, showing lines of sight to existing ground level from various points are also provided in Appendix K.

At year 1 the site would be visible from all areas coloured orange, but by year 15 the site would only be visible from the areas coloured dark orange. It should be noted that these analyses are a technical tool based on available ground level data and should be viewed as indicative at this stage.

Following this further appraisal, the only scoring which was changed is as follows:

- Site 6 (Bourn Airfield)
  - Noise (changed from 2 to -1) – Due to site location being near to residential dwellings.

In all locations, a Park and Ride site will introduce a large-scale built form into a predominantly rural landscape and may have an urbanising influence on landscape and views. Some of the

potential sites however have already lost some or much of their rural character due to housing and transport infrastructure development, including Bourn Airfield and Scotland Farm. The Waterworks and Crome Lea sites are in relatively more prominent locations on the Madingley Ridge, with expansive views to the south although there is infrastructure associated with the Waterworks on site and existing development in the Crome Lea areas. Crome Lea may have additional visual impact on residents in Coton when compared to the Waterworks site.

The Waterworks and Crome Lea, Scotland Farm and the existing Park and Ride sites are all in the Green Belt. All would increase lighting levels and would reduce tranquillity in the area, some (Waterworks and Crome Lea) currently relatively unlit (although the Waterworks site is adjacent to an existing radio mast and the operating Mulch facility as well as a lit roundabout are present in the area).

Screen planting around the perimeter of the Park & Rides would reduce adverse effects, but the urbanising effect of a large Park & Ride in a rural area would remain.

Overall our judgement is that, not accounting for potential detailed design mitigation, a Park and Ride on the Waterworks or Crome Lea sites is likely to result in a high adverse effect. A Park and Ride on Scotland Farm is likely to result in a medium adverse effect. A Park and Ride at Bourn Airfield or the existing Park and Ride site is likely to result in a low adverse effect.

5.2.4 Deliverability

Following receipt of the site layout drawings a high-level review of the capital costs has been undertaken. Given that each of the sites is a similar size and will be comprise similar features, it was not considered possible to separate them at this stage of assessment.

In terms of scalability, the scoring for Scotland Farm was improved slightly from 0 to +1 as it is considered that further expansion at the sites within the Green Belt (Sites 0, 3 and 4) would be more challenging due to increased impacts on the Green Belt caused by larger sites or decked options. Bourn Airfield is not within the Green Belt but is considered to have less potential for expansion due to the proposed development in the area potentially limiting space available in the future.

5.2.5 Planning Policy Considerations

As part of the Study we have identified the planning policy framework at a national and local level in order that this informs the site selection process. The following planning and transportation policy documents have been identified as being of most relevance to the Study and site selection process.

- The National Planning Policy Framework (NPPF)
- South Cambridgeshire Core Strategy 2007
- South Cambridgeshire Development Control Policies DPD 2007
- South Cambridgeshire Local Plan – Proposed Submission (July 2013)
- Cambridgeshire County Council Transport Strategy 2014

5.2.5.1 National Planning Policy Framework (2012)

The Government attaches great importance to Green Belts as set out in the National Planning Policy Framework (2012) (the 'NPPF' or 'Framework' hereafter). Section 4 of the NPPF and in particular, **Paragraph 30** encourages sustainable transport solutions that support reductions in greenhouse gases and congestion. **Paragraph 37** goes onto reinforce the role of planning policies

balancing land use so as to minimise journey lengths for employment, shopping, leisure and other such trip generating developments.

Section 9 of the Framework sets out the approach to protecting Green Belt land and it confirms that the fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open; the essential characteristics of Green Belts are their *openness* and their *permanence*.

Paragraph 80 of the Framework confirms that the Green Belt serves the following five purposes:

- to check the unrestricted sprawl of large built-up areas;
- to prevent neighbouring towns merging into one another;
- to assist in safeguarding the countryside from encroachment;
- to preserve the setting and special character of historic towns; and
- to assist in urban regeneration, by encouraging the recycling of derelict and other urban land.

'Inappropriate development' is, by definition, harmful to the Green Belt and should not be approved except in *'very special circumstances'*. The construction of new buildings is regarded as inappropriate development in the Green Belt unless they fall within one of the exceptions set out at Paragraph 89 of the Framework.

Certain other forms of development are also not inappropriate in the Green Belt, as set out at Paragraph 90 of the Framework, provided they preserve the openness of the Green Belt and do not conflict with the purposes of including land in the Green Belt (see Paragraph 80). This includes, amongst other things, *local transport infrastructure which can demonstrate a requirement for a Green Belt location* In this regard, park and ride facilities are deemed as 'local transport infrastructure' and so fall within the scope of Paragraph 90 as a form of development that is not considered to be inappropriate, subject to demonstrating a requirement for a Green Belt location.

5.2.5.2 Statutory Development Plan

Core Strategy (January 2007)

Policy ST/ b seeks to locate development where access to day-to-day needs for employment, shopping, education, recreation, and other services is available by public transport, walking and cycling thus reducing the need to travel, particularly by private car.

Policy ST/c encourages the creation of new and distinctive sustainable communities on the edge of Cambridge connected to the rest of the city by high quality public transport and other non-motorised modes of transport which will enhance the special character of the city and it's setting.

Policy ST/f promotes the provision of enhanced infrastructure to meet the needs of the expanded population.

Policy ST/1 – Green Belt states that:-

A Green Belt will be maintained around Cambridge which will define the extent of the urban area. The detailed boundaries of the Green Belt will be established in Development Plan Documents.

Development Control Policies DPD (July 2007)

Policy GB/1 – Development in the Green Belt

There is a presumption against inappropriate development in the Cambridge Green Belt as defined on the Proposals Map.

Policy GB/2 – Mitigating the Impact of Development in the Green Belt

1. Any development considered appropriate within the Green Belt must be located and designed so that it does not have an adverse effect on the rural character and openness of the Green Belt.
2. Where development is permitted, landscaping conditions, together with a requirement that any planting is adequately maintained, will be attached to any planning permission in order to ensure that the impact on the Green Belt is mitigated.

Policy GB/3 – Mitigating the Impact of Development Adjoining the Green Belt

1. Where development proposals are in the vicinity of the Green Belt, account will be taken of any adverse impact on the Green Belt.
2. Development on the edges of settlements which are surrounded by the Green Belt must include careful landscaping and design measures of a high quality in order to protect the purposes of the Green Belt.

5.2.5.3 Emerging Planning Policy

South Cambridgeshire Local Plan – Proposed Submission (July 2013)

Draft Policy S/4: Cambridge Green Belt

A Green Belt will be maintained around Cambridge that will define the extent of the urban area. The detailed boundaries of the Green Belt in South Cambridgeshire are defined on the Policies Map, which includes some minor revisions to the inner boundary of the Green Belt around Cambridge and to the boundaries around some inset villages.

Draft Policy NH/8 Mitigating the Impact of Development in and Adjoining the Green Belt

1. Any development considered appropriate within the Green Belt, or proposals outside but in the vicinity of the Green Belt, must be located and designed so that it does not have an adverse effect on the rural character and openness of the Green Belt.
2. Where development is permitted, landscaping conditions, together with a requirement that any planting is adequately maintained, will be attached to any planning permission in order to ensure that the impact on the Green Belt is mitigated.
3. Development on the edges of settlements which are surrounded by the Green Belt must include careful landscaping and design measures of a high quality in order to protect the purposes of the Green Belt.

Policy SS6 which relates to the strategic site at Bourn Airfield proposes a possible Park & Ride facility to serve the A428.

There are further modifications proposed to the Local Plan in November 2016 and arising from the Examination in Public and this may result in the reference to Park & Ride at Bourn Airfield being removed.

Draft Policy TI/2 promotes sustainable forms of transport and also links to the Transport Strategy for Cambridge and South Cambridgeshire 2014. Whilst there is no specific mention of the promotion of park and ride facilities in the transport chapter Policy SS6 recognises the need to provide a park and ride facility which is further reinforced in the Transport Strategy for Cambridge and South Cambridgeshire 2014.

Transport Strategy for Cambridge and South Cambridgeshire 2014

Policy TSCSC:21 identifies the need to secure contributions from development proposed at Bourn Airfield and West Cambourne towards an integrated package of transport improvements, These include amongst others the guided busway and additional Park & Ride provision to serve trips around the A1303/A428 intersection. Figure 5.15 in the Strategy identified land at Bourn Airfield as a potential site for new Park & Ride facilities.

5.2.5.4 Planning Recommendations

The local policy framework in the form of Transport Strategy for Cambridge and South Cambridgeshire 2014 demonstrates a clear need for additional park and ride facilities to serve the western corridor alongside a wider package of sustainable transport improvements. The Core Strategy and Emerging Local Plan also provide support for sustainable transport modes with site specific proposals for additional park and ride facilities to serve the western corridor. The NPPF further underpins support for promotion of sustainable transport modes and in particular, those that reduce greenhouse gases and reduce congestion.

These policies are balanced against others both at a local and national level and include those relating to Green Belt, ecology, flood risk and landscape.

In terms of Green Belt Paragraph 90 local transport infrastructure, including park and ride facilities, is a form of development not considered to be inappropriate, subject to demonstrating a requirement for a gReen Belt location and preserving openness and the purposes set out in Paragraph 80. As such, there would need to be a clear need case put forward for such a facility to be located in the Green Belt.and arobust site selection process needs to demonstrate if there are any alternative sites in more preferable locations (i.e. outside of the Green Belt etc.) in order to satisfy Paragraph 90 of the NPPF.

If a requirement for a Green Belt location is established through the above process, any scheme would then need to demonstrate that it preserves openness and does not conflict with the purposes of including land in the Green Belt (see Paragraph 80). work undertaken by the determining authority in coming their own judgement on a scheme

If the tests set out in Paragraph 90 of the Framework cannot be satisfied then such a scheme would represent *'inappropriate development'* in the Green Belt and by definition, would be harmful to the Green Belt and should not be approved except in *'very special circumstances'*. In this instance, substantial weight would be given to any harm to the Green Belt. 'Very special circumstances' would not exist unless the potential harm to the Green Belt by reason of inappropriateness, and any other harm, is clearly outweighed by other considerations.

It should be noted that whilst the planning context in terms of Green Belt considerations for the associated busway will be the same as for a Park and Ride site, the requirements will be applied in a different way. This reflects thefact that any route for a busway will need to pass through the Green Belt whereas a Park and Ride can be placed outside the Green Belt or on a site which does not undermine the openness of the Green Belt.

There is also the matter of compliance with the current Transport Strategy and Emerging Local Plan which may result in consideration of a Park & Ride facility as part of the Bourn Airfield being removed from the proposed allocation and developer requirements. As such, if this was the case in the absence of any specific policies in the Local Plan on site suitability for Park & Ride facilities, then the key planning policy framework for the purpose of any planning decision

will be Paragraphs 80 and 90 of the NPPF and to a more limited degree Policies S8 and NH8 of the Emerging Local Plan. Hence, impact on openness of the Green Belt will be a key consideration for both the site selection and detailed design process associated with promotion of a Park & Ride facility to serve the western corridor.

5.3 Stakeholder Engagement

A second workshop was held with local stakeholders on 22nd August 2017. This workshop was to present the 5 sites that had been taken forward from Stage 1 and to obtain any comments or questions on each of these sites.

The following table identifies the comments received along with responses. Further details of the workshop can be found in Appendix N.

Table 5: Stage 2 Workshop Comments and Responses

Site 3	Response	Site 4	Response	Site 5	Response	Site 6	Response	Other	Response
Queueing and congestion on Madingley Mulch roundabout / site located after start of current congestion.	Junction improvements will be required to minimise congestion. Further work will be required at detailed design.	Queueing and congestion on Madingley Mulch roundabout	Junction improvements will be required to minimise congestion. Further work will be required at detailed design.	Improved connectivity	Agreed that this offers some benefits, but these may be lessened or become disbenefits depending on the chosen bus route alignment. Cycle connectivity could be considered worse than other sites given the distance from the City Centre.	No direct connection to the A428	Noted, and reflected in current assessment.	Park & Ride at M11 Girton Interchange	This is being considered as part of another scheme and is being discussed with Highways England. As such it does not form part of this scheme and has not been assessed because it does not primarily address the issues on the A428.
Environmental/ Noise / SSSI concerns	Environmental review has considered sites against various cirteria. Site 3 is within the Green Belt and located close to a SSSI, although further away than other sites in the Madingley Mulch area and these factors have been considered during the current level of appraisal.	Environmental/ SSSI concerns	Environmental review has considered sites against various cirteria. Site 3 is within the Green Belt and located close to a SSSI, although further away than other sites in the Madingley Mulch area and these factors have been considered during the current level of appraisal.	Access from the east and west	Noted.	Impact on housing development land at Bourn Airfield	Potential impact noted, although subject to finalisation of South Cambridgeshire Local Plan and subsequent housing proposals.		
Visual impact/ light pollution	Visual Impact has been assessed using Zone of Theoretical Visibility plans and is part of current assessment. Mitigation through planting has been assumed.	Visual impact/ light pollution	Visual Impact has been assessed using Zone of Theoretical Visibility plans and is part of current assessment. Mitigation through planting has been assumed.	Improved journey times	Dependant on choice of bus route and final access arrangements.	Too remote from congestion/Cambridge itself	Congestion is not necessarily an issue, but remoteness from Cambridge is reflected as a concern in the current assessment.		
Poor access from the east/A428	Primary scheme objective is to improve access from the west and the proposed development sites in that area. Other Park & Ride sites are being considered around Cambridge.	Poor access from the east/A428	Primary scheme objective is to improve access from the west and the proposed development sites in that area. Other Park & Ride sites are being considered around Cambridge.	Less environmental impact	Benefits can be seen in reduced impact on landscape and SSSI, although additional disbenefits to local residents.	Further out from Hardwick, Caldecote, Dry Drayton, Madingley	Noted, and identified as disbenefit in current assessment.		
Flood risk	Flood maps have been reviewed and the site is not located within an area associated with flood risk. A full flood impact assessment will be carried out should this site be chosen. If required suitable drainage and attenuation facilities will be designed to avoid flooding risk to other areas.	Flood risk	Flood maps have been reviewed and the site is not located within an area associated with flood risk. A full flood impact assessment will be carried out should this site be chosen. If required suitable drainage and attenuation facilities will be designed to avoid flooding risk to other areas.	Sited prior to beginning of congestion	Noted, although congestion at other sites may be able to be dealt with through junction improvements.	Fewer environmental issues	Noted, and recognised in current assessment.		

Site 3	Response	Site 4	Response	Site 5	Response	Site 6	Response	Other	Response
Green Belt	It is noted that the site is within the Green Belt. Transport infrastructure is not an inappropriate landuse within the Green Belt where the need for such infrastructure has been demonstrated. Full Green Belt assessment will be required if this site were to be selected.	Congestion at access	Junction improvements will be required to minimise congestion. Further work will be required at detailed design.	Opportunity for connectivity to Science Park	Noted as a potential benefit, subject to provision of bus service along this route.	Stated as Bourn Airfield but actually at Highfields Caldecote	Noted, site always intended to be located at suitable position within proposed development area.		
Exit east too close to Coton / Predetermines off line solution / not considered bus exit onto Madingley Hill.	Exit shown assumes off line bus route. Final layout and design dependant on choice of bus way and detailed design and environmental assessment.	National Trust covenants	Covenants and any other property matters will be adressed at time of land acquisition.	Possible rat running through Dry Drayton	Noted as a potential disbenefit, which applies to all sites and would need to be mitigated through traffic calming / signing etc...	Adverse light impact on Highfields Caldecote	Noted, mitigation to be considered during scheme development.		
Why were top 3 sites from MM study not selected? Madingley Mulch sites wouldn't and shouldn't have been on shortlist	It was decided the best sites from each of the identified "zones" (Madingley Mulch, central area and western area) would be taken forward to provide a robust spread of sites.	Rejected by everyone consulted	Noted.	Minimum impact on communities	Benefits can be seen in reduced impact on landscape and SSSI, although additional disbenefits to local residents.	Adverse impacts on traffic due to rat running through Caldecote, Bourn and Knapwell from A14	Noted as a potential disbenefit, which applies to all sites and would need to be mitigated through traffic calming / signing etc...		
Rat running likely through Madingley from A14 access road and Hardwick to reach the site: need traffic control/calming	Noted as a potential disbenefit, which applies to all sites and would need to be mitigated through traffic calming / signing etc...	Exit east too close to Coton / Predetermines off line solution / not considered bus exit onto Madingley Hill.	Exit shown assumes off line bus route. Final layout and design dependant on choice of bus way and detailed design and environmental assessment.	Blue bridge over A428 from Hardwick: good pedestrian, cycle and mobility access	Noted.	Operationally blocks access of route for existing bus service	Existing services would be amended as required.		
National Trust covenants	Covenants and any other property matters will be adressed at time of land acquisition.	Why were top 3 sites from MM study not selected? Madingley Mulch sites wouldn't and shouldn't have been on shortlist	It was decided the best sites from each of the identified "zones" (Madingley Mulch, central area and western area) would be taken forward to provide a robust spread of sites.	May require additional buses to operate a frequent/timely service	Noted.	Presupposes it is built	No decision made at this stage.		
Gradient/hillside makes expansion impractical	This would need to be considered during the design but the current layout is located on a relatively flat plateau and it is considered that a suitable design could be achieved, particularly by using the site adjacent to the road to minimise how far south the site is to be located. Noted that expansion could be limited.	Research into adjacent wood	To be assessed at Environmental Impact Assessment.	Westbound buses may get delayed by traffic accessing the site	Issue to be addressed at detailed design stage if problems identified.				

Site 3	Response	Site 4	Response	Site 5	Response	Site 6	Response	Other	Response
No cars next to a reservoir?	It is not anticipated that the presence of the site or associated traffic would impact on the reservoir. Suitable drainage and environmental systems can be designed to avoid possible impacts. Subject to statutory consultation with water company / Environment Agency.	Consideration for a priority for a bus tickets inclusion in City Zone would be needed?	To be considered when dealing with Bus operations.	Capable of better landscaping	Noted, to be developed during scheme design.				
Wrong side of the road	Either side of the road has benefits and disbenefits. Southern side is further from SSSI.	Gradient/hillside makes expansion impractical	This would need to be considered during the design but the current layout is located on a relatively flat plateau and it is considered that a suitable design could be achieved, particularly by using the site adjacent to the road to minimise how far south the site is to be located. Noted that expansion could be limited.	Will reduce volume of traffic on Madingley Mulch and journey times for commuters	Noted.				
Direction of wind from SW will impact SSSI	Not considered specifially under the extent of current assessment. To be addressed at Environmental Impact Assessment Stage.	Community Assessment by consultants on historic environment is a joke	All assessments undertaken by appropriately qualified specialists.	Concern over flooding	Flood maps have been reviewed and the site is not located within an area associated with flood risk.				
		Negative on bats from SSSI due to lighting as owls eat bats	Noted, to be further assessed at Environmental Impact Assessment Stage.	Correct side of the road	Either side of the road has benefits and disbenefits. Southern side is further from SSSI.				
		Access back onto A428/Science Park impossible	Primary scheme objective is to improve access from the west and the proposed development sites in that area. Other Park & Ride sites are being considered around Cambridge.	Need good priority into the city	Noted, required for all sites.				
		Direction of wind from SW will impact SSSI	Not considered specifially under the extent of current assessment. To be addressed at Environmental Impact Assessment Stage.						
		62m height: how to mitigate?	Noted, planting around site assumed, further mitigation to be considered at EIA Stage.						

Source: Mott MacDonald

5.4 Option Scores

Table 5 below shows a summary of the revised scores following the Stage 2 Assessment. More detail can be found in Appendices L and M.

Table 6: Stage 2 Option Scores

Number	Name	1A. High Level Theme – Policy Alignment	1B. Intermediate Theme - Benefits	1C. Operational Theme - Deliverability	Average
		Final score (-3 to 3 scale)	Final score (-3 to 3 scale)	Final score (-3 to 3 scale)	
0	Existing Madingley Road Park and Ride	0.62	0.28	-0.08	**0.27**
3	Madingley Mulch South West (often referred to as water works site)	1.09	1.03	-0.73	**0.47**
4	Madingley Mulch South East (often referred to as Crome Lea)	1.09	0.92	-0.73	**0.43**
5	Scotland Farm	0.96	1.01	-0.48	**0.50**
6	Bourn Airfield	1.09	0.96	-0.65	**0.47**

5.5 Summary of Stage 2 Findings

From the previous phase of the work we selected 5 sites to go forward with.

- Site 0 Madingley Road
- Site 3 Waterworks
- Site 4 Crome Lea
- Site 5 Scotland Farm
- Site 6 Bourn Airfield

Having undertaken further research and development, the following initial conclusions have been drawn.

Madingley Road is in a developed area and space constrained. Some expansion of the site to add additional spaces could be undertaken but would not address the anticipated level of demand. The site is in the Green Belt, and the impact of the loss of planting needed to add these spaces would ned to be fully considered to determine whether double-decking is likely to be acceptable. The issue of ownership and a limited lease is also a risk. Moreover, this site does not enable incoming traffic to divert onto Buses west of the M11. Madingley Road will remain in the assessment as a low-cost comparator for scheme appraisal purposes but does not fulfil the requirements of a do-something scheme.

Crome Lea has been assessed to be less desirable than the Waterworks site on both environmental and traffic grounds. Specifically, there is a greater visual impact on surrounding areas including houses on Madingley Road and Coton Village as well as being visible to a large area of open landscape to the south and south east, including strategic views from Red Meadow Hill and Madingley Rise. The Waterworks site is also further from the Madingley Wood SSSI, and all access and egress traffic to Crome Lea would need to transit Madingley Mulch roundabout.

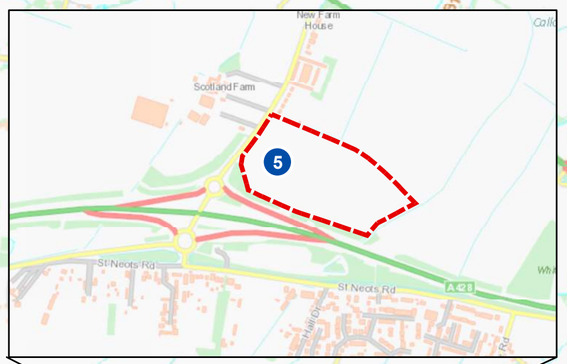
Similarly, having reviewed access and egress issues, Bourn Airfield is considered less desirable than Scotland Farm given the likely pressure which would be put on the St Neots Road and the roundabouts connecting to the A428 by the proposed residential development. Modest parking provision for cyclists and disabled drivers adjacent to bus stops within the development itself, and potentially additional parking to meet local needs, would be desirable to maximise the use of the busway by residents, and to reduce external trip-making, but the additional pressure of traffic generated by the Park and Ride would not be helpful when considered cumulatively against the impact of the development itself.

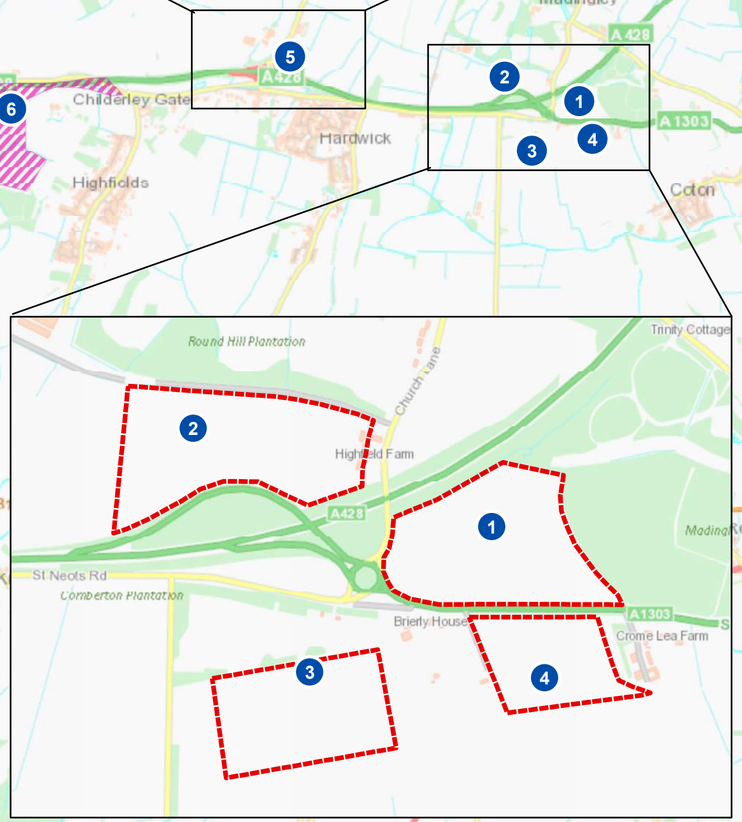
Therefore, the two sites which merit further consideration are Scotland Farm and the Waterworks. Of these, both have strengths and weaknesses. Scotland Farm has less visual impact on the wider countryside but is in close proximity to a small number of existing houses just north of the site on Scotland Road which would be impacted. The Waterworks is already developed in places and there is existing development activity with associated visual impact associated with a radio mast and nearby street-lighting. Scotland Farm is also less well connected to the proposed off-line busway. Both sites lie in the Green Belt but Scotland Farm is located to the edge of the Green Belt and has a greater visual impact outside the Green Belt. The Waterworks site is predicted to be more heavily used than Scotland Farm so offers greater potential transport benefits and opportunities for park and cycle to the city centre.

Mitigation measures for any outstanding issues will be developed in advance of public consultation.

A. Park and Ride Location plan

Ref	Description
0	Existing Madingley Rd P&R
1	Madingley Mulch North East
2	Madingley Mulch North West
3	Madingley Mulch South West
4	Madingley Mulch South East
5	Scotland Farm
6	Bourn Airfield
7	North of Cambourne
8	Caxton Gibbet





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Key to Symbols

- Planned new settlements
- Cambridge areas of growth
- Existing busway
- Existing P&R Sites
- Potential area of search for outer P&R locations
- Indicative potential site boundary

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	03/05/2017	LDG	Initial draft for discussion only - to be researched	TF	JB

Title: Cambourne to Cambridge Park & Ride Study
Potential P&R Locations

Drawn	J.Eades	JE
Checked	T.Fawcett	TF
Approved	J.Baker	JB

Scale at A2: 1:40,000

Drawing Number: 349260-MMD-00-XX-GIS-Y-Location Map-001

Security	Status	Rev
STD	PRE	P1

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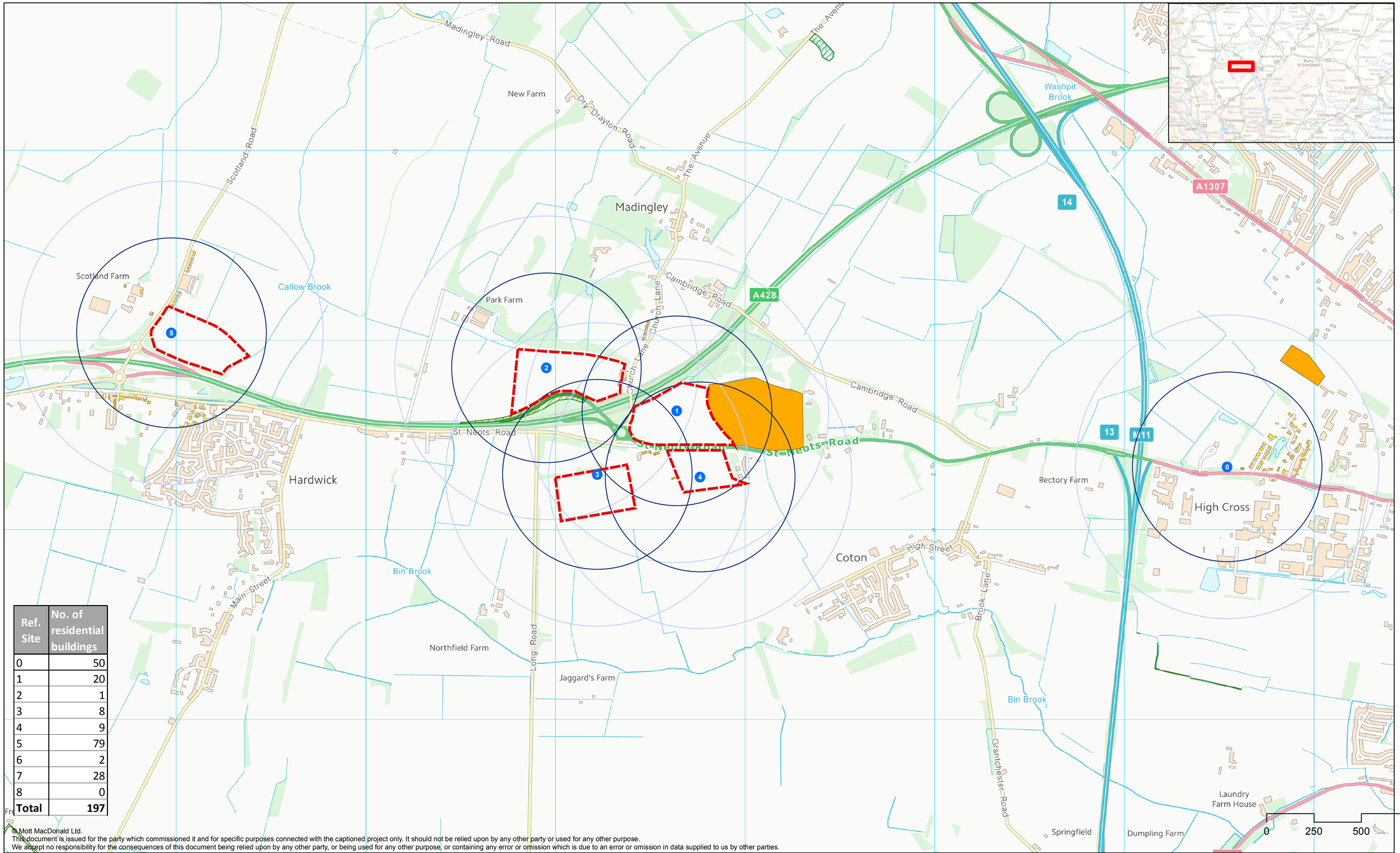
B. **Cambourne to Cambridge Route Options**

Scheme	Level of intervention	Brief description
Option 1	Low	Improvement to bus services, which will run along existing roads. No bus priority is proposed on the existing A428 dual carriageway. Signalisation of Madingley Mulch roundabout Eastbound bus lanes from Madingley Mulch roundabout to Lady Margaret Road.
Option 2	Medium	A new segregated bus route linking Cambourne and the proposed Bourn Airfield new settlement. Continues along St Neots Road with bus priority measures to the A1303 / A428 junction; from here a new segregated bus route going north-east connecting to Madingley Road just west of the M11. Eastbound bus lane on Madingley Road to Lady Margaret Road.
Options 3 and 3a	High	A new segregated dedicated bus route connection between Cambourne and Bourn Airfield before running either south of Hardwick (Option 3) or in between the St Neots Road and the A428 (Option 3) to Madingley Mulch roundabout. From here a new segregated dedicated bus route running north of Coton, across the M11 at a new bridge, and thence to Grange Road, with a connection along the way to the West Cambridge University site. Also allows for a high-quality segregated cycle route.
Option 4	Medium	Segregated bus route linking Cambourne and Bourn Airfield. The route continues along St Neots Road with bus priority measures to the A1303 / A428 junction. From here a new off line segregated bus route going north-east from connecting in to Madingley Road west of the M11 bridge. Uses the existing bridge to cross the M11 and using route through West Cambridge to Grange Road.
Option 6		New tidal bus lane along the A1303 between the Madingley Mulch roundabout and High Cross, open to eastbound vehicles in the AM peak and westbound vehicles in the PM peak as a general rule.

C. Stage 1 Constraints Mapping



Ref. Site	No. of residential buildings
0	50
1	20
2	1
3	8
4	9
5	79
6	2
7	28
8	0
Total	**197**

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Key to Symbols

- Site reference point for potential new P & R sites
- Indicative P & R site boundary
- Site 500m buffer
- Site 800m buffer
- Residential buildings within 500m of the sites
- Wildlife sites
- Site of Special Scientific Interest (SSSI)

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
B	05/07/2017	JE	Second Issue	EH	TF

Title: Cambourne to Cambridge Park & Ride Study
Noise and Air Quality Receptors
East Sheet,
Sheet 1 of 2

Drawn	H Pickard	HP
Checked	E Hansen	EH
Approved	T Fawcett	TF

Scale at A2: 1:13,000

Drawing Number: 377897-MMD-00-XX-GIS-Y-002

Security	Status	Rev
STD	PRE	P1

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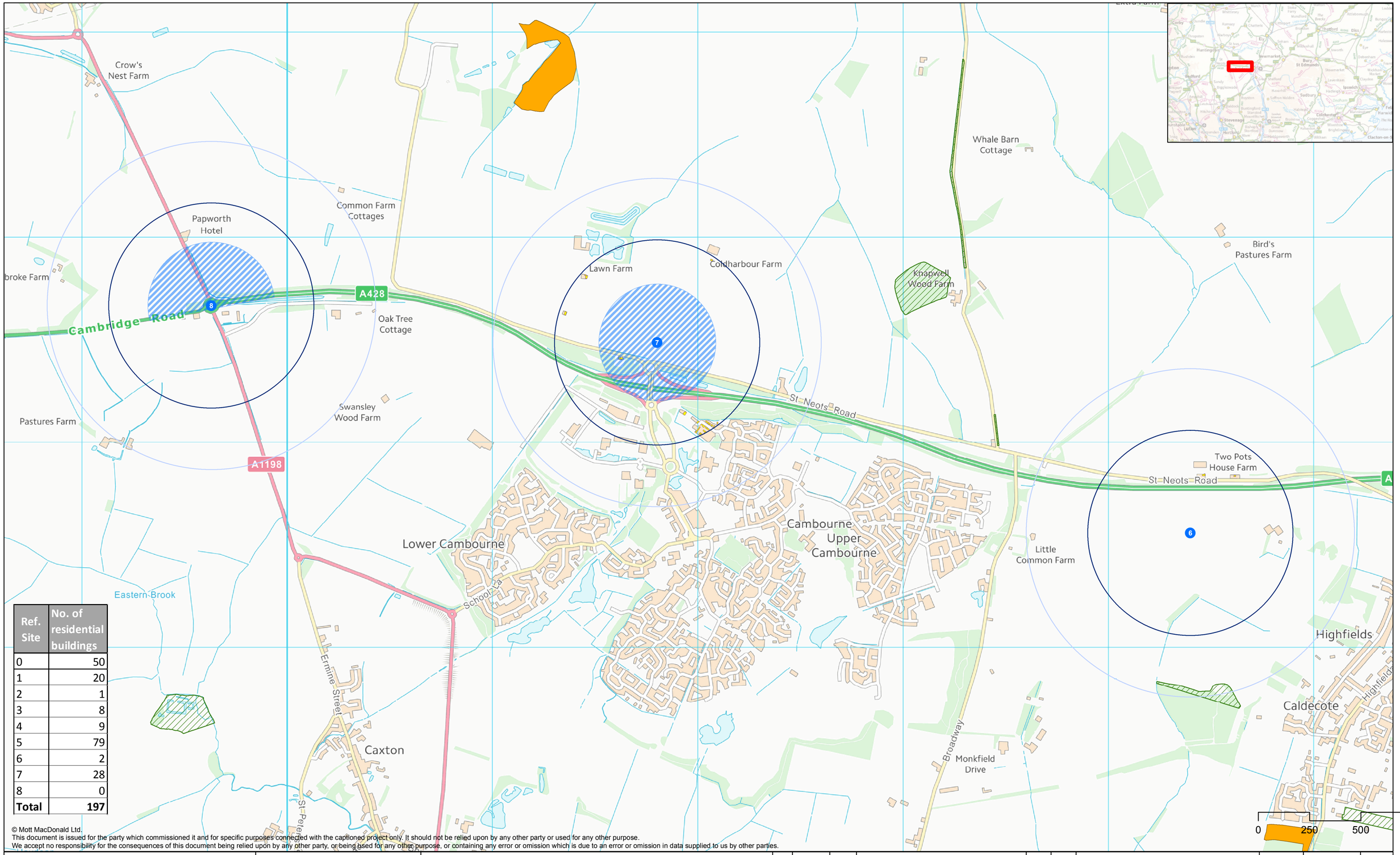

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3	8
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5	79
6	2
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8	0
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Key to Symbols

- Site reference point for potential new P & R sites
- Site 500m buffer
- Site 800m buffer
- Potential area of search for outer P&R locations
- Residential buildings within 500m of the sites
- Wildlife sites
- Site of Special Scientific Interest (SSSI)

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
B	05/07/2017	JE	Second Issue	EH	TF

Title: Cambourne to Cambridge Park & Ride Study
Noise and Air Quality Receptors
West Sheet,
Sheet 2 of 2

Drawn	H Pickard	HP
Checked	E Hansen	EH
Approved	T Fawcett	TF

Scale at A2: 1:12,000

Drawing Number: 377897-MMD-00-XX-GIS-Y-003

Security	Status	Rev
STD	PRE	P1

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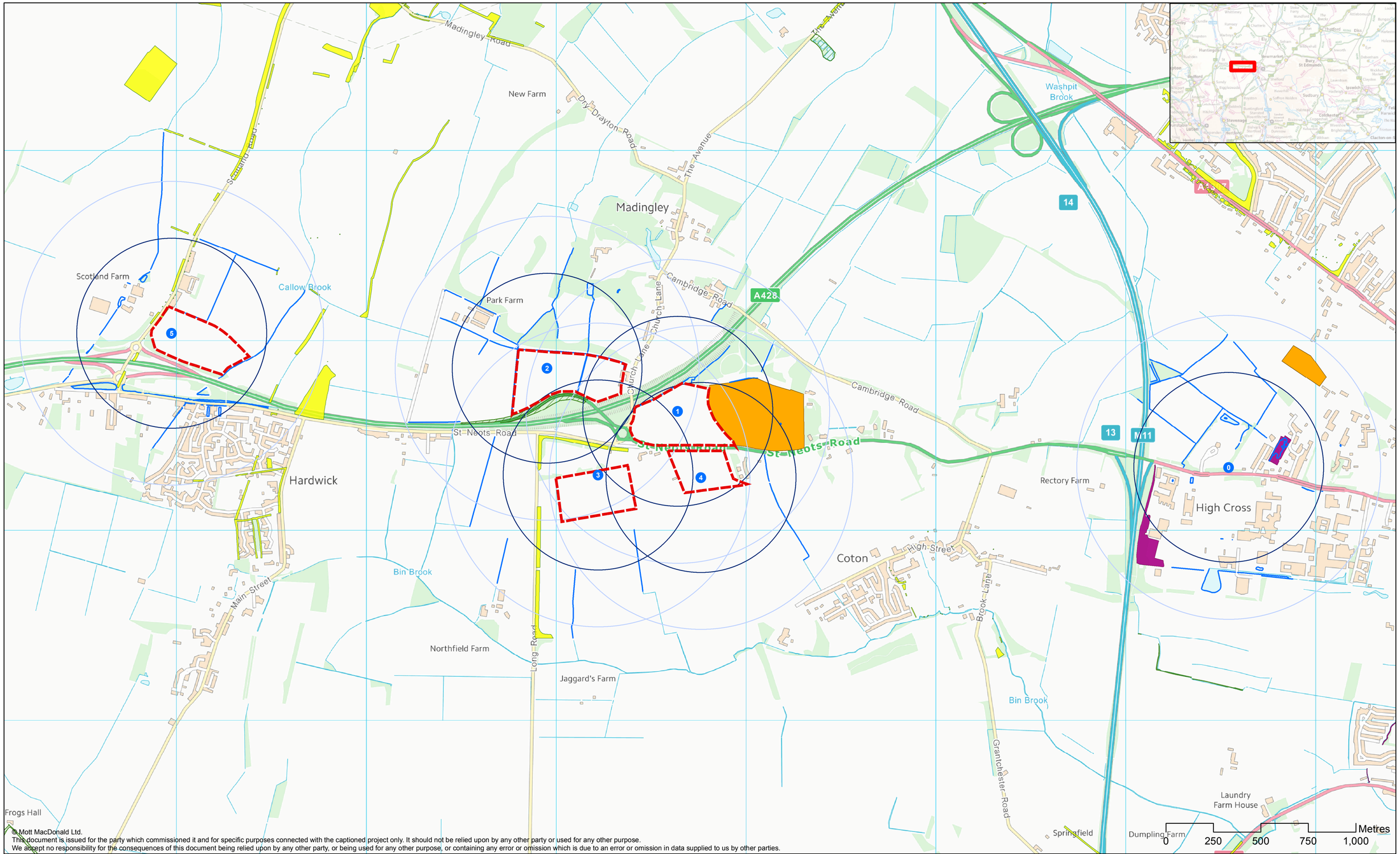

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Key to Symbols

- Site reference point for potential new P & R sites
- Indicative P & R site boundary
- Site 500m buffer
- Site 800m buffer
- Rivers and streams within 100m of 500m site buffer
- Tree preservation order (TPO)
- City wlidlife sites
- Wildlife sites
- Site of Special Scientific Interest (SSSI)

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
B	05/07/2017	HP	Second Issue	EH	TF

Title: Cambourne to Cambridge Park & Ride Capability Study Ecological Constraints East Sheet, Sheet 1 of 2

Drawn	H Pickard	HP
Checked	E Hansen	EH
Approved	T Fawcett	TF

Scale at A2: 1:13,000

Drawing Number: 377897-MMD-00-XX-GIS-Y-004

Security	Status	Rev
STD	PRE	P1

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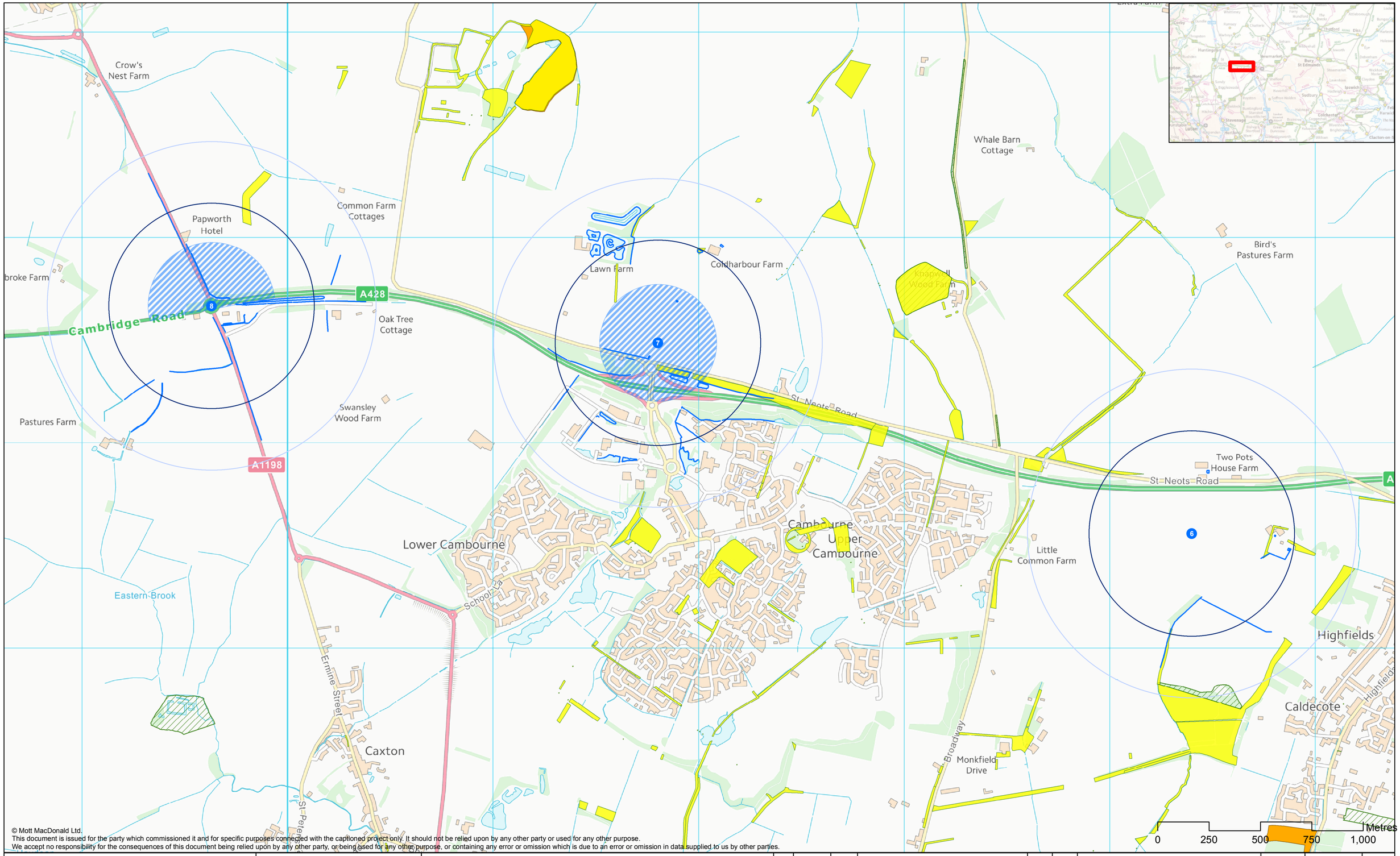

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Client

Cambridgeshire County Council

Key to Symbols

- Site reference point for potential new P & R sites
- Site 500m buffer
- Site 800m buffer
- Potential area of search for outer P&R locations
- Rivers and streams within 100m of 500m site buffer
- Tree preservation order (TPO)
- Wildlife sites
- Site of Special Scientific Interest (SSSI)

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
B	05/07/2017	HP	Second Issue	EH	TF

Title: Cambourne to Cambridge Park & Ride Capability Study Ecological Constraints West Sheet, Sheet 2 of 2

Drawn	H Pickard	HP
Checked	E Hansen	EH
Approved	T Fawcett	TF

Scale at A2: 1:12,000

Drawing Number: 377897-MMD-00-XX-GIS-Y-005

Security	Status	Rev
STD	PRE	P1

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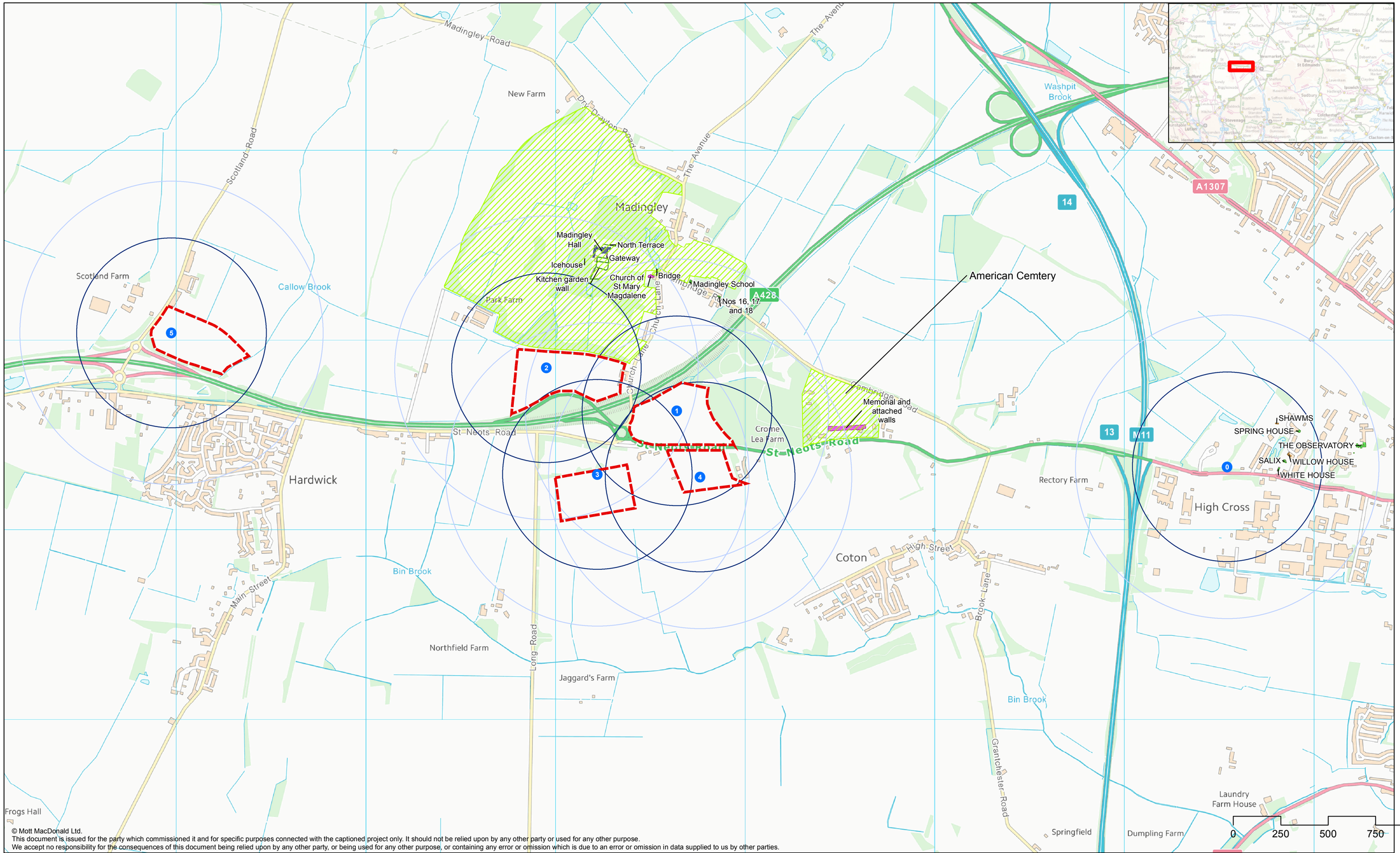

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Key to Symbols

- Site reference point for potential new P & R sites
- Indicative P & R site site boundary
- Site 500m buffer
- Site 800m buffer
- Registered Parks and Gardens

Listed buildings within 800m of the sites

- Grade I
- Grade II
- Grade II star
- Grade II*

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
B	05/07/2017	HP	Second Issue	EH	TF

Title: Cambourne to Cambridge Park & Ride Study
Heritage and Archaeological Assets
East Sheet,
Sheet 1 of 2

Drawn	H Pickard	HP
Checked	E Hansen	EH
Approved	T Fawcett	TF

Scale at A2: 1:13,000

Drawing Number: 377897-MMD-00-XX-GIS-Y-006

Security	Status	Rev
STD	PRE	P1

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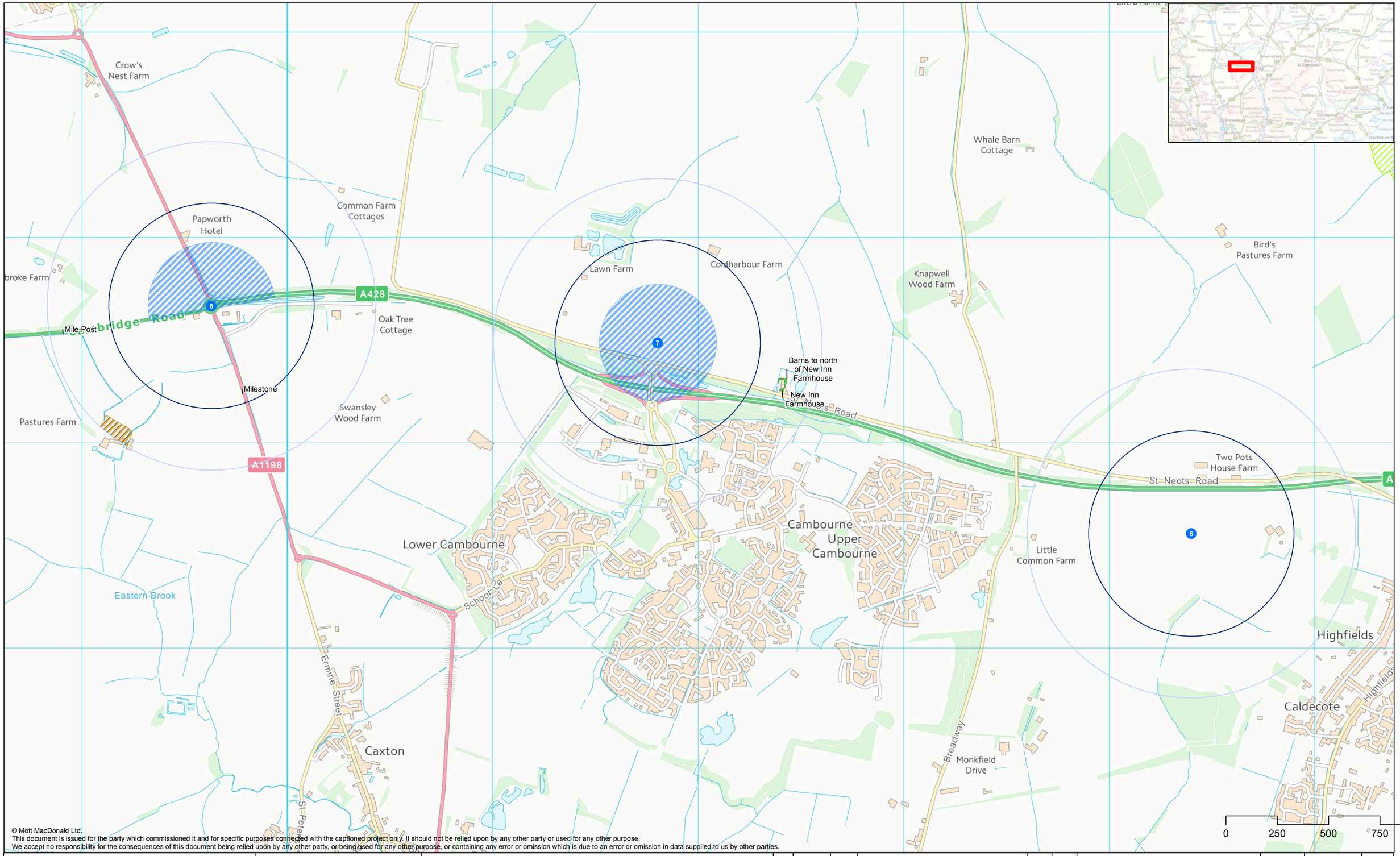

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Key to Symbols

- Site reference point for potential new P & R sites
- Site 500m buffer
- Site 800m buffer
- Potential area of search for outer P&R locations
- Scheduled Monuments
- Registered Parks and Gardens

Listed buildings within 800m of the sites
- Grade II

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
B	05/07/2017	HP	Second Issue	EH	TF

Title: Cambourne to Cambridge Park & Ride Study
Heritage and Archaeological Assets
West Sheet,
Sheet 2 of 2

Drawn	H Pickard	HP
Checked	E Hansen	EH
Approved	T Fawcett	TF

Scale at A2: 1:12,000

Drawing Number: 377897-MMD-00-XX-GIS-Y-007

Security	Status	Rev
STD	PRE	P1

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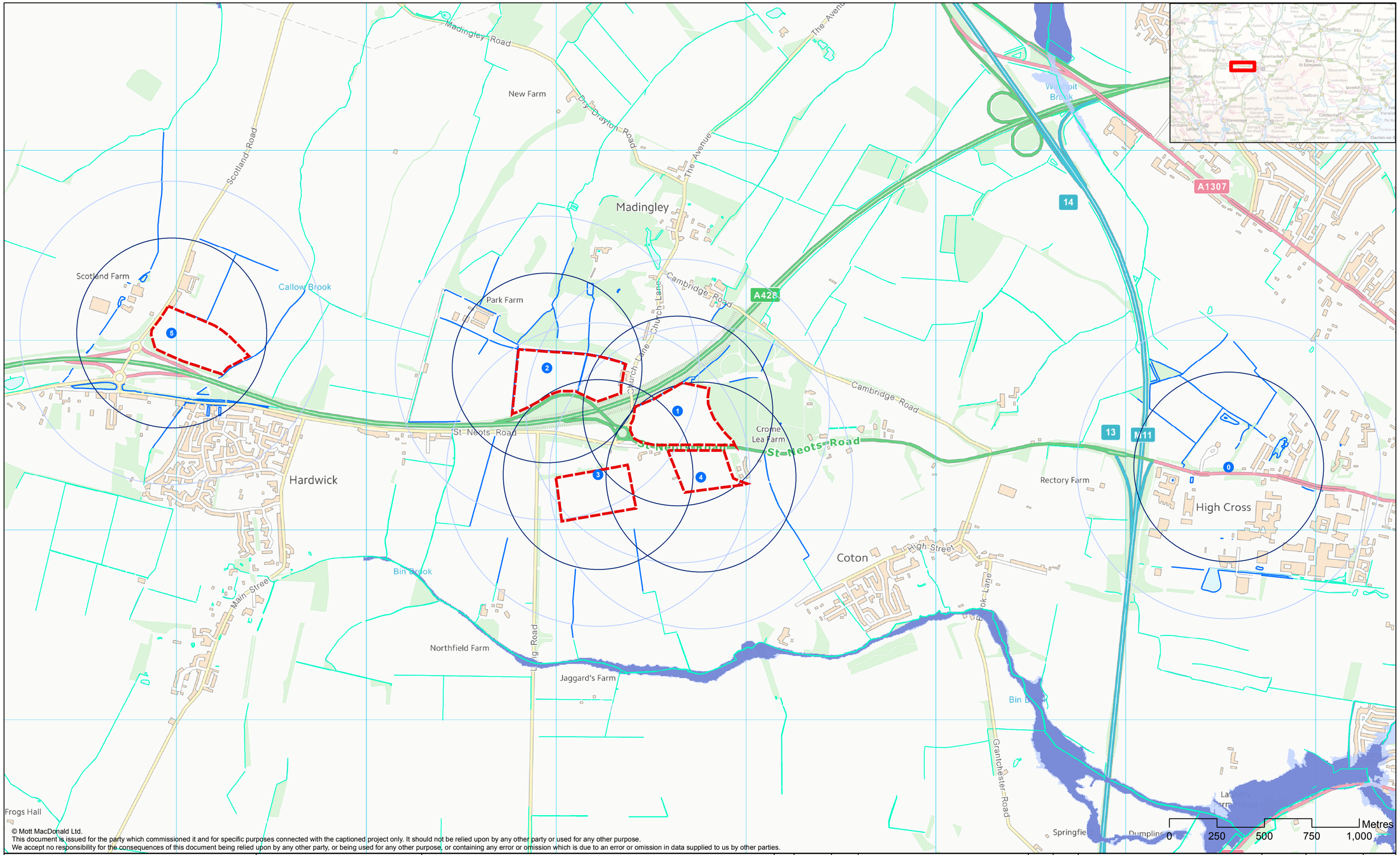

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Key to Symbols

- Site reference point for potential new P & R sites
- Indicative P & R site boundary
- Site 500m buffer
- Site 800m buffer
- Rivers and streams within 100m of 500m site buffer
- Rivers and streams
- Flood zone 3
- Flood zone 2

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
B	05/07/2017	JE	Second Issue	EH	TF

Title: Cambourne to Cambridge Park & Ride Study
Ground Conditions: Hydrological Constraints
East Sheet,
Sheet 1 of 2

Drawn	H Pickard	HP
Checked	E Hansen	EH
Approved	T Fawcett	TF

Scale at A2: 1:13,000

Drawing Number: 377897-MMD-00-XX-GIS-Y-008

Security	Status	Rev
STD	PRE	P1

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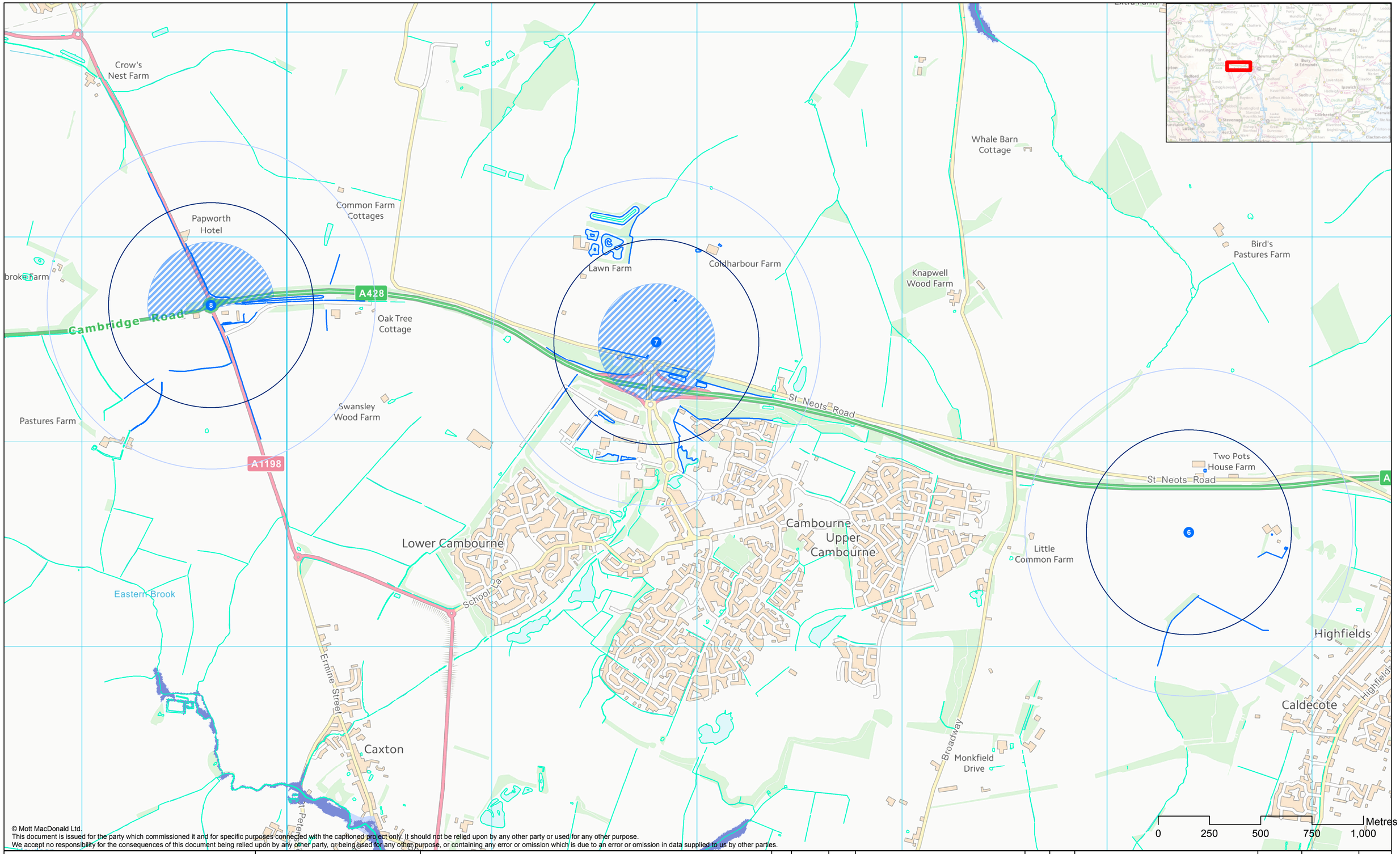

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- Flood zone 2

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
B	05/07/2017	JE	Second Issue	EH	TF

Title: Cambourne to Cambridge Park & Ride Study
Ground Conditions: Hydrological Constraints
West Sheet,
Sheet 2 of 2

Drawn	H Pickard	HP
Checked	E Hansen	EH
Approved	T Fawcett	TF

Scale at A2: 1:12,000

Drawing Number	Security	Status	Rev
377897-MMD-00-XX-GIS-Y-008	STD	PRE	P1

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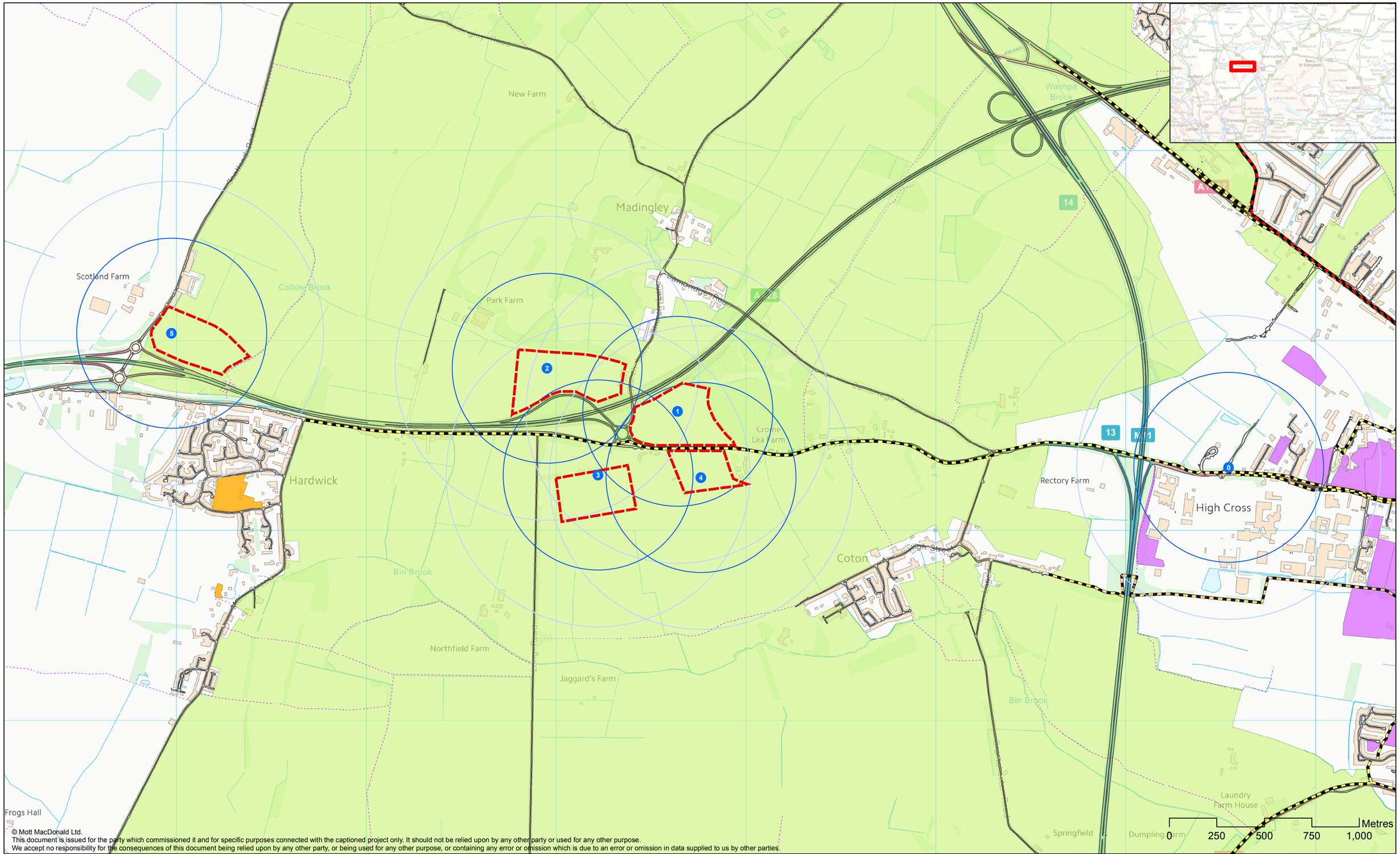

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Key to Symbols

- Site reference point for potential new P & R sites
- Indicative P & R site boundary
- Site 500m buffer
- Site 800m buffer
- Public rights of way (PROW)
- Sustrans national cycle network
- Pavement unsegregated
- Roads or tracks
- Local green space
- Protected open space
- Green belt

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
A	05/07/2017	JE	Second Issue	EH	TF

Title: Cambourne to Cambridge Park & Ride Study
Social and Community Constraints East Sheet,
Sheet 1 of 2

Drawn	H Pickard	HP
Checked	E Hansen	EH
Approved	T Fawcett	TF

Scale at A2: 1:13,000

Drawing Number: 377897-MMD-00-XX-GIS-Y-010

Security	Status	Rev
STD	PRE	P1

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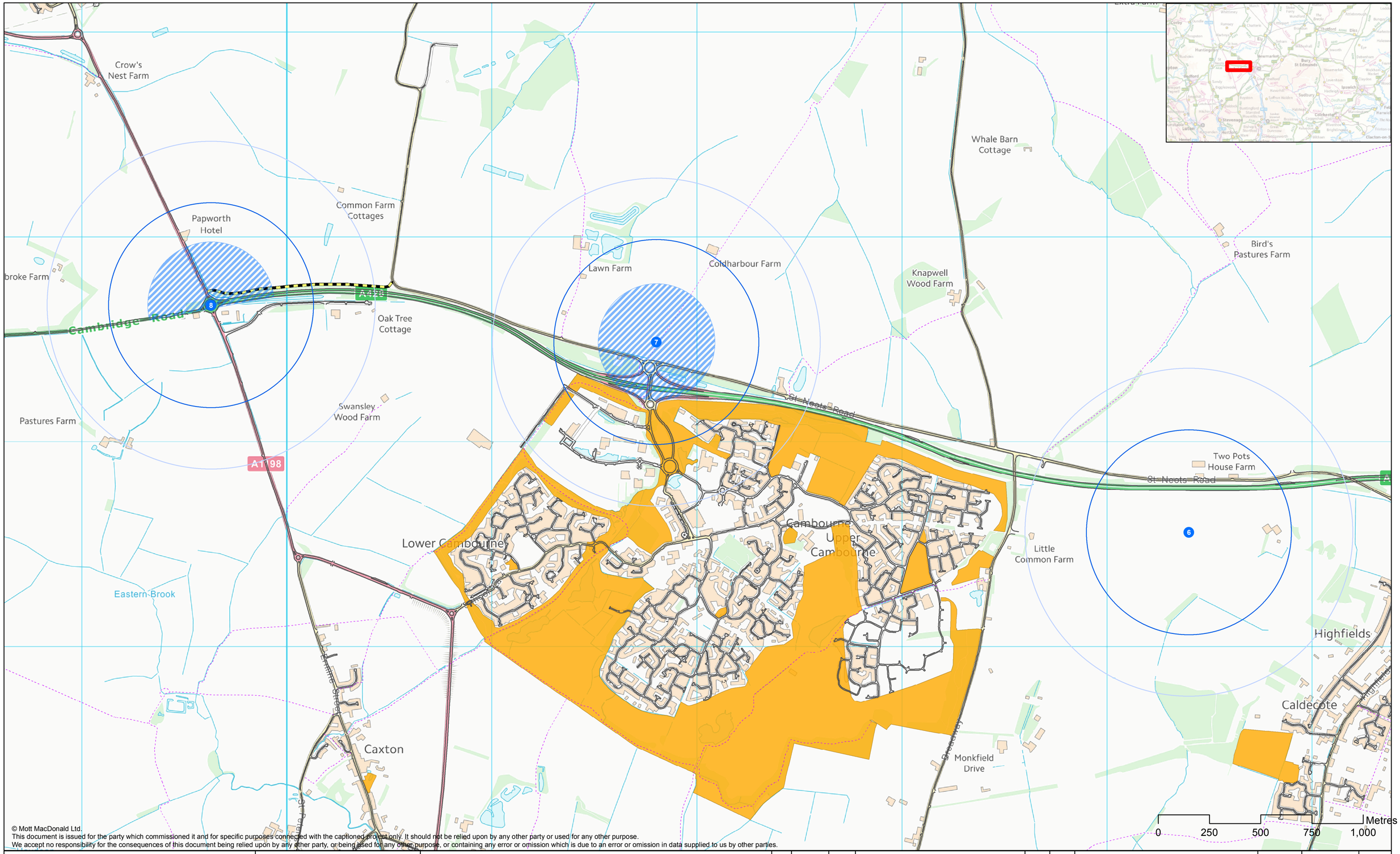

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- Potential area of search for outer P&R locations
- Public rights of way (PROW)
- Pavement unsegregated
- Roads or tracks
- Local green space

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
A	05/07/2017	JE	Second Issue	EH	TF

Title: Cambourne to Cambridge Park & Ride Study
Social and Community Constraints West Sheet, Sheet 2 of 2

Drawn	H Pickard	HP
Checked	E Hansen	EH
Approved	T Fawcett	TF

Scale at A2: 1:12,000

Drawing Number: 377897-MMD-00-XX-GIS-Y-011

Security	Status	Rev
STD	PRE	P1

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D. Stage 1 Environmental Impact Tables

D.1 Stage 1 Environmental Constraints Review

Scoring:

- -3 High Adverse: Significant adverse effects, difficult to mitigate
- -2 Medium Adverse: Potentially significant adverse effects, can be mitigated
- -1 Low Adverse: Small number of adverse effects, can be mitigated
- 0 Neutral
- 1 Low Beneficial: Small number of beneficial effects
- 2 Medium Beneficial: Potentially significant beneficial effects
- 3 High Beneficial: Significant beneficial effects

Table 7: Stage 1 Environmental Constraints Review

	Noise	Air Quality & Greenhouse Gases	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
Criteria Stage 1	Proximity to receptors (dwellings, hospitals/nursing homes, designated sites (SSSI, LNR, City Wildlife, Country Wildlife, Wildlife Sites, SAC, SPA)), number of receptors.	Proximity to receptors (residential areas, designated sites, AQMA), number of receptors [*Greenhouse Gases to be considered at later stage*]	Proximity to designated areas, sensitive habitats (SSSI, LNR, City Wildlife, Country Wildlife, Wildlife Sites, SAC, SPA), protected species (including bats), and TPO	Proximity to Listed buildings and ancient monuments. American Cemetery potential effects on setting	Flood Zones, local flooding	Watercourses within 100m	GSPZ, Superficial and Bedrock Aquifers, Groundwater Vulnerability Zones.	No of receptors (local residents) affected. Severance by access roads, impact on PRoWs. Loss of recreational space/open space: Green Belt, Country Park, Local Green Space, Protected Open Space
Map Title	Noise & Air Quality Receptors		Heritage and Archaeology Assets	Ground Conditions: Hydrological Constraints	Social and Community Constraints			
Data Sources:	Magic.gov.uk, OS data	Defra, OS data, Magic.gov.uk	Magic.gov.uk, GIS data provided by client	Historic England	Environment Agency	Environment Agency	Environment Agency	GIS data provided by client
Reference for Significance Scoring	Sensitivity: Within 50m – high - likely a constraint	Sensitivity: Proximity to residential dwellings;	Sensitivity: Site within designated area/habitat or protected	Sensitivity: Heritage assets within or adjacent to site – High	Sensitivity: FRZ 3- High risk – medium constraint	Sensitivity: High - Watercourse crosses site	Sensitivity: Site over Aquifer – - low	Sensitivity: Over 10 Residential dwellings

	Noise	Air Quality & Greenhouse Gases	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
	depending on mitigation options; 100m – medium – potentially a constraint depending on sensitivity; over 100m – unlikely to be affected, not a constraint. Magnitude: >0-10 dwellings - low >11-20 dwellings and/or designated site- medium >20 dwellings and/or hospital/health care facilities home – high	Proximity to designated site; Proximity to AQMA – beyond 200m no constraint Magnitude: Low in all cases – levels are unlikely to exceed existing Air Quality Objectives with the proposed development in place	species present – high; sites within 500m medium – assess mitigation options; over 500m – low – unlikely to be a significant constraint, consider at Stage 2 Magnitude: Designated Site, protected species – High- Zone of Influence – Medium – may require mitigation No designation - low	HA within 450m – high to medium– Listed Building - 550m or less away with screening; Archaeology – 800m – low Magnitude: HA within site and would require removal – high HA – adjacent to site/ potentially within site – medium HA screened from site or over 450m - low	FRZ 1-2 – low constraint Magnitude: Local surface runoff can be mitigated through design e.g. SUDS - low	Medium - Watercourse adjacent to site Low - waterbody within 100m Magnitude: All effects can be mitigated/minimized through design No watercourses within 100 m - low	Site over Aquifer and within a Groundwater Vulnerability Zone -medium Magnitude: All effects can be mitigated/minimized through design or construction environmental management measures - low	affected – High Less than 10 dwelling, or Schools, hospitals - medium offices - low Magnitude: Severance of dwellings due to access roads - High Redirection of PRoW required, loss of Green Belt – medium Edge of Green Belt/no Green Belt - low

	Noise	Air Quality & Greenhouse Gases	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
Site 0 Existing Madingley Rd Park & Ride	No hospitals/health care facilities within 500m of site Large number of residential dwellings within 500m of site. Baseline noise level due to existing Park & Ride. No designated site within 100 m	Large number of residential dwellings within 500m of site No designated site within 200m. Defra projected background concentrations for year 2017 show concentrations of NO_2, PM_{10} and $PM_{2.5}$ do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within	Site is within 500m of a City Wildlife Site and within 800m of the Traveller's Rest Pit SSSI. No Granted European Protected Species Applications (England) for bats within 800m of the site. Scheme is unlikely to adversely affect these features due existing setting within urban area. No TPO within expected site area, Removal of trees with TPO therefore unlikely.	4 listed buildings within 550m to the east of the site: Shawms, Grade II*, 330m, Salix, Grade II, 360m, Willow House, Grade II*, 370m, Spring House, Grade II, 430m, White House, Grade II, 430m No scheduled monument within 800m. Potential adverse effect on setting of heritage assets. However, view towards proposed scheme is likely to be screened by other buildings and existing trees. Therefore, any adverse effects are likely to be minimal.	The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected.	No Watercourses within close proximity of the site. A pond is located to the north adjacent to the site. Works are expected to remain within the footprint of the existing Park & Ride, any potential effects on watercourse can be mitigated through design and construction and environmental management measures.	The site is not within a Groundwater Source Protection Zone (GSPZ) The site is over or adjacent to a Principal Bedrock Aquifer. The site is over an undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone.	Site outside of Green Belt. No loss of designated open space, no PRoW diversion required.

	Noise	Air Quality & Greenhouse Gases	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
		200 metres of any of the proposed sites.						
Rating Site 0	**-1**	**-1**	**0**	**-1**	**0**	**0**	**-2**	**0**
Site 1 Madingley Mulch North-East	No hospitals/health care facilities within 500m of site Few or no residential dwellings within 500m of site. Site adjacent to the Madingley Wood SSSI - potential to cause adverse effect on the SSSI.	Few or no residential dwellings within 500m of site. Site adjacent to the Madingley Wood SSSI - potential to cause a significant adverse effect on the SSSI. There are no other proposed sites within 200m with an ecological designation. Defra projected background concentrations for year 2017 show concentrations of NO_2, PM_{10} and $PM_{2.5}$ do not exceed the relevant air quality objectives at any of the potential sites and there	Site adjacent to the Madingley Wood SSSI - potential to cause a significant adverse effect on the SSSI in terms of Air Quality, Noise and Lighting. No Granted European Protected Species Applications (England) for bats within 800m of the site. However, Madingley Wood has been reported to be habitat for the rare Barbastrelle bats. Potential for significant effects. No TPO within expected site area, Constraint due to trees with	No listed buildings within 550m of site, no scheduled monument within 800m. Consider setting of American Cemetery 600m east.	The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected.	Watercourse adjacent to site. No watercourse within or adjacent to site. Drains within 100m. Impacts can be minimized through design/Construction environmental Management measures.	The site is not within a Groundwater Source Protection Zone (GSPZ) The site is within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone.	Site in Green Belt, potential effects on openness and local community acceptance. No loss of designated open space, no PRoW diversion required.

	Noise	Air Quality & Greenhouse Gases	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
		is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200 metres of any of the proposed sites.	TPO therefore unlikely.					
Rating Site 1	**-2**	**-2**	**-3**	**-1**	**0**	**0**	**-2**	**-2**
Site 2 Madingley Mulch North West	No hospitals/health care facilities within 500m of site Few or no residential dwellings within 500m of site. Site boundary could be adjacent to residential dwellings.	Few or no residential dwellings within 500m of site. No designated site within 200m. Defra projected background concentrations for year 2017 show concentrations of NO_2, PM_{10}	Site within 800m to the Madingley Wood SSSI – potential for significant adverse effects on the SSSI in terms of Noise and Lighting likely to be minimal due to severance by existing A-road. No Granted European Protected Species	Grade II listed Statue of Albert, Prince Consort, at Madingley Hall located approximately 300m north of site. Consider setting of this asset. No scheduled monument within 800m of site.	The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions	Watercourse crosses site – minor impact on water body likely but can be minimized through design/ construction environmental management measures	The site is not within a Groundwater Source Protection Zone (GSPZ) The site is within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater	Site in Green Belt, potential effects on openness and local community acceptance. No loss of designated open space, no PRoW diversion required.

	Noise	Air Quality & Greenhouse Gases	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
	No designated site within 100m Minor residual effects possible.	and $PM_{2.5}$ do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200 metres of any of the proposed sites.	Applications (England) for bats within 800m of the site. However, Madingley Wood has been reported to be habitat for the rare Barbastrelle bats. Potential for significant effects along hedgerows connecting towards SSSI. Can be mitigated through design. No TPO within expected site area, Constraint due to trees with TPO therefore unlikely.		in terms of flooding issues is expected.		vulnerability zone.	
Rating Site 2	**-1**	**0**	**-2**	**-1**	**0**	**-2**	**-2**	**-2**
Site 3 Madingley Mulch South-West	No hospitals/health care facilities within 500m of site. Few or no residential dwellings	Few or no residential dwellings within 500m of site. No designated site within 200m Defra projected background concentrations	Site within 800m to the Madingley Wood SSSI – potential for significant adverse effects on the SSSI in terms of Noise and Lighting likely to be	No listed buildings within 550m of site, no scheduled monument within 800m	Site not within flood plain. Local runoff – can be mitigated through design e.g. SUDS	No watercourse within or adjacent to site. Drains within 100m. Impacts can be minimized	The site is not within a Groundwater Source Protection Zone (GSPZ) The site is within or adjacent to a Principal Bedrock Aquifer.	Site in Green Belt, potential effects on openness and local community acceptance. No loss of designated open space,

	Noise	Air Quality & Greenhouse Gases	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
	within 500m of site. Site boundary unlikely to be adjacent to site boundary. Noise effects likely to be mitigated through design.	for year 2017 show concentrations of NO_2, PM_{10} and $PM_{2.5}$ do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200m of any of the proposed sites.	minimal due to severance by existing A-road. No Granted European Protected Species Applications (England) for bats within 800m of the site. However, Madingley Wood has been reported to be habitat for the rare Barbastrelle bats. Potential for significant effects along hedgerows connecting towards SSSI. Can be mitigated through design. No TPO within expected site area, however trees along St Neots and Long Road are TPOs and could present a constraint for access roads.			through design.	The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone.	no PRoW diversion required.
Rating Site 3	**0**	**0**	**-2**	**0**	**0**	**0**	**-2**	**-2**

	Noise	Air Quality & Greenhouse Gases	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
Site 4 Madingley Mulch South-East	No hospitals/health care facilities within 500m of site. Few or no residential dwellings within 500m of site. Site boundary could be adjacent to residential dwellings. Site within 200m of Madingley Wood SSSI. Minor residual effects possible.	Few or no residential dwellings within 500m of site. Site within 200m of the Madingley Wood SSSI and have the potential to cause a significant adverse effect on the SSSI. There are no other proposed sites within 200m of an ecological designation. Defra projected background concentrations for year 2017 show concentrations of NO_2, PM_{10} and $PM_{2.5}$ do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development.	Site within 200m to the Madingley Wood SSSI – potential for adverse effects on the SSSI in terms of Air Quality and Lighting. No Granted European Protected Species Applications (England) for bats within 800m of the site. However, Madingley Wood has been reported to be habitat for the rare Barbastrelle bats. Potential for significant effects along hedgerows connecting towards SSSI. Can be mitigated through design. No TPO within expected site area, Constraint due to trees with TPO therefore unlikely.	No listed buildings within 550m of site, no scheduled monument within 800m Consider Setting of American Cemetery approximately 600m north east.	The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected.	No watercourse within or adjacent to site. Drains within 100m. Impacts can be minimized through design.	The site is not within a Groundwater Source Protection Zone (GSPZ) The site is within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone.	Site in Green Belt, potential effects on openness and local community acceptance. No loss of designated open space, no PRoW diversion required.

	Noise	Air Quality & Greenhouse Gases	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
		Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200 metres of any of the proposed sites.						
Rating Site 4	**-2**	**-2**	**-2**	**-1**	**0**	**0**	**-2**	**-2**
Site 5 Scotland Farm	No hospitals/health care facilities within 500m of site Large number of residential dwellings within 500m of site (Hardwick). Site boundary potentially located adjacent to residential dwelling.	Large number of residential dwellings within 500m of site. No designated site within 200m. Defra projected background concentrations for year 2017 show concentrations of NO_2, PM_{10} and $PM_{2.5}$ do not exceed the relevant air quality objectives at any of the potential sites and there is a large	No designated site within 800m of the site. No Granted European Protected Species Applications (England) for bats within 800m of the site. No TPO within expected site area, Constraint due to trees with TPO therefore unlikely.	Grade II listed feature Pump on South East Corner of Small Green located approximately 550m south-east of the site.	The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected.	Watercourse adjacent to/near/within site depending on final site boundary. Adverse construction effects possible but can be minimized through design/Construction environmental Management measures	The site is not within a Groundwater Source Protection Zone (GSPZ) The site is not within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is not within a groundwater vulnerability zone.	Site located within edge of Green Belt, minor potential for effects on openness. No loss of designated open space. Site lies close to PRoW – diversion may be required.

	Noise	Air Quality & Greenhouse Gases	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
		amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200m of any of the proposed sites.						
Rating Site 5	**-2**	**0**	**0**	**-1**	**0**	**-1**	**-1**	**-2**
Site 6 Bourn Airfield	No hospitals/health care facilities within 500m of site. Few or no residential dwellings within 500m of site. Site boundary could be adjacent to future residential dwellings	Few or no residential dwellings within 500m of site. No designated site within 200m. Defra projected background concentrations for year 2017 show concentrations of NO_2, PM_{10} and $PM_{2.5}$ do not exceed the relevant air quality	No designated site within 800m of the site. No Granted European Protected Species Applications (England) for bats within 800m of the site. Area with TPO within expected site area, however, this area can be avoided through design.	No listed buildings within 550m of site, no scheduled monument within 800m	The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of	Watercourse adjacent to/near/within site depending on final site boundary. Adverse construction effects possible but can be minimized through design/Construction environme	The site is not within a Groundwater Source Protection Zone (GSPZ) The site is within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater	Site outside of Green Belt. No loss of designated open space, no PRoW diversion required.

	Noise	Air Quality & Greenhouse Gases	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
	as site is allocated for developme nt. Effects likely to be mitigated through design.	objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200m of any of the proposed sites.	Constraint due to trees with TPO therefore unlikely.		flooding issues is expected.	ntal Manageme nt measures.	vulnerability zone.	
Rating Site 6	**0**	**0**	**0**	**0**	**0**	**-1**	**-2**	**0**
Site 7 North of Cambourne	No hospitals/he alth care facilities within 500m of site reference Few or no residential dwellings within 500m of site reference, boundary	Few or no residential dwellings within 500m of site.Defra projected background concentrations for year 2017 show concentrations of NO_2, PM_{10} and $PM_{2.5}$ do not exceed the	No designated site within 800m of the site. No Granted European Protected Species Applications (England) for bats within 800m of the site. Area with TPO along A428 and in field west of	No listed buildings within 550m of site, no scheduled monument within 800m.	The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS.	Watercour se adjacent to/near/wit hin site depending on final site boundary. Adverse constructio n effects possible but can be minimized	The site is not within a Groundwater Source Protection Zone (GSPZ) The site is not within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary	Site outside of Green Belt. No loss of designated open space. The site is crossed by a PRoW – diversion required.

	Noise	Air Quality & Greenhouse Gases	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
	site unlikely to be adjacent to residential properties. No designated site within 100 m.	relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200m of any of the proposed sites.	Scotland Road. May present a constraint for Access road design, however, this area can be avoided through design.		Therefore, no change in existing conditions in terms of flooding issues is expected.	through design/Construction environmental Management measures.	Superficial deposits Aquifer. The site is not within a groundwater vulnerability zone.	
Rating Site 7	**0**	**0**	**-1**	**0**	**0**	**-1**	**-1**	**-1**
Site 8 Caxton Gibbet	No hospitals/health care facilities within 500m of site reference Few or no residential dwellings within 500m of site reference,	Few or no residential dwellings within 500m of site. No designated site within 200m. Defra projected background concentrations for year 2017 show concentrations of NO_2, PM_{10}	No designated site within 800m of the site. No Granted European Protected Species Applications (England) for bats within 800m of the site. Area with TPO north east of site reference,	4 Features of Heritage Interest within 800m of the site. 4 Grade II listed features: Milestone TO south of Caxton Gibbet inn 450m south of site reference, Mile Post South of Pembroke Farm And West of	The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS.	Watercourse adjacent to/near/within site depending on final site boundary. Adverse construction effects possible but can be minimized	The site is not within a Groundwater Source Protection Zone (GSPZ) The site is not within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary	Site outside of Green Belt. No loss of designated open space, no PRoW diversion required.

	Noise	Air Quality & Greenhouse Gases	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
	boundary site unlikely to be adjacent to residential properties. No designated site within 100 m.	and $PM_{2.5}$ do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200m of any of the proposed sites.	however, this area can be avoided through design. Constraint due to trees with TPO therefore unlikely.	Caxton Gibbet Inn,660m west Mile Post Near Junction with Elsworth Rd, 900m east Dovecote TO North East of Caxton Pastures Farmhouse, 750m south west One Scheduled Monument (Moated Site AT Pastures Farm) around Dovecote site.	Therefore, no change in existing conditions in terms of flooding issues is expected.	through design/Construction environmental Management measures	Superficial deposits Aquifer. The site is not within a groundwater vulnerability zone.	
Rating Site 8	**0**	**0**	**0**	**-2**	**0**	**-1**	**-1**	**0**

Source: Mott MacDonald

E. Landscape and Visual Impact Review

E.1.1 Methodology

This review is a draft appraisal of the landscape and visual impacts of constructing and operating a new Park & Ride on sites 0 - 8. It is not a full landscape and visual impact assessment (LVIA) and therefore it does not comply with the Landscape Institute's methodology for LVIA, but was informed by it.

Background information used in the review was derived from:

- Two site visits in July and August 2017;
- A workshop with stakeholders at Cambourne Village College on 14 June 2017;
- A workshop with stakeholders at Comberton Sports and Arts Centre on 22 August 2017;
- The A428 Cambourne to Cambridge Better Bus Journeys Landscape and Planning Appraisal (Atkins, January 2017);
- Mapping provided by Atkins showing ground level sightlines for Options 3 and 5, as well as views from Coton (in Appendix K);
- Draft viewshed analyses by Mott MacDonald (in Appendix K) showing the zone of theoretical visibility (ZTV) for Sites 3 4, 5 and 6. The ZTVs have been modelled showing the visibility of the site in the first year of planting and after 15 years, when screen planting, proposed for the boundaries of each Park & Ride site, has become established.

E.1.2 Criteria

- Proximity to high sensitivity receptors (registered parks and gardens, conservation area, listed buildings, residential and recreational visual receptors);
- Location in Green Belt;
- Number of visual receptors affected;
- Proportion of the view affected;
- Cambridge Skyline Guidance: Strategic Viewpoints and City Approaches; and
- Policy NE/4 - Landscape Character Areas states that: *Development will only be permitted where it respects and retains or enhances the local character and distinctiveness of the individual Landscape Character Area in which is it located.*

Green Belt

Paragraph 80 of the National Planning Policy Framework (NPPF) sets out five purposes for Green Belt:

- To check the unrestricted sprawl of large built-up areas.
- To prevent neighbouring towns merging into one another.
- To assist in safeguarding the countryside from encroachment.
- To preserve the setting and special character of historic towns.
- To assist in urban regeneration, by encouraging the recycling of derelict and other urban land.

The South Cambridgeshire District Council Cambridge Green Belt Study (2002)[1] focussed on the fourth purpose of the Green Belt - to preserve the setting and special character of historic towns.

It identified the special qualities of the Cambridge Green Belt as follows:

- A large historic core relative to the size of the city as a whole
- A city focussed on the historic core
- Short and/or characteristic approaches to Cambridge from the edge of the city
- A city of human scale easily crossed by foot and by bicycle
- Key views of Cambridge from the landscape
- Significant areas of distinctive and supportive townscape and landscape
- Topography providing a framework to Cambridge
- A soft green edge to the city
- Green fingers into the city
- Designated sites and areas enriching the setting of Cambridge
- Long distance footpaths and bridleways providing links between Cambridge and the open countryside
- Elements and features contributing positively to the character of the landscape setting
- The distribution, physical separation, setting, scale and character of necklace villages
- A city set in a landscape which retains a strong rural character.

Assessing the impacts of building a Park & Ride on the sites in the Green Belt takes into account their existing special qualities and the extent to which they fulfil the purposes of the Green Belt.

Sites 1-4 are in the Green Belt and this section of Green Belt, between the city boundary and Hardwick, has a distinctly rural character, with fields, hedgerows, woodland and views over open landscape. It provides a landscape gap between Cambridge and the expanding settlement at Cambourne and the potential new settlement at Bourn Airfield.

Cambridge Skyline Guidance: Strategic Viewpoints and City Approaches

The overall aims of the guidance are to*:*

To maintain and where appropriate enhance the overall character and qualities of the Cambridge skyline as the City continues to grow and develop into the future.

The guidance is primarily aimed at helping to assess impacts due to tall buildings, but it also outlines the characteristics of the Cambridge skyline, its setting and landscape and townscape character and identifies valued views and vistas (strategic views). Of relevance to this scheme are the strategic views from:

- Red Meadow Hill;
- Madingley Rise;
- Grantchester Road;

[1] Cambridge Green Belt Study, LDA Design, 2002

- King's College Chapel; and
- Castle Hill Mound.

Madingley Road is identified as one of the city approaches in the guidance document.

Effect of Lighting on the Night-time Environment

The Campaign to Protect Rural England defines light pollution as follows:[2]

- skyglow – the pink or orange glow seen over wide areas, caused by a scattering of artificial light by airborne dust and water droplets;
- glare – the brightness of a light source; and
- light intrusion – light spilling beyond the boundary of the property on which a light is located.

Of these, light intrusion can be prevented by good lighting design. Skyglow and glare can be reduced through choice of light fittings, use of LED luminaires and low lux levels. However, skyglow will increase as light is reflected from hard surfacing and parked cars and light emitted from light fittings, when viewed from below, will increase glare. Trees removed to construct entrances and access roads will potentially increase the visibility of existing lighting currently screened by vegetation.

The *A428 Cambourne to Cambridge Landscape and Planning Appraisal* by Atkins includes a map showing existing night-time light levels in the area. The urban edge of Cambridge and the villages are lit with street lighting and are therefore not dark at night. Major road junctions are also lit. Madingley Road, minor roads outside the city and agricultural land are generally not lit and are therefore darker. All areas are affected by skyglow however.

E.1.3 Rating

NB: High sensitivity receptors considered only (registered parks and gardens, conservation area, listed buildings, residential and recreational visual receptors).

Magnitude:

- -3 High Adverse: Significant adverse effects, difficult to mitigate
- -2 Medium Adverse: Potentially significant adverse effects, can be mitigated
- -1 Low Adverse: Small number of adverse effects, can be mitigated
- 0 Neutral
- +1 Low Beneficial: Small number of beneficial effects
- +2 Medium Beneficial: Potentially significant beneficial effects
- +3 High Beneficial: Significant beneficial effects

E.1.4 Park and Ride Assumptions

The Park and Ride site, for the purpose of this assessment, has been assumed to comprise a central building, hard surfacing (roads and parking spaces), street lighting (columns a minimum of 8m high), fencing, signage, street furniture and changes to the local transport network in the form of extra lanes, changes to roundabouts and new junctions onto existing roads. It is assumed that trees and vegetation will be lost during construction and the site will be surrounded by new planting in the form of 15 – 30m wide tree belts. It is assumed the Park &

[2] http://nightblight.cpre.org.uk/what-is-light-pollution

Ride will generally follow the existing contours of the land, but earthworks and changes to the local topography will be required. The site will be lit at all times.

E.1.5 Site 0: Existing Madingley Road Park and Ride – increase capacity by adding deck to Park & Ride

Baseline

The site is an existing Park & Ride site in Cambridge, in a part of the city that has a leafy suburban character - though this is changing with the large-scale West Cambridge and North-west Cambridge developments and with major road widening around the junctions with the M11, the new developments and the Park & Ride site. The Park & Ride was built around 20 years ago and the landscape on the site is well established, but not mature. All roads in the area have street lighting. Tranquillity is medium - low.

The site is in the Green Belt, but due to the level of adjacent development in the area it no longer fully fulfils the majority of purposes of the Green Belt.

Receptors in dwellings in Lansdowne Road (80m away) and the North-west Cambridge development have clear views of the existing Park & Ride.

Key constraints and impacts include:

Impact	Score
Loss of landscape elements within site - trees (20 years + old) – but none outside the site.	Low to medium Negative
No need for extra lanes or changes to road layout in Madingley Road.	High Positive
Landscape has a suburban character. Development would result in a new building, but one on a similar in scale to existing buildings on West Cambridge Site. No change to landscape character	Low Negative
Slight reduction in the openness of the Green Belt	Low Negative
Area well-lit at night and not currently tranquil: no change anticipated to night-time character or tranquillity therefore.	Neutral
Small number of visual receptors in Lansdowne Road and some in the North-west Cambridge development affected, but their existing view is of a Park & Ride.	Low Negative

Score: -1

E.1.6 Site 1: Madingley Mulch North East (site adjacent to SSSI north of A1303)

Baseline

The site is just outside Cambridge, in South Cambridgeshire, between the A1303, the A428 and the Madingley Mulch roundabout. It is on the 60m contour – the highest contour on the Madingley Ridge. Currently an arable field, it slopes down to the north and is immediately adjacent to Madingley Wood. A dense woodland belt runs along the northern boundary between the site and the A428. The A1303 is single lane in each direction and there is no street lighting on this section of the road, except in proximity to the Madingley Mulch roundabout. Night-light levels are medium to low – with a brighter area around the Madingley Mulch roundabout, but darker areas elsewhere and on the site. The nearby Madingley Mulch site also has associated

lighting and noise impacts. Tranquillity is medium due to the close proximity of major road infrastructure.

The site is in the Green Belt. The Green Belt in this location is assessed as fulfilling four of the five purposes of the Green Belt:

- To check the unrestricted sprawl of large built-up areas;
- To prevent neighbouring towns merging into one another;
- To assist in safeguarding the countryside from encroachment; and
- To preserve the setting and special character of historic towns.

Receptors in houses on the A1303 opposite the site may be able to see it from upper floor windows, but it is largely screened from the wider landscape by woodland and the local topography.

Key constraints and impacts include:

Impact	Score
A loss of landscape elements (overgrown hedgerow) and an arable field and potentially mature trees on the A1303 boundary (towards the American Cemetery).	Medium to high Negative
Requirement for road widening and extra lane or changes to road layout in Madingley Road.	High Negative
The Park & Ride will be an uncharacteristic new feature in a predominantly rural landscape.	Medium Negative
A1303 is unlit at this point and additional lighting for junction and Park & Ride will increase light levels at night in an largely unlit area.	Medium Negative
Listed/undesignated sites: the site will not be visible from the American Cemetery Grade I registered park and garden (RP&G) unless major road widening takes place on A1303. The site is potentially visible from Grade II Madingley Hall RP&G and from landscape to south, but views are likely to be filtered through intervening vegetation. It is adjacent to Madingley SSSI and Ancient Woodland.	High Negative
The development will reduce the openness of the Green Belt.	High Negative
Limited visibility over a wider area.	Low to medium Negative
Small number of visual receptors on A1303 to south may be able to see the new junction, access road and Park & Ride site, especially at night. Views are filtered by intervening vegetation however.	Low Negative

Score: - 3

E.1.7 Site 2: Madingley Mulch North West (often referred to as Park Farm)

Baseline

The site is in South Cambridgeshire, between the A428 and Madingley. It is on the 60m contour – the highest contour on the Madingley Ridge. Currently an arable field, sloping down to the north, it shares a wooded boundary with the Madingley Hall RP&G (Grade II) to the north. A

dense woodland belt runs along the southern boundary between the site and the A428 eastwards exit slip road. There is no street lighting on this section of the road, but the Madingley Mulch roundabout is brightly lit. The nearby Madingley Mulch site also has associated lighting and noise impacts. Night-light levels are medium to low – with a brighter area around the roundabout, but darker areas elsewhere and on the site. The A428 is a busy dual carriageway and tranquillity is medium.

The site is in the Green Belt. The Green Belt in this location is assessed as fulfilling four of the five purposes of the Green Belt:

- To check the unrestricted sprawl of large built-up areas;
- To prevent neighbouring towns merging into one another;
- To assist in safeguarding the countryside from encroachment; and
- To preserve the setting and special character of historic towns.

Receptors in houses at Highfield Farm on Church Lane, Madingley and Park Farm have a view of the site but it is screened from the wider landscape by woodland and the local topography.

Key constraints and impacts include:

Impact	Score
A loss of landscape elements (farmland trees and hedgerows).	Medium to high Negative
Requirement for road widening and extra lane in a rural road.	High Negative
The Park & Ride will be an uncharacteristic new feature in a predominantly rural landscape.	Medium Negative
The A428 is unlit but the roundabout is lit. Additional lighting for junction and Park & Ride will increase light levels at night in a mainly unlit environment.	Medium Negative
Listed/undesignated sites: the site is unlikely to be visible from Madingley Hall RP&G in summer but it might be apparent at night in winter. If the entrance is from Church Lane, setting of the listed building might be affected.	Medium Negative
The development will reduce the openness of the Green Belt.	High Negative
Visible in strategic views from Madingley Hill and from the west and far-east, but these latter views are likely to filtered. Limited visibility over a wider area.	Low to medium Negative
The view from Highfield Farm and Park Farm would change from one of open countryside to a view of a Park & Ride and access road.	Medium to high Negative

Score: - 3

E.1.8 Site 3: Madingley Mulch South West (often referred to as water works site)

Baseline

The site is in South Cambridgeshire, south of the St Neots Road and A1303. It runs across the 60m and 55m contours – the highest contour on the Madingley Ridge in this area. It is currently

an arable field in an open landscape, sloping down to the south. Tree belts along Long Road and the St Neots Road partly screens the site from the north and west. There is no street lighting on the local roads but the Madingley Mulch roundabout is brightly lit. The site is already developed in places and there is existing development activity with associated visual impact associated with a radio mast and nearby street-lighting. The nearby Madingley Mulch site also has associated lighting and noise impacts. Night-light levels are medium to low – with a brighter area around the roundabout, but darker areas elsewhere and on the site. The site is separated from the A428 by the St Neots Road and consequently tranquillity is medium.

The site is in the Green Belt. The Green Belt in this location fulfils four of the five purposes of the Green Belt:

- To check the unrestricted sprawl of large built-up areas;
- To prevent neighbouring towns merging into one another;
- To assist in safeguarding the countryside from encroachment; and
- To preserve the setting and special character of historic towns.

Views of the site from strategic viewpoints on Red Meadow Hill and Madingley Rise. Receptors in a small number of houses on Madingley Road will have oblique, filtered views of the site. It will however be widely visible over a wide area of open landscape to the south and south-east. It will also be visible from Hardwick, especially from upper floor windows.

Key constraints and impacts include:

Impact	Score
A loss of landscape elements (mature trees, woodland, farmland) due to the creation of a junction, site access road and Park & Ride in an agricultural field.	Medium – high Negative
Requirement for road and roundabout alterations to provide the access.	High Negative
The Park & Ride will be an uncharacteristic new feature in a predominantly rural landscape, although it is noted that an existing radio mast is located on the site and the nearby Madingley Mulch Garden Centre is in operation.	High Negative
The A428 is unlit apart from in the vicinity of the Madingley Mulch roundabout and existing lighting from the Madingley Mulch Garden Centre, and additional lighting for junction and Park & Ride will increase light levels at night in a predominantly unlit environment.	Medium Negative
Listed/undesignated sites: the site is unlikely to be visible from Madingley Hall RP&G in summer but it might be apparent at night in winter. If the entrance is from Church Lane, setting of the listed building might be affected.	Medium Negative
The development will reduce the openness of the Green Belt.	High Negative
The Park & Ride will be visible from a wide area of open landscape to the south and south-west. ZTV shows visibility from residential receptor locations in Hardwick and properties to the south, from Harcamlow Way to the south and in strategic views from Red Meadow Hill and Madingley Rise.	High Negative

The view from houses on Madingley Road and Hardwick and from the long-distance footpath south of the site will change from one of open countryside to a new view of the Park & Ride and access road.	Medium Negative

Score: - 3

E.1.9 Site 4: Madingley Mulch South East (often referred to as Crome Lea)

Baseline

The site is in South Cambridgeshire, south of the St Neots Road and A1303. It is on the 60m contour – the highest contour on the Madingley Ridge. It is currently an arable field in an open landscape, with long views to the south. Tree belts along the A1303 partly screens the site from the north. There is no street lighting on the local roads but the Madingley Mulch roundabout is brightly lit. The nearby Madingley Mulch site also has associated lighting and noise impacts. Night-light levels are medium to low – with a brighter area around the roundabout, but darker areas elsewhere and on the site. Tranquillity is medium due to the close proximity of the road.

The site is in the Green Belt. The Green Belt in this location fulfils four of the five purposes of the Green Belt:

- To check the unrestricted sprawl of large built-up areas;
- To prevent neighbouring towns merging into one another;
- To assist in safeguarding the countryside from encroachment; and
- To preserve the setting and special character of historic towns.

Receptors in a small number of houses on Madingley Road and in Coton village may have oblique, filtered views of the proposed Park and Ride site, (mainly from upper floor windows in Coton). The site will be widely visible over an area of open landscape to the south and south-east and from Harcamlow Way, the long-distance footpath to the south. Views of the site from strategic views from Red Meadow Hill and Madingley Rise.

Key constraints and impacts include:

Impact	Score
A loss of landscape elements (mature trees, woodland, farmland) due to the creation of a junction, site access road and Park & Ride in an agricultural field.	Medium Negative
Requirement for road widening and extra lane on rural road	Medium Negative
The Park & Ride will be an uncharacteristic new feature in a predominantly rural landscape.	Low to medium Negative
The A428 is unlit and additional lighting for junction and Park & Ride will increase light levels at night in a predominantly unlit environment.	Medium Negative
Listed/undesignated sites: American Cemetery Grade I registered park and garden (RP&G) potentially unaffected unless major road widening takes place on A1303.	Medium Negative

The development will reduce the openness of the Green Belt.	High Negative
The Park & Ride will be visible from a wide area of open landscape to the south and south-west. ZTV shows visibility from residential receptor locations in Coton, Hardwick, residential properties to the south, in strategic views from Red Meadow Hill and Madingley Rise and from Harcamlow Way to the south.	High Negative
The view from houses on Madingley Road, part of Coton and Hardwick and from the long-distance footpath south-west of the site will change from one of open countryside to a new view of the Park & Ride and access road.	Medium Negative

Score: - 3

E.1.10 Site 5: Scotland Farm

Baseline

The site is in South Cambridgeshire, between the eastbound entrance slip road to the A428 and Scotland Road. Madingley. It is on the 60m contour and is currently an open arable field which slopes down to the east. There is little surrounding vegetation, fields are large and the landscape has an open, expansive feel. This will gradually change as planting along the verges of the A428, which is at a lower level than the Park & Ride site, matures. There are some commercial uses, as well as farms and a row of cottages close to the site. There is no street lighting on this section of the road or to the north and night-light levels are medium to low – with a brighter area in Hardwick, which has street lighting. The A428 is a busy dual carriageway and tranquillity is medium.

- The site is within the Green Belt, but on its western boundary. The urbanising elements of the duel carriageway, bridges and roundabouts at the A428 junction have eroded the rural character of the Green Belt in this location. The Green Belt is assessed as fulfilling three of the five purposes of the Green Belt:
- To check the unrestricted sprawl of large built-up areas;
- To prevent neighbouring towns merging into one another; and
- To assist in safeguarding the countryside from encroachment.

Receptors in houses on Scotland Road and Old St Neots Road in Hardwick have a view of the site. Houses in Dry Drayton may have views from upper floor windows of the proposed Park and Ride site.

Key constraints and impacts include:

Impact	Score
A loss of landscape elements (mature trees, woodland, farmland) due to the creation of a junction, site access road and Park & Ride in an agricultural field.	Medium to high Negative
Requirement for road widening and extra lane on rural road	High Negative
The Park & Ride will be an uncharacteristic new feature in a predominantly rural landscape.	Low to medium Negative

The A428 junction is lit, but the land to the north is not: additional lighting for junction and Park & Ride will increase light levels at night.	Low to medium Negative
Listed/undesignated sites: The site is unlikely to be visible from Childerley Hall RP&G (Grade II) but it might be apparent at night in winter. Hardwick conservation area unaffected	Neutral
The development will reduce the openness of the Green Belt.	High Negative
The Park & Ride will be visible in close views, but wider views are unlikely.	Low Negative
The view from Scotland Road would change from one of open countryside to a view of a Park & Ride and access road.	Medium Negative

Score: - 2

E.1.11 Site 6: Bourn Airfield

Baseline

The site is located within the existing Bourn Airfield boundary, to the south of Wellington Way and the A428 and north of the settlement of Highfields. The site is on the Madingley Ridge, with a gentle slope towards the south. There are three existing runways, with a flying club and associated buildings located west of the site. There is minimal tree cover and arable fields between the runways and part of the Bourn Airfield site is in industrial use. The character along the Broadway, heading south towards Crow End and Claxton End, is rural with some open views between hedgerows towards the wider landscape. The area immediately south of the airfield has a distinct rural character, with open arable fields and hedgerow boundaries. North of Highfield, the area has an edge of settlement character. Night-light levels are medium to low – with a brighter area in the villages to the south and around the A428 junction and a darker area to the north. The A428 is a busy dual carriageway and tranquillity is medium.

The site is outside the Green Belt.

The site is visible from properties along West Drive in Highfields but woodland south and west of the Park & Ride site screens it from most other properties in Highfield and Caldecote. Gaps within the tree belt, which may allow glimpsed views from Hardwick and as Upper Cambourne is on the same contour as the site and in close proximity to it, the site will be visible, especially from upstairs windows. Properties to the south of Caldecote are screened by a hill, which rises to 61m.

Key constraints and impacts include:

Impact	Score
Few landscape features will be lost as the site is in arable production and there is minimal vegetation within the site. Potential for tree loss on site boundary, depending on where the access road and entrance are.	Low Negative
Quality of existing landscape: the landscape of the Park & Ride site has an edge of settlement character. The Park & Ride will not be an	Low Negative

uncharacteristic feature in the landscape as the Bourn Airfield a is in existing transport infrastructure use and is already partly hard surfaced.	
Listed/undesignated sites (two listed buildings near/within the site boundary) are well screened by vegetation. No designated landscapes in the proximity of the site or with views of the site.	Low Negative
Lighting and tranquillity: lighting would raise ambient light levels but Cambourne is already brightly lit, as is A428 junction. A small reduction in tranquillity.	Low Negative
Visibility of the scheme in the landscape: well screened by surrounding woodland and rising topography to north and south.	Low Negative
Number of visual receptors potentially affected: residents in Highfields, Hardwick and Upper Cambourne. Most views would be filtered by intervening vegetation	Low to medium Negative
Potential to incorporate Park & Ride into housing scheme, sharing sustainable drainage systems and using these as part of the open space provision for the new housing. (SUDs ponds have been incorporated into the open space extensively in Cambourne). Cambourne could be connected with the new housing and surrounding villages via an open space network via cycle and footways.	Not included in scoring as potential for synergy with housing scheme is unknown at this stage.

Score: -1

E.1.12 Site 7: north of Cambourne

Baseline

The site is situated in an existing arable field located on St Neots Road, north of the A428 and Cambourne. The site is on the 55m contour, which is lower than the A428 and Cambourne to the south. The landscape character to the north of the A428 has a distinct rural feel, with open gently undulating arable fields interspersed with hedgerows and tree plantations. There are a small number of dispersed farmsteads in the surrounding area, including Lawn Farm, Coldharbour Farm, New Inn Farm and Wood Farm. Elsworth Wood, north of the site and Knapwell Wood to the north-west are designated as an ancient woodland. Cambourne and the A428 junction are lit and overall ambient light levels are therefore medium to high, though the landscape to the north is not lit. Tranquillity is medium due to the presence of the busy A428, but reduces north, with increasing distance from the road.

In Cambourne, receptors in New Hall Lane look towards the site but a vegetated embankment between the A428 and St Neots Road, rising to around 5m, effectively screens views north from Cambourne.

Key constraints and impacts include:

Impact	Score

Loss of rural elements, such as agricultural fields, hedgerows and trees. Tree removal will open up views of the site from the wider landscape. Careful planning of site entrance and Park & Ride could reduce tree loss. Retain trees in centre of site.	Low to medium Negative
The Park & Ride will be an uncharacteristic new feature in a distinctly rural and open landscape. Impacts would depend on the exact location of the site however. The impact on the rural character will included introduction of lighting into an unlit area and loss of tranquillity.	Low to medium Negative
Listed/undesignated sites (Elsworth Wood, Knapwell Wood and two listed buildings at New Inn Farm) will be potentially affected by the development.	Low to medium Negative
Visibility of the scheme: Cambourne restricts views from the south and the topography and intervening woodland restricts views from the west north and east.	Low Negative
The small number of farms overlooking the site and walkers on the PRoW would have direct, oblique of filtered views.	Low to medium Negative
Lighting and tranquillity: lighting would raise ambient light levels in a medium-dark area but Cambourne is already brightly lit, as is A428 junction. A small reduction in tranquillity.	Low Negative
Number of visual receptors potentially affected: residents in Upper Cambourne and along West Drive, and properties along Broadway to the north overlooking the site would be the primary receptors. Views would be interrupted by vegetation, so the impacts would be fairly minimal.	Low to medium Negative

Score: - 1

E.1.13 Site 8: Caxton Gibbet

The site is located at the A428 and A1198 junction, on arable fields. The site is on the 65m contour, the highest land in the immediate area. The landscape character around the A428 junction has an open, slightly exposed feel, with gently undulating arable fields interspersed with hedgerows and tree plantations. Elsworth Wood, located to the north of the site, is designated as an ancient woodland. There are a number of businesses around the A1198/A428 junction. There is no significant settlement close to the site. Lower Cambourne to the south and Papworth to the north are the nearest towns. Visibility of the site is limited to a relatively small area by the local topography and woodland belts, but there is scope for longer views north and south through gaps in the hedgerows. Lighting from the A428 junction and service station means that ambient light levels are medium. Away from the main roads, it is darker. Tranquillity near the roads is medium, but lower in the less populated areas. on, and away from the road would be at a low level.

The site is outside the Green Belt.

Views of the site from the Cambourne and Papworth are screened by vegetation, hedgerows and topography. There are a small number of farms in close proximity to the site and receptors at Pembroke Farm, Swansley Wood Farm, Pastures Farm and North East Farm, along with the

Island Inn Hotel may be able to see the site, especially in winter and at night. The farms west of the site are screened by established tree belts.

Key constraints and impacts include:

Impact	Score
Loss of rural elements, such as agricultural fields, hedgerows and trees. Careful planning of site entrance and Park & Ride could reduce tree loss, especially along A1198 road. Retain tree belt around Pembroke Farm	Low Negative
The landscape has a distinctive rural and open feel, and contributes to the wider landscape character north of the A428. The Park & Ride will be an uncharacteristic new feature in the landscape, though this already includes a service station, and restaurants. The impact on the rural character will include the introduction of lighting into a partly unlit area.	Low Negative
Listed designated sites: (Pastures Farm historic moat, south west of the site and Elsworth Wood to the north-east). Depending on the size and location, there could be views from both sites towards the development.	Low Negative
Small number of farms with views east towards the site, but these are well screened by intervening vegetation. May the site at night or in winter.	Low Negative
Lighting and tranquillity: lighting would raise ambient light levels in a medium-dark area but A428 junction, service station and restaurants already contributes to light pollution.	Low Negative
Number of visual receptors potentially affected: residents in Upper Cambourne and along West Drive, and properties along Broadway to the north overlooking the site would be the primary receptors. Views would be interrupted by vegetation, so the impacts would be fairly minimal.	Low to medium Negative

Score: -1

E.2 Conclusion

In all locations, a Park and Ride site will introduce a large-scale built form into a predominantly rural landscape and may have an urbanising influence on landscape and views. Some of the potential sites however have already lost some or much of their rural character due to housing and transport infrastructure development, including Bourn Airfield and Scotland Farm. The Waterworks and Crome Lea sites are in relatively more prominent locations on the Madingley Ridge, with expansive views to the south although there is infrastructure associated with the Waterworks on site and existing development in the Crome Lea areas. Crome Lea may have additional visual impact on residents in Coton when compared to the Waterworks site.

The Waterworks and Crome Lea, Scotland Farm and the existing Park and Ride sites are all in the Green Belt. All would increase lighting levels and would reduce tranquillity in the area, some (Waterworks and Crome Lea) currently relatively unlit (although the Waterworks site is adjacent to an existing radio mast and the operating Mulch facility as well as a lit roundabout are present in the area).

Screen planting around the perimeter of the Park & Rides would reduce adverse effects, but the urbanising effect of a large Park & Ride in a rural area would remain.

Overall our judgement is that, not accounting for potential detailed design mitigation, a Park and Ride on the Waterworks or Crome Lea sites is likely to result in a high adverse effect. A Park and Ride on Scotland Farm is likely to result in a medium adverse effect. A Park and Ride at Bourn Airfield or the existing Park and Ride site is likely to result in a low adverse effect.

F. Stage 1 Scoring Justification Tables

Theme	Criteria	Subcriteria	Option 0	1	2	3	4	5	6	7	8
Theme	Criteria	Subcriteria	Existing Madingley Road Park and Ride	Madingley Mulch North East (site adjacent to SSSI north of A1303)	Madingley Mulch North West (often referred to as Park Farm)	Madingley Mulch South West (Often referred to as water works site)	Madingley Mulch South East (often referred to as Chrome Lea)	Scotland Farm	Bourn Airfield	North of Cambourne	Caxton Gibbet
1A.HIGH LEVEL THEME - POLICY ALIGNMENT	Alignment with the Greater Cambridge Greater Peterborough Enterprise Partnership (GCGPEP) Ambitions	To be the UK's exemplar area for digital connectivity	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.
		Deliver a growth hub to support business growth	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.
		Respond to existing pressure for the growth and retention of businesses by facilitating the provision of additional innovation & incubator space	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.
		Remove the skills barriers to continued growth	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.
		A transport network fit for an economically vital high growth area	All options deemed to have positive impact on ambitions by increasing extent and capacity of public transport network.	All options deemed to have positive impact on ambitions by increasing extent and capacity of public transport network.	All options deemed to have positive impact on ambitions by increasing extent and capacity of public transport network.	All options deemed to have positive impact on ambitions by increasing extent and capacity of public transport network.	All options deemed to have positive impact on ambitions by increasing extent and capacity of public transport network.	All options deemed to have positive impact on ambitions by increasing extent and capacity of public transport network.	All options deemed to have positive impact on ambitions by increasing extent and capacity of public transport network.	All options deemed to have positive impact on ambitions by increasing extent and capacity of public transport network.	All options deemed to have positive impact on ambitions by increasing extent and capacity of public transport network.
		Alconbury Weald enterprise campus	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.
	Alignment with the Greater Cambridge City Deal Transport Vision	Accessibility by public transport	Advice from Atkins, based on preliminary transport network modelling, is that sites closer to the M11 corridor provide greater public transport connectivity than those further away from Cambridge.	Advice from Atkins, based on preliminary transport network modelling, is that sites closer to the M11 corridor provide greater public transport connectivity than those further away from Cambridge.	Advice from Atkins, based on preliminary transport network modelling, is that sites closer to the M11 corridor provide greater public transport connectivity than those further away from Cambridge.	Advice from Atkins, based on preliminary transport network modelling, is that sites closer to the M11 corridor provide greater public transport connectivity than those further away from Cambridge.	Advice from Atkins, based on preliminary transport network modelling, is that sites closer to the M11 corridor provide greater public transport connectivity than those further away from Cambridge.	Advice from Atkins, based on preliminary transport network modelling, is that sites further from M11 corridor provide less good public transport connectivity than those closer to Cambridge.	Advice from Atkins, based on preliminary transport network modelling, is that sites further from M11 corridor provide less good public transport connectivity than those closer to Cambridge.	Advice from Atkins, based on preliminary transport network modelling, is that sites further from M11 corridor provide less good public transport connectivity than those closer to Cambridge.	Advice from Atkins, based on preliminary transport network modelling, is that sites further from M11 corridor provide less good public transport connectivity than those closer to Cambridge.
		Accessibility by cycle	Negligible impact on vision as no increased access by cycle compared to existing provision	Large positive alignment with vision as good access from local settlements, including Coton and Madingley, while proximity of P&R to Cambridge will encourage 'park and cycle'	Large positive alignment with vision as good access from local settlements, including Coton and Madingley, while proximity of P&R to Cambridge will encourage 'park and cycle'	Large positive alignment with vision as good access from local settlements, including Coton and Madingley, while proximity of P&R to Cambridge will encourage 'park and cycle'	Large positive alignment with vision as good access from local settlements, including Coton and Madingley, while proximity of P&R to Cambridge will encourage 'park and cycle'	Medium positive alignment with vision as good access from local settlements, including Hardwick and Dry Drayton	Medium positive alignment with vision as good access from local settlements, including Highfields Caldecote. Note future development at Bourn Airfield not taken into account as not yet consented	Medium positive alignment with vision as good access from local settlements, including Cambourne.	Small positive alignment with vision as some access from local settlements including Cambourne. Note future development at West Cambourne not taken into account as not yet consented
		Accessibility on foot	Negligible impact on vision as no increased access by foot compared to existing provision	Poor access on foot from areas of housing, so negligible impact on vision	Poor access on foot from areas of housing, so negligible impact on vision	Poor access on foot from areas of housing, so negligible impact on vision	Poor access on foot from areas of housing, so negligible impact on vision	Poor access on foot from areas of housing, so negligible impact on vision	Poor access on foot from areas of housing, so negligible impact on vision. Note future development at Bourn Airfield not taken into account as not yet consented	Poor access on foot from areas of housing, so negligible impact on vision. Note despite proximity of Cambourne to site, access by foot would be across A428 bridge so not a desirable walking connection	Poor access on foot from areas of housing, so negligible impact on vision. Note future development at West Cambourne not taken into account as not yet consented
		Congestion (i.e. traffic delays)	Negligible impact on vision as there would be no impact on congestion west of M11 corridor	Medium positive impact on vision as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium positive impact on vision as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium positive impact on vision as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium positive impact on vision as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium positive impact on vision as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium positive impact on vision as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium positive impact on vision as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium positive impact on vision as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling
		Traffic levels (i.e. total volume of traffic)	Small positive impact on traffic levels as there is a potential reduction achievable through mode shift. Needs to be confirmed through detailed transport network modelling	Small positive impact on traffic levels as there is a potential reduction achievable through mode shift. Needs to be confirmed through detailed transport network modelling	Small positive impact on traffic levels as there is a potential reduction achievable through mode shift. Needs to be confirmed through detailed transport network modelling	Small positive impact on traffic levels as there is a potential reduction achievable through mode shift. Needs to be confirmed through detailed transport network modelling	Small positive impact on traffic levels as there is a potential reduction achievable through mode shift. Needs to be confirmed through detailed transport network modelling	Small positive impact on traffic levels as there is a potential reduction achievable through mode shift. Needs to be confirmed through detailed transport network modelling	Small positive impact on traffic levels as there is a potential reduction achievable through mode shift. Needs to be confirmed through detailed transport network modelling	Small positive impact on traffic levels as there is a potential reduction achievable through mode shift. Needs to be confirmed through detailed transport network modelling	Small positive impact on traffic levels as there is a potential reduction achievable through mode shift. Needs to be confirmed through detailed transport network modelling
	Alignment with Published Plans	Draft Local Plan for Cambridge (2014)	Deemed small positive fit due to contribution to vision of supporting sustainable economic growth by enhancing public transport provision	Deemed small positive fit due to contribution to vision of supporting sustainable economic growth by enhancing public transport provision	Deemed small positive fit due to contribution to vision of supporting sustainable economic growth by enhancing public transport provision	Deemed small positive fit due to contribution to vision of supporting sustainable economic growth by enhancing public transport provision	Deemed small positive fit due to contribution to vision of supporting sustainable economic growth by enhancing public transport provision	Deemed small positive fit due to contribution to vision of supporting sustainable economic growth by enhancing public transport provision	Deemed small positive fit due to contribution to vision of supporting sustainable economic growth by enhancing public transport provision	Deemed small positive fit due to contribution to vision of supporting sustainable economic growth by enhancing public transport provision	Deemed small positive fit due to contribution to vision of supporting sustainable economic growth by enhancing public transport provision
		Draft Local Plan for South Cambridgeshire (2014)	Medium positive impact on growth ambitions and access to facilities and services by enabling enhanced public transport provision	Medium positive impact on growth ambitions and access to facilities and services by enabling enhanced public transport provision	Medium positive impact on growth ambitions and access to facilities and services by enabling enhanced public transport provision	Medium positive impact on growth ambitions and access to facilities and services by enabling enhanced public transport provision	Medium positive impact on growth ambitions and access to facilities and services by enabling enhanced public transport provision	Medium positive impact on growth ambitions and access to facilities and services by enabling enhanced public transport provision	Medium positive impact on growth ambitions and access to facilities and services by enabling enhanced public transport provision	Medium positive impact on growth ambitions and access to facilities and services by enabling enhanced public transport provision	Medium positive impact on growth ambitions and access to facilities and services by enabling enhanced public transport provision
		Cambridgeshire Local Transport Plan 2011-2031	Small positive contribution as expands existing P&R facility. General positive contribution to strategy, objectives and challenges outlined	Medium positive contribution as provides new P&R facility (with higher potential capacity than expanded existing facility). General positive contribution to strategy, objectives and challenges outlined	Medium positive contribution as provides new P&R facility (with higher potential capacity than expanded existing facility). General positive contribution to strategy, objectives and challenges outlined	Medium positive contribution as provides new P&R facility (with higher potential capacity than expanded existing facility). General positive contribution to strategy, objectives and challenges outlined	Medium positive contribution as provides new P&R facility (with higher potential capacity than expanded existing facility). General positive contribution to strategy, objectives and challenges outlined	Medium positive contribution as provides new P&R facility (with higher potential capacity than expanded existing facility). General positive contribution to strategy, objectives and challenges outlined	Medium positive contribution as provides new P&R facility (with higher potential capacity than expanded existing facility). General positive contribution to strategy, objectives and challenges outlined	Medium positive contribution as provides new P&R facility (with higher potential capacity than expanded existing facility). General positive contribution to strategy, objectives and challenges outlined	Medium positive contribution as provides new P&R facility (with higher potential capacity than expanded existing facility). General positive contribution to strategy, objectives and challenges outlined
		Transport Strategy for Cambridge and South Cambridgeshire (TSCSC) (2014)	Small positive contribution as provides increase P&R capacity, but not an outer Park & Ride on A428 between Cambourne and A1303	Medium positive contribution as provides an outer Park & Ride on A428 between Cambourne and A1303	Medium positive contribution as provides an outer Park & Ride on A428 between Cambourne and A1304	Medium positive contribution as provides an outer Park & Ride on A428 between Cambourne and A1305	Medium positive contribution as provides an outer Park & Ride on A428 between Cambourne and A1306	Medium positive contribution as provides an outer Park & Ride on A428 between Cambourne and A1307	Medium positive contribution as provides an outer Park & Ride on A428 between Cambourne and A1308	Medium positive contribution as provides an outer Park & Ride on A428 between Cambourne and A1309	Medium positive contribution as provides an outer Park & Ride on A428 between Cambourne and A1310
		Greenbelt	Negligible impact to greenbelt as site outside greenbelt	Medium negative fit as site within greenbelt	Medium negative fit as site within greenbelt	Medium negative fit as site within greenbelt	Medium negative fit as site within greenbelt	Slight negative fit as site on edge of greenbelt	Negligible impact to greenbelt as site outside greenbelt	Negligible impact to greenbelt as site outside greenbelt	Negligible impact to greenbelt as site outside greenbelt

Note: Site 0 subsequently reviewed as being within Green Belt as part of Stage 2 assessment

Theme	Criteria	Subcriteria	Option 0	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8
			Existing Madingley Road Park and Ride	Madingley Mulch North East (site adjacent to SSSI north of A1303)	Madingley Mulch North West (often referred to as Park Farm)	Madingley Mulch South West (Often referred to as water works site)	Madingley Mulch South East (often referred to as Chrome Lea)	Scotland Farm	Bourn Airfield	North of Cambourne	Caxton Gibbet
1B. INTERMEDIATE LEVEL THEME - BENEFITS	Transport Benefits	Journey time	End to end journey times no quicker than existing	End to end journey times potentially similar for most sites with potential small decrease. Needs to be confirmed through detailed transport network modelling	End to end journey times potentially similar for most sites with potential small decrease. Needs to be confirmed through detailed transport network modelling	End to end journey times potentially similar for most sites with potential small decrease. Needs to be confirmed through detailed transport network modelling	End to end journey times potentially similar for most sites with potential small decrease. Needs to be confirmed through detailed transport network modelling	End to end journey times potentially similar for most sites with potential small decrease. Needs to be confirmed through detailed transport network modelling	End to end journey times potentially similar for most sites with potential small decrease. Needs to be confirmed through detailed transport network modelling	End to end journey times potentially similar for most sites with potential small decrease. Needs to be confirmed through detailed transport network modelling	End to end journey times potentially similar for most sites with potential small decrease. Needs to be confirmed through detailed transport network modelling
		Ease of interchange between modes	Negligible benefit as no improvement over exisiting provision of interchange	Medium positive benefit as provides a new location for transport interchange	Medium positive benefit as provides a new location for transport interchange	Medium positive benefit as provides a new location for transport interchange	Medium positive benefit as provides a new location for transport interchange	Medium positive benefit as provides a new location for transport interchange	Medium positive benefit as provides a new location for transport interchange	Medium positive benefit as provides a new location for transport interchange	Medium positive benefit as provides a new location for transport interchange
		Accommodates forecast patronage	Small positive. Expansion of existing site will increase capacity.	Medium positive. A second site in addition to existing will provide greater benefit than expansion of Site 0.	Medium positive. A second site in addition to existing will provide greater benefit than expansion of Site 0.	Medium positive. A second site in addition to existing will provide greater benefit than expansion of Site 0.	Medium positive. A second site in addition to existing will provide greater benefit than expansion of Site 0.	Medium positive. A second site in addition to existing will provide greater benefit than expansion of Site 0.	Medium positive. A second site in addition to existing will provide greater benefit than expansion of Site 0.	Medium positive. A second site in addition to existing will provide greater benefit than expansion of Site 0.	Medium positive. A second site in addition to existing will provide greater benefit than expansion of Site 0.
		Public transport connectivity	Other than P&R, no other public transport. All neutral.	Other than P&R, no other public transport. All neutral.	Other than P&R, no other public transport. All neutral.	Other than P&R, no other public transport. All neutral.	Other than P&R, no other public transport. All neutral.	Other than P&R, no other public transport. All neutral.	Other than P&R, no other public transport. All neutral.	Other than P&R, no other public transport. All neutral.	Other than P&R, no other public transport. All neutral.
		Private vehicles connectivity	Negligible benefit as no improvement over exisitng provision of private vehicle connectivity	Large benefit as new P&R site next to junction on strategic road network	Large benefit as new P&R site next to junction on strategic road network	Large benefit as new P&R site next to junction on strategic road network	Large benefit as new P&R site next to junction on strategic road network	Small benefit as new P&R site but not next to junction on strategic road network	Large benefit as new P&R site next to junction on strategic road network	Large benefit as new P&R site next to junction on strategic road network	Large benefit as new P&R site next to junction on strategic road network
		Walking connectivity	Negligible benefit as no increased access by foot compared to existing provision	Poor access on foot from areas of housing, so negligible benefit	Poor access on foot from areas of housing, so negligible benefit	Poor access on foot from areas of housing, so negligible benefit	Poor access on foot from areas of housing, so negligible benefit	Poor access on foot from areas of housing, so negligible benefit	Poor access on foot from areas of housing, so negligible benefit. Note future development at Bourn Airfield not taken into account as not yet consented	Poor access on foot from areas of housing, so negligible benefit. Note despite proximity of Cambourne to site, access by foot would be across A428 bridge so not a desirable walking connection	Poor access on foot from areas of housing, so negligible benefit. Note future development at West Cambourne not taken into account as not yet consented
		Cycling connectivity	Negligible benefit as no increased access by cycle compared to existing provision	Medium benefit as good access from local settlements, including Coton and Madingley	Medium benefit as good access from local settlements, including Coton and Madingley	Medium benefit as good access from local settlements, including Coton and Madingley	Medium benefit as good access from local settlements, including Coton and Madingley	Medium benefit as good access from local settlements, including Hardwick and Dry Drayton	Medium benefit as good access from local settlements, including Highfields Caldecote. Note future development at Bourn Airfield not taken into account as not yet consented	Medium benefit with vision as good access from local settlements, including Cambourne.	Small benefit as some access from local settlements including Cambourne. Note future development at West Cambourne not taken into account as not yet consented
	Passenger Experience	Safety	All positive. All sites relatively equal in terms of safety	All positive. All sites relatively equal in terms of safety	All positive. All sites relatively equal in terms of safety	All positive. All sites relatively equal in terms of safety	All positive. All sites relatively equal in terms of safety	All positive. All sites relatively equal in terms of safety	All positive. All sites relatively equal in terms of safety	All positive. All sites relatively equal in terms of safety	All positive. All sites relatively equal in terms of safety
		Shelter provision	All positive. All sites relatively equal in terms shelter provision	All positive. All sites relatively equal in terms shelter provision	All positive. All sites relatively equal in terms shelter provision	All positive. All sites relatively equal in terms shelter provision	All positive. All sites relatively equal in terms shelter provision	All positive. All sites relatively equal in terms shelter provision	All positive. All sites relatively equal in terms shelter provision	All positive. All sites relatively equal in terms shelter provision	All positive. All sites relatively equal in terms shelter provision
		Impact on the mobility impaired	All positive. All relatively equal in terms of impact on mobility impaired	All positive. All relatively equal in terms of impact on mobility impaired	All positive. All relatively equal in terms of impact on mobility impaired	All positive. All relatively equal in terms of impact on mobility impaired	All positive. All relatively equal in terms of impact on mobility impaired	All positive. All relatively equal in terms of impact on mobility impaired	All positive. All relatively equal in terms of impact on mobility impaired	All positive. All relatively equal in terms of impact on mobility impaired	All positive. All relatively equal in terms of impact on mobility impaired
		Wayfinding	All positive. All relatively equal in terms of wayfinding	All positive. All relatively equal in terms of wayfinding	All positive. All relatively equal in terms of wayfinding	All positive. All relatively equal in terms of wayfinding	All positive. All relatively equal in terms of wayfinding	All positive. All relatively equal in terms of wayfinding	All positive. All relatively equal in terms of wayfinding	All positive. All relatively equal in terms of wayfinding	All positive. All relatively equal in terms of wayfinding
		Congestion	Negligible benefit as there would be no impact on congestion west of M11 corridor	Medium benefit as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium benefit as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium benefit as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium benefit as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium benefit as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium benefit as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium benefit as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium benefit as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling
	Wider economic benefits	Wider economic benefits (e.g. GVA)	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.
		Impact on areas of deprivation	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.

			Option								
			0	1	2	3	4	5	6	7	8
Theme	Criteria	Subcriteria	Existing Madingley Road Park and Ride	Madingley Mulch North East (site adjacent to SSSI north of A1303)	Madingley Mulch North West (often referred to as Park Farm)	Madingley Mulch South West (Often referred to as water works site)	Madingley Mulch South East (often referred to as Chrome Lea)	Scotland Farm	Bourn Airfield	North of Cambourne	Caxton Gibbet
1B. INTERMEDIATE LEVEL THEME - BENEFITS	Environmental and Social Issues	Noise	Small negative impact. No hospitals/health care facilities within 500m of site Large number of residential dwellings within 500m of site. Baseline noise level due to existing P&R. No designated site within 100 m	Medium negative impact. No hospitals/health care facilities within 500m of site Few or no residential dwellings within 500m of site. Site adjacent to the Madingley Wood SSSI - potential to cause adverse effect on the SSSI.	Small negative impact. No hospitals/health care facilities within 500m of site Few or no residential dwellings within 500m of site. Site boundary could be adjacent to residential dwellings. No designated site within 100m Minor residual effects possible.	Negligible impact. No hospitals/health care facilities within 500m of site. Few or no residential dwellings within 500m of site. Site boundary unlikely to be adjacent to site boundary. Noise effects likely to be mitigated through design.	Medium negative impact. No hospitals/health care facilities within 500m of site. Few or no residential dwellings within 500m of site. Site boundary could be adjacent to residential dwellings. Site within 200m of Madingley Wood SSSI. Minor residual effects possible.	Medium negative impact. No hospitals/health care facilities within 500m of site Large number of residential dwellings within 500m of site (Hardwick). Site boundary potentially located adjacent to residential dwelling.	Negligible impact. No hospitals/health care facilities within 500m of site. Few or no residential dwellings within 500m of site. Site boundary could be adjacent to future residential dwellings as site is allocated for development. Effects likely to be mitigated through design.	Negligible impact. No hospitals/health care facilities within 500m of site reference Few or no residential dwellings within 500m of site reference, boundary site unlikely to be adjacent to residential properties. No designated site within 100 m.	Negligible impact. No hospitals/health care facilities within 500m of site reference Few or no residential dwellings within 500m of site reference, boundary site unlikely to be adjacent to residential properties. No designated site within 100 m.
		Air quality and greenhouse gases	Small negative impact. Large number of residential dwellings within 500m of site No designated site within 200m. Defra projected background concentrations for year 2017 show concentrations of NO2, PM10 and PM2.5 do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200 metres of any of the proposed sites.	Meduim negative impact. Few or no residential dwellings within 500m of site. Site adjacent to the Madingley Wood SSSI - potential to cause a significant adverse effect on the SSSI. There are no other proposed sites within 200m with an ecological designation. Defra projected background concentrations for year 2017 show concentrations of NO2, PM10 and PM2.5 do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200 metres of any of the proposed sites.	Neutral impact. Few or no residential dwellings within 500m of site. No designated site within 200m. Defra projected background concentrations for year 2017 show concentrations of NO2, PM10 and PM2.5 do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200 metres of any of the proposed sites.	Neutral impact. Few or no residential dwellings within 500m of site. No designated site within 200m Defra projected background concentrations for year 2017 show concentrations of NO2, PM10 and PM2.5 do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200m of any of the proposed sites.	Medium negative impact. Few or no residential dwellings within 500m of site. Site within 200m of the Madingley Wood SSSI and have the potential to cause a significant adverse effect on the SSSI. There are no other proposed sites within 200m of an ecological designation. Defra projected background concentrations for year 2017 show concentrations of NO2, PM10 and PM2.5 do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200 metres of any of the proposed sites.	Neutral impact. Large number of residential dwellings within 500m of site. No designated site within 200m. Defra projected background concentrations for year 2017 show concentrations of NO2, PM10 and PM2.5 do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200m of any of the proposed sites.	Neutral impact. Few or no residential dwellings within 500m of site. No designated site within 200m. Defra projected background concentrations for year 2017 show concentrations of NO2, PM10 and PM2.5 do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200m of any of the proposed sites.	Neutral impact. Few or no residential dwellings within 500m of site.Defra projected background concentrations for year 2017 show concentrations of NO2, PM10 and PM2.5 do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200m of any of the proposed sites.	Neutral impact. Few or no residential dwellings within 500m of site. No designated site within 200m. Defra projected background concentrations for year 2017 show concentrations of NO2, PM10 and PM2.5 do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200m of any of the proposed sites.
		Landscape / townscape	Small negative impact. Due to sensitivity of landscape / townscape impacts, see more detailed assessment separately	Large negative impact. Due to sensitivity of landscape / townscape impacts, see more detailed assessment separately	Large negative impact. Due to sensitivity of landscape / townscape impacts, see more detailed assessment separately	Large negative impact. Due to sensitivity of landscape / townscape impacts, see more detailed assessment separately	Large negative impact. Due to sensitivity of landscape / townscape impacts, see more detailed assessment separately	Medium negative impact. Due to sensitivity of landscape / townscape impacts, see more detailed assessment separately	Medium positive impact. Due to sensitivity of landscape / townscape impacts, see more detailed assessment separately	Small negative impact. Due to sensitivity of landscape / townscape impacts, see more detailed assessment separately	Small negative impact. Due to sensitivity of landscape / townscape impacts, see more detailed assessment separately
		Biodiversity	Neutral impact. Site is within 500m of a City Wildlife Site and within 800m of the Traveller's Rest Pit SSSI. No Granted European Protected Species Applications (England) for bats within 800m of the site. Scheme is unlikely to adversely affect these features due existing setting within urban area. No TPO within expected site area, Removal of trees with TPO therefore unlikely.	Large negative impact. Site adjacent to the Madingley Wood SSSI - potential to cause a significant adverse effect on the SSSI in terms of Air Quality, Noise and Lighting. No Granted European Protected Species Applications (England) for bats within 800m of the site. However, Madingley Wood has been reported to be habitat for the rare Barbastrelle bats. Potential for significant effects. No TPO within expected site area, Constraint due to trees with TPO therefore unlikely.	Medium negative impact. Site within 800m to the Madingley Wood SSSI – potential for significant adverse effects on the SSSI in terms of Noise and Lighting likely to be minimal due to severance by existing A-road. No Granted European Protected Species Applications (England) for bats within 800m of the site. However, Madingley Wood has been reported to be habitat for the rare Barbastrelle bats. Potential for significant effects along hedgerows connecting towards SSSI. Can be mitigated through design. No TPO within expected site area, Constraint due to trees with TPO therefore unlikely.	Medium negative impact. Site within 800m to the Madingley Wood SSSI – potential for significant adverse effects on the SSSI in terms of Noise and Lighting likely to be minimal due to severance by existing A-road. No Granted European Protected Species Applications (England) for bats within 800m of the site. However, Madingley Wood has been reported to be habitat for the rare Barbastrelle bats. Potential for significant effects along hedgerows connecting towards SSSI. Can be mitigated through design. No TPO within expected site area, however trees along St Neots and Long Road are TPOs and could present a constraint for access roads.	Medium negative impact. Site within 200m to the Madingley Wood SSSI – potential for adverse effects on the SSSI in terms of Air Quality and Lighting. No Granted European Protected Species Applications (England) for bats within 800m of the site. However, Madingley Wood has been reported to be habitat for the rare Barbastrelle bats. Potential for significant effects along hedgerows connecting towards SSSI. Can be mitigated through design. No TPO within expected site area, Constraint due to trees with TPO therefore unlikely.	Neutral impact. No designated site within 800m of the site. No Granted European Protected Species Applications (England) for bats within 800m of the site. No TPO within expected site area, Constraint due to trees with TPO therefore unlikely	Neutral impact. No designated site within 800m of the site. No Granted European Protected Species Applications (England) for bats within 800m of the site. Area with TPO within expected site area, however, this area can be avoided through design. Constraint due to trees with TPO therefore unlikely.	Small negative impact. No designated site within 800m of the site. No Granted European Protected Species Applications (England) for bats within 800m of the site. Area with TPO along A428 and in field west of Scotland Road. May present a constraint for Access road design, however, this area can be avoided through design.	Neutral impact. No designated site within 800m of the site. No Granted European Protected Species Applications (England) for bats within 800m of the site. Area with TPO north east of site reference, however, this area can be avoided through design. Constraint due to trees with TPO therefore unlikely.

			Option								
			0	1	2	3	4	5	6	7	8
Theme	**Criteria**	**Subcriteria**	**Existing Madingley Road Park and Ride**	**Madingley Mulch North East (site adjacent to SSSI north of A1303)**	**Madingley Mulch North West (often referred to as Park Farm)**	**Madingley Mulch South West (Often referred to as water works site)**	**Madingley Mulch South East (often referred to as Chrome Lea)**	**Scotland Farm**	**Bourn Airfield**	**North of Cambourne**	**Caxton Gibbet**
1B. INTERMEDIATE LEVEL THEME - BENEFITS	**Environmental and Social Issues**	Historic environment	Small negative impact. 4 listed buildings within 550m to the east of the site: Shawms, Grade II*, 330m, Salix, Grade II, 360m, Willow House, Grade II*, 370m, Spring House, Grade II, 430m, White House, Grade II, 430m No scheduled monument within 800m. Potential adverse effect on setting of heritage assets. However, view towards proposed scheme is likely to be screened by other buildings and existing trees. Therefore, any adverse effects are likely to be minimal	Small negative impact. No listed buildings within 550m of site, no scheduled monument within 800m. Consider setting of American Cemetery 600m east.	Small negative impact. Grade II listed Statue of Albert, Prince Consort, at Madingley Hall located approximately 300m north of site. Consider setting of this asset. No scheduled monument within 800m of site.	Neutral impact. No listed buildings within 550m of site, no scheduled monument within 800m	Small negative impact. No listed buildings within 550m of site, no scheduled monument within 800m Consider Setting of American Cemetery approximately 600m north east.	Small negative impact. Grade II listed feature Pump on South East Corner of Small Green located approximately 550m south-east of the site.	Neutral impact. No listed buildings within 550m of site, no scheduled monument within 800m	Neutral impact. No listed buildings within 550m of site, no scheduled monument within 800m.	Medium negative impact. 4 Features of Heritage Interest within 800m of the site. 4 Grade II listed features: Milestone TO south of Caxton Gibbet inn 450m south of site reference, Mile Post South of Pembroke Farm And West of Caxton Gibbet Inn,660m west Mile Post Near Junction with Elsworth Rd, 900m east Dovecote TO North East of Caxton Pastures Farmhouse, 750m south west One Scheduled Monument (Moated Site AT Pastures Farm) around Dovecote site.
		Flood risk	Neutral impact. The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected.	Neutral impact. The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected.	Neutral impact. The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected	Neutral impact. The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected	Neutral impact. The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected.	Neutral impact. The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected	Neutral impact. The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected.	Neutral impact. The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected	Neutral impact. The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected.
		Water quality - Surface water	Neutral impact. No Watercourses within close proximity of the site. A pond is located to the north adjacent to the site. Works are expected to remain within the footprint of the existing P&R, any potential effects on watercourse can be mitigated through design and construction and environmental management measures.	Neutral impact. Watercourse adjacent to site. No watercourse within or adjacent to site. Drains within 100m. Impacts can be minimized through design/Construction environmental Management measures.	Medium negative impact. Watercourse crosses site – minor impact on water body likely but can be minimized through design/ construction environmental management measures	Neutral impact. No watercourse within or adjacent to site. Drains within 100m. Impacts can be minimized through design.	Neutral impact. No watercourse within or adjacent to site. Drains within 100m. Impacts can be minimized through design.	Small negative impact. The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected.	Small negative impact. Watercourse adjacent to/near/within site depending on final site boundary. Adverse construction effects possible but can be minimized through design/Construction environmental Management measures.	Small negative impact. Watercourse adjacent to/near/within site depending on final site boundary. Adverse construction effects possible but can be minimized through design/Construction environmental Management measures.	Small negative impact. Watercourse adjacent to/near/within site depending on final site boundary. Adverse construction effects possible but can be minimized through design/Construction environmental Management measures
		Water quality - Groundwater	Medium negative impact. The site is not within a Groundwater Source Protection Zone (GSPZ) The site is over or adjacent to a Principal Bedrock Aquifer. The site is over an undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone.	Medium negative impact. The site is not within a Groundwater Source Protection Zone (GSPZ) The site is within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone.	Medium negative impact. The site is not within a Groundwater Source Protection Zone (GSPZ) The site is within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone.	Medium negative impact. The site is not within a Groundwater Source Protection Zone (GSPZ) The site is within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone.	Medium negative impact. The site is not within a Groundwater Source Protection Zone (GSPZ) The site is within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone.	Small negative impact. The site is not within a Groundwater Source Protection Zone (GSPZ) The site is not within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is not within a groundwater vulnerability zone.	Medium negative impact. The site is not within a Groundwater Source Protection Zone (GSPZ) The site is within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone.	Small negative impact. The site is not within a Groundwater Source Protection Zone (GSPZ) The site is not within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is not within a groundwater vulnerability zone.	Small negative impact. The site is not within a Groundwater Source Protection Zone (GSPZ) The site is not within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is not within a groundwater vulnerability zone.
		Impact on society	Neutral impact. Site outside of Green Belt. No loss of designated open space, no PRoW diversion required.	Medium negative impact. Site in Greenbelt, potential effects on openness and local community acceptance. No loss of designated open space, no PRoW diversion required.	Medium negative impact. Site in Greenbelt, potential effects on openness and local community acceptance. No loss of designated open space, no PRoW diversion required.	Medium negative impact. Site in Greenbelt, potential effects on openness and local community acceptance. No loss of designated open space, no PRoW diversion required	Medium negative impact. Site in Greenbelt, potential effects on openness and local community acceptance. No loss of designated open space, no PRoW diversion required.	Medium negative impact. Site located within edge of Greenbelt, minor potential for effects on openness. No loss of designated open space. Site lies close to PRoW – diversion may be required.	Neutral impact. Site outside of Greenbelt. No loss of designated open space, no PRoW diversion required.	Small negative impact. Site outside of Greenbelt. No loss of designated open space. The site is crossed by a PRoW – diversion required.	Neutral impact. Site outside of Greenbelt. No loss of designated open space, no PRoW diversion required.

			Option								
			0	1	2	3	4	5	6	7	8
Theme	**Criteria**	**Subcriteria**	**Existing Madingley Road Park and Ride**	**Madingley Mulch North East (site adjacent to SSSI north of A1303)**	**Madingley Mulch North West (often referred to as Park Farm)**	**Madingley Mulch South West (Often referred to as water works site)**	**Madingley Mulch South East (often referred to as Chrome Lea)**	**Scotland Farm**	**Bourn Airfield**	**North of Cambourne**	**Caxton Gibbet**
1C. OPERATIONAL THEME - DELIVERABILITY	**Planning Issues**	Land acquisition required	Land acquisition required to ensure continued operation of currently leased site. Medium negative	Land acquisition required. Small negative	Land acquisition required. Small negative	Land acquisition required. Small negative	Land acquisition required. Small negative	Land acquisition required. Small negative	Land acquisition required. Small negative	Land acquisition required. Small negative	Land acquisition required. Small negative
		Interaction with planned developments	No consented developments at site. Negligible effect	No consented developments at site. Negligible effect	No consented developments at site. Negligible effect	No consented developments at site. Negligible effect	No consented developments at site. Negligible effect	No consented developments at site. Negligible effect	No consented developments at site. Negligible effect	No consented developments at site. Negligible effect	No consented developments at site. Negligible effect
		Impact on land use	No change. Negligible effect	Change to existing land use (agricultural). Small negative effect	Change to existing land use (agricultural). Small negative effect	Change to existing land use (agricultural). Small negative effect	Change to existing land use (agricultural). Small negative effect	Change to existing land use (agricultural). Small negative effect	Change to existing land use (airfield), however negligible effect	Change to existing land use (agricultural). Small negative effect	Change to existing land use (agricultural). Small negative effect
		Public acceptability	Small positive because no change in terms of existing use or location	Medium negative as strong local objections have been raised	Medium negative as strong local objections have been raised	Medium negative as strong local objections have been raised	Medium negative as strong local objections have been raised	Small positive because of existing site use as airfield	Negligible as no local objects have been raised or are anticipated	Negligible as no local objects have been raised or are anticipated	Negligible as no local objects have been raised or are anticipated
		Business acceptability	Through Cambridgeshire County Council's discussions with bus operators, it has been suggested that bus operators would prefer to serve this location. Medium positive	Through Cambridgeshire County Council's discussions with bus operators, it has been suggested that bus operators would prefer to serve this location. Medium positive	Through Cambridgeshire County Council's discussions with bus operators, it has been suggested that bus operators would prefer to serve this location. Medium positive	Through Cambridgeshire County Council's discussions with bus operators, it has been suggested that bus operators would prefer to serve this location. Medium positive	Through Cambridgeshire County Council's discussions with bus operators, it has been suggested that bus operators would prefer to serve this location. Medium positive	Through Cambridgeshire County Council's discussions with bus operators, it has been suggested that bus operators would prefer not to serve this location due to distance from Cambridge. Negligible effect	Through Cambridgeshire County Council's discussions with bus operators, it has been suggested that bus operators would prefer not to serve this location due to distance from Cambridge. Negligible effect	Through Cambridgeshire County Council's discussions with bus operators, it has been suggested that bus operators would prefer not to serve this location due to distance from Cambridge. Negligible effect	Through Cambridgeshire County Council's discussions with bus operators, it has been suggested that bus operators would prefer not to serve this location due to distance from Cambridge. Negligible effect
	Engineering Issues	Impact on local road network during construction	Negligible effect as exisitng access can be used	Medium negative effect as new access likely required, with some impacts on traffic	Medium negative effect as new access likely required, with some impacts on traffic	Small negative effect as new access likely required, with minor impact on traffic	Small negative effect as new access likely required, with minor impact on traffic	Neutral impact. Already a dumbbell roundabout with spur in place.	Neutral impact. Already a roundabout with arm in place.	Neutral impact. Can be constructed offline	Medium negative effect as new access likely required, with some impacts on traffic
	Costs	Capital Costs	All deemed to be similar costs at this stage.	All deemed to be similar costs at this stage.	All deemed to be similar costs at this stage.	All deemed to be similar costs at this stage.	All deemed to be similar costs at this stage.	All deemed to be similar costs at this stage.	All deemed to be similar costs at this stage.	All deemed to be similar costs at this stage.	All deemed to be similar costs at this stage.
		Operating Costs	Negligible effect as bus journey times same as existing	Small negative effect, as bus journey times longer than existing, if operated as a shuttle between P&R and Cambridge centre	Small negative effect, as bus journey times longer than existing, if operated as a shuttle between P&R and Cambridge centre	Small negative effect, as bus journey times longer than existing, if operated as a shuttle between P&R and Cambridge centre	Small negative effect, as bus journey times longer than existing, if operated as a shuttle between P&R and Cambridge centre	Medium negative effect, as bus journey times longer than existing and sites 1-4, if operated as a shuttle between P&R and Cambridge centre	Medium negative effect, as bus journey times longer than existing and sites 1-4, if operated as a shuttle between P&R and Cambridge centre	Medium negative effect, as bus journey times longer than existing and sites 1-4, if operated as a shuttle between P&R and Cambridge centre	Large negative effect, as bus journey times longer than existing and sites 1-7, if operated as a shuttle between P&R and Cambridge centre
	Scalability	Scalability	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.
		Resilience	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.

G. **Stage 1 INSET Scoring**

CAMBOURNE TO CAMBRIDGE BETTER BUS JOUREYS - P&R SITE SHORTLIST SELECTION
INVESTMENT SIFTING AND EVALUATION TOOL (INSET)

1A.HIGH LEVEL THEME - POLICY ALIGNMENT																																
		Greater Cambridge Greater Peterborough enterprise Partnership Ambitions															**Alignment with the Greater Cambridge City Deal Transport Vision**												**Alignment with Published Plans**								**WEIGHTED SCORE FOR THEME**
No.	**Name**	**Enhance Digital Connectivity**		**Business Growth**		**Growth of business innovationand incubator space**		**Removes skills barriers to contiued growth**		**Transport network fit for an economically vital high growth area**		**Alconbury Weald enterprise campus**		**WEIGHTED AVERAGE**	**Accessibility by Public transport**		**Accessibility by cycle**		**Acessibility on foot**		**Congestion (i.e. traffic delays)**		**Traffic levels (i.e. total volume of traffic)**	**0**	**WEIGHTED AVERAGE**	**Draft Local Plan for Cambridge (2014)**		**Draft Local Plan for South Cambridgeshire (2014)**		**Cambridgeshire Local Transport Plan 2011 - 2031**		**Transport Strategy for Cambridge and South Cambridge**		**Greenbelt**		**WEIGHTED AVERAGE**	
		Select from list:													*Select from list:*												*Select from list:*								
0	**Existing Madingley Road Park and Ride**	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**0.67**	2: Medium positive (Medium improvement to accessibility)	2	0: Neutral (No change)	0	0: Neutral (No change)	0	0: Neutral (No change)	0	1: Small positive (Some reduction in traffic levels)	1	**0.60**	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	1: Small positive (Small positive fit)	1	1: Small positive (Small positive fit)	1	0: Neutral (N/A)	0	**1.00**	**0.76**
1	**Madingley Mulch North East (site adjacent to SSSI north of A1303)**	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**0.67**	2: Medium positive (Medium improvement to accessibility)	2	3: Large positive (Large improvement to accessibility)	3	0: Neutral (No change)	0	2: Medium positive (Medium reduction in traffic levels)	2	1: Small positive (Some reduction in traffic levels)	1	**1.60**	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	-2: Medium negative (Medium negative fit)	-2	**1.00**	**1.09**
2	**Madingley Mulch North West (often referred to as Park Farm)**	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**0.67**	2: Medium positive (Medium improvement to accessibility)	2	3: Large positive (Large improvement to accessibility)	3	0: Neutral (No change)	0	2: Medium positive (Medium reduction in traffic levels)	2	1: Small positive (Some reduction in traffic levels)	1	**1.60**	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	-2: Medium negative (Medium negative fit)	-2	**1.00**	**1.09**
3	**Madingley Mulch South West (Often referred to as water works site)**	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**0.67**	2: Medium positive (Medium improvement to accessibility)	2	3: Large positive (Large improvement to accessibility)	3	0: Neutral (No change)	0	2: Medium positive (Medium reduction in traffic levels)	2	1: Small positive (Some reduction in traffic levels)	1	**1.60**	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	-2: Medium negative (Medium negative fit)	-2	**1.00**	**1.09**
4	**Madingley Mulch South East (often referred to as Chrome Lea)**	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**0.67**	2: Medium positive (Medium improvement to accessibility)	2	3: Large positive (Large improvement to accessibility)	3	0: Neutral (No change)	0	2: Medium positive (Medium reduction in traffic levels)	2	1: Small positive (Some reduction in traffic levels)	1	**1.60**	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	-2: Medium negative (Medium negative fit)	-2	**1.00**	**1.09**
5	**Scotland Farm**	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**0.67**	1: Small positive (Some improved accessibility)	1	2: Medium positive (Medium improvement to accessibility)	2	0: Neutral (No change)	0	2: Medium positive (Medium reduction in traffic levels)	2	1: Small positive (Some reduction in traffic levels)	1	**1.20**	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	-1: Small negative (Small negative fit)	-1	**1.20**	**1.02**
6	**Bourn airfield**	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**0.67**	1: Small positive (Some improved accessibility)	1	2: Medium positive (Medium improvement to accessibility)	2	0: Neutral (No change)	0	2: Medium positive (Medium reduction in traffic levels)	2	1: Small positive (Some reduction in traffic levels)	1	**1.20**	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**1.40**	**1.09**
7	**North of Cambourne**	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**0.67**	1: Small positive (Some improved accessibility)	1	2: Medium positive (Medium improvement to accessibility)	2	0: Neutral (No change)	0	2: Medium positive (Medium reduction in traffic levels)	2	1: Small positive (Some reduction in traffic levels)	1	**1.20**	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**1.75**	**1.21**
8	**Caxton Gibbet**	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**0.67**	1: Small positive (Some improved accessibility)	1	1: Small positive (Some improved accessibility)	1	0: Neutral (No change)	0	2: Medium positive (Medium reduction in traffic levels)	2	1: Small positive (Some reduction in traffic levels)	1	**1.00**	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**1.75**	**1.14**

CAMBOURNE TO CAMBRIDGE BETTER BUS JOUREYS - P&R SITE SHORTLIST SELECTION
INVESTMENT SIFTING AND EVALUATION TOOL (INSET)

1B. INTERMEDIATE LEVEL THEME - BENEFITS

No.	Name	Transport Benefits																								Passenger experience																							
		Journey Time			Ease of interchange between modes			Accomodates forecast patronage			Public transport connectivity			Private vehicles connectivity			Walking Connectivity			Cycling Connectivity			WEIGHTED AVERAGE			Safety			Shelter provision			Impact on the mobility impaired			Wayfinding			Congestion			WEIGHTED AVERAGE		
		Select from list:						*Select from list:*																		*Select from list:*																							
0	**Existing Madingley Road Park and Ride**	0: Neutral (No change)	0		0: Neutral (No change)	0		1: Small positive (Small increase in capacity)	1		0: Neutral (No change)	0		0: Neutral (No change)	0		0: Neutral (No change)	0		0: Neutral (No change)	0		**0.14**			2: Medium positive (Medium improvements to safety)	2		2: Medium positive (Medium increase in shelter provision)	2		2: Medium positive (Medium improvement for mobility impaired)	2		2: Medium positive (Medium improvements to wayfinding)	2		0: Neutral (No change)	0		**1.60**	
1	**Madingley Mulch North East (site adjacent to SSSI north of A1303)**	1: Small positive (Some reduction in journey times)	1		2: Medium positive (Medium improvement to interchange)	2		2: Medium positive Medium increase in capacity)	2		0: Neutral (No change)	0		3: Large positive (Large improvement to connectivity)	3		0: Neutral (No change)	0		2: Medium positive Medium improvement to connectivity)	2		**1.43**			2: Medium positive (Medium improvements to safety)	2		2: Medium positive (Medium increase in shelter provision)	2		2: Medium positive (Medium improvement for mobility impaired)	2		2: Medium positive (Medium improvements to wayfinding)	2		2: Medium positive (Medium reduction in congestion)	2		**3.60**	
2	**Madingley Mulch North West (often referred to as Park Farm)**	1: Small positive (Some reduction in journey times)	1		2: Medium positive (Medium improvement to interchange)	2		2: Medium positive Medium increase in capacity)	2		0: Neutral (No change)	0		3: Large positive (Large improvement to connectivity)	3		0: Neutral (No change)	0		2: Medium positive Medium improvement to connectivity)	2		**1.43**			2: Medium positive (Medium improvements to safety)	2		2: Medium positive (Medium increase in shelter provision)	2		2: Medium positive (Medium improvement for mobility impaired)	2		2: Medium positive (Medium improvements to wayfinding)	2		2: Medium positive (Medium reduction in congestion)	2		**3.60**	
3	**Madingley Mulch South West (Often referred to as water works site)**	1: Small positive (Some reduction in journey times)	1		2: Medium positive (Medium improvement to interchange)	2		2: Medium positive Medium increase in capacity)	2		0: Neutral (No change)	0		3: Large positive (Large improvement to connectivity)	3		0: Neutral (No change)	0		2: Medium positive Medium improvement to connectivity)	2		**1.43**			2: Medium positive (Medium improvements to safety)	2		2: Medium positive (Medium increase in shelter provision)	2		2: Medium positive (Medium improvement for mobility impaired)	2		2: Medium positive (Medium improvements to wayfinding)	2		2: Medium positive (Medium reduction in congestion)	2		**3.60**	
4	**Madingley Mulch South East (often referred to as Chrome Lea)**	1: Small positive (Some reduction in journey times)	1		2: Medium positive (Medium improvement to interchange)	2		2: Medium positive Medium increase in capacity)	2		0: Neutral (No change)	0		3: Large positive (Large improvement to connectivity)	3		0: Neutral (No change)	0		2: Medium positive Medium improvement to connectivity)	2		**1.43**			2: Medium positive (Medium improvements to safety)	2		2: Medium positive (Medium increase in shelter provision)	2		2: Medium positive (Medium improvement for mobility impaired)	2		2: Medium positive (Medium improvements to wayfinding)	2		2: Medium positive (Medium reduction in congestion)	2		**3.60**	
5	**Scotland Farm**	1: Small positive (Some reduction in journey times)	1		2: Medium positive (Medium improvement to interchange)	2		2: Medium positive Medium increase in capacity)	2		0: Neutral (No change)	0		3: Large positive (Large improvement to connectivity)	3		0: Neutral (No change)	0		2: Medium positive Medium improvement to connectivity)	2		**1.43**			2: Medium positive (Medium improvements to safety)	2		2: Medium positive (Medium increase in shelter provision)	2		2: Medium positive (Medium improvement for mobility impaired)	2		2: Medium positive (Medium improvements to wayfinding)	2		2: Medium positive (Medium reduction in congestion)	2		**3.60**	
6	**Bourn airfield**	1: Small positive (Some reduction in journey times)	1		2: Medium positive (Medium improvement to interchange)	2		2: Medium positive Medium increase in capacity)	2		0: Neutral (No change)	0		1: Small positive (Some improvement to connectivity)	1		0: Neutral (No change)	0		2: Medium positive Medium improvement to connectivity)	2		**1.14**			2: Medium positive (Medium improvements to safety)	2		2: Medium positive (Medium increase in shelter provision)	2		2: Medium positive (Medium improvement for mobility impaired)	2		2: Medium positive (Medium improvements to wayfinding)	2		2: Medium positive (Medium reduction in congestion)	2		**3.60**	
7	**North of Cambourne**	1: Small positive (Some reduction in journey times)	1		2: Medium positive (Medium improvement to interchange)	2		2: Medium positive Medium increase in capacity)	2		0: Neutral (No change)	0		3: Large positive (Large improvement to connectivity)	3		0: Neutral (No change)	0		2: Medium positive Medium improvement to connectivity)	2		**1.43**			2: Medium positive (Medium improvements to safety)	2		2: Medium positive (Medium increase in shelter provision)	2		2: Medium positive (Medium improvement for mobility impaired)	2		2: Medium positive (Medium improvements to wayfinding)	2		2: Medium positive (Medium reduction in congestion)	2		**3.60**	
8	**Caxton Gibbet**	1: Small positive (Some reduction in journey times)	1		2: Medium positive (Medium improvement to interchange)	2		2: Medium positive Medium increase in capacity)	2		0: Neutral (No change)	0		3: Large positive (Large improvement to connectivity)	3		0: Neutral (No change)	0		1: Small positive (Some improvement to connectivity)	1		**1.29**			2: Medium positive (Medium improvements to safety)	2		2: Medium positive (Medium increase in shelter provision)	2		2: Medium positive (Medium improvement for mobility impaired)	2		2: Medium positive (Medium improvements to wayfinding)	2		2: Medium positive (Medium reduction in congestion)	2		**3.60**	

CAMBOURNE TO CAMBRIDGE BETTER BUS JOUREYS - P&R SITE SHORTLIST SELECTION
INVESTMENT SIFTING AND EVALUATION TOOL (INSET)

1B. INTERMEDIATE LEVEL THEME - BENEFITS

No.	Name	Environmental and social issues																						Wider Economic Benefits					WEIGHTED SCORE FOR THEME
		Noise		Air Quality and Greenhouse Gases		Landscape / Townscape		Biodiversity		Historic Environment		Flood Risk		Water Quality - Surface Water		Water Quality - Groundwater		Impact on Society		WEIGHTED AVERAGE		Wider Economic Benefits(e.g. GVA)		Impact on areas of deprivation		WEIGHTED AVERAGE	
		Select from list:																											
0	**Existing Madingley Road Park and Ride**	-1: Small negative (small number of adverse effects, can be mitigated)	-1	-1: Small negative (small number of adverse effects, can be mitigated)	-1	-1: Small negative (small number of adverse effects, can be mitigated)	-1	0: Neutral (N/A)	0	-1: Small negative (small number of adverse effects, can be mitigated)	-1	0: Neutral (N/A)	0	0: Neutral (N/A)	0	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	0: Neutral (N/A)	0	**-0.67**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	**0.00**	**0.27**
1	**Madingley Mulch North East (site adjacent to SSSI north of A1303)**	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-3: Large negative (Significant adverse effect, difficult to mitigate)	-3	-3: Large negative (Significant adverse effect, difficult to mitigate)	-3	-1: Small negative (small number of adverse effects, can be mitigated)	-1	0: Neutral (N/A)	0	0: Neutral (N/A)	0	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	**-1.44**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	**0.00**	**0.90**
2	**Madingley Mulch North West (often referred to as Park Farm)**	-1: Small negative (small number of adverse effects, can be mitigated)	-1	0: Neutral (N/A)	0	-3: Large negative (Significant adverse effect, difficult to mitigate)	-3	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-1: Small negative (small number of adverse effects, can be mitigated)	-1	0: Neutral (N/A)	0	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	**-1.22**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	**0.00**	**0.95**
3	**Madingley Mulch South West (Often referred to as water works site)**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	-3: Large negative (Significant adverse effect, difficult to mitigate)	-3	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	0: Neutral (N/A)	0	0: Neutral (N/A)	0	0: Neutral (N/A)	0	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	**-0.78**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	**0.00**	**1.06**
4	**Madingley Mulch South East (often referred to as Chrome Lea)**	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-3: Large negative (Significant adverse effect, difficult to mitigate)	-3	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-1: Small negative (small number of adverse effects, can be mitigated)	-1	0: Neutral (N/A)	0	0: Neutral (N/A)	0	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	**-1.33**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	**0.00**	**0.92**
5	**Scotland Farm**	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	0: Neutral (N/A)	0	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	0: Neutral (N/A)	0	-1: Small negative (small number of adverse effects, can be mitigated)	-1	0: Neutral (N/A)	0	-1: Small negative (small number of adverse effects, can be mitigated)	-1	-1: Small negative (small number of adverse effects, can be mitigated)	-1	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	**-0.78**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	**0.00**	**1.06**
6	**Bourn airfield**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	2: Medium positive (Potentially signiciant beneficial effects)	2	0: Neutral (N/A)	0	0: Neutral (N/A)	0	0: Neutral (N/A)	0	-1: Small negative (small number of adverse effects, can be mitigated)	-1	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	0: Neutral (N/A)	0	**-0.11**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	**0.00**	**1.16**
7	**North of Cambourne**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	-1: Small negative (small number of adverse effects, can be mitigated)	-1	-1: Small negative (small number of adverse effects, can be mitigated)	-1	0: Neutral (N/A)	0	0: Neutral (N/A)	0	-1: Small negative (small number of adverse effects, can be mitigated)	-1	-1: Small negative (small number of adverse effects, can be mitigated)	-1	-1: Small negative (small number of adverse effects, can be mitigated)	-1	**-0.44**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	**0.00**	**1.15**
8	**Caxton Gibbet**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	-1: Small negative (small number of adverse effects, can be mitigated)	-1	0: Neutral (N/A)	0	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	0: Neutral (N/A)	0	-1: Small negative (small number of adverse effects, can be mitigated)	-1	-1: Small negative (small number of adverse effects, can be mitigated)	-1	0: Neutral (N/A)	0	**-0.56**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	**0.00**	**1.08**

CAMBOURNE TO CAMBRIDGE BETTER BUS JOUREYS - P&R SITE SHORTLIST SELECTION
INVESTMENT SIFTING AND EVALUATION TOOL (INSET)

1C. OPERATIONAL THEME - DELIVERABILITY

No.	Name	Planning Issues															Engineering Issues			Costs					Scalability						WEIGHTED SCORE FOR THEME
		Land acquisition required		Interaction with planned developments		Impact on land use		Public acceptability		Business acceptability		WEIGHTED AVERAGE					Impact on local road network during construction		WEIGHTED AVERAGE	Capital costs		Operating costs		WEIGHTED AVERAGE		Scalability		Resilience		WEIGHTED AVERAGE	
		Select from list:															*Select from list:*			*Select from list:*					*Select from list:*						
0	**Existing Madingley Road Park and Ride**	-2: Medium negative (TBD depending on project)	-2	0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	1: Small positive (TBD depending on project)	1	2: Medium positive (TBD depending on project)	2	**0.20**					0: Neutral (No impact))	0	**0.00**	-2: Medium negative (TBD depending on project)	-2	0: Neutral (TBD depending on project)	0	**-1.00**		0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	**0.00**		**-0.20**
1	**Madingley Mulch North East (site adjacent to SSSI north of A1303)**	-1: Small negative (TBD depending on project)	-1	0: Neutral (TBD depending on project)	0	-1: Small negative (TBD depending on project)	-1	-2: Medium negative (TBD depending on project)	-2	2: Medium positive (TBD depending on project)	2	**-0.40**					-2: Medium negative (Medium impact on road network	-2	**-2.00**	-2: Medium negative (TBD depending on project)	-2	-1: Small negative (TBD depending on project)	-1	**-1.50**		0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	**0.00**		**-0.98**
2	**Madingley Mulch North West (often referred to as Park Farm)**	-1: Small negative (TBD depending on project)	-1	0: Neutral (TBD depending on project)	0	-1: Small negative (TBD depending on project)	-1	-2: Medium negative (TBD depending on project)	-2	2: Medium positive (TBD depending on project)	2	**-0.40**					-2: Medium negative (Medium impact on road network	-2	**-2.00**	-2: Medium negative (TBD depending on project)	-2	-1: Small negative (TBD depending on project)	-1	**-1.50**		0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	**0.00**		**-0.98**
3	**Madingley Mulch South West (Often referred to as water works site)**	-1: Small negative (TBD depending on project)	-1	0: Neutral (TBD depending on project)	0	-1: Small negative (TBD depending on project)	-1	-2: Medium negative (TBD depending on project)	-2	2: Medium positive (TBD depending on project)	2	**-0.40**					-1: Small negative (Small impact on road network)	-1	**-1.00**	-2: Medium negative (TBD depending on project)	-2	-1: Small negative (TBD depending on project)	-1	**-1.50**		0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	**0.00**		**-0.73**
4	**Madingley Mulch South East (often referred to as Chrome Lea)**	-1: Small negative (TBD depending on project)	-1	0: Neutral (TBD depending on project)	0	-1: Small negative (TBD depending on project)	-1	-2: Medium negative (TBD depending on project)	-2	2: Medium positive (TBD depending on project)	2	**-0.40**					-1: Small negative (Small impact on road network)	-1	**-1.00**	-2: Medium negative (TBD depending on project)	-2	-1: Small negative (TBD depending on project)	-1	**-1.50**		0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	**0.00**		**-0.73**
5	**Scotland Farm**	-1: Small negative (TBD depending on project)	-1	0: Neutral (TBD depending on project)	0	-1: Small negative (TBD depending on project)	-1	0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	**-0.40**					0: Neutral (No impact))	0	**0.00**	-2: Medium negative (TBD depending on project)	-2	-2: Medium negative (TBD depending on project)	-2	**-2.00**		0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	**0.00**		**-0.60**
6	**Bourn airfield**	-1: Small negative (TBD depending on project)	-1	0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	1: Small positive (TBD depending on project)	1	0: Neutral (TBD depending on project)	0	**0.00**					0: Neutral (No impact))	0	**0.00**	-2: Medium negative (TBD depending on project)	-2	-2: Medium negative (TBD depending on project)	-2	**-2.00**		0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	**0.00**		**-0.50**
7	**North of Cambourne**	-1: Small negative (TBD depending on project)	-1	0: Neutral (TBD depending on project)	0	-1: Small negative (TBD depending on project)	-1	0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	**-0.40**					0: Neutral (No impact))	0	**0.00**	-2: Medium negative (TBD depending on project)	-2	-2: Medium negative (TBD depending on project)	-2	**-2.00**		0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	**0.00**		**-0.60**
8	**Caxton Gibbet**	-1: Small negative (TBD depending on project)	-1	0: Neutral (TBD depending on project)	0	-1: Small negative (TBD depending on project)	-1	0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	**-0.40**					-2: Medium negative (Medium impact on road network	-2	**-2.00**	-2: Medium negative (TBD depending on project)	-2	-3: Large negative (TBD depending on project)	-3	**-2.50**		0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	**0.00**		**-1.23**

CAMBOURNE TO CAMBRIDGE BETTER BUS JOUREYS - P&R SITE SHORTLIST SELECTION
INVESTMENT SIFTING AND EVALUATION TOOL (INSET)

2A. MULTI-CRITERIA ANALYSIS - SUMMARY					
No.	**Name**	**1A.HIGH LEVEL THEME - POLICY ALIGNMENT**	**1B. INTERMEDIATE LEVEL THEME - BENEFITS**	**1C. OPERATIONAL THEME - DELIVERABILITY**	**WEIGHTED AVERAGE**
		Final weighted score (-3 to 3 scale):	*Final weighted score (-3 to 3 scale):*	*Final weighted score (-3 to 3 scale):*	
0	Existing Madingley Road Park and Ride	0.76	0.27	-0.20	0.27
1	Madingley Mulch North East (site adjacent to SSSI north of A1303)	1.09	0.90	-0.98	0.34
2	Madingley Mulch North West (often referred to as Park Farm)	1.09	0.95	-0.98	0.36
3	Madingley Mulch South West (Often referred to as water works site)	1.09	1.06	-0.73	0.48
4	Madingley Mulch South East (often referred to as Chrome Lea)	1.09	0.92	-0.73	0.43
5	Scotland Farm	1.02	1.06	-0.60	0.49
6	Bourn airfield	1.09	1.16	-0.50	0.58
7	North of Cambourne	1.21	1.15	-0.60	0.58
8	Caxton Gibbet	1.14	1.08	-1.23	0.33

2B. MULTI-CRITERIA ANALYSIS - SUMMARY IN ORDER					
No.	Name	1A.HIGH LEVEL THEME - POLICY ALIGNMENT	1B. INTERMEDIATE LEVEL THEME - BENEFITS	1C. OPERATIONAL THEME - DELIVERABILITY	WEIGHTED AVERAGE
		Final weighted score (-3 to 3 scale):	*Final weighted score (-3 to 3 scale):*	*Final weighted score (-3 to 3 scale):*	
6	Bourn airfield	1.09	1.16	-0.50	0.58
7	North of Cambourne	1.21	1.15	-0.60	0.58
5	Scotland Farm	1.02	1.06	-0.60	0.49
3	Madingley Mulch South West (Often referred to as water works site)	1.09	1.06	-0.73	0.48
4	Madingley Mulch South East (often referred to as Chrome Lea)	1.09	0.92	-0.73	0.43
2	Madingley Mulch North West (often referred to as Park Farm)	1.09	0.95	-0.98	0.36
1	Madingley Mulch North East (site adjacent to SSSI north of A1303)	1.09	0.90	-0.98	0.34
8	Caxton Gibbet	1.14	1.08	-1.23	0.33
0	Existing Madingley Road Park and Ride	0.76	0.27	-0.20	0.27

H. Stage 2 Indicative Site Layout Plans

H.1 Site 0: Existing Madingley Road Park & Ride

Rev B

Drawing Number 5040372/HW/FS/090

Status I

DO NOT SCALE

A1

PROPOSED ADDITIONAL PARKING AREAS

Rev	Description	By	Date	Chk'd	Auth
B	PROPOSED PARKING AREAS INDICATED				
–	–	–	–	–	–

Rev	Purpose of Issue	Date	Auth
B	FOR INFORMATION		
A	FOR INFORMATION	–	–

Client

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cambridgeshirehighways@skanska.co.uk

Project

CAMBRIDGE TO CAMBOURNE BUS IMPROVEMENT SCHEME

Title

PARK AND RIDE SITE 0

DRAFT

Original Scale	Designed / Drawn	Checked	Authorised
1:2000	RDB Date 07/08/17	SPW Date 07/08/17	ADB Date 07/08/17

Status	Drawing Number	Rev
I	5040372/HW/FS/090	B

H.2 Site 3: Madingley Mulch South West (Water Works)

Rev B

Drawing Number 5040372/HW/FS/092

Status I

DO NOT SCALE

A1

PROPOSED PARK AND RIDE SITE AREA

Rev	Description	By	Date	Chk'd	Auth
B	PROPOSED PARKING AREAS INCLUDED				
–	–	–	–	–	–

Rev	Purpose of Issue	Date	Auth
B	FOR INFORMATION		
A	FOR INFORMATION	–	–

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CAMBRIDGE TO CAMBOURNE BUS IMPROVEMENT SCHEME

Title

PARK AND RIDE SITE 3B

DRAFT

Original Scale	Designed/Drawn	Checked	Authorised
1:2000	RDB	SPW	ADB
	Date 07/08/17	Date 07/08/17	Date 07/08/17

Status	Drawing Number	Rev
I	5040372/HW/FS/092	B

H.3 Site 4: Madingley Mulch South East (Crome Lea)

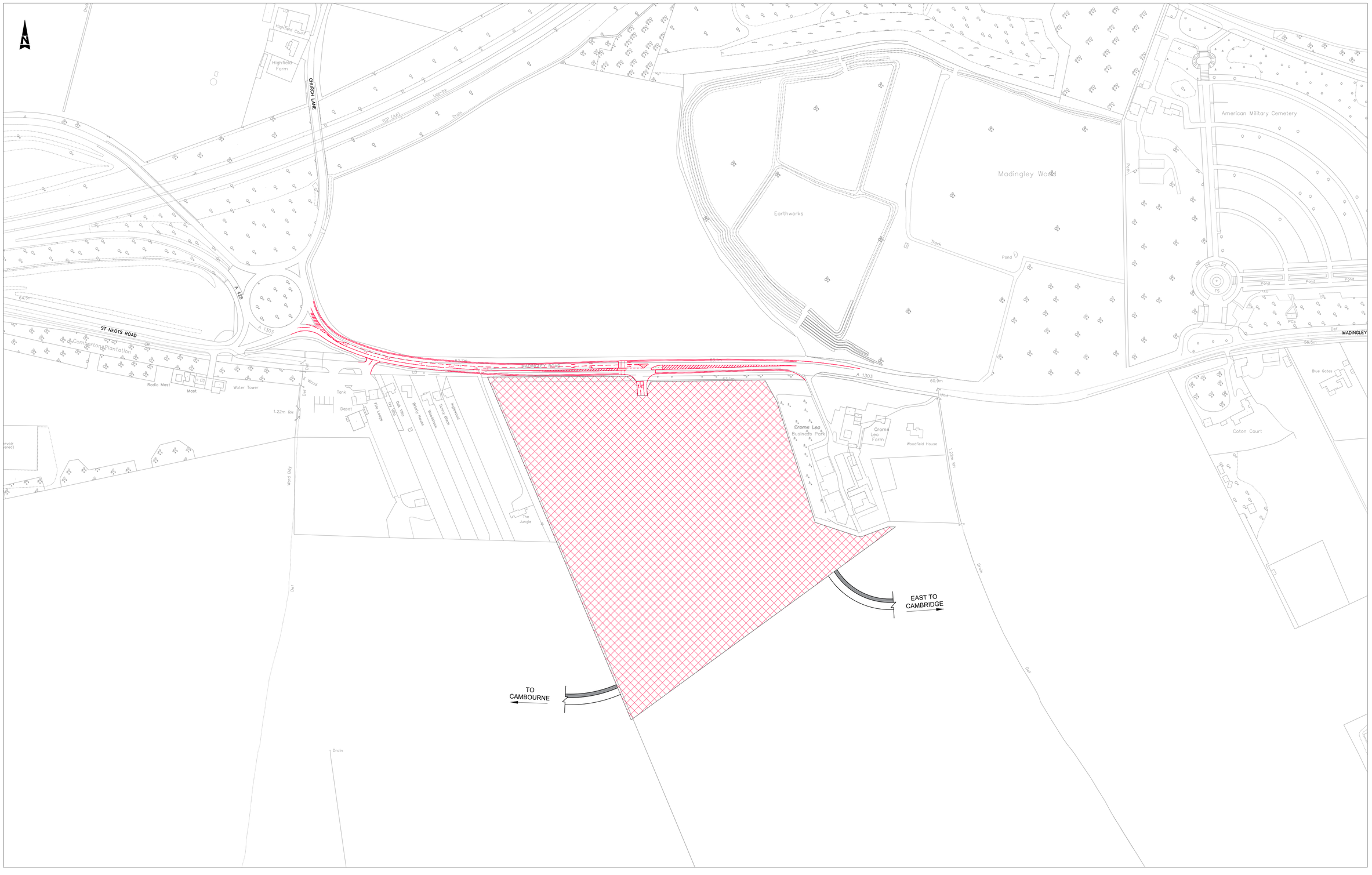
Rev B

Status I

Drawing Number 5040372/HW/FS/093

DO NOT SCALE

A3



PROPOSED PARK AND RIDE SITE AREAS

Rev	Description	By	Date	Chk'd	Auth
B	PROPSED PARKING AREAS INCLUDED	–	–	–	–
–	–				

Rev	Purpose of Issue	Date	Auth
B	FOR INFORMATION		
A	FOR INFORMATION	–	–

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Project

CAMBRIDGE TO CAMBOURNE
BUS IMPROVEMENT SCHEME

Title

PARK AND RIDE
SITE 4

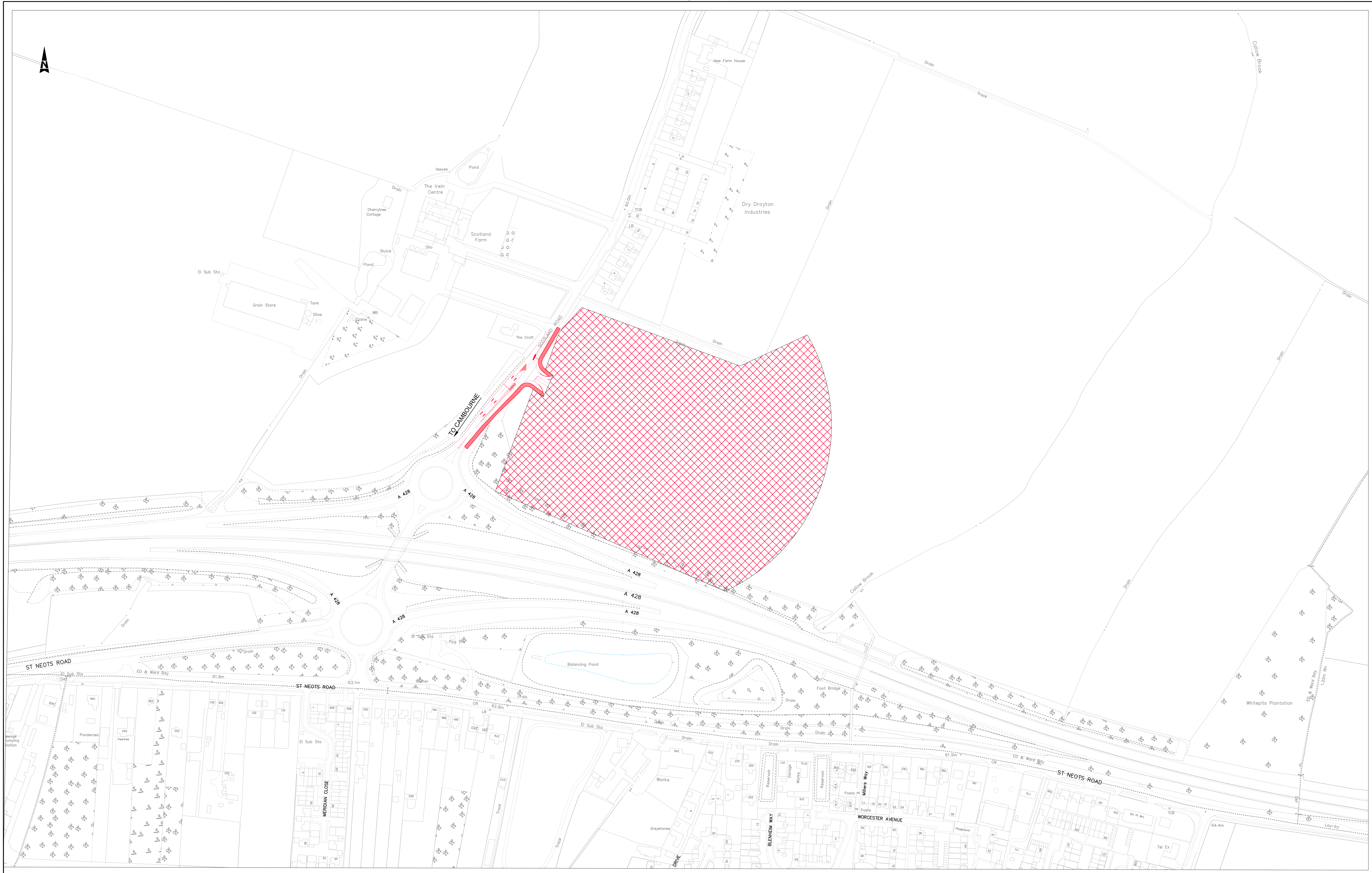
DRAFT

Original Scale	Designed/Drawn	Checked	Authorised
1:2000	RDB	SPW	ADB
	Date 07/08/17	Date 07/08/17	Date 07/08/17

Status	Drawing Number	Rev
I	5040372/HW/FS/093	B

File Location: P:\PBP01\ES\05 Combs CC\Cambridge Busways – A428 & Western Orbit\900 CAD & BIM\910 Drawings\A428 Cambridge to Cambourne\A1303 Options\Current\Vissim\
Drawing Name: A428 Busway Madingley P&R – Site 4 – Rev B.dwg Date: Aug 21, 2017 – 1:01pm Plotted by: kc964094

H.4 Site 5: Scotland Farm



DO NOT SCALE

A1

Status: I | Drawing Number: 5040372/HW/FS/094 | Rev: B

PROPOSED PARK AND RIDE SITE AREA

Rev	Description	By	Date	Chk'd	Auth
B	PROPOSED PARKING AREAS INCLUDED				
–	–	–	–	–	–

Rev	Purpose of Issue	Date	Auth
B	FOR INFORMATION		
A	FOR INFORMATION	–	–

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Project

CAMBRIDGE TO CAMBOURNE BUS IMPROVEMENT SCHEME

Title

PARK AND RIDE SITE 5

DRAFT

Original Scale	Designed/Drawn	Checked	Authorised
1:2000	RDB	SPW	ADB
	Date 07/08/17	Date 07/08/17	Date 07/08/17

Status	Drawing Number	Rev
I	5040372/HW/FS/094	B

H.5 Site 6: Bourn Airfield

Rev B

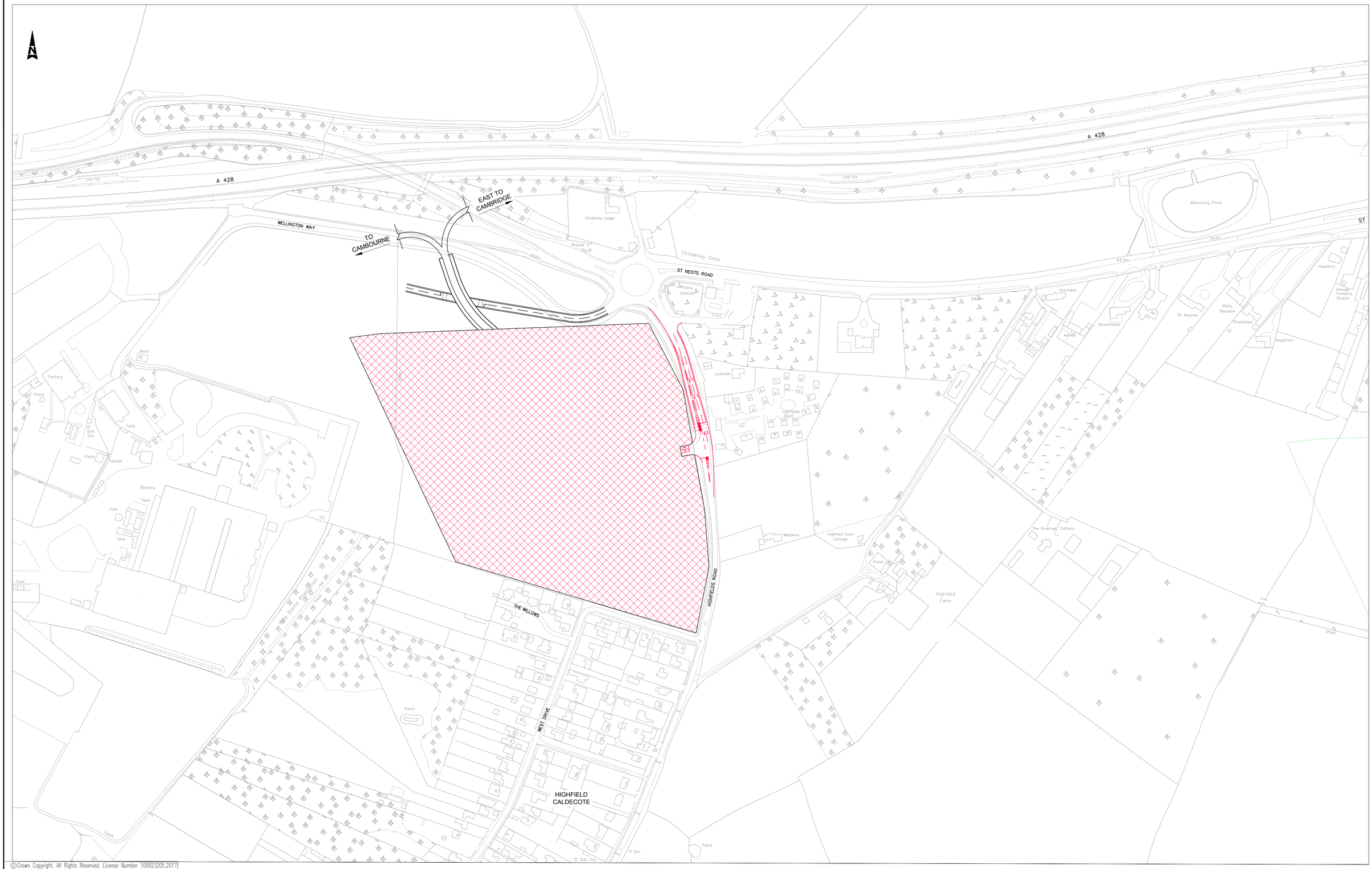
Drawing Number 5040372/HW/FS/095

Status I

DO NOT SCALE

A1

50 0 10



PROPOSED PARK AND RIDE SITE AREA

Rev	Description	By	Date	Chk'd	Auth
–	–	–	–	–	–

Rev	Purpose of Issue	Date	Auth
B	FOR INFORMATION		
A	FOR INFORMATION	–	–

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Project

CAMBRIDGE TO CAMBOURNE BUS IMPROVEMENT SCHEME

Title

PARK AND PARK SITE 6

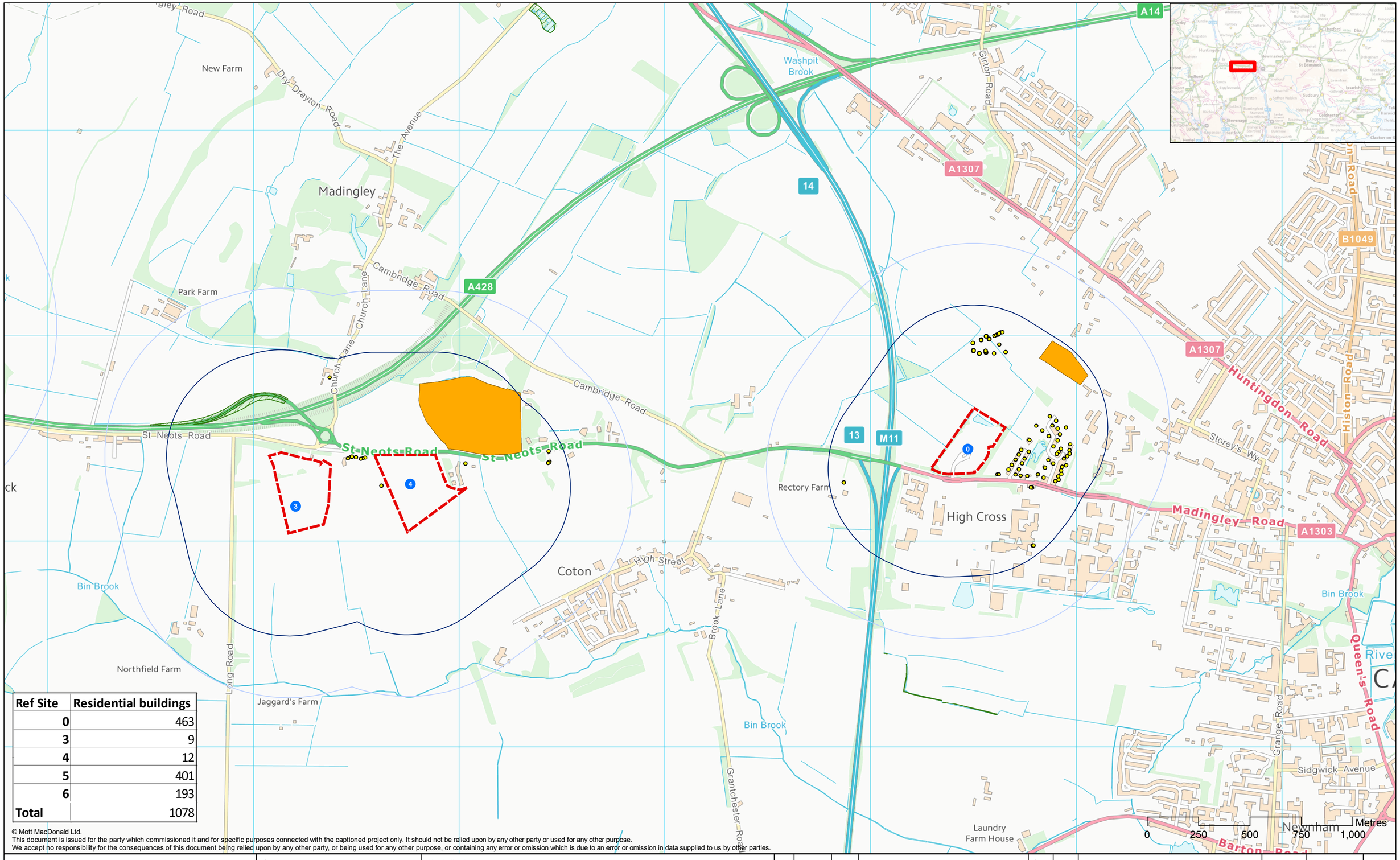
DRAFT

Original Scale	Designed/Drawn	Checked	Authorised
1:2000	RDB Date 07/08/17	SPW Date 07/08/17	ASB Date 07/08/17

Status	Drawing Number	Rev
I	5040372/HW/FS/095	B

File Location: P:\GBP\JCSs\05 Combs C2\Cambridge Busways – A428 & Western Orbit\900 CAD & BIM\910 Drawings\A428 Cambridge to Cambourne\A1303 Options\Current\Drawing Name: A428 Busway Madingley P&R – Site 6_REV B.dwg Date: Aug 21, 2017 – 1:14pm Plotted by: ks264094

I. Stage 2 Constraints Mapping



Ref Site	Residential buildings
0	463
3	9
4	12
5	401
6	193
Total	1078

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Client

Cambridgeshire County Council

Key to Symbols

- Site reference
- Indicative P & R site boundary
- Site 500m buffer
- Site 800m buffer
- Residential buildings within 500m of site
- Wildlife sites
- Site of Special Scientific Interest (SSSI)

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
B	05/07/2017	JE	Second Issue	EH	TF
C	23/08/2017	JE	Third Issue	EH	CS

Title

Cambourne to Cambridge Park & Ride Study
Noise and Air Quality Receptors
East Sheet,
Sheet 1 of 2

Drawn	J Eades	HP
Checked	E Hansen	EH
Approved	C Searson	CS

Scale at A2: 1:12,000

Drawing Number: 377897-MMD-00-XX-GIS-Y-003

Security	Status	Rev
STD	PRE	P1

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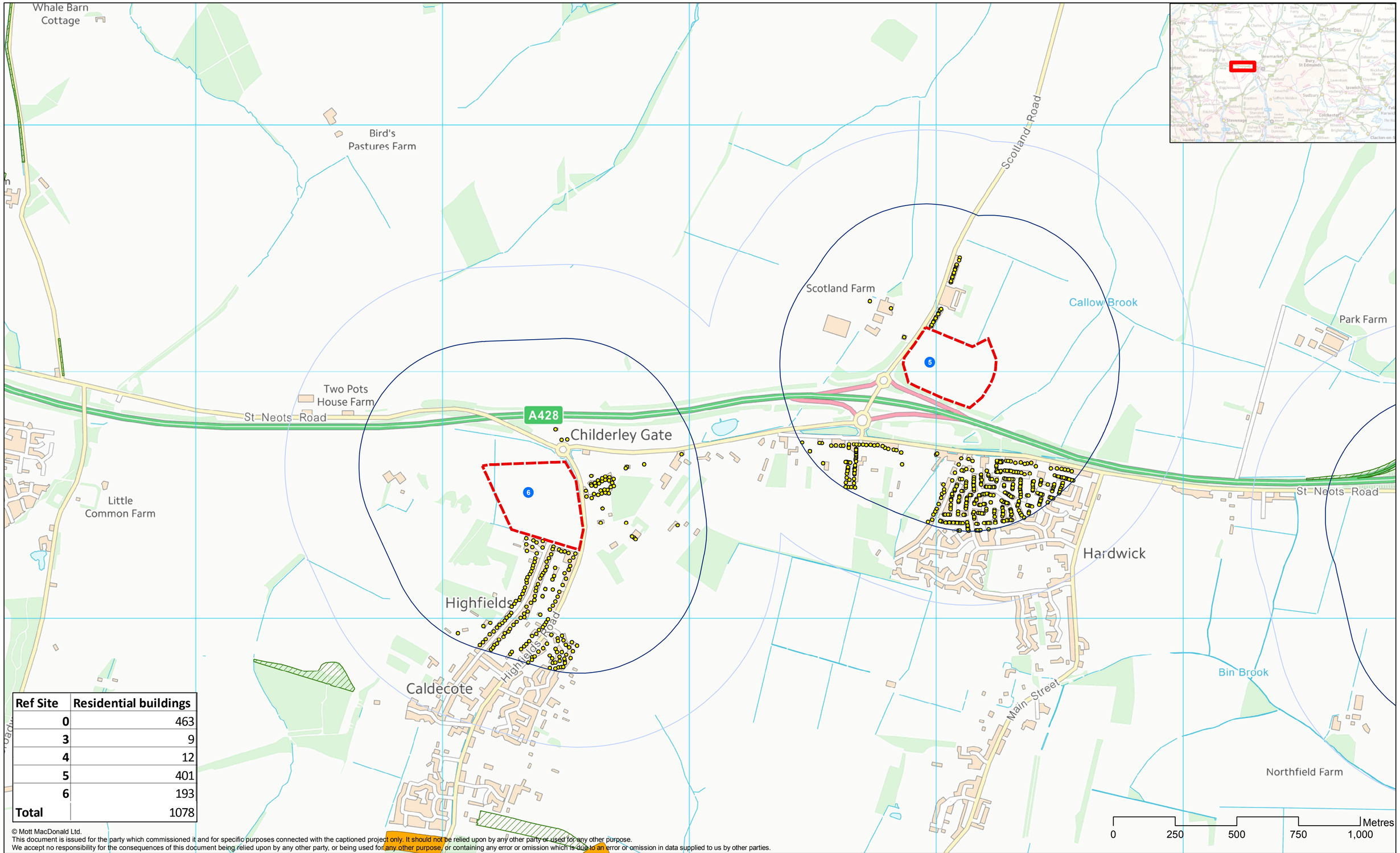

Ref Site	Residential buildings
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3	9
4	12
5	401
6	193
Total	1078

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- Wildlife sites
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A	26/06/2017	HP	First Issue	EH	TF
B	05/07/2017	JE	Second Issue	EH	TF
C	23/08/2017	JE	Third Issue	EH	CS

Title: Camboume to Cambridge Park & Ride Study
Noise and Air Quality Receptors
West Sheet,
Sheet 2 of 2

Drawn	J Eades	HP
Checked	E Hansen	EH
Approved	C Searson	CS

Scale at A2: 1:10,000

Drawing Number: 377897-MMD-00-XX-GIS-Y-003

Security	Status	Rev
STD	PRE	P1

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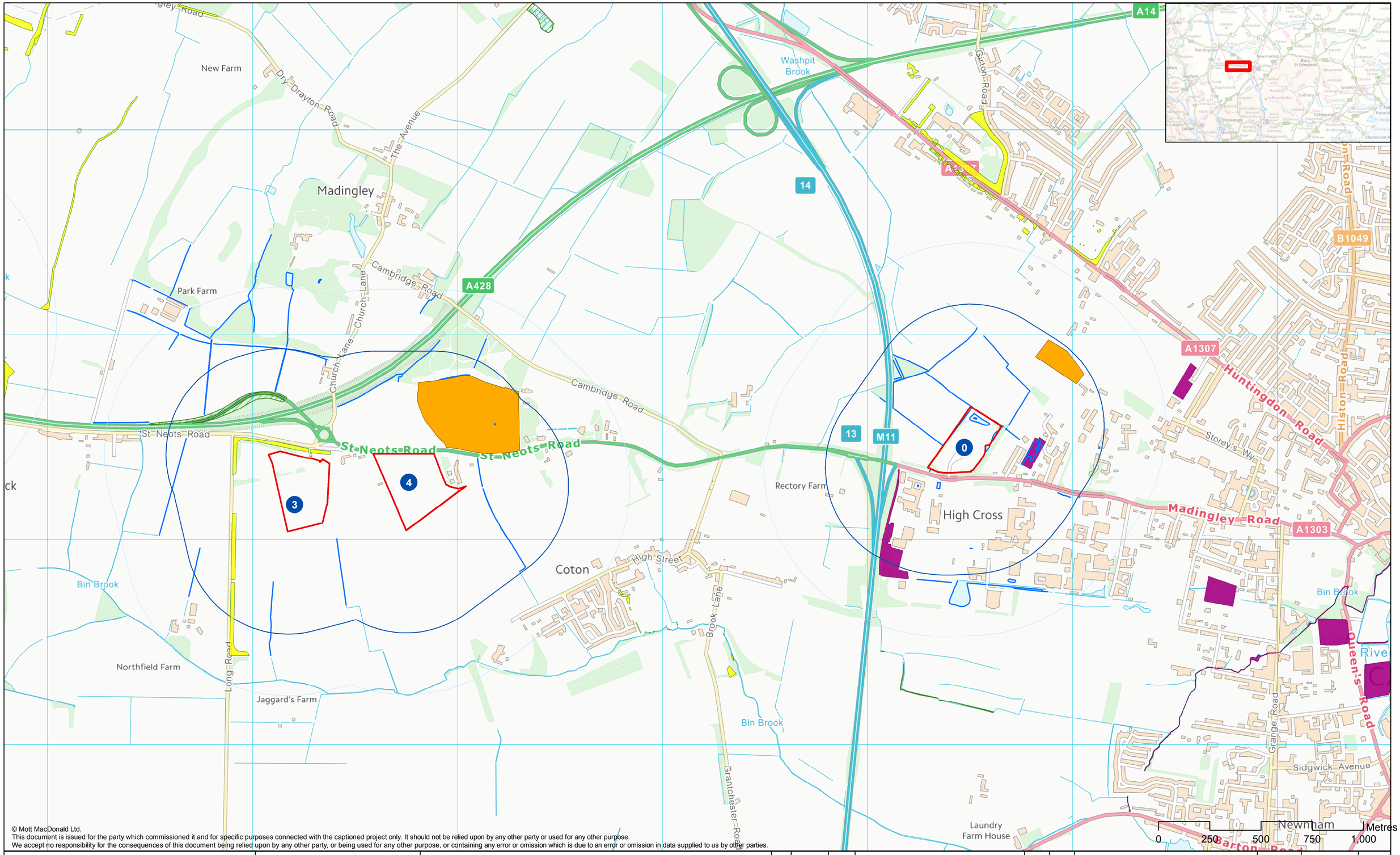

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Client

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Key to Symbols

- Site Reference
- Indicative P&R Site Boundary
- Site 500m buffer
- Site 800m buffer
- Tree preservation order (TPO)
- Rivers and streams within 100m of 500m site buffer
- City wlidlife sites
- Wildlife sites
- Site of Special Scientific Interest (SSSI)

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
B	05/07/2017	HP	Second Issue	EH	TF
C	23/08/2017	JE	Third Issue	EH	CS

Title: Cambourne to Cambridge Park & Ride Capability Study
Ecological Constraints
East Sheet,
Sheet 1 of 2

Drawn	J Eades	JE
Checked	E Hansen	EH
Approved	C Searson	CS

Scale at A2: 1:12,000

Drawing Number: 377897-MMD-00-XX-GIS-Y-005

Security	Status	Rev
STD	PRE	P1

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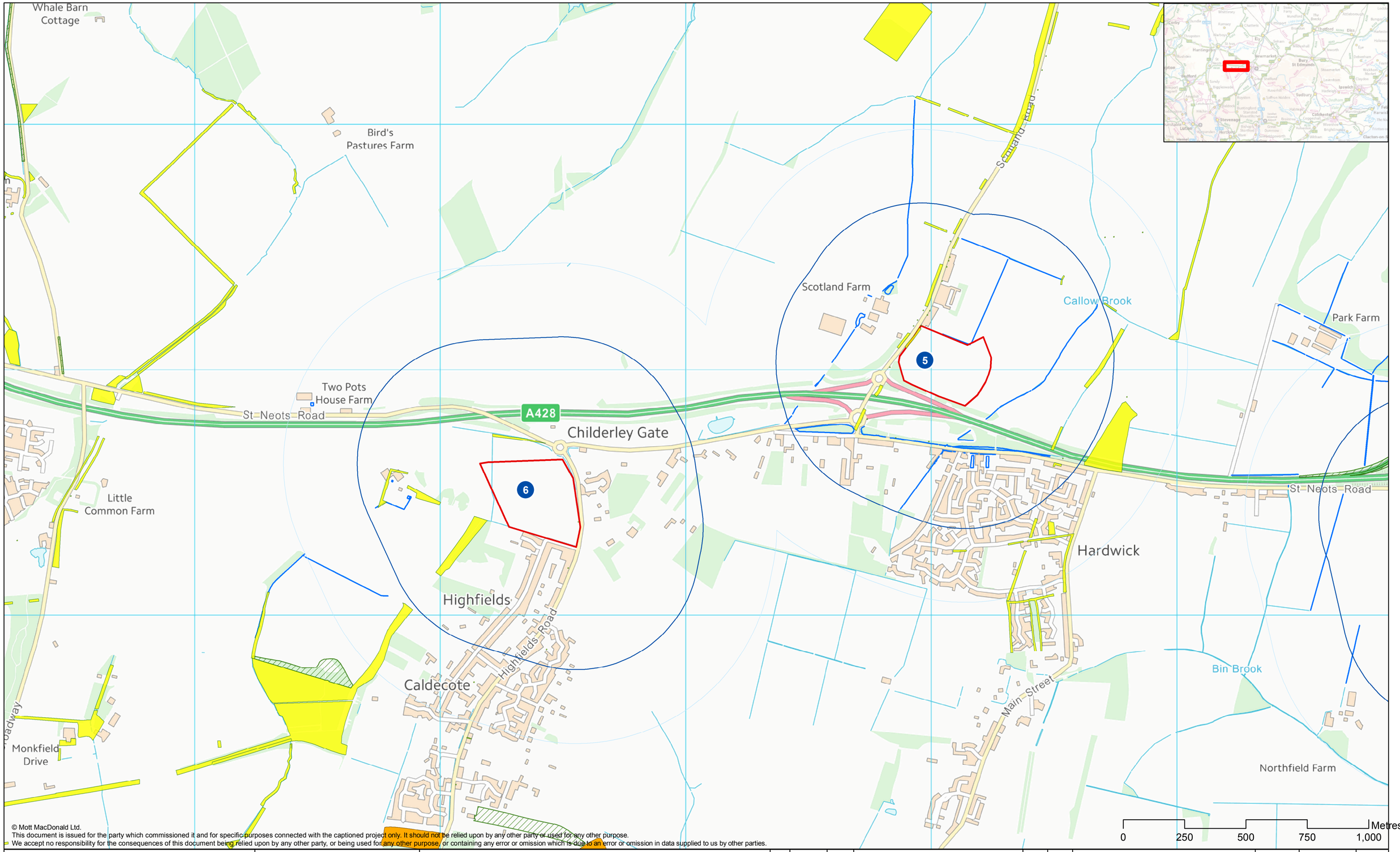

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Key to Symbols

- Site Reference
- Indicative P&R Site Boundary
- Site 500m buffer
- Site 800m buffer
- Tree preservation order (TPO)
- Rivers and streams within 100m of 500m site buffer
- Wildlife sites
- Site of Special Scientific Interest (SSSI)

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
B	05/07/2017	HP	Second Issue	EH	TF
C	23/08/2017	JE	Third Issue	EH	CS

Title: Camboume to Cambridge Park & Ride Capability Study
Ecological Constraints
West Sheet,
Sheet 2 of 2

Drawn	J Eades	JE
Checked	E Hansen	EH
Approved	C Searson	CS

Scale at A2: 1:10,000

Drawing Number: 377897-MMD-00-XX-GIS-Y-005

Security	Status	Rev
STD	PRE	P1

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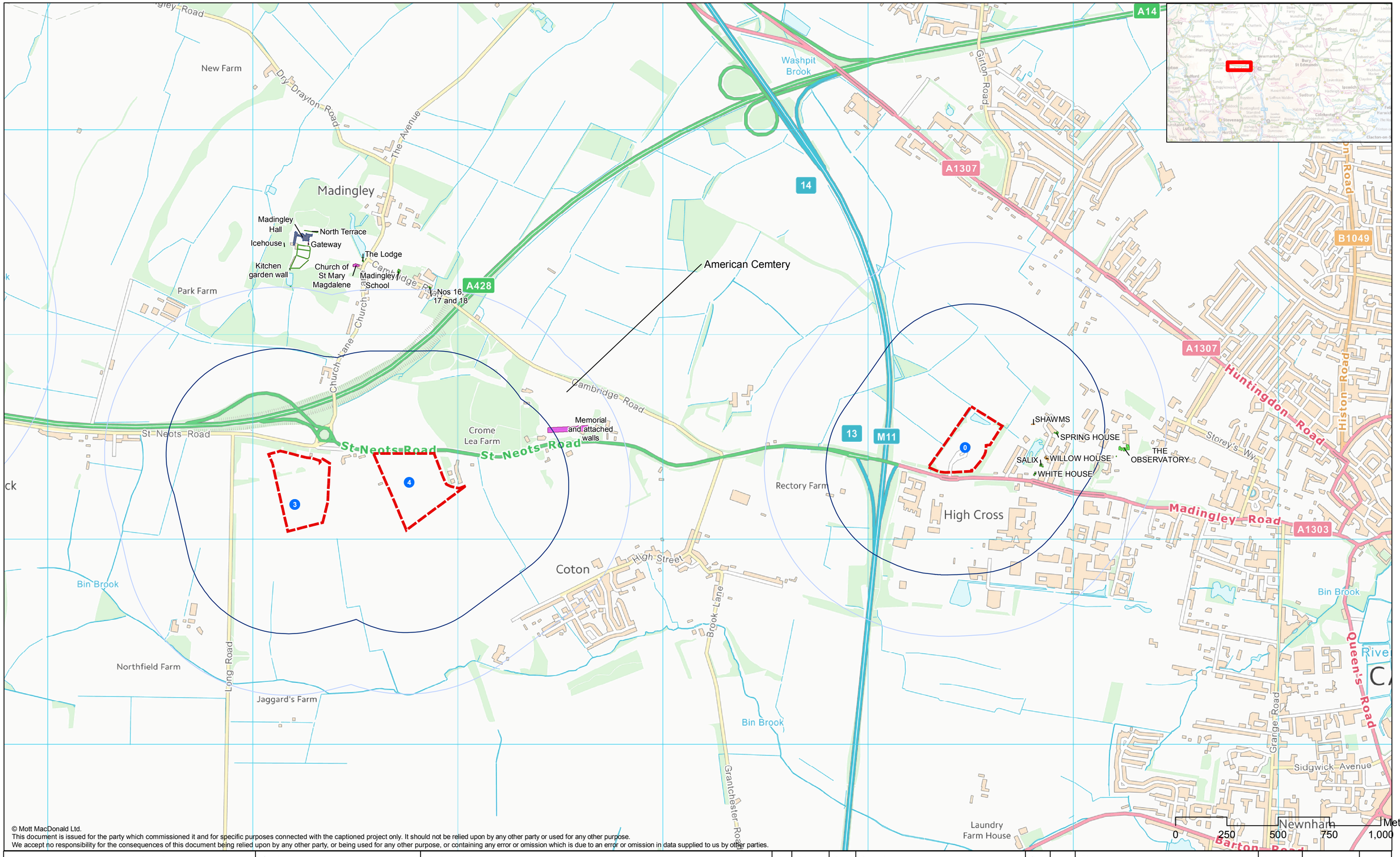

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Client

Cambridgeshire County Council

Key to Symbols

- Site reference
- Indicative P&R site boundary
- Site 500m buffer
- Site 800m buffer

Listed buildings within 800m of the sites

- Grade I
- Grade II
- Grade II star
- Grade II*

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
B	05/07/2017	HP	Second Issue	EH	TF
C	23/08/2017	JE	Third Issue	EH	CS

Title

Cambourne to Cambridge Park & Ride Study
Heritage and Archaeological Assets
East Sheet,
Sheet 1 of 2

Drawn	J.Eades	JE
Checked	E Hansen	EH
Approved	C.Searson	CS

Scale at A2: 1:12,000

Drawing Number	Security	Status	Rev
377897-MMD-00-XX-GIS-Y-007	STD	PRE	P1

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Whale Barn Cottage
Bird's Pastures Farm
Scotland Road
Scotland Farm
Callow Brook
Park Farm
Two Pots House Farm
St Neots Road
A428
Childerley Gate
Little Common Farm
Highfields
Highfields Road
Caldecote
Hardwick
Main Street
Bin Brook
Northfield Farm
Monkfield Drive
5
6
0 250 500 750 1,000 Metres

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Client
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Key to Symbols
- Site reference
- Indicative P&R site boundary
- Site 500m buffer
- Site 800m buffer

Listed buildings within 800m of the sites
- Grade II

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
B	05/07/2017	HP	Second Issue	EH	TF
C	23/08/2017	JE	Third Issue	EH	CS

Title
Cambourne to Cambridge Park & Ride Study
Heritage and Archaeological Assets
West Sheet,
Sheet 2 of 2

Drawn	J.Eades	JE
Checked	E Hansen	EH
Approved	C.Searson	CS

Scale at A2
1:10,000

Drawing Number
377897-MMD-00-XX-GIS-Y-007

Security	Status	Rev
STD	PRE	P1

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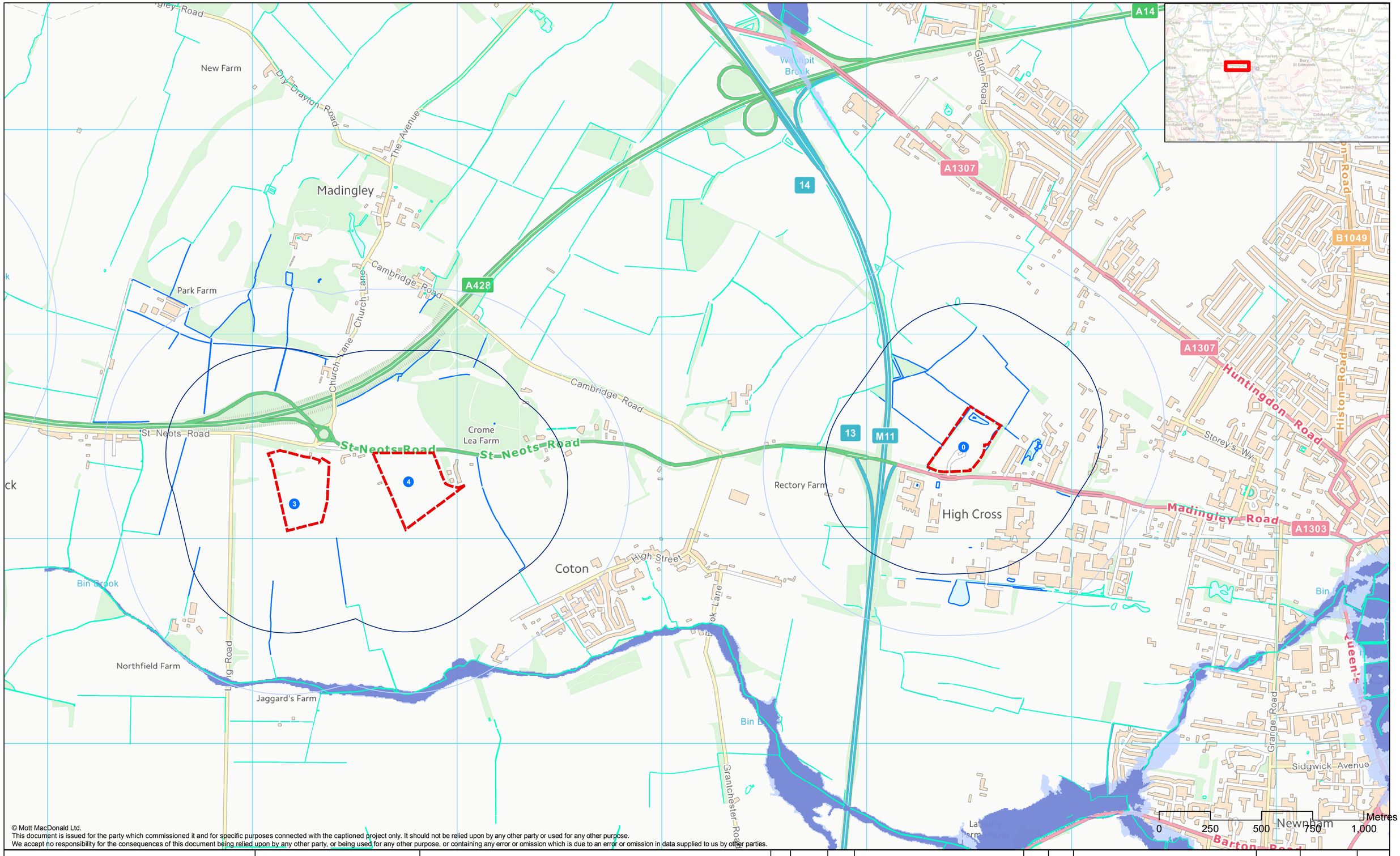

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Client

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Key to Symbols

- Site reference
- Indicative P & R site boundary
- Site 500m buffer
- Site 800m buffer
- Rivers and streams within 100m of 500m site buffer
- Rivers and streams
- Flood zone 3
- Flood zone 2

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
B	05/07/2017	JE	Second Issue	EH	TF
C	23/08/2017	JE	Third Issue	EH	CS

Title

Cambourne to Cambridge Park & Ride Study
Ground Conditions: Hydrological Constraints
East Sheet,
Sheet 1 of 2

Drawn	H Pickard	HP
Checked	E Hansen	EH
Approved	C Searson	CS

Scale at A2: 1:12,000

Drawing Number: 377897-MMD-00-XX-GIS-Y-008

Security	Status	Rev
STD	PRE	P1

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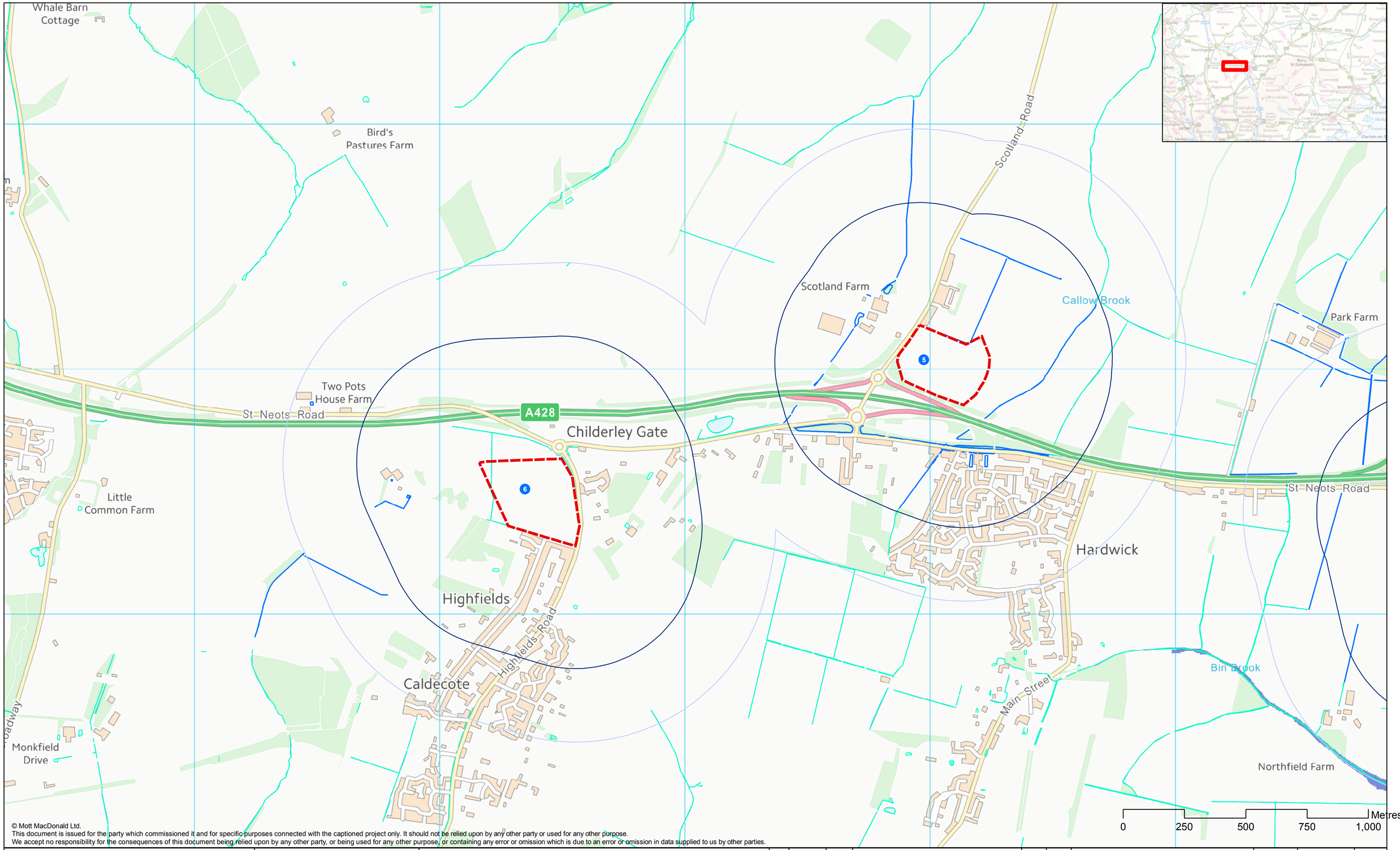

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Client

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Key to Symbols

- Site reference
- Indicative P & R site boundary
- Site 500m buffer
- Site 800m buffer
- Rivers and streams within 100m of 500m site buffer
- Rivers and streams
- Flood zone 3
- Flood zone 2

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
B	05/07/2017	JE	Second Issue	EH	TF
C	23/08/2017	JE	Third Issue	EH	CS

Title: Cambourne to Cambridge Park & Ride Study
Ground Conditions: Hydrological Constraints
West Sheet,
Sheet 2 of 2

Drawn	H Pickard	HP
Checked	E Hansen	EH
Approved	C Searson	CS

Scale at A2: 1:10,000

Drawing Number	Security	Status	Rev
377897-MMD-00-XX-GIS-Y-008	STD	PRE	P1

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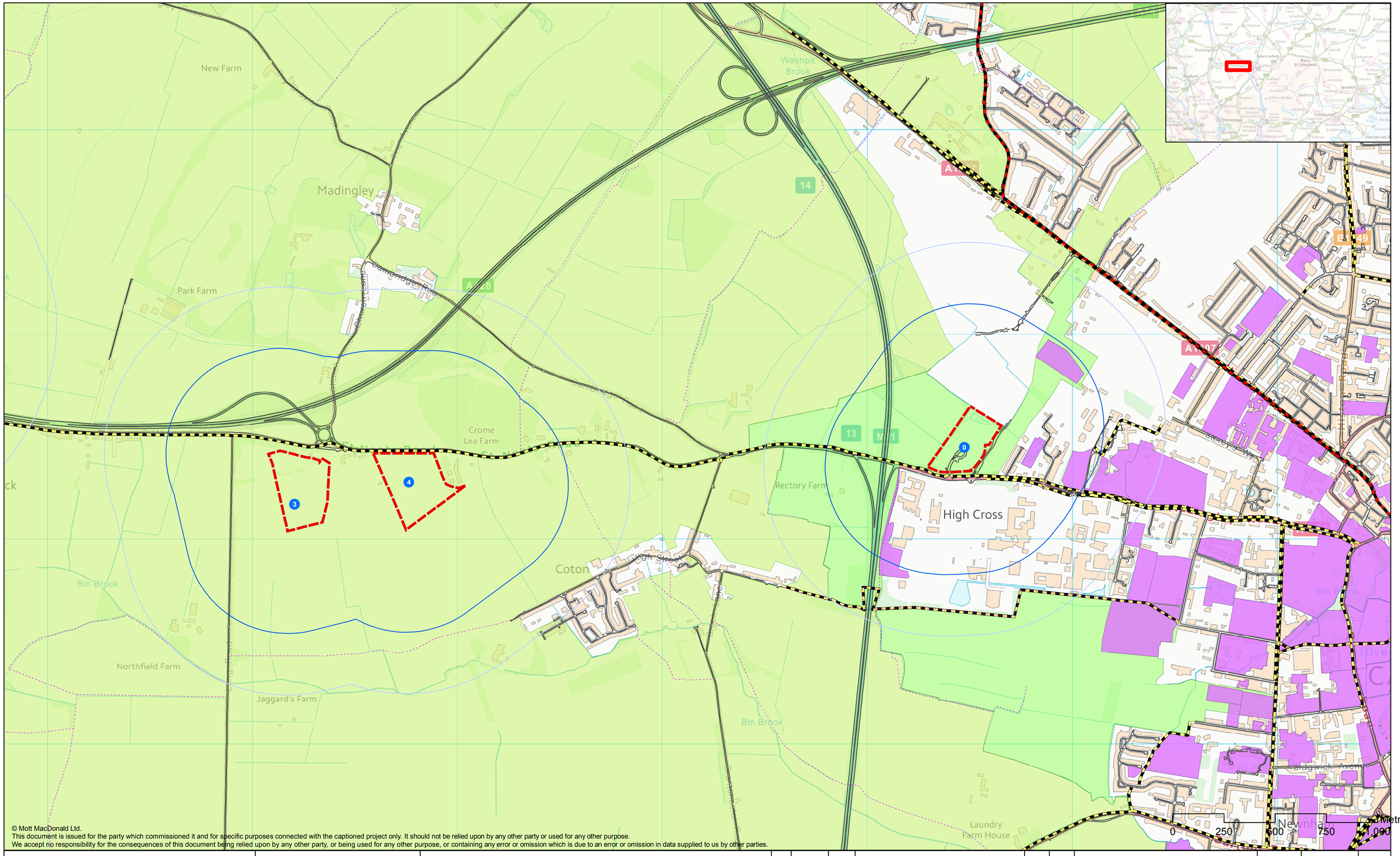

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Client

Cambridgeshire County Council

Key to Symbols

- Site reference
- Indicative P&R Site Boundary
- Site 500m buffer
- Site 800m buffer
- Public rights of way (PROW)
- Sustrans national cycle network
- Pavement unsegregated
- Roads or tracks
- Protected open space
- South Cambridgeshire District Council - Greenbelt
- Cambridge City Council - Greenbelt

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
A	05/07/2017	JE	Second Issue	EH	TF
A	23/08/2017	JE	Second Issue	EH	CS

Title: Cambourne to Cambridge Park & Ride Study
Social and Community Constraints East Sheet, Sheet 1 of 2

Drawn	J Eades	JE
Checked	E Hansen	EH
Approved	C Searson	CS

Scale at A2: 1:12,000

Drawing Number: 377897-MMD-00-XX-GIS-Y-011

Security	Status	Rev
STD	PRE	P1

P:\Cambridge\Demeter\EVT\Projects\349260 Cambridge Access Study\Mxds\Assessment Plans\377897-MMD-00-XX-GIS-Y-0007_Social_Community_Effects.mxd

Whale Barn Cottage
Bird's Pastures Farm
Scotland Farm
Scotland Road
Callow Brook
Park Farm
Two Pots House Farm
St Neots Road
A428
Childerley Gate
Little Common Farm
Highfields
Highfields Road
Caldecote
Hardwick
Bin Brook
Northfield Farm
Monkfield Drive
5
6
0 250 500 750 1,000 Metres

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Client
Cambridgeshire County Council

Key to Symbols
- Site reference
- Indicative P&R Site Boundary
- Site 500m buffer
- Site 800m buffer
- Public rights of way (PROW)
- Pavement unsegregated
- Roads or tracks
- Local green space
- South Cambridgeshire District Council - Greenbelt

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	26/06/2017	HP	First Issue	EH	TF
A	05/07/2017	JE	Second Issue	EH	TF
A	23/08/2017	JE	Second Issue	EH	CS

Title: Camboume to Cambridge Park & Ride Study
Social and Community Constraints West Sheet, Sheet 2 of 2

Drawn	J Eades	JE
Checked	E Hansen	EH
Approved	C Searson	CS

Scale at A2: 1:10,000

Drawing Number	Security	Status	Rev
377897-MMD-00-XX-GIS-Y-011	STD	PRE	P1

P:\Cambridge\Demeter\EVT\Projects\349260 Cambridge Access Study\Mxds\Assessment Plans\377897-MMD-00-XX-GIS-Y-0007_Social_Community_Effects.mxd

J. Stage 2 Environmental Impact Tables

Effect	Score
High Positive	3
Medium Positive	2
Low Positive	1
Neutral	0
Low Negative	-1
Medium Negative	-2
High Negative	-3

Table 8: Stage 2 Environmental Constraints Review

	Noise	Air Quality & Greenhouse Gases	Landscape / Townscape	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
Criteria Stage 1/2	Proximity to receptors (dwellings, hospitals/nursing homes, designated sites (SSSI, LNR, City Wildlife, Country Wildlife, Wildlife Sites, SAC, SPA)), number of receptors.	Proximity to receptors (residential areas, designated sites, AQMA), number of receptors [*Greenhouse Gases to be considered at later stage*]	Landscape character. Visual receptors. Registered park and garden. Green Belt. Conservation Area. Topography. Proximity to high sensitivity receptors (registered parks and gardens, conservation area, listed buildings,	Proximity to designated areas, sensitive habitats (SSSI, LNR, City Wildlife, Country Wildlife, Wildlife Sites, SAC, SPA), protected species (including bats), and TPO	Proximity to Listed buildings and ancient monuments. American Cemetery potential effects on setting	Flood Zones, local flooding	Watercourses within 100m	GSPZ, Superficial and Bedrock Aquifers, Groundwater Vulnerability Zones.	No of receptors (local residents) affected. Severance by access roads, impact on PRoWs. Loss of recreational space/open space: Green Belt, Country Park, Local Green Space,

	Noise	Air Quality & Greenhouse Gases	Landscape / Townscape	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
			residential and recreational visual receptors). Location in Green Belt. Number of visual receptors affected. Proportion of the view affected. Policy NE/4 Landscape Character Areas states that: *Development will only be permitted where it respects and retains or enhances the local character and distinctiveness of the individual Landscape Character Area in which is it located.*						Protected Open Space
Map Title	Noise & Air Quality Receptors			Heritage and Archaeology Assets	Ground Conditions: Hydrological Constraints	Social and Community Constraints			
Data Sources:	Magic.gov.uk, OS data	Defra, OS data, Magic.gov.uk		Magic.gov.uk, GIS data provided by client	Historic England	Environment Agency	Environment Agency	Environment Agency	GIS data provided by client

	Noise	Air Quality & Greenhouse Gases	Landscape / Townscape	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
Reference for Significance Scoring	Sensitivity: Within 50m – high - likely a constraint depending on mitigation options; 100m – medium – potentially a constraint depending on sensitivity; over 100m – unlikely to be affected, not a constraint. Magnitude: >0-10 dwellings - low >11-20 dwellings and/or designated site- medium >20 dwellings and/or	Sensitivity: Proximity to residential dwellings; Proximity to designated site; Proximity to AQMA – beyond 200m no constraint Magnitude: Low in all cases – levels are unlikely to exceed existing Air Quality Objectives with the proposed development in place	NB: High sensitivity receptors considered only (registered parks and gardens, conservation area, listed buildings, residential and recreational visual receptors) Magnitude: **High**: loss of key landscape elements leading to loss of character and distinctiveness; substantial alteration to key characteristics of the view, land no longer fulfils Green Belt purpose. **Medium**: loss of key landscape elements, character and distinctiveness; noticeable alteration to key characteristics	Sensitivity: Site within designated area/habitat or protected species present – high; sites within 500m medium – assess mitigation options; over 500m – low – unlikely to be a significant constraint, consider at Stage 2 Magnitude: Designated Site, protected species – High- Zone of Influence – Medium – may require mitigation No designation - low	Sensitivity: Heritage assets within or adjacent to site – High HA within 450m – high to medium– Listed Building - 550m or less away with screening; Archaeology – 800m – low Magnitude: HA within site and would require removal – high HA – adjacent to site/ potentially within site – medium HA screened from site or over 450m - low	Sensitivity: FRZ 3- High risk – medium constraint FRZ 1-2 – low constraint Magnitude: Local surface runoff can be mitigated through design e.g. SUDS - low	Sensitivity: High - Watercourse crosses site Medium - Watercourse adjacent to site Low - waterbody within 100m Magnitude: All effects can be mitigated/minimized through design No watercourses within 100 m - low	Sensitivity: Site over Aquifer – - low Site over Aquifer and within a Groundwater Vulnerability Zone -medium Magnitude: All effects can be mitigated/minimized through design or construction environmental management measures - low	Sensitivity: Over 10 Residential dwellings affected – High Less than 10 dwelling, or Schools, hospitals - medium offices - low Magnitude: Severance of dwellings due to access roads - High Redirection of PRoW required, loss of Green Belt – medium Edge of Green Belt/no Green Belt - low

	Noise	Air Quality & Greenhouse Gases	Landscape / Townscape	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
	hospital/health care facilities home – high		of the view; land only partially fulfils Green Belt purpose. **Low**: slight loss of key landscape elements; alteration to key characteristics of the view, land largely continues to fulfil Green Belt purpose.						
Site 0 Design Details considered at Stage 2	No change in site footprint. Two storey Parking Deck to increase capacity by 2017 spaces (currently 930), maximum 4 m height incl. guard rail. Lighting columns on parking deck to be confirmed. Additional Environmental Barrier (Planted Screening) 15-30 m wide around north-east end of site (currently green space). Site located in Green Belt.								
Site 0 Existing Madingley Rd Park & Ride	No hospitals/health care facilities within 500m of site Large number of residential dwellings within 500m of site. Baseline noise level due to existing	Large number of residential dwellings within 500m of site No designated site within 200m. Defra projected background concentrations for year 2017 show concentrations of NO_2, PM_{10} and $PM_{2.5}$ do not exceed the	**(Provided in Appendix E)**	Site is within 500m of a City Wildlife Site and within 800m of the Traveller's Rest Pit SSSI. No Granted European Protected Species Applications (England) for bats within 800m of the site. Scheme is unlikely to	4 listed buildings within 550m to the east of the site: Shawms, Grade II*, 330m, Salix, Grade II, 360m, Willow House, Grade II*, 370m, Spring House, Grade II, 430m, White House, Grade II, 430m	The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing	A number of drainage ditched run along the site boundary. A pond is located to the north within the site. Any potential effects on watercourses are expected to be mitigated	The site is not within a Groundwater Source Protection Zone (GSPZ) The site is over or adjacent to a Principal Bedrock Aquifer. The site is over an undifferentiated secondary Superficial deposits Aquifer. The site is within a	Site outside of Green Belt. No loss of designated open space, no PRoW diversion required. **Rating Unchanged**

	Noise	Air Quality & Greenhouse Gases	Landscape / Townscape	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
	Park & Ride. No designated site within 100 m **Rating Unchanged**	relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200 metres of any of the proposed sites. **Rating Unchanged**		adversely affect these features due existing setting within urban area. No TPO within expected site area, Removal of trees with TPO therefore unlikely. The proposed Environmental Barrier provides opportunities for ecological habitat enhancement within existing open space. Ponds within and nearby site have not yet been reviewed for GCN potential, the presence of which may have implications on the construction programme. **Rating Unchanged**	No scheduled monument within 800m. Potential adverse effect on setting of heritage assets. However, view towards proposed scheme is likely to be screened by other buildings and existing trees. Therefore, any adverse effects are likely to be minimal. **Rating Unchanged**	conditions in terms of flooding issues is expected. **Rating Unchanged**	through design and construction and environmental management measures. **Rating changed** to -1	groundwater vulnerability zone. **Rating Unchanged**	
Rating Site 0	**-1**	**-1**		**0**	**-1**	**0**	**-1**	**-2**	**0**
Site 3 Design Details	2033 Park & Rideing spaces plus coach and cycle parking. Environmental Barrier of 15-30 m width around east, south and western borders of site.								

	Noise	Air Quality & Greenhouse Gases	Landscape / Townscape	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
considered at Stage 2	Draft reports for eDNA for Great Crested Newts and Protected Species Surveys issued by Cambridge Ecology (P0608-R-002a Draft and P0608-R-001a DRAFT) have been considered.								
Site 3 Madingley Mulch South-West	No hospitals/health care facilities within 500m of site. Few or no residential dwellings within 500m of site. Site boundary unlikely to be adjacent to site boundary. Noise effects likely to be mitigated through design. **Rating Unchanged**	Few or no residential dwellings within 500m of site. No designated site within 200m Defra projected background concentrations for year 2017 show concentrations of NO_2, PM_{10} and $PM_{2.5}$ do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs	**(Provided in Appendix E)**	Site within 800m to the Madingley Wood SSSI – potential for significant adverse effects on the SSSI in terms of Noise and Lighting likely to be minimal due to severance by existing A-road. No Granted European Protected Species Applications (England) for bats within 800m of the site. However, Madingley Wood has been reported to be habitat for the rare Barbastrelle bats. Potential for significant effects along hedgerows connecting towards SSSI. Can be	No listed buildings within 550m of site, no scheduled monument within 800m **Rating Unchanged**	Site not within flood plain. Local runoff – can be mitigated through design e.g. SUDS **Rating Unchanged**	No watercourse within or adjacent to site. Drains within 100m. Impacts can be minimized through design. **Rating Unchanged**	The site is not within a Groundwater Source Protection Zone (GSPZ) The site is within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone. **Rating Unchanged**	Site in Green Belt, potential effects on openness and local community acceptance. No loss of designated open space, no PRoW diversion required. **Rating Unchanged**

	Noise	Air Quality & Greenhouse Gases	Landscape / Townscape	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
		located within 200m of any of the proposed sites. **Rating Unchanged**		mitigated through design. The site is located within wintering bird habitat and evidence of badger activity near the site has been identified. Adverse effects on these species can be mitigated through consideration of these species and further surveys to be considered in construction programme and design (e.g. opportunities for ecological habitat enhancement at Environmental Barrier. Proposed site access crosses through trees with TPO. **Rating changed to -3**					
Rating Site 3	**0**	**0**		**-3**	**0**	**0**	**0**	**-2**	**-2**

	Noise	Air Quality & Greenhouse Gases	Landscape / Townscape	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
Site 4 Design Details considered at Stage 2	2058 Park & Rideing spaces plus coach and cycle parking. Access to roundabout off Madingley Road via existing field access (to be enhanced). Potential access to offline busway to south and south-east of site. Environmental Barrier of 15-30 m width around border of site. Draft reports for eDNA for Great Crested Newts and Protected Species Surveys issued by Cambridge Ecology (P0608-R-002a Draft and P0608-R-001a DRAFT) have been considered.								
Site 4 Madingley Mulch South-East	No hospitals/health care facilities within 500m of site. Few or no residential dwellings within 500m of site. Site boundary could be adjacent to residential dwellings. Site within 200m of Madingley Wood SSSI. Minor residual effects possible. **Rating Unchanged**	Few or no residential dwellings within 500m of site. Site within 200m of the Madingley Wood SSSI and have the potential to cause a significant adverse effect on the SSSI. There are no other proposed sites within 200m of an ecological designation. Defra projected background concentrations for year 2017 show concentrations of NO_2, PM_{10} and $PM_{2.5}$ do not exceed the relevant air quality objectives at any of the potential sites	**(Provided in Appendix E)**	Site within 200m to the Madingley Wood SSSI – potential for adverse effects on the SSSI in terms of Air Quality and Lighting. No Granted European Protected Species Applications (England) for bats within 800m of the site. However, Madingley Wood has been reported to be habitat for the rare Barbastrelle bats. Potential for significant effects along hedgerows connecting towards SSSI. Can be mitigated through design.	No listed buildings within 550m of site, no scheduled monument within 800m Consider Setting of American Cemetery approximately 600m north east. **Rating Unchanged**	The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected. **Rating Unchanged**	No watercourse within or adjacent to site. Drains within 100m. Impacts can be minimized through design. **Rating Unchanged**	The site is not within a Groundwater Source Protection Zone (GSPZ) The site is within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone. **Rating Unchanged**	Site in Green Belt, potential effects on openness and local community acceptance. No loss of designated open space, no PRoW diversion required. **Rating Unchanged**

	Noise	Air Quality & Greenhouse Gases	Landscape / Townscape	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
		and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200 metres of any of the proposed sites. **Rating Unchanged**		No TPO within expected site area, Constraint due to trees with TPO therefore unlikely. The site is located within wintering bird habitat. Adverse effects on these species can be mitigated through consideration of these species and further surveys to be considered in construction programme and design (e.g. opportunities for ecological habitat enhancement at Environmental Barrier). **Rating Unchanged**					
Rating Site 4	**-2**	**-2**		**-2**	**-1**	**0**	**0**	**-2**	**-2**
Site 5 Design Details considered at Stage 2	2127 Park & Rideing spaces plus coach and cycle parking. Environmental Barrier (Planted Screening) of 15 m width around border of site. Draft reports for eDNA for Great Crested Newts and Protected Species Surveys issued by Cambridge Ecology (P0608-R-002a Draft and P0608-R-001a DRAFT) have been considered.								

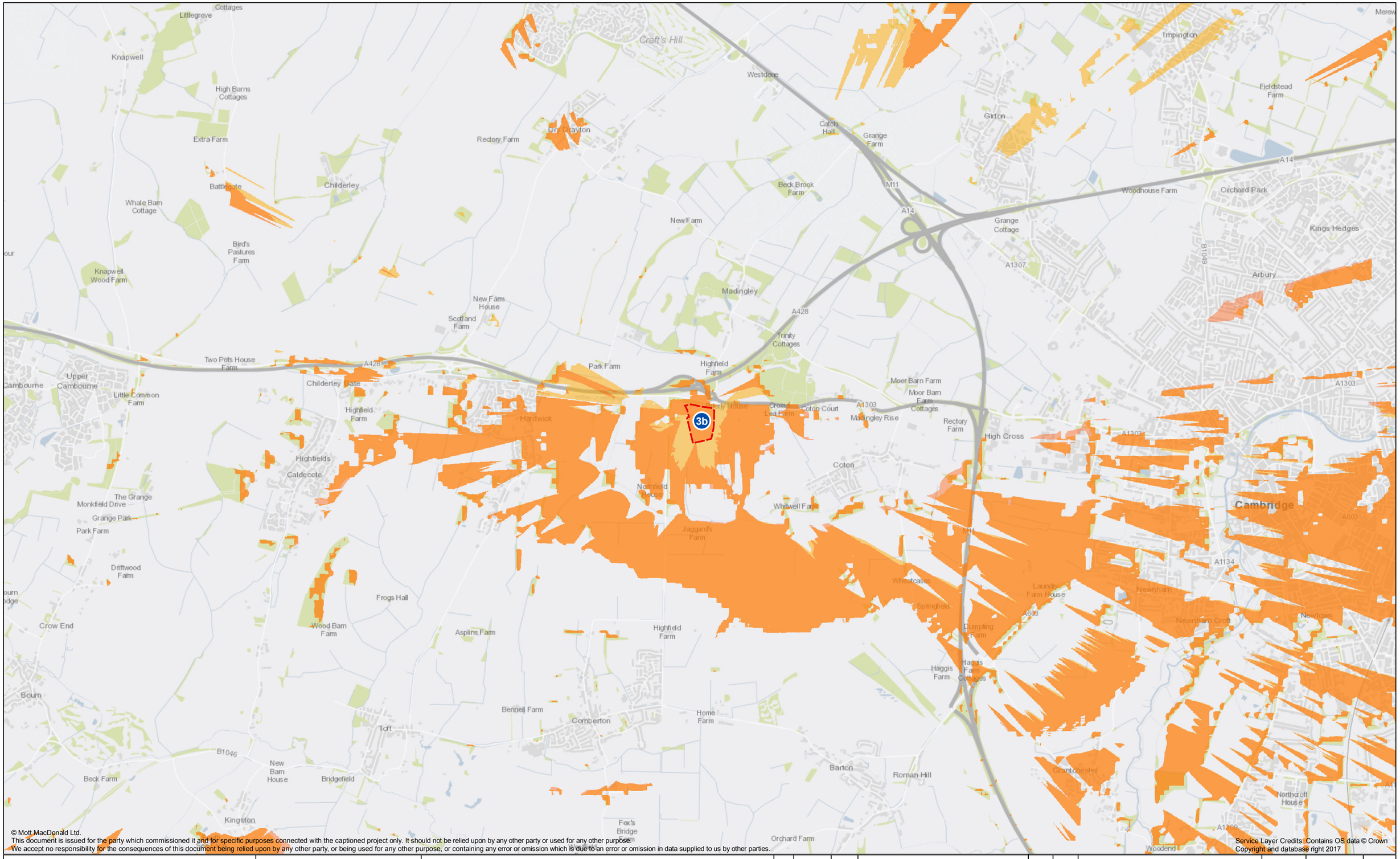
	Noise	Air Quality & Greenhouse Gases	Landscape / Townscape	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
Site 5 Scotland Farm	No hospitals/health care facilities within 500m of site Large number of residential dwellings within 500m of site (Hardwick). Site boundary located approximately 20m from nearest residential dwelling. Consider noise barrier within Planted Environmental Barrier to mitigate noise if required. **Rating Unchanged**	Large number of residential dwellings within 500m of site. No designated site within 200m. Defra projected background concentrations for year 2017 show concentrations of NO_2, PM_{10} and $PM_{2.5}$ do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200m of any of the	**(Provided in Appendix E)**	No designated site within 800m of the site. No Granted European Protected Species Applications (England) for bats within 800m of the site. No TPO within expected site area, Constraint due to trees with TPO therefore unlikely. Site boundary leads to loss of existing woodland to south west of site. **Rating changed from 0 to -2**	Grade II listed feature Pump on South East Corner of Small Green located approximately 550m south-east of the site. **Rating Unchanged**	The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected. **Rating Unchanged**	Watercourse adjacent to/near/within site depending on final site boundary. Adverse construction effects possible but can be minimized through design/Construction environmental Management measures. **Rating Unchanged**	The site is not within a Groundwater Source Protection Zone (GSPZ) The site is not within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is not within a groundwater vulnerability zone. **Rating Unchanged**	Site located within edge of Green Belt, minor potential for effects on openness. No loss of designated open space. Site lies close to PRoW – diversion may be required. **Rating Unchanged**

	Noise	Air Quality & Greenhouse Gases	Landscape / Townscape	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
		proposed sites. **Rating Unchanged**							
Rating Site 5	**-2**	**0**		**-2**	**-1**	**0**	**-1**	**-1**	**-2**
Site 6 Design Details considered at Stage 2	2002 Park & Rideing spaces plus coach and cycle parking. Bus access via bridge off new offline busway road to the north. Main access off Highfields Road to the east via existing field access. Environmental Barrier (Planted Screening) of 15 m width around border of site.								
Site 6 Bourn Airfield	No hospitals/health care facilities within 500m of site. Site boundary located adjacent to over 11 residential dwellings to the south and east. Consider noise barrier within Planted Environmental Barrier or placing parking spaces and tracks at least 50m away to mitigate	Few or no residential dwellings within 500m of site. No designated site within 200m. Defra projected background concentrations for year 2017 show concentrations of NO_2, PM_{10} and $PM_{2.5}$ do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development.	**(Provided in Appendix E)**	No designated site within 800m of the site. No Granted European Protected Species Applications (England) for bats within 800m of the site. Area with TPO within expected site area, however, this area can be avoided through design. Constraint due to trees with TPO therefore unlikely. Bat boxes and Reptile Habitat located to the north of the site. Adverse effects on these	No listed buildings within 550m of site, no scheduled monument within 800m. **Rating Unchanged**	The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected. **Rating Unchanged**	A drainage ditch crosses the site on a north-south axis to the west of the site. Adverse construction effects possible but can be minimized through design/Construction environmental Management measures. **Rating Unchanged**	The site is not within a Groundwater Source Protection Zone (GSPZ) The site is within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone. **Rating Unchanged**	Site outside of Green Belt. No loss of designated open space, no PRoW diversion required. **Rating Unchanged**

	Noise	Air Quality & Greenhouse Gases	Landscape / Townscape	Biodiversity	Historic Environment	Flood Risk	Water Quality – Surface Water	Water Quality - Groundwater	Impact on Society
	noise if required. Site boundary could be adjacent to future residential dwellings as site is allocated for development. **Rating changed to -2**	Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200m of any of the proposed sites. **Rating Unchanged**		species. **Rating changed from 0 to -2**					
Rating Site 6	**-2**	**0**		**-2**	**0**	**0**	**-1**	**-2**	**0**

Source: Mott MacDonald

K. Viewshed Analysis and Line of Sight Drawings



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Client

Cambridgeshire County Council

Key to Symbols

1 Potential new P&R locations

Indicative potential site boundary

Potential viewshed: Year 01

Visible to 8m high lamp column

Potential viewshed: Year 15 (Assuming screen planting is 7.5m high)

Visible to 8m high lamp column

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	22/08/2017	HP	For Information	JM	JB

Title: Cambourne to Cambridge Park &Ride Study
Viewshed Analysis: Location 3b

Drawn	F Lastname	LC
Checked	F Lastname	JM
Approved	F Lastname	JB

Scale at A2: 1:25,000

Drawing Number: 349260-MMD-00-XX-GIS-Y-0003b

Security	Status	Rev
STD	PRE	P1

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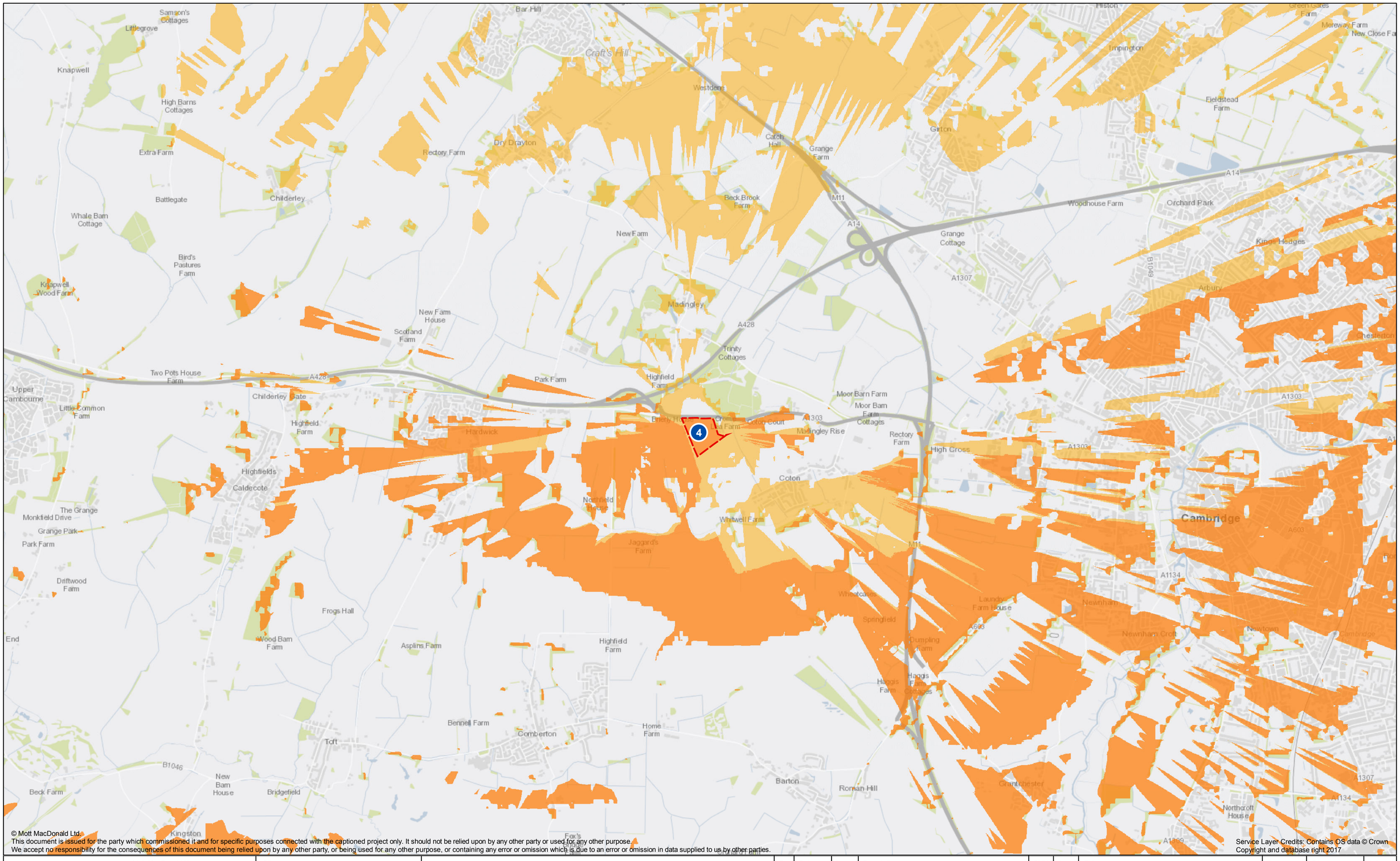

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Indicative potential site boundary

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Visible to 8m high lamp column

Potential viewshed: Year 15 (Assuming screen planting is 7.5m high)

Visible to 8m high lamp column

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	22/08/2017	HP	For Information	JM	JB

Title: Cambourne to Cambridge Park & Ride Study
Viewshed Analysis: Location 4

Drawn	F Lastname	LC
Checked	F Lastname	JM
Approved	F Lastname	JB

Scale at A2: 1:25,000

Drawing Number: 349260-MMD-00-XX-GIS-Y-0004

Security	Status	Rev
STD	PRE	P1

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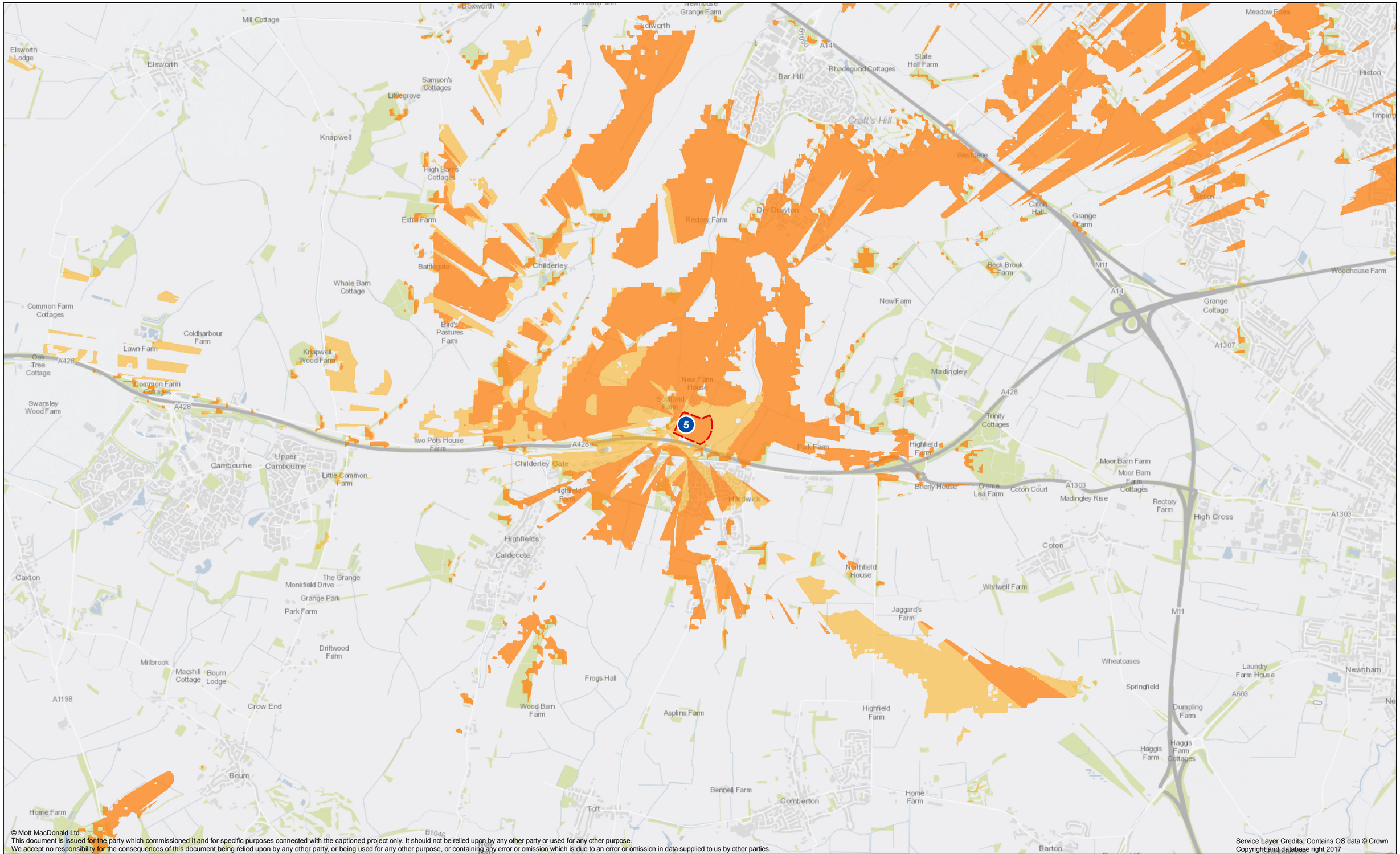

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Key to Symbols

1 Potential new P&R locations

Indicative potential site boundary

Potential viewshed: Year 01

Visible to 8m high lamp column

Potential viewshed: Year 15 (Assuming screen planting is 7.5m high)

Visible to 8m high lamp column

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	22/08/2017	HP	For Information	JM	JB

Title: Cambourne to Cambridge Park & Ride Study
Viewshed Analysis: Location 5

Drawn	F Lastname	LC
Checked	F Lastname	JM
Approved	F Lastname	JB

Scale at A2: 1:25,000

Drawing Number: 349260-MMD-00-XX-GIS-Y-0005

Security	Status	Rev
STD	PRE	P1

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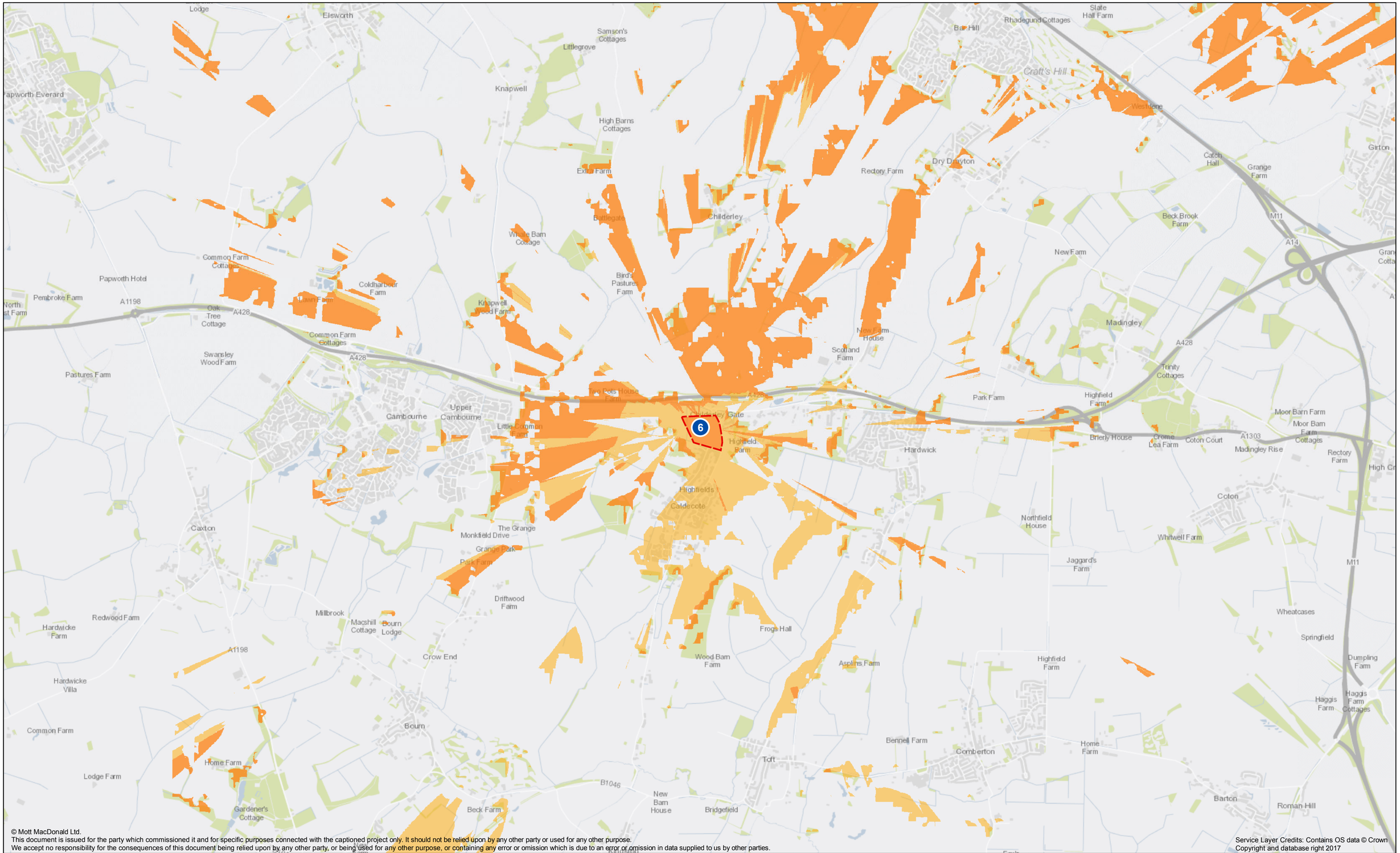

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Key to Symbols

1 Potential new P&R locations

Indicative potential site boundary

Potential viewshed: Year 01

Visible to 8m high lamp column

Potential viewshed: Year 15 (Assuming screen planting is 7.5m high)

Visible to 8m high lamp column

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	22/08/2017	HP	For Information	JM	JB

Title: Cambourne to Cambridge Park & Ride Study
Viewshed Analysis: Location 6

Drawn	F Lastname	LC
Checked	F Lastname	JM
Approved	F Lastname	JB

Scale at A2: 1:25,000

Drawing Number: 349260-MMD-00-XX-GIS-Y-0006

Security	Status	Rev
STD	PRE	P1

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A428 Cambourne to Cambridge Better Bus Journeys

Park and Ride Options Sightlines

Key

- Visible from Ground Level (1.6m)
- Visible from First Floor (4.1m)
- Not Visible

N

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 0.25 0.5 Km

Scale (at A3): 1:12,500

Cambridgeshire County Council

ATKINS

Status:	Purpose of issue:	Rev:	Model File Identifier:
S1	DRAFT	1.0	N/A

Drawing Number:	Drawn:	Checked:	Authorised:
CCBBJ-ATK-00-00-DR-L-01001	TP 07/08/2017	IL 07/08/2017	

The Axis, 10 Holliday Street, Birmingham, B1 1TF
www.atkinsglobal.com

A428 Cambourne to Cambridge Better Bus Journeys

Park and Ride Options Sightlines

Key

- Visible from Ground Level (1.6m)
- Visible from First Floor (4.1m)
- Not visible

0 0.275 0.55 Km

Scale (at A3): 1:12,500

Cambridgeshire County Council

ATKINS

Status:	Purpose of issue:	Rev:	Model File Identifier:	
S1	DRAFT	1.0	N/A	
Drawing Number: CCBBJ-ATK-00-00-DR-L-01005		Drawn: TP 07/08/2017	Checked: IL 07/08/2017	Authorised:

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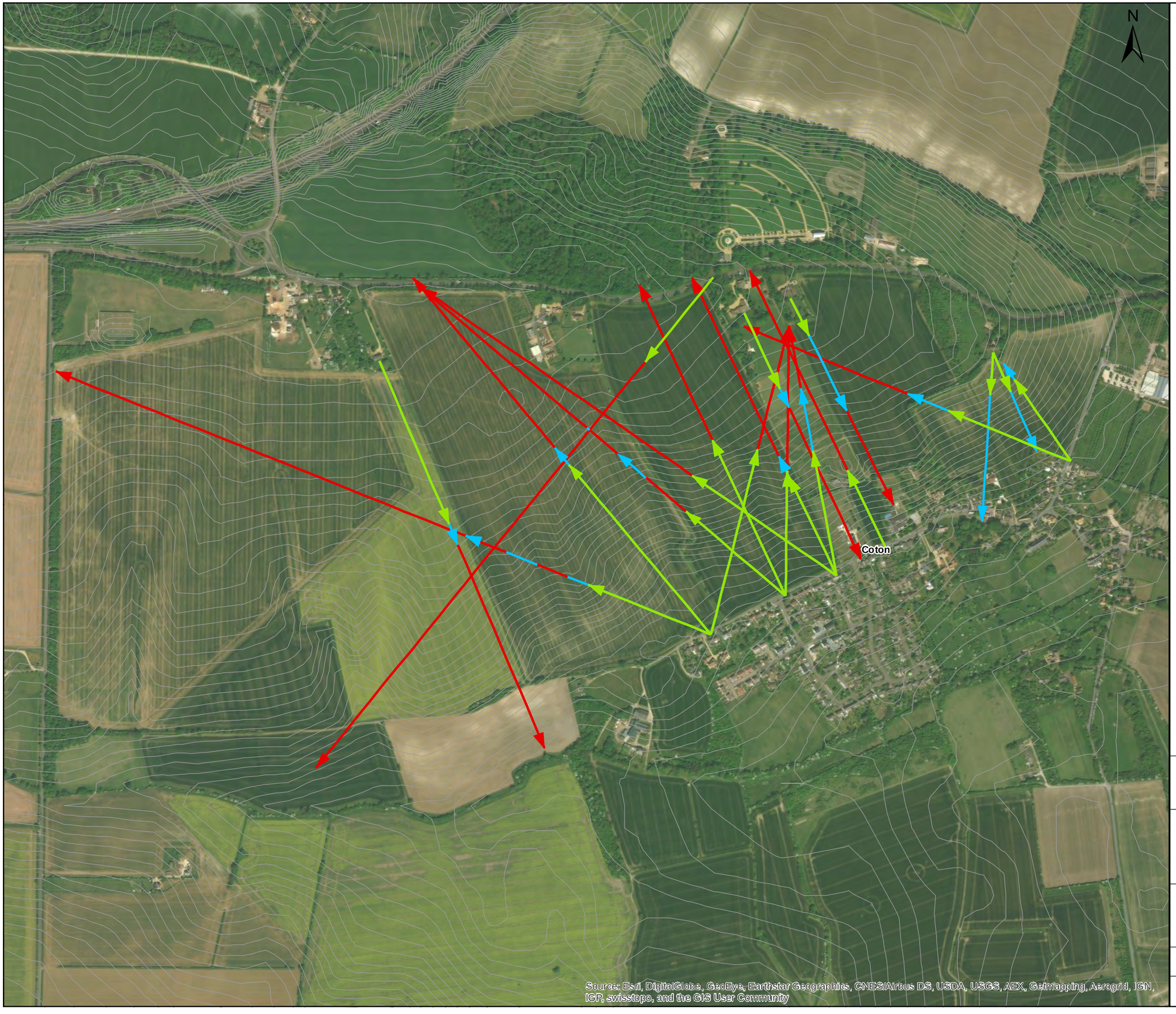
www.atkinsglobal.com



A428 Cambourne to Cambridge Better Bus Journeys

Landscape & Planning Appraisal Sightlines Around Coton

Key

- Ground Visible from Eye Level (1.6m)
- Ground Visible from 1st Floor (4.1m)
- Ground Not Visible
- 1m Contours

Note:
Sightlines based on topography data only. Sightline interference by vegetation and/or buildings is not taken into account.

0 0.2 0.4 Km

Scale (at A3): 1:8,000

Cambridgeshire County Council

ATKINS

Status:	Purpose of issue:	Rev:	Model File Identifier:
S4	For Issue	2.0	N/A

Drawing Number:	Drawn:	Checked:	Authorised:
CCBBJ-ATK-00-00-DR-L-00014	IL 02/11/2016	IL 02/11/2016	GW 02/11/2016

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L. Stage 2 Scoring Justification Tables

			Option				
			0	3	4	5	6
Theme	Criteria	Subcriteria	Existing Madingley Road Park and Ride	Madingley Mulch South West (Often referred to as water works site)	Madingley Mulch South East (often referred to as Crome Lea)	Scotland Farm	Bourn Airfield
1A.HIGH LEVEL THEME - POLICY ALIGNMENT	Alignment with the Greater Cambridge Greater Peterborough Enterprise Partnership (GCGPEP) Ambitions	To be the UK's exemplar area for digital connectivity	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.
		Deliver a growth hub to support business growth	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.
		Respond to existing pressure for the growth and retention of businesses by facilitating the provision of additional innovation & incubator space	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.
		Remove the skills barriers to continued growth	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.	All options deemed to have small positive impact on ambitions by facilitating improved connectivity between areas of housing and areas of employment.
		A transport network fit for an economically vital high growth area	All options deemed to have positive impact on ambitions by increasing extent and capacity of public transport network.	All options deemed to have positive impact on ambitions by increasing extent and capacity of public transport network.	All options deemed to have positive impact on ambitions by increasing extent and capacity of public transport network.	All options deemed to have positive impact on ambitions by increasing extent and capacity of public transport network.	All options deemed to have positive impact on ambitions by increasing extent and capacity of public transport network.
		Alconbury Weald enterprise campus	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.	All options deemed to have negligible impact on ambitions.

1A.HIGH LEVEL THEME - POLICY ALIGNMENT	**Alignment with the Greater Cambridge City Deal Transport Vision**	Accessibility by public transport	Advice from Atkins, based on preliminary transport network modelling, is that sites closer to the M11 corridor provide greater public transport connectivity than those further away from Cambridge.	Advice from Atkins, based on preliminary transport network modelling, is that sites closer to the M11 corridor provide greater public transport connectivity than those further away from Cambridge.	Advice from Atkins, based on preliminary transport network modelling, is that sites closer to the M11 corridor provide greater public transport connectivity than those further away from Cambridge.	Advice from Atkins, based on preliminary transport network modelling, is that sites further from M11 corridor provide less good public transport connectivity than those closer to Cambridge.	Advice from Atkins, based on preliminary transport network modelling, is that sites further from M11 corridor provide less good public transport connectivity than those closer to Cambridge.
		Accessibility by cycle	Negligible impact on vision as no increased access by cycle compared to existing provision	Large positive alignment with vision as good access from local settlements, including Coton and Madingley, while proximity of P&R to Cambridge will encourage 'park and cycle'	Large positive alignment with vision as good access from local settlements, including Coton and Madingley, while proximity of P&R to Cambridge will encourage 'park and cycle'	Medium positive alignment with vision as good access from local settlements, including Hardwick and Dry Drayton	Medium positive alignment with vision as good access from local settlements, including Highfields Caldecote. Note future development at Bourn Airfield not taken into account as not yet consented
		Accessibility on foot	Negligible impact on vision as no increased access by foot compared to existing provision	Poor access on foot from areas of housing, so negligible impact on vision	Poor access on foot from areas of housing, so negligible impact on vision	Poor access on foot from areas of housing, so negligible impact on vision	Poor access on foot from areas of housing, so negligible impact on vision. Note future development at Bourn Airfield not taken into account as not yet consented
		Congestion (i.e. traffic delays)	Negligible impact on vision as there would be no impact on congestion west of M11 corridor	Medium positive impact on vision as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium positive impact on vision as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium positive impact on vision as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium positive impact on vision as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling
		Traffic levels (i.e. total volume of traffic)	Small positive impact on traffic levels as there is a potential reduction achievable through mode shift. Needs to be confirmed through detailed transport network modelling	Small positive impact on traffic levels as there is a potential reduction achievable through mode shift. Needs to be confirmed through detailed transport network modelling	Small positive impact on traffic levels as there is a potential reduction achievable through mode shift. Needs to be confirmed through detailed transport network modelling	Small positive impact on traffic levels as there is a potential reduction achievable through mode shift. Needs to be confirmed through detailed transport network modelling	Small positive impact on traffic levels as there is a potential reduction achievable through mode shift. Needs to be confirmed through detailed transport network modelling

1A.HIGH LEVEL THEME - POLICY ALIGNMENT	Alignment with Published Plans	Draft Local Plan for Cambridge (2014)	Deemed small positive fit due to contribution to vision of supporting sustainable economic growth by enhancing public transport provision	Deemed small positive fit due to contribution to vision of supporting sustainable economic growth by enhancing public transport provision	Deemed small positive fit due to contribution to vision of supporting sustainable economic growth by enhancing public transport provision	Deemed small positive fit due to contribution to vision of supporting sustainable economic growth by enhancing public transport provision	Deemed small positive fit due to contribution to vision of supporting sustainable economic growth by enhancing public transport provision
		Draft Local Plan for South Cambridgeshire (2014)	Medium positive impact on growth ambitions and access to facilities and services by enabling enhanced public transport provision	Medium positive impact on growth ambitions and access to facilities and services by enabling enhanced public transport provision	Medium positive impact on growth ambitions and access to facilities and services by enabling enhanced public transport provision	Medium positive impact on growth ambitions and access to facilities and services by enabling enhanced public transport provision	Medium positive impact on growth ambitions and access to facilities and services by enabling enhanced public transport provision
		Cambridgeshire Local Transport Plan 2011-2031	Small positive contribution as expands existing P&R facility. General positive contribution to strategy, objectives and challenges outlined	Medium positive contribution as provides new P&R facility (with higher potential capacity than expanded existing facility). General positive contribution to strategy, objectives and challenges outlined	Medium positive contribution as provides new P&R facility (with higher potential capacity than expanded existing facility). General positive contribution to strategy, objectives and challenges outlined	Medium positive contribution as provides new P&R facility (with higher potential capacity than expanded existing facility). General positive contribution to strategy, objectives and challenges outlined	Medium positive contribution as provides new P&R facility (with higher potential capacity than expanded existing facility). General positive contribution to strategy, objectives and challenges outlined
		Transport Strategy for Cambridge and South Cambridgeshire (TSCSC) (2014)	Small positive contribution as provides increase P&R capacity, but not an outer Park & Ride on A428 between Cambourne and A1303	Medium positive contribution as provides an outer Park & Ride on A428 between Cambourne and A1303	Medium positive contribution as provides an outer Park & Ride on A428 between Cambourne and A1303	Medium positive contribution as provides an outer Park & Ride on A428 between Cambourne and A1303	Medium positive contribution as provides an outer Park & Ride on A428 between Cambourne and A1303
		Greenbelt	Medium negative fit as site within greenbelt. Changed from 0 in Stage 1 to reflect greater clarity over Green belt boundary	Medium negative fit as site within greenbelt	Medium negative fit as site within greenbelt	Medium negative fit as site within greenbelt. Changed from -1 in Stage 1 to reflect greater clarity over Green belt boundary	Negligible impact to greenbelt as site outside greenbelt

1B. INTERMEDIATE LEVEL THEME - BENEFITS	Transport Benefits	Journey time	End to end journey times no quicker than existing	End to end journey times potentially similar for most sites with potential small decrease. Needs to be confirmed through detailed transport network modelling	End to end journey times potentially similar for most sites with potential small decrease. Needs to be confirmed through detailed transport network modelling	End to end journey times potentially similar for most sites with potential small decrease. Needs to be confirmed through detailed transport network modelling	End to end journey times potentially similar for most sites with potential small decrease. Needs to be confirmed through detailed transport network modelling
		Ease of interchange between modes	Negligible benefit as no improvement over exisiting provision of interchange	Medium positive benefit as provides a new location for transport interchange	Medium positive benefit as provides a new location for transport interchange	Medium positive benefit as provides a new location for transport interchange	Medium positive benefit as provides a new location for transport interchange
		Accommodates forecast patronage	Small positive. Expansion of existing site will increase capacity.	Medium positive. A second site in addition to existing will provide greater benefit than expansion of Site 0.	Medium positive. A second site in addition to existing will provide greater benefit than expansion of Site 0.	Medium positive. A second site in addition to existing will provide greater benefit than expansion of Site 0.	Medium positive. A second site in addition to existing will provide greater benefit than expansion of Site 0.
		Public transport connectivity	Other than P&R, no other public transport. All neutral.	Other than P&R, no other public transport. All neutral.	Other than P&R, no other public transport. All neutral.	Other than P&R, no other public transport. All neutral.	Other than P&R, no other public transport. All neutral.
		Private vehicles connectivity	Negligible benefit as no improvement over exisitng provision of private vehicle connectivity	Large benefit as new P&R site next to junction on strategic road network	Large benefit as new P&R site next to junction on strategic road network	Large benefit as new P&R site next to junction on strategic road network	Small benefit as new P&R site but not next to junction on strategic road network
		Walking connectivity	Negligible benefit as no increased access by foot compared to existing provision	Poor access on foot from areas of housing, so negligible benefit	Poor access on foot from areas of housing, so negligible benefit	Poor access on foot from areas of housing, so negligible benefit	Poor access on foot from areas of housing, so negligible benefit. Note future development at Bourn Airfield not taken into account as not yet consented
		Cycling connectivity	Negligible benefit as no increased access by cycle compared to existing provision	Medium benefit as good access from local settlements, including Coton and Madingley	Medium benefit as good access from local settlements, including Coton and Madingley	Medium benefit as good access from local settlements, including Hardwick and Dry Drayton	Medium benefit as good access from local settlements, including Highfields Caldecote. Note future development at Bourn Airfield not taken into account as not yet consented
	Passenger Experience	Safety	All positive. All sites relatively equal in terms of safety	All positive. All sites relatively equal in terms of safety	All positive. All sites relatively equal in terms of safety	All positive. All sites relatively equal in terms of safety	All positive. All sites relatively equal in terms of safety
		Shelter provision	All positive. All sites relatively equal in terms shelter provision	All positive. All sites relatively equal in terms shelter provision	All positive. All sites relatively equal in terms shelter provision	All positive. All sites relatively equal in terms shelter provision	All positive. All sites relatively equal in terms shelter provision
		Impact on the mobility impaired	All positive. All relatively equal in terms of impact on mobility impaired	All positive. All relatively equal in terms of impact on mobility impaired	All positive. All relatively equal in terms of impact on mobility impaired	All positive. All relatively equal in terms of impact on mobility impaired	All positive. All relatively equal in terms of impact on mobility impaired
		Wayfinding	All positive. All relatively equal in terms of wayfinding	All positive. All relatively equal in terms of wayfinding	All positive. All relatively equal in terms of wayfinding	All positive. All relatively equal in terms of wayfinding	All positive. All relatively equal in terms of wayfinding
		Congestion	Negligible benefit as there would be no impact on congestion west of M11 corridor	Medium benefit as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium benefit as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium benefit as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling	Medium benefit as there is potential for reduction of congestion on A1303 corridor between the A428 and M11. Needs to be confirmed through detailed transport network modelling

			Option				
			0	3	4	5	6
Theme	**Criteria**	**Subcriteria**	**Existing Madingley Road Park and Ride**	**Madingley Mulch South West (Often referred to as water works site)**	**Madingley Mulch South East (often referred to as Crome Lea)**	**Scotland Farm**	**Bourn Airfield**
1B. INTERMEDIATE LEVEL THEME - BENEFITS	**Environmental and Social Issues**	Noise	Small negative impact. No hospitals/health care facilities within 500m of site Large number of residential dwellings within 500m of site. Baseline noise level due to existing P&R. No designated site within 100 m	Negligible impact. No hospitals/health care facilities within 500m of site. Few or no residential dwellings within 500m of site. Site boundary unlikely to be adjacent to site boundary. Noise effects likely to be mitigated through design.	Medium negative impact. No hospitals/health care facilities within 500m of site. Few or no residential dwellings within 500m of site. Site boundary could be adjacent to residential dwellings. Site within 200m of Madingley Wood SSSI. Minor residual effects possible.	Medium negative impact. No hospitals/health care facilities within 500m of site Large number of residential dwellings within 500m of site (Hardwick). Site boundary potentially located adjacent to residential dwelling.	Medium negative impact. No hospitals/health care facilities within 500m of site Large number of residential dwellings within 500m of site. Site boundary potentially located adjacent to residential dwelling.
		Air quality and greenhouse gases	Small negative impact. Large number of residential dwellings within 500m of site No designated site within 200m. Defra projected background concentrations for year 2017 show concentrations of NO2, PM10 and PM2.5 do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200 metres of any of the proposed sites.	Neutral impact. Few or no residential dwellings within 500m of site. No designated site within 200m Defra projected background concentrations for year 2017 show concentrations of NO2, PM10 and PM2.5 do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200m of any of the proposed sites.	Medium negative impact. Few or no residential dwellings within 500m of site. Site within 200m of the Madingley Wood SSSI and have the potential to cause a significant adverse effect on the SSSI. There are no other proposed sites within 200m of an ecological designation. Defra projected background concentrations for year 2017 show concentrations of NO2, PM10 and PM2.5 do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200 metres of any of the proposed sites.	Neutral impact. Large number of residential dwellings within 500m of site. No designated site within 200m. Defra projected background concentrations for year 2017 show concentrations of NO2, PM10 and PM2.5 do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200m of any of the proposed sites.	Neutral impact. Few or no residential dwellings within 500m of site. No designated site within 200m. Defra projected background concentrations for year 2017 show concentrations of NO2, PM10 and PM2.5 do not exceed the relevant air quality objectives at any of the potential sites and there is a large amount of available headroom for development. Due to the low background concentrations it is unlikely that there will be significant effects. There are no AQMAs located within 200m of any of the proposed sites.
		Landscape / townscape	Small negative impact. Due to sensitivity of landscape / townscape impacts, see more detailed assessment separately.	Large negative impact. Due to sensitivity of landscape / townscape impacts, see more detailed assessment separately.	Large negative impact. Due to sensitivity of landscape / townscape impacts, see more detailed assessment separately.	Medium negative impact. Due to sensitivity of landscape / townscape impacts, see more detailed assessment separately.	Small negative impact. Due to sensitivity of landscape / townscape impacts, see more detailed assessment separately.
		Biodiversity	Neutral impact. Site is within 500m of a City Wildlife Site and within 800m of the Traveller's Rest Pit SSSI. No Granted European Protected Species Applications (England) for bats within 800m of the site. Scheme is unlikely to adversely affect these features due existing setting within urban area. No TPO within expected site area, Removal of trees with TPO therefore unlikely. The pond to the north of the site boundary will be removed as part of the car park extension. Drainage issues could be addressed through design.	Large negative impact. Site within 800m to the Madingley Wood SSSI – potential for significant adverse effects on the SSSI in terms of Noise and Lighting likely to be minimal due to severance by existing A-road. No Granted European Protected Species Applications (England) for bats within 800m of the site. However, Madingley Wood has been reported to be habitat for the rare Barbastrelle bats. Potential for significant effects along hedgerows connecting towards SSSI. Can be mitigated through design. TPO within expected site access route.	Medium negative impact. Site within 200m to the Madingley Wood SSSI – potential for adverse effects on the SSSI in terms of Air Quality and Lighting. No Granted European Protected Species Applications (England) for bats within 800m of the site. However, Madingley Wood has been reported to be habitat for the rare Barbastrelle bats. Potential for significant effects along hedgerows connecting towards SSSI. Can be mitigated through design. No TPO within expected site area, Constraint due to trees with TPO therefore unlikely.	Medium negative impact. No designated site within 800m of the site. No Granted European Protected Species Applications (England) for bats within 800m of the site. TPO within expected site area due to new site accesses. Site boundary leads to loss of existing woodland to south west of site.	Medium negative impact. No designated site within 800m of the site. No Granted European Protected Species Applications (England) for bats within 800m of the site. Bus access crosses over trees subject to TPO. Bat boxes and Reptile Habitat located to the north of the site.
		Historic environment	Small negative impact. 4 listed buildings within 550m to the east of the site: Shawms, Grade II*, 330m, Salix, Grade II, 360m, Willow House, Grade II*, 370m, Spring House, Grade II, 430m, White House, Grade II, 430m No scheduled monument within 800m. Potential adverse effect on setting of heritage assets. However, view towards proposed scheme is likely to be screened by other buildings and existing trees. Therefore, any adverse effects are likely to be minimal	Neutral impact. No listed buildings within 550m of site, no scheduled monument within 800m	Small negative impact. No listed buildings within 550m of site, no scheduled monument within 800m Consider Setting of American Cemetery approximately 600m north east.	Small negative impact. Grade II listed feature Pump on South East Corner of Small Green located approximately 550m south-east of the site.	Neutral impact. No listed buildings within 550m of site, no scheduled monument within 800m
		Flood risk	Neutral impact. The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected.	Neutral impact. The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected	Neutral impact. The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected.	Neutral impact. The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected	Neutral impact. The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected.
		Water quality - Surface water	Small negative impact. No Watercourses within close proximity of the site. A pond is located to the north adjacent to the site and will be removed as part of the car park extension. The pond may also be home to Great Crested Newts, possibly impacting on construction programming.	Neutral impact. No watercourse within or adjacent to site. Drains within 100m. Impacts can be minimized through design.	Neutral impact. No watercourse within or adjacent to site. Drains within 100m. Impacts can be minimized through design.	Small negative impact. The site is not located within flood plain. It is expected that potential local runoff can be mitigated through design e.g. SUDS. Therefore, no change in existing conditions in terms of flooding issues is expected.	Small negative impact. Watercourse adjacent to/near/within site depending on final site boundary. Adverse construction effects possible but can be minimized through design/Construction environmental Management measures.
		Water quality - Groundwater	Medium negative impact. The site is not within a Groundwater Source Protection Zone (GSPZ) The site is over or adjacent to a Principal Bedrock Aquifer. The site is over an undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone.	Medium negative impact. The site is not within a Groundwater Source Protection Zone (GSPZ) The site is within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone.	Medium negative impact. The site is not within a Groundwater Source Protection Zone (GSPZ) The site is within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone.	Small negative impact. The site is not within a Groundwater Source Protection Zone (GSPZ) The site is not within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is not within a groundwater vulnerability zone.	Medium negative impact. The site is not within a Groundwater Source Protection Zone (GSPZ) The site is within or adjacent to a Principal Bedrock Aquifer. The site is within a undifferentiated secondary Superficial deposits Aquifer. The site is within a groundwater vulnerability zone.
		Impact on society	Neutral impact. Site outside of Green Belt. No loss of designated open space, no PRoW diversion required.	Medium negative impact. Site in Greenbelt, potential effects on openness and local community acceptance. No loss of designated open space, no PRoW diversion required	Medium negative impact. Site in Greenbelt, potential effects on openness and local community acceptance. No loss of designated open space, no PRoW diversion required.	Medium negative impact. Site located within edge of Greenbelt, minor potential for effects on openness. No loss of designated open space. Site lies close to PRoW – diversion may be required.	Medium negative impact. Site outside of Greenbelt. No loss of designated open space, no PRoW diversion required. Score changed from 0 in Stage 1 to reflect the creation of the 'Stop Bourn Airfield Development' Group
	Wider economic benefits	Wider economic benefits (e.g. GVA)	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.
		Impact on areas of deprivation	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.	Insufficient information available to differentiate at this stage. Further assessment necessary at later stages.

1C. OPERATIONAL THEME - DELIVERABILITY	Planning Issues	Land acquisition required	Land acquisition required to ensure continued operation of currently leased site. Medium negative	Land acquisition required. Small negative	Land acquisition required. Small negative	Land acquisition required. Small negative	Land acquisition required. Small negative
		Interaction with planned developments	No consented developments at site. Negligible effect	No consented developments at site. Negligible effect	No consented developments at site. Negligible effect	No consented developments at site. Negligible effect	No consented developments at site. Negligible effect
		Impact on land use	No change. Negligible effect	Change to existing land use (agricultural). Small negative effect	Change to existing land use (agricultural). Small negative effect	Change to existing land use (agricultural). Small negative effect	Change to existing land use (airfield), however negligible effect. Located on Brownfield site.
		Public acceptability	Small positive because no change in terms of existing use or location	Medium negative as strong local objections have been raised	Medium negative as strong local objections have been raised	Neutral impact. Workshops indicate public preference for this site, but some opposition from nearby residents.	Medium negative as strong local objections have been raised. Changed from +1 in Stage 1 to reflect objections to development proposals in the area during the local plans process.
		Business acceptability	Through Cambridgeshire County Council's discussions with bus operators, it has been suggested that bus operators would prefer to serve this location. Medium positive	Through Cambridgeshire County Council's discussions with bus operators, it has been suggested that bus operators would prefer to serve this location. Medium positive	Through Cambridgeshire County Council's discussions with bus operators, it has been suggested that bus operators would prefer to serve this location. Medium positive	Through Cambridgeshire County Council's discussions with bus operators, it has been suggested that bus operators would prefer not to serve this location due to distance from Cambridge. Negligible effect	Through Cambridgeshire County Council's discussions with bus operators, it has been suggested that bus operators would prefer not to serve this location due to distance from Cambridge. Negligible effect
	Engineering Issues	Impact on local road network during construction	Negligible effect as exisitng access can be used	Small negative effect as new access likely required, with minor impact on traffic	Small negative effect as new access likely required, with minor impact on traffic	Neutral impact. Already a dumbbell roundabout with spur in place.	Neutral impact. Already a roundabout with arm in place.
	Costs	Capital Costs	New P&R schemes considered to be similar cost as similar in size.	New P&R schemes considered to be similar cost as similar in size. Minor extra cost for works to existing roundabout required for Waterworks, not considered significant enough to change scoring.	New P&R schemes considered to be similar cost as similar in size.	New P&R schemes considered to be similar cost as similar in size.	New P&R schemes considered to be similar cost as similar in size.
		Operating Costs	Negligible effect as bus journey times same as existing	Small negative effect, as bus journey times longer than existing, if operated as a shuttle between P&R and Cambridge centre	Small negative effect, as bus journey times longer than existing, if operated as a shuttle between P&R and Cambridge centre	Medium negative effect, as bus journey times longer than existing and sites 1-4, if operated as a shuttle between P&R and Cambridge centre	Medium negative effect, as bus journey times longer than existing and sites 1-4, if operated as a shuttle between P&R and Cambridge centre
	Scalability	Scalability	Additional decking could be added but opportunity is limited.	Expansion would lead to additional impact on green belt and landscape / visual.	Expansion would lead to additional impact on green belt and landscape / visual.	Considered more easily expanded as no addiitonal impact on green belt / visual impact compared to other schemes.	Location within proposed development site may limit ability to expand.
		Resilience	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.	All deemed to be neutral at this stage.

M. **Stage 2 INSET Scoring**

1A.HIGH LEVEL THEME - POLICY ALIGNMENT														
No.	Name	Greater Cambridge Greater Peterborough enterprise Partnership Ambitions												
		Enhance Digital Connectivity		Business Growth		Growth of business innovationand incubator space		Removes skills barriers to contiued growth		Transport network fit for an economically vital high growth area		Alconbury Weald enterprise campus		WEIGHTED AVERAGE
		Select from list:												
0	**Existing Madingley Road Park and Ride**	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**0.67**
3	**Madingley Mulch South West (Often referred to as water works site)**	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**0.67**
4	**Madingley Mulch South East (often referred to as Chrome Lea)**	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**0.67**
5	**Scotland Farm**	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**0.67**
6	**Bourn airfield**	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	0: Neutral (N/A)	0	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**0.67**

1A.HIGH LEVEL THEME - POLICY ALIGNMENT												
No.	Name	Alignment with the Greater Cambridge City Deal Transport Vision										
		Accessibility by Public transport		Accessibility by cycle		Acessibility on foot		Congestion (i.e. traffic delays)		Traffic levels (i.e. total volume of traffic)	0	WEIGHTED AVERAGE
		Select from list:										
0	**Existing Madingley Road Park and Ride**	2: Medium positive (Medium improvement to accessibility)	2	0: Neutral (No change)	0	0: Neutral (No change)	0	0: Neutral (No change)	0	1: Small positive (Some reduction in traffic levels)	1	**0.60**
3	**Madingley Mulch South West (Often referred to as water works site)**	2: Medium positive (Medium improvement to accessibility)	2	3: Large positive (Large improvement to accessibility)	3	0: Neutral (No change)	0	2: Medium positive (Medium reduction in traffic levels)	2	1: Small positive (Some reduction in traffic levels)	1	**1.60**
4	**Madingley Mulch South East (often referred to as Chrome Lea)**	2: Medium positive (Medium improvement to accessibility)	2	3: Large positive (Large improvement to accessibility)	3	0: Neutral (No change)	0	2: Medium positive (Medium reduction in traffic levels)	2	1: Small positive (Some reduction in traffic levels)	1	**1.60**
5	**Scotland Farm**	1: Small positive (Some improved accessibility)	1	2: Medium positive (Medium improvement to accessibility)	2	0: Neutral (No change)	0	2: Medium positive (Medium reduction in traffic levels)	2	1: Small positive (Some reduction in traffic levels)	1	**1.20**
6	**Bourn airfield**	1: Small positive (Some improved accessibility)	1	2: Medium positive (Medium improvement to accessibility)	2	0: Neutral (No change)	0	2: Medium positive (Medium reduction in traffic levels)	2	1: Small positive (Some reduction in traffic levels)	1	**1.20**

1A.HIGH LEVEL THEME - POLICY ALIGNMENT														
No.	Name	Alignment with Published Plans												WEIGHTED SCORE FOR THEME
		Draft Local Plan for Cambridge (2014)		Draft Local Plan for South Cambridgeshire (2014)		Cambridgeshire Local Transport Plan 2011 - 2031		Transport Strategy for Cambridge and South Cambridge		Greenbelt		WEIGHTED AVERAGE		
		Select from list:												
0	**Existing Madingley Road Park and Ride**	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	1: Small positive (Small positive fit)	1	1: Small positive (Small positive fit)	1	-2: Medium negative (Medium negative fit)	-2	**0.60**		**0.62**
3	**Madingley Mulch South West (Often referred to as water works site)**	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	-2: Medium negative (Medium negative fit)	-2	**1.00**		**1.09**
4	**Madingley Mulch South East (often referred to as Chrome Lea)**	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	-2: Medium negative (Medium negative fit)	-2	**1.00**		**1.09**
5	**Scotland Farm**	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	-2: Medium negative (Medium negative fit)	-2	**1.00**		**0.96**
6	**Bourn airfield**	1: Small positive (Small positive fit)	1	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	2: Medium positive (Medium positive fit)	2	0: Neutral (N/A)	0	**1.40**		**1.09**

1B. INTERMEDIATE LEVEL THEME - BENEFITS																
No.	Name	Transport Benefits														
		Journey Time		Ease of interchange between modes		Accomodates forecast patronage		Public transport connectivity		Private vehicles connectivity		Walking Connectivity		Cycling Connectivity		WEIGHTED AVERAGE
		Select from list:														
0	**Existing Madingley Road Park and Ride**	0: Neutral (No change)	0	0: Neutral (No change)	0	2: Medium positive Medium increase in capacity)	2	0: Neutral (No change)	0	0: Neutral (No change)	0	0: Neutral (No change)	0	0: Neutral (No change)	0	**0.29**
3	**Madingley Mulch South West (Often referred to as water works site)**	1: Small positive (Some reduction in journey times)	1	2: Medium positive (Medium improvement to interchange)	2	2: Medium positive Medium increase in capacity)	2	0: Neutral (No change)	0	3: Large positive (Large improvement to connectivity)	3	0: Neutral (No change)	0	2: Medium positive Medium improvement to connectivity)	2	**1.43**
4	**Madingley Mulch South East (often referred to as Chrome Lea)**	1: Small positive (Some reduction in journey times)	1	2: Medium positive (Medium improvement to interchange)	2	2: Medium positive Medium increase in capacity)	2	0: Neutral (No change)	0	3: Large positive (Large improvement to connectivity)	3	0: Neutral (No change)	0	2: Medium positive Medium improvement to connectivity)	2	**1.43**
5	**Scotland Farm**	1: Small positive (Some reduction in journey times)	1	2: Medium positive (Medium improvement to interchange)	2	2: Medium positive Medium increase in capacity)	2	0: Neutral (No change)	0	3: Large positive (Large improvement to connectivity)	3	0: Neutral (No change)	0	2: Medium positive Medium improvement to connectivity)	2	**1.43**
6	**Bourn airfield**	1: Small positive (Some reduction in journey times)	1	2: Medium positive (Medium improvement to interchange)	2	2: Medium positive Medium increase in capacity)	2	0: Neutral (No change)	0	1: Small positive (Some improvement to connectivity)	1	0: Neutral (No change)	0	2: Medium positive Medium improvement to connectivity)	2	**1.14**

1B. INTERMEDIATE LEVEL THEME - BENEFITS

No.	Name	Passenger experience										
		Safety		**Shelter provision**		**Impact on the mobility impaired**		**Wayfinding**		**Congestion**		**WEIGHTED AVERAGE**
		Select from list:										
0	**Existing Madingley Road Park and Ride**	2: Medium positive (Medium improvements to safety)	2	2: Medium positive (Medium increase in shelter provision)	2	2: Medium positive (Medium improvement for mobility impaired)	2	2: Medium positive (Medium improvements to wayfinding)	2	0: Neutral (No change)	0	**1.60**
3	**Madingley Mulch South West (Often referred to as water works site)**	2: Medium positive (Medium improvements to safety)	2	2: Medium positive (Medium increase in shelter provision)	2	2: Medium positive (Medium improvement for mobility impaired)	2	2: Medium positive (Medium improvements to wayfinding)	2	2: Medium positive (Medium reduction in congestion)	2	**3.60**
4	**Madingley Mulch South East (often referred to as Chrome Lea)**	2: Medium positive (Medium improvements to safety)	2	2: Medium positive (Medium increase in shelter provision)	2	2: Medium positive (Medium improvement for mobility impaired)	2	2: Medium positive (Medium improvements to wayfinding)	2	2: Medium positive (Medium reduction in congestion)	2	**3.60**
5	**Scotland Farm**	2: Medium positive (Medium improvements to safety)	2	2: Medium positive (Medium increase in shelter provision)	2	2: Medium positive (Medium improvement for mobility impaired)	2	2: Medium positive (Medium improvements to wayfinding)	2	2: Medium positive (Medium reduction in congestion)	2	**3.60**
6	**Bourn airfield**	2: Medium positive (Medium improvements to safety)	2	2: Medium positive (Medium increase in shelter provision)	2	2: Medium positive (Medium improvement for mobility impaired)	2	2: Medium positive (Medium improvements to wayfinding)	2	2: Medium positive (Medium reduction in congestion)	2	**3.60**

1B. INTERMEDIATE LEVEL THEME - BENEFITS

No.	Name	Environmental and social issues																						WEIGHTED AVERAGE
		Noise		Air Quality and Greenhouse Gases		Landscape / Townscape		Biodiversity		Historic Environment		Flood Risk		Water Quality - Surface Water		Water Quality - Groundwater		Impact on Society						
		Select from list:																						
0	**Existing Madingley Road Park and Ride**	-1: Small negative (small number of adverse effects, can be mitigated)	-1	-1: Small negative (small number of adverse effects, can be mitigated)	-1	-1: Small negative (small number of adverse effects, can be mitigated)	-1	0: Neutral (N/A)	0	-1: Small negative (small number of adverse effects, can be mitigated)	-1	0: Neutral (N/A)	0	-1: Small negative (small number of adverse effects, can be mitigated)	-1	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	0: Neutral (N/A)	0					**-0.78**
3	**Madingley Mulch South West (Often referred to as water works site)**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	-3: Large negative (Significant adverse effect, difficult to mitigate)	-3	-3: Large negative (Significant adverse effect, difficult to mitigate)	-3	0: Neutral (N/A)	0	0: Neutral (N/A)	0	0: Neutral (N/A)	0	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2					**-0.89**
4	**Madingley Mulch South East (often referred to as Chrome Lea)**	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-3: Large negative (Significant adverse effect, difficult to mitigate)	-3	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-1: Small negative (small number of adverse effects, can be mitigated)	-1	0: Neutral (N/A)	0	0: Neutral (N/A)	0	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2					**-1.33**
5	**Scotland Farm**	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	0: Neutral (N/A)	0	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-1: Small negative (small number of adverse effects, can be mitigated)	-1	0: Neutral (N/A)	0	-1: Small negative (small number of adverse effects, can be mitigated)	-1	-1: Small negative (small number of adverse effects, can be mitigated)	-1	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2					**-1.00**
6	**Bourn airfield**	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	0: Neutral (N/A)	0	-1: Small negative (small number of adverse effects, can be mitigated)	-1	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	0: Neutral (N/A)	0	0: Neutral (N/A)	0	-1: Small negative (small number of adverse effects, can be mitigated)	-1	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2	-2: Medium negative (Potentially significant adverse effects, can be mitigated)	-2					**-0.89**

1B. INTERMEDIATE LEVEL THEME							
No.	**Name**	**Wider Economic Benefits**					**WEIGHTED SCORE FOR THEME**
		Wider Economic Benefits(e.g. GVA)		**Impact on areas of deprivation**		**WEIGHTED AVERAGE**	
0	**Existing Madingley Road Park and Ride**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	**0.00**	**0.28**
3	**Madingley Mulch South West (Often referred to as water works site)**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	**0.00**	**1.03**
4	**Madingley Mulch South East (often referred to as Chrome Lea)**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	**0.00**	**0.92**
5	**Scotland Farm**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	**0.00**	**1.01**
6	**Bourn airfield**	0: Neutral (N/A)	0	0: Neutral (N/A)	0	**0.00**	**0.96**

1C. OPERATIONAL THEME - DELIVERABILITY															
No.	Name	Engineering Issues			Costs						Scalability					WEIGHTED SCORE FOR THEME
		Impact on local road network during construction		WEIGHTED AVERAGE	Capital costs		Operating costs		WEIGHTED AVERAGE		Scalability		Resilience		WEIGHTED AVERAGE	
		Select from list:			*Select from list:*						*Select from list:*					
0	**Existing Madingley Road Park and Ride**	0: Neutral (No impact))	0	**0.00**	-2: Medium negative (TBD depending on project)	-2	0: Neutral (TBD depending on project)	0	**-1.00**		0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	**0.00**	**-0.20**
3	**Madingley Mulch South West (Often referred to as water works site)**	-1: Small negative (Small impact on road network)	-1	**-1.00**	-2: Medium negative (TBD depending on project)	-2	-1: Small negative (TBD depending on project)	-1	**-1.50**		0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	**0.00**	**-0.73**
4	**Madingley Mulch South East (often referred to as Chrome Lea)**	-1: Small negative (Small impact on road network)	-1	**-1.00**	-2: Medium negative (TBD depending on project)	-2	-1: Small negative (TBD depending on project)	-1	**-1.50**		0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	**0.00**	**-0.73**
5	**Scotland Farm**	0: Neutral (No impact))	0	**0.00**	-2: Medium negative (TBD depending on project)	-2	-2: Medium negative (TBD depending on project)	-2	**-2.00**		1: Small positive (TBD depending on project)	1	0: Neutral (TBD depending on project)	0	**0.50**	**-0.48**
6	**Bourn airfield**	0: Neutral (No impact))	0	**0.00**	-2: Medium negative (TBD depending on project)	-2	-2: Medium negative (TBD depending on project)	-2	**-2.00**		0: Neutral (TBD depending on project)	0	0: Neutral (TBD depending on project)	0	**0.00**	**-0.65**

CAMBOURNE TO CAMBRIDGE BETTER BUS JOUREYS - P&R SITE SHORTLIST SELECTION
INVESTMENT SIFTING AND EVALUATION TOOL (INSET)

2A. MULTI-CRITERIA ANALYSIS - SUMMARY					
No.	Name	1A.HIGH LEVEL THEME - POLICY ALIGNMENT	1B. INTERMEDIATE LEVEL THEME - BENEFITS	1C. OPERATIONAL THEME - DELIVERABILITY	WEIGHTED AVERAGE
		Final weighted score (-3 to 3 scale):	*Final weighted score (-3 to 3 scale):*	*Final weighted score (-3 to 3 scale):*	
0	Existing Madingley Road Park and Ride	0.62	0.28	-0.08	0.27
3	Madingley Mulch South West (Often referred to as water works site)	1.09	1.03	-0.73	0.47
4	Madingley Mulch South East (often referred to as Chrome Lea)	1.09	0.92	-0.73	0.43
5	Scotland Farm	0.96	1.01	-0.48	0.50
6	Bourn airfield	1.09	0.96	-0.65	0.47

N. Record of Stakeholder Meetings

N.1 14th June 2017

N.1.1 Aim:

To clarify priorities in relation to Park & Ride options and ensure that they are reflected in the study process

N.1.2 Objectives:

- To provide an update on overall progress of the project, and ensure a common understanding of the process going forward
- To determine the main topics of concern to stakeholders
- To gain a better understanding of the criteria used in making decisions about the various options
- To explore positive and negative issues against each criteria
- To document concerns and detail of issues raised to ensure they are reflected in the appraisal

N.1.3 Introductions, overview of objectives and group agreement

There were 35 people in attendance, and we started just after 6pm. The introductions overview of objectives and group agreement went smoothly. Those leading the workshop aimed to set a tone that was upbeat and focused, with emphasis on collaboration by listening afresh and showing respect. This seemed to be received by the group.

N.1.4 Background and Context by Ashley Heller

'Big Picture' overview with questions of clarification

Ashley gave an update on the wider context to how we got to this point, how this session fits into the wider picture of the project overall and about intention behind the process we are following. See attached slides for detail.

There were a couple of straight-forward questions of clarification.

N.1.5 Outline of Approach by Jo Baker

Jo gave an overview of appraisal process, and key stages with timelines in relation to submissions to City Deal Board. See attached slides for detail. He emphasised that this evening's session is to ensure we have captured what matters most to the group, and that this is an important opportunity to gather this information so that it can be taken into account in the next phases.

There were questions about:

- the timing of the next workshop, with a concern that many people are away in August, so cannot take part Response – this was noted. The next workshop will likely be in early September.
- the inaccuracy of the maps and concern that detailed input is required from the group based on 'flawed' information. Response – at this stage, no decisions are being made and these

maps are good enough to be indicative. Highly accurate ordnance survey maps will be used in due course

- why not go straight to work on the short-list, rather than spend time on such a wide list. Response – this process is part of re-looking at everything, and aims to be as involving as possible of everyone. Hence the wide scope at this stage
- Drainage and water run-off is an issue Response – that is a good example of a criterion we need to pay full attention to. Please incorporate that in the options exercise to follow
- Are we aware that the '100 acre wood' is used by Cambridge University for research and is classified as a Site of Special Scientific Interest (SSSI) Response – Again, that is an important factor we will take account of. Please incorporate that in the options exercise.
- Why are we wasting time and not getting on with what we came for this evening? Response – acknowledged, as an opinion. We will move on shortly, but setting the context and process is important to some people, ensures a shared understanding and lays the foundation for the next exercise.

These questions merged into the planned discussion. It was apparent that the tone of the questioning was becoming increasingly strident from some quarters. This had been anticipated, given the emotive subject. The workshop leaders/facilitators had agreed in advance to demonstrate active listening, to acknowledge concerns and as far as possible to avoid getting defensive. This seemed to be effective in that any negative tone was contained and not taken up by the wider group, so an overall constructive tone was maintained. We then identified the main issues that were exercising the group. These were:

Green Belt; Community and Heritage; Access/Connectivity; Heritage and landscape; Journey times; Transport modal shift; Traffic congestion

It was stressed that there is no pecking order of importance. These are broad themes to help focus thoughts, and groups might come up with other themes. The wider group was split into four mixed groups with instructions to indicate against each of the 8 options on a large graph their positives (on green post-its) and negatives (on orange post-its), and were reminded to be as specific as possible.

All groups went to task and it was soon apparent from the level of noise and body language that there was a high level of engagement. The facilitators on each group were ensuring that as far as possible, air time was being shared out, and that they did not drift into general discussion. Clearly some individuals already had their main concerns, and voiced these, but this was natural and a relevant part of the exercise as long as recorded in specific terms, and not just as a general likes or dislikes.

Two of the groups asked for extra time, so I gave an extra 10 minutes. We came back together as a whole group at 8.05pm. I was concerned to allow enough time for some feedback and discussion. In the event, there was little feedback, and there was a notable further positive shift in the atmosphere. It seemed that this collective effort had channelled energy well and the group were willing to accept Jo Baker's assurance that their considerations would be taken account of. I then asked the group how they wanted to use the time left. They chose to do a weighting of importance exercise (1-5) to give some indication as to what mattered more to them. Two of the groups chose to do this.

Before everyone left, the group were reminded of the key timelines in the process, submission to the Board, approximate time of next workshop etc. Then they were thanked for their hard work and for adhering to the group agreement we had set at the beginning. The verbal

consensus was that our collective effort this evening had helped the group move on this evening, and we looked forward to this continuing. The session closed at 8.25pm.

Table 9: Review of Options – Positive and Negative

	Community & Heritage	Green Belt	Social Impact	Mode shift
Site			(visual impact and noise)	(traffic congestion and modal shift)
0	Fairly neutral – depending on design quality Expand enterprise zone	Not in Green Belt Already on the Green Belt	No Green Belt. Low social impact Ugly 2-decker buses Additional noise for new housing	Captures M11 from south by western orbital. Quick journey time. Housing at St Neots Road, 150 houses from {????] house on Dry Drayton [???] illegible Won't make a positive additional contribution Congestion will 'disincentivise' people to use
1	Big negative impact on community. Reducing rural character. Research projects in wood (University) Impact on Coton/Madingley BAP species – bats – encourages predation	Green Belt. Highest point west of Cambridge next to SSSI Ecology and diversity wildlife sites Non-starter because congestion starts at just west of 2 Good quality Green Belt Spoils "100 Acre Wood" Biggest impact (damaging to rare hill) Green Belt High quality Green Belt	Social impacts – housing infilling and community cohesion Biggest visual impact as on high land Closest to people's homes Light pollution	Too close to Cambridge Too far from core users Lower mode shift because lack of access to Science Park People won't stop at 1-4 to park, they'll carry on to Cambridge Too far from western settlements – people won't use Congestion will disincentivise people to use
2	Big negative impact – reduce rural landscape quality Impact on Coton/Madingley BAP species – bats – encourages predation	Highest point. Green Belt Ecology and diversity wildlife sites Non-starter because congestion starts at just west of 2 Good quality Green Belt Biggest impact (damaging to rare hill)	Social impacts – housing infilling and community cohesion Madingley village and Hall Big visual impact from high land Closest to people's homes Light pollution	Too close to Cambridge Too far from core users Lower mode shift because lack of access to Science Park People won't stop at bus having queued already for half an hour to get there

	Community & Heritage	Green Belt	Social Impact	Mode shift
		Green Belt High quality Green Belt	Visual impact	Too far from western settlements – people won't use Congestion will disincentivise people to use
3	Reduce landscape quality and advance effect on community Impact on Coton/Madingley Draining ---> Flooding Coton – water running off concrete on slope BAP species – bats – encourages predation	Green Belt. Highest point west of Cambridge. Lovely views to Cambridge Ecology and diversity wildlife sites Non-starter because congestion starts at just west of 2 Green Belt – good quality Biggest impact (damaging to rare hill) Green Belt High quality Green Belt	Social impacts – housing infilling and community cohesion Impact on Coton Impact on Comberton and Barton Concern on promoting additional housing development on Green Belt regarding character Biggest visual impact as on high land Closest to people's homes Light pollution Draining/Flooding is an issue Visual impact	Too close to Cambridge Too far from core users Lower mode shift because lack of access to Science Park People won't stop, will carry on to Cambridge Too far from western settlements – people won't use
4	Big negative on community – rural quality diminished. Impact on Coton/Madingley Draining ---> Flooding Coton – water running off concrete on slope BAP species – bats – encourages predation Damages the Coton green corridor Harms National Trust covenant	Green Belt. Highest point west of Cambridge. National Trust covenants. Ecology and diversity wildlife sites Non-starter because congestion starts at just west of 2 Good quality in Green Belt Green Belt High quality Green Belt	Social impacts – housing infilling and community cohesion Concern on promoting additional housing development on Green Belt regarding character Impact on Coton Big visual impact as on high ground Closest to people's homes Light pollution	Too close to Cambridge Too far from core users Lower mode shift because lack of access to Science Park Won't stop here to get bus. Already congested. Too far from western settlements – people won't use Congestion will disincentivise people to use
5	A long way from community, as long as rat-running can be dissuaded. May improve Hardwick situation.	Existing A428 junctions On edge of Green Belt	Little visual impact, little additional noise in context of existing noisy environment	Will sites east of 5 use it? More trip intercepted

	Community & Heritage	Green Belt	Social Impact	Mode shift
	Potential for rat-running impacting on Dry Drayton Low/nil community impact (larger villages) Supports local communities – cars going against flow		Reliable to journey to Park & Ride site plus rapid journey to employment areas (N & S) Low environmental impact Light pollution. Top of the hill – harder to mitigate lighting Damages historic city by being visible from a long distance/ruining protected landscape	Will improve journey times by bypassing congestion Good for western settlements (provided good direct buses)
6	Could be well-designed Low/nil community impact (larger villages)	Within area proposed for development – brown field site. Outside Green Belt Not Green Belt	Minimal [impact] as site to be developed and can be mitigated May be close to new homes (but before they move in?) Low environmental impact Drainage/Flooding is an issue	Depend on future development People from Bourn won't turn west to go east Will improve journey times by bypassing congestion
7	Less impact on green field and lower visual quality Low/nil community impact (larger villages) Better access for visually impaired	Outside Green Belt Too far out. People won't go west to park from Bourn airfield Not Green Belt	Minimal impact as can be mitigated Low impact Low environmental impact	Too far from congestion Will improve journey times by bypassing congestion Good for western settlements (provided good direct buses)
8	Less impact on green field and lower visual quality Low/nil community impact (larger villages) Better access for visually impaired	Outside Green Belt Too far from Cambridge. Increase rat-run from A1198 Not Green Belt	Low impact Low environmental impact	Too far from congestion Miss people from Cambourne and Bourn airfield. They won't turn left – too far out. Will improve journey times by bypassing congestion Good potential for population further west than Cambourne (Express Services)

Source: Alasdair Cant and Associates

N.2 22nd August 2017

N.2.1 Objectives

- To present the emerging views of the technical consultant in relation to the shortlist of Park and Ride sites
- To have opportunities to discuss and determine main areas of concern in response to this shortlist
- To gather further information and document concerns on these shortlisted sites against the assessment criteria

N.2.2 Description

The workshop began at 6.30pm with introductions around the room, a welcome to everyone including newcomers, overview of objectives and an explanation of the process for the evening. There was good attendance, particularly from Parish Councils. As with the evening before, an explanation was given about the August timings and arrangements for a further 'mop-up' session on 11 September for those on holiday or unable to attend, and wish to input to the process. As before, we made a group agreement, emphasising the need for active and respectful listening, to share air time and to get as much down in writing as possible during the exercises.

Ashley Heller began by setting a very brief context, explaining that the options would still be at a 'high level' i.e. not yet in such detail, but that will follow, and that nothing has been decided.

The initial presentation of the shortlisted sites by Jo Baker were projected on screen. Jo took questions during and after this presentation. The main themes that emerged from the group were frustration at not being able to fully comprehend the maps as displayed; frustration at the repeated emphasis of 'high level', yet the group 'are being asked to comment in depth', which is 'impossible'. Disbelief and upset was expressed at the choice of the shortlist, particularly the sites 3 and 4 near Madingley Mulch and site 6 – even if decisions haven't yet been made, the uncertainty and upset that this will create for villages such as Coton makes some people feel that theprocess is 'already decided' – i.e. whatever input is given (and much has been given over many months), it does not seem to be 'making any difference'. As the questions and comment continued, the tension and lack of trust became more apparent. The facilitator emphasised the need for constructive focus on the facts, and to try to keep open to hearing each other. However, several people replied that there had been a 'breakdown in trust' and that it was difficult to get beyond this in open discussion. We then worked in four groups, exploring each site in turn. As with the previous evening, the groups settled to the tasks and produced relevant and specific details which will be helpful to the consultants and the Project Team.

N.3 Tables

N.3.1 Table 1

- Tom Waterhouse (Stagecoach East)
- Howard Russell (Dry Drayton PC)
- Roger Tomlinson (Coton Parish Council)
- Grenville Chamberlain (District Councillor – Hardwick)

N.3.2 Table 2

- Amanda Nolan (Cambridge University Transport Manager)

- Peter Dear (Elsworth PC)
- Shaun Harrison-Fuller (Cambridgeshire County Council)
- Stuart Hawkins (MadingleyPC)
- Alan Quick (Cambridge Campaign for Future Transport)
- Tumi Hawkins (District Councillor, Caldecote ward)

N.3.3 Table 4

- Rod Cantrill (Cambridge City Council)
- Tim Scott (SCDC – Comberton)
- Pete Price (City Access Team)
- Lorraine Mooney (Barton PC)
- Robin Pellew (Cambridge PPF)
- Jo Morrison (Mott MacDonald)
- Stephen Coates (SWF)

N.3.4 Table 5

- Andy Campbell (Stagecoach)
- Bunty Waters (SCDC Cllr Bar Hill Ward)
- Markus Gehring (Cllr Cambridge City Council Newnham Ward)
- Rita Langan (Cranmer Road Residents' Association)
- Helen Bradbury (The Footpath Coton)

N.4 Summary of Findings

There will be more details on this to follow, but in brief, all groups favoured Site 5, mainly because of improved connectivity, less environmental impact and access from the east and west. Sites 3 and 4 were particularly unpopular as it was thought queuing and congestion on Madingley Mulch roundabout would result, concerns about environmental impact including visual impact and light pollution as well as an over-arching threat to Green Belt. Site 6 not considered viable as too distant from congestion or Cambridge and has no direct connection to A428 so would get little use, and would have negative impact on housing development land at Bourn Airfield.

N.5 Conclusion

There were strong feelings expressed during this workshop, with some fundamental concerns about how meaningful the consultation is. Emphasis was put on people having an opportunity to be heard, and this seemed an important part of the process, before the work in smaller groups which produced more detailed and specific feedback on each site. Again, many said that the workshop was an important opportunity to express their views which they sincerely hoped would be taken seriously and reflected in the final outcome. Everyone was thanked for giving their time and commitment.