Greater Cambridge Partnership

NEWMARKET ROAD PARK & RIDE RELOCATION AND EXPANSION

Outline Business Case Appendices

OBC
FEBRUARY 2023

PUBLIC

Greater Cambridge Partnership

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Greater Cambridge Partnership

NEWMARKET ROAD PARK & RIDE RELOCATION AND EXPANSION

Outline Business Case Appendices

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Appendix A

SCHEME DRAWINGS

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DO NOT SCALE

NOTES

1. THE JUNCTION LAYOUT SHOWN IS INDICATIVE AND IS INTENDED TO SHOW THE MAIN FEATURES FOR PUBLIC CONSULTATION PURPOSES.
2. NUMBER OF TRAFFIC LANES ON EACH APPROACH / EXITS IS SUBJECT TO FURTHER ANALYSIS AND JUNCTION MODELLING

KEY:

- HIGHWAY BOUNDARY
- PARK & RIDE BOUNDARY
- PARK & RIDE – P1 SUBSET BOUNDARY
- P1 BOUNDARY
- CARRIAGEWAY
- BUS LANE
- CYCLEWAY
- FOOTWAY
- PARKING AREA
- VERGE
- LANDSCAPING

REV	DATE	BY	DESCRIPTION	CHK	APP
P03	10/08/2022	AKM	ISSUED FOR CONSULTATION	AG	GC
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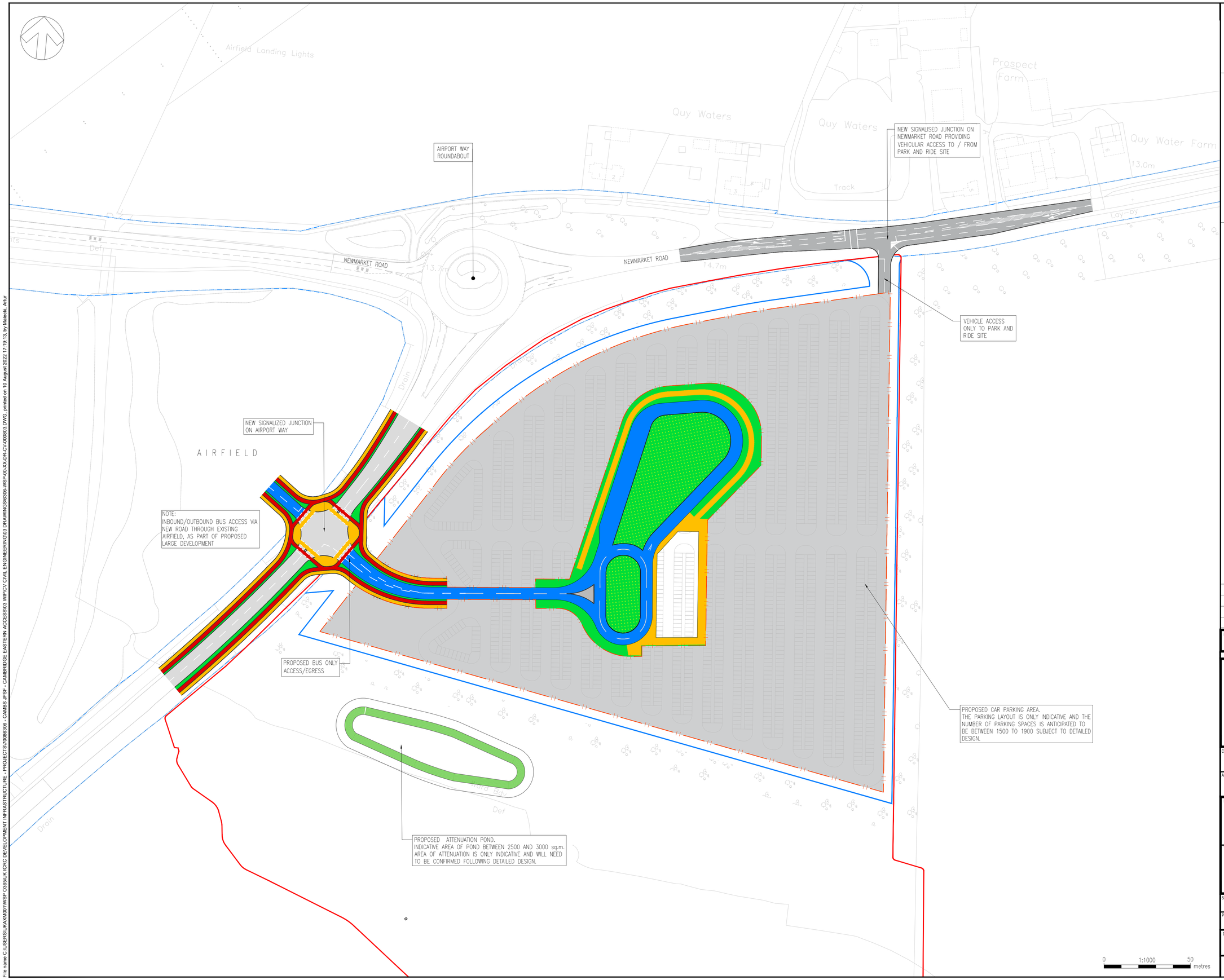

DO NOT SCALE

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SITE/PROJECT: CAMBRIDGE EASTERN ACCESS NEWMARKET ROAD

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Appendix B

OPTION ASSESSMENT REPORT

Greater Cambridge Partnership

CAMBRIDGE EASTERN ACCESS

Newmarket Road Park and Ride Site Selection and Appraisal Report

NR P&R
MAY 2022

PUBLIC

Greater Cambridge Partnership

CAMBRIDGE EASTERN ACCESS

Newmarket Road Park and Ride Site Selection and Appraisal Report

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CAMBRIDGE EASTERN ACCESS

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EXECUTIVE SUMMARY

This report summarises WSP's reasoned approach to the identification and appraisal of potential site location options for a new 2,000 space Park and Ride (P&R) facility along the A1303 Newmarket Road corridor, between Airport Way and Junction 35 of the A14.

This report supersedes the previous P&R site identification and appraisal work undertaken by Tetra Tech reported in the Strategic Outline Business Case (April 2021) and is informed by potential sites identified in the Cambridge Eastern Access (CEA) public consultation carried out in December 2021.

There is an existing P&R facility located on the north side of Newmarket Road, west of the Airport Way roundabout. The GCP are seeking to expand the P&R facility to 2,000 spaces and potentially accommodate additional bus services to support the 'Making Connections' bus strategy. As a result, a site identification and appraisal process has been undertaken to identify broad sites along the A1303 that could accommodate an expanded P&R facility.

This report demonstrates that a reasoned 'P&R Area of Search' has been identified that recommends that the facility is located on Newmarket Road (between Airport Way and Junction 35 of the A14) resulting in the requirement for a Green Belt location.

Within the 'Area of Search', a long list of 12 site locations were identified and a proportionate appraisal was undertaken to discount locations that were too small, restricted by adopted Local Plan planning policies or located in close proximity to sensitive environmental receptors.

This sift resulted in a short list of five location options for the P&R facility. A multi-criteria appraisal (MCAF) of the remaining sites was then undertaken using publicly available data. Importantly, the short list appraisal considered the potential harm to the Green Belt considered against the policy test set out in National and Local Planning Guidance. This is set out in WSP Green Belt Appraisal Report, which should be read in conjunction with this report.

The MCAF has been used to inform a final comparative analysis that considered the relative merits of each site and applied professional judgement to reach a recommendation on the preferred site. The final conclusions of this P&R site selection appraisal are:

- The Newmarket Road P&R facility requires a Green Belt location;
- The existing site should be relocated and expanded to a site east of Airport Way;
- All five short listed sites are capable of accommodating a P&R facility;
- On balance, Site P1 (east of Airport Way) is recommended as the preferred site to accommodate the P&R facility and should be located within the northern land parcel.
- Site P2 (south of Newmarket Road) and P3 (High Ditch Road) are ranked second and third due to being located further from Cambridge, the potential for higher environmental impact (P2) and higher level of harm to the Green Belt (P3); and
- Site P10 and P11 (North of Junction 35 of the A14) are the least preferable due to being the furthest from Cambridge (slowest bus and cycle times and highest bus priority infrastructure requirements) and increased concerns regarding environmental impacts to existing Stow-cum-Quy residents.

1 INTRODUCTION

1.1 CAMBRIDGE EASTERN ACCESS PROJECT

1.1.1. WSP has been appointed by the Greater Cambridge Partnership (GCP) to take forward the Cambridge Eastern Access (CEA) programme which comprises the following projects:

- Phase A: Improvements to walking, cycling and public transport infrastructure on Newmarket Road (Elizabeth Way to Airport Way) and the **relocation of the existing Park and Ride site**;
- Phase B: A high quality public transport route (HQPT) through the Cambridge Airport site; and
- Longer-term upgrades to the Cambridge to Newmarket rail line.

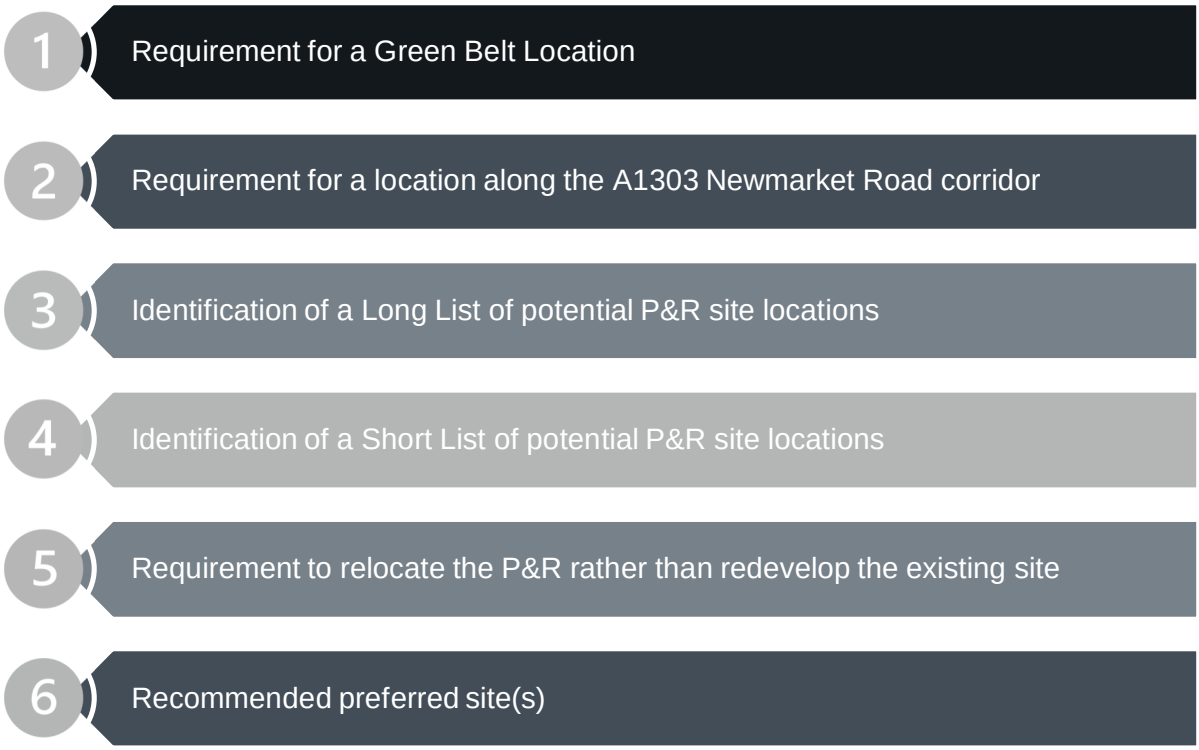
1.2 THE PURPOSE OF THIS REPORT

1.2.1. The purpose of this report is to set out WSP's proportionate approach to the identification and appraisal of alternative sites for the Newmarket Road Park and Ride (P&R), and the conclusions regarding site selection. This report sets out the site identification and selection methodology that has been applied, the P&R sites that have been identified, the appraisal results using a bespoke Multi-Criteria Appraisal Framework (MCAF) and the appraisal recommendations.

1.2.2. This report should be read in conjunction with WSP's Strategic Green Belt P&R Site Appraisal Report which sets out an appraisal of the short-listed sites against the National and Local tests set out in the National Planning Policy Framework (NPPF) and South Cambridgeshire District Council (SCDC) Local Plan.

REPORT OUTCOMES

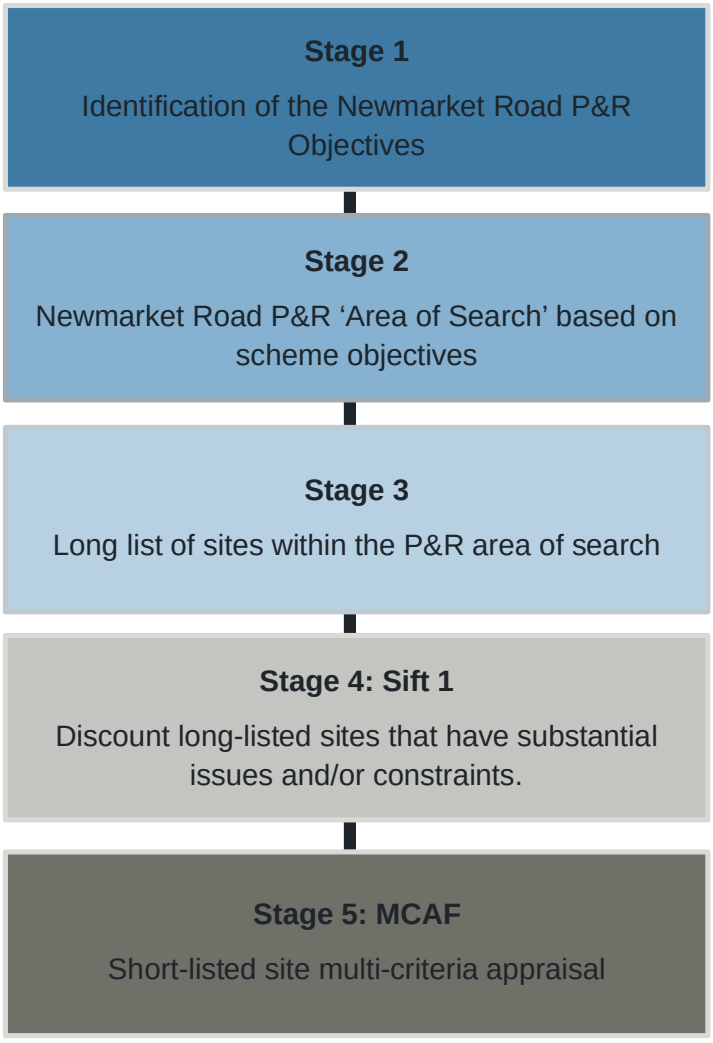
1.2.3. The main P&R outcomes demonstrated in this report are:



1.3 METHODOLOGY OVERVIEW

1.3.1. The flow diagram presented in Figure 1-1 provides an overview of the methodology that has been followed to identify and appraise a long list of potential P&R site options.

Figure 1-1 – P&R Option Identification and Appraisal Process



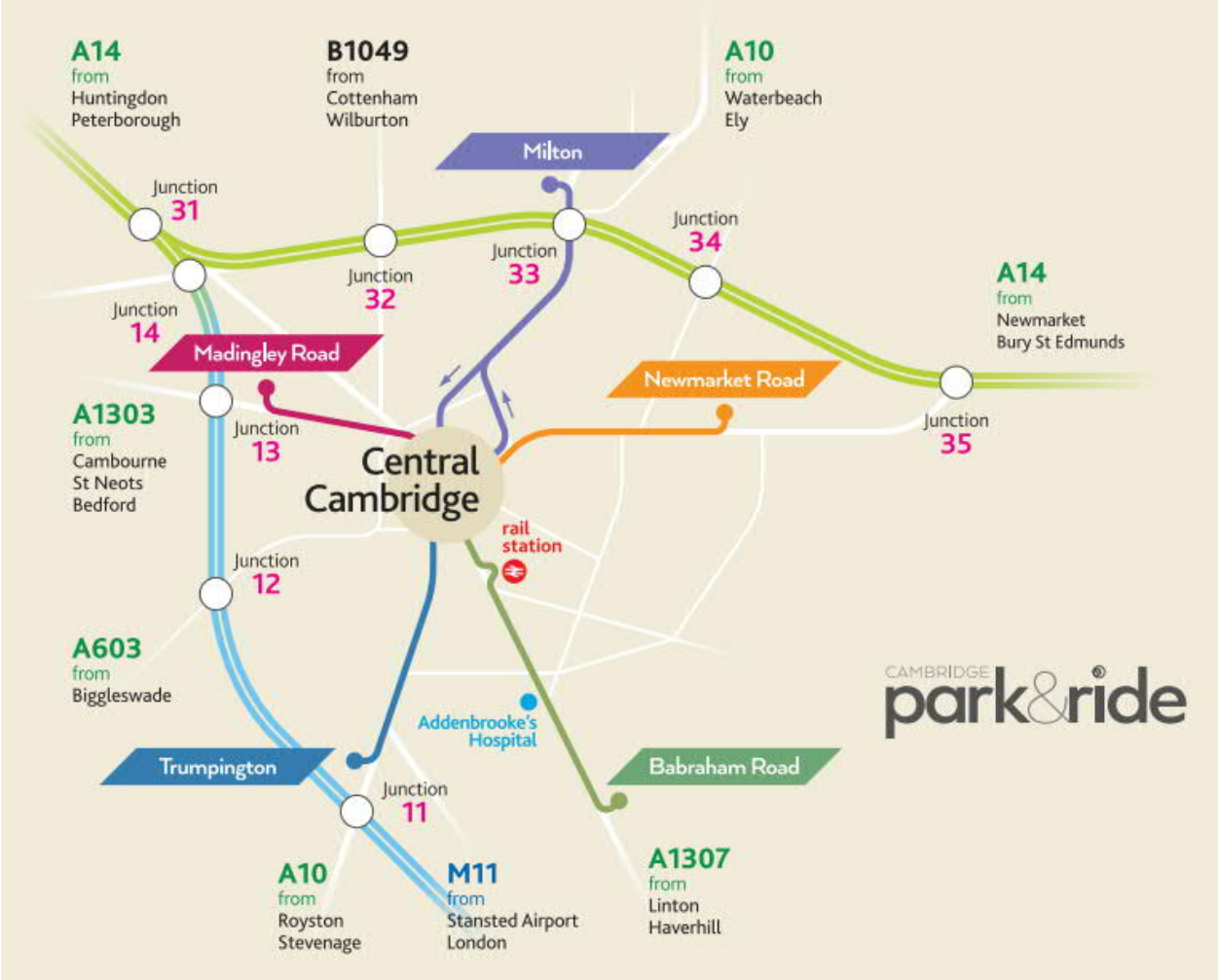
1.3.2. The methodology that has been developed and applied in this report followed a series of logical and informed stages as follows:

- **Stage 1:** Identification of a set of Newmarket Road P&R specific objectives;
- **Stage 2:** Application of the scheme objectives to identify a P&R site 'area of search';
- **Stage 3**: Identification of a long list of potential P&R sites within the 'area of search';
- **Stage 4:** An initial sift to discount any sites that are impacted by key environmental constraints, significantly conflict with planning policy and do not provide sufficient operational space; and
- **Stage 5:** A multi-criteria appraisal of the remaining short-listed sites, including a strategic Green Belt Impact Assessment to identify a preferred site(s).

1.4 ROAD PARK AND RIDE OVERVIEW

1.4.1. The Newmarket Road P&R site forms one of five P&R sites (Figure 1-2) located on key radial routes into Cambridge to intercept movements from the north, south, east and west of the city respectively. The P&R sites are a key and well-established component of the Cambridge and South Cambridgeshire Transport Strategy.

Figure 1-2 – Cambridge Park and Ride Sites



Source: https://cambridgeparkandride.info/contact.shtml

1.4.2. It is important to recognise that the term 'Park and Ride' has been historically used due to the prominence of car-based travel to the sites to then catch a frequent bus service into the city and other key destinations. However, it is important to recognise that the P&R sites in Cambridge are also used for 'Park & Stride' and 'Park & Pedal', where site users complete their journey to destinations in Cambridge on foot, bicycle or shared e-scooter respectively.

1.5 STRUCTURE OF THIS REPORT

1.5.1. The remainder of this report is structured as follows:

- Chapter 2 – provides a description of the existing Newmarket P&R facility and the parameters adopted for the relocated facility to inform the site selection process;
- Chapter 3 – provides a summary of previous work on the relocation of the Newmarket Road P&R facility and feedback received from the Concept Design public consultation;
- Chapter 4 – sets out relevant planning policy that has been used to inform the identification and appraisal of potential P&R sites;
- Chapter 5 – sets out the adopted 'area of search' within which the P&R site is to be located;
- Chapter 6 – sets out the approach applied to identify the long-list of potential P&R sites within the area of search and the results of the initial sift to identify a short-list;
- Chapter 7 – sets out the appraisal results of the short-listed P&R sites; and
- Chapter 8 – provides the study conclusions and recommendations.

2 NEWMARKET ROAD PARK AND RIDE

2.1 INTRODUCTION

2.1.1. The purpose of this chapter is to provide a description of the existing Newmarket Road P&R including the site location, access arrangements, parking facilities, bus services and site ownership details. This chapter also sets out the key requirements of the Newmarket Road P&R which have been used to inform the relocation site identification and selection process described in Chapter 6.

2.2 EXISTING SITE

SITE LOCATION AND SURROUNDING LAND USE

2.2.1. The existing Newmarket P&R site is located on the A1303 Newmarket Road, approximately 625 metres west of the Airport Way junction (Figure 2-1). The site is immediately surrounded on its eastern, western and northern boundaries by a belt of woodland and to the south by Newmarket Road.

Figure 2-1 – Newmarket Road P&R Site Location

2.2.2. Within the P&R site (inside the wooded boundaries) is the Marshalls Aero Academy, a training facility of Marshalls staff and the Cambridge Ice Arena, an indoor ice rink. The Marshall Aero Academy is accessed via its own segregated access with Newmarket Road which also provides staff and delivery access to the Ice Arena. Public access to the Ice Arena is via the P&R access arrangements described below, with public users of the Ice Arena parking within the P&R car park.

2.2.3. Beyond the immediate wooded boundaries, the P&R is surrounded on its northern and western sides by the Marleigh residential-led development, which is currently being built-out and occupied. To the east the site is surrounded by green fields and to the south by Cambridge Airport.

SITE ACCESS

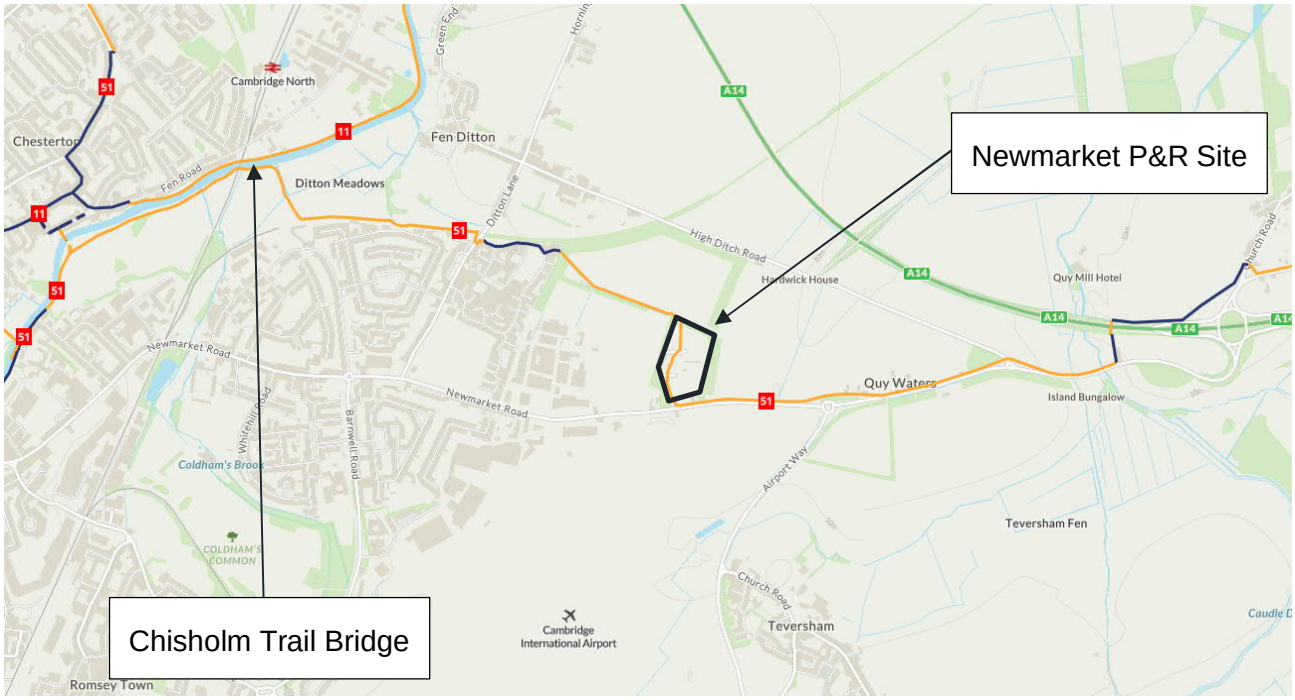
2.2.4. The main access to the P&R site is via a signal-controlled T-Junction with Newmarket Road. The signal-controlled access provides the sole vehicular access and egress to the P&R site, and therefore accommodates both P&R buses as well as site user vehicle movements. From the east, Newmarket Road has a dedicated P&R vehicle access lane from the Airport Way junction to the main site access, proving priority access over any nearside queuing traffic heading westbound along Newmarket Road.

2.2.5. In addition to the site main entrance, the P&R will provide direct access into the adjacent Marleigh development via a walk and cycle access adjacent to the internal roundabout. This link will provide direct access to the Marleigh local centre which will include a range of shops and a primary school.

2.2.6. Along the northern boundary of the site, a walk and cycle access is provided that forms part of the National Cycle Network (NCN) Route 51, routing locally from Newmarket to St Ives along the Cambridge Guided Busway.

2.2.7. Figure 2-2 shows that NCN 51 routes off-road along the northern side of Newmarket Road, through the existing P&R site, before continuing west towards central and northern Cambridge via a surfaced route alongside the river Cam and via the new Chisholm Trail, Green Dragon and Riverside bridges respectively.

Figure 2-2 – National Cycle Network 51



Source: https://www.sustrans.org.uk/national-cycle-network/

2.2.8. The presence of NCN 51 routing through the existing P&R site encourages 'Park and Pedal' and 'Park and Stride' by some existing users. These are site users who park on-site and then continue their journey to their destination on foot or by active travel modes including bicycle (transported in their vehicle or stored at the P&R) or other micro-mobility modes.

PARKING PROVISION AND FACILITIES

2.2.9. Based on information provided on the dedicated Cambridge P&R website (https://cambridgeparkandride.info/newmarketroad-about.shtml) accessed in March 2022, the existing P&R provides:

- 873 car parking spaces
- 8 Parent and Child spaces;
- 15 Disabled spaces;
- 60 cycle parking spaces; and
- 42 Secure Cycle lockers (rented from Cambridgeshire County Council).

2.2.10. Parking on-site is free for 18 hours, with charges applied after 18 hours with a maximum stay of 72 hours.

2.2.11. In addition to vehicle and cycle parking, the P&R provides a single publicly accessible building with waiting space, seating, vending machines, toilets and baby changing facilities.

BUS SERVICES

2.2.12. The Newmarket Road P&R bus services operate a high frequency service (March 2022) as follows:

- 0700 hours to 2030 hours Monday to Saturday and 0700 to 1820 hours on Sundays
- Up to every 15 minutes Monday to Sunday.
- Routing along Newmarket Road to the Grafton Centre (via Newmarket Road) and central Cambridge (via Emmanuel Road) and the central Drummer Street bus station. Services stop at Marshalls, Cambridge Untied (match days only), Cambridge Retail Park, the Grafton Centre and Drummer Street.
- Journey time to The Grafton is approximately 10 minutes and to Central Cambridge is approximately 17 minutes.
- Bus services benefit from the existing bus lanes provided along Newmarket Road and a bus gate on Emmanuel Road.

SITE OWNERSHIP

2.2.13. WSP has been informed by the GCP that the existing P&R site is leased from Marshalls. The 40-year lease for the site, which was agreed in 1996 provides Marshalls with options for early termination after 30 years (2026). Therefore, the site is not owned by Cambridgeshire County Council and may not be able to accommodate a P&R facility in the medium to long term

Relevance to the site selection process: This section has identified the key components of a P&R site, including the provision of car and cycle parking spaces, attractive bus journey times to Cambridge City Centre, supported by bus priority measures and the opportunity to complete 'last mile' journeys by active modes.

2.3 PROPOSED SITE

KEY COMPONENTS

2.3.1. To inform the site identification process a high-level specification for the proposed P&R facility was provided by the GCP. The key components of the relocated P&R facility are:

- Surface car parking for up to 2,000 cars (which will include allocated spaces for disabled, parent and child and Electric Vehicle (EV) charging spaces);
- A bus waiting, pick-up and drop-off zone;
- Site access junction(s) and associated bus and vehicle access roads;
- A single storey P&R building to provide a waiting area and welfare facilities;
- Space for cycle parking and cycle lockers;
- Landscaping and screen planting for visual mitigation; and
- Sustainable Drainage System.

2.3.2. Applying these facility components, WSP has estimated that the minimum site size for the relocated P&R facility is between **5.0 and 5.5 hectares**.

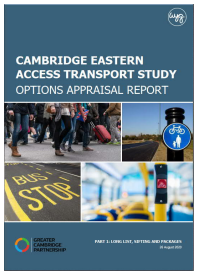
Relevance to the site selection process: A minimum site size of 5.0 hectares has been adopted to identify potential relocation sites for the Newmarket Road P&R site.

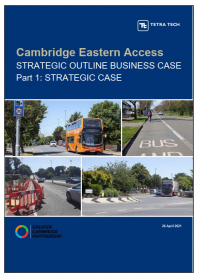
3 PREVIOUSLY IDENTIFIED SITES

3.1 INTRODUCTION

3.1.1. The purpose of this chapter is to set out the previous work that has been undertaken to identify relocation sites for the Newmarket P&R and the reasons why the site selection process has been revisited by WSP.

3.2 CEA STRATEGIC OUTLINE BUSINESS CASE



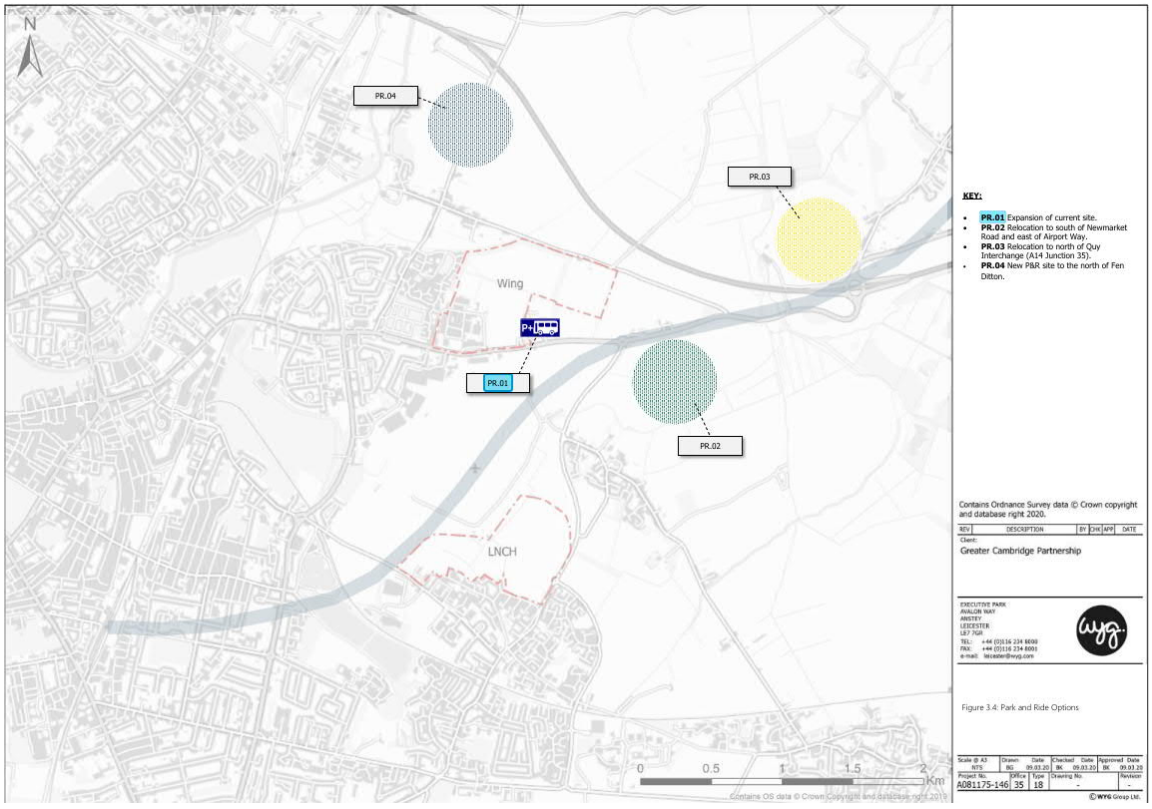


3.2.1. Prior to WSP's involvement in the CEA programme, an Options Appraisal Report (OAR) and Strategic Outline Business Case (SOBC) was produced for the CEA study area by Tetra Tech. The OAR set out a long list of sustainable transport infrastructure options within eastern Cambridge, and an appraisal of the options to identify a short-list of schemes. The SOBC set out the strategic case for delivering sustainable travel improvements in eastern Cambridge along with a recommended package of improvements.

3.2.2. The OAR considered four locations (Figure 3-1) for the Newmarket Road P&R as follows:

- PR.01: Expansion of the current site;
- PR.02: Relocation to the south of Newmarket Road and east of Airport Way;
- PR.03: Relocation to the north of Quy Interchange (A14 Junction 35); and
- PR.04: Relocation to the north of Fen Ditton.

Figure 3-1 – OAR P&R Site Location Options



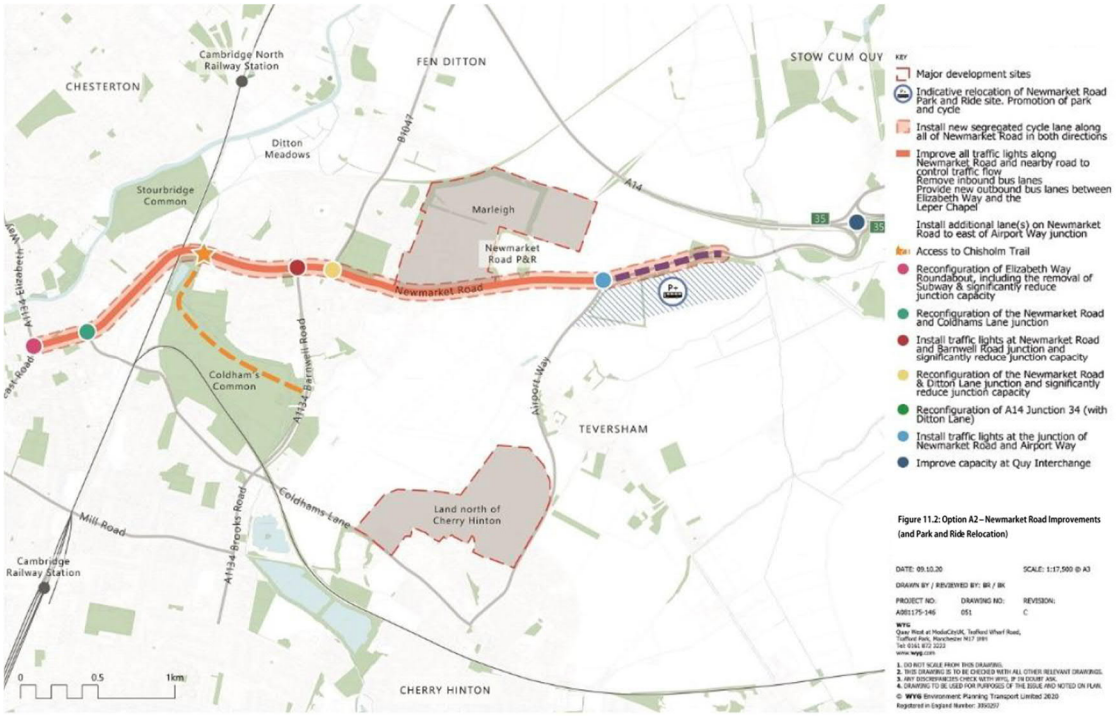
3.2.3. The OAR appraised the four identified options resulting in the rejection of P&R sites PR.03 and PR.04. All the identified sustainable transport options were appraised qualitatively using a Multi-Criteria Appraisal Framework against a series of transport objectives, connectivity, community, environmental, engineering, legal and deliverability criteria. A summary of the rationale behind the rejection of PR.03 and PR.04 is provided in Table 3-1.

Table 3-1 – SOBC P&R Site Rejection Summaries

Ref	Scheme Option	Rational for Rejection
PR.03	Relocation of Park and Ride to north of Quy Interchange (A14 Junction 35).	Both in terms of the provision of the infrastructure and operation of the supporting services, the site would present problems. Located in the green belt it would have an impact on the environment and landscape. Perceptually it could be unappealing for users, in being cited further away from the city centre, and operationally there would be issues in terms of increased costs and travel times (including negotiating the Quy Interchange). Whilst it would intercept many vehicles sooner, those travelling from the south via Airport Way would have further to travel.
PR.04	New Park and Ride site to the north of Fen Ditton	The site offers potential to support a northern route realignment and intercept traffic travelling towards the busy Ditton Lane junction with Newmarket Road, catering for traffic exiting the A14 at J34 and utilising existing service provision. However, measures to be introduced as part of the Cambridge North to Waterbeach Study are likely to cater for any demand from further north in places such as Horningsea, and given the limitations on demand and impact of works on the Green Belt, it is not recommended that it is taken forward.

3.2.4. The OAR then identified the expansion of the existing site as part of a package of short-term measures and the relocation to site PR.02 as part of a package of medium-term measures. The SOBC Strategic Case set out a recommend hybrid package (Figure 3-2) of improvements for CEA. This included relocating the existing Newmarket Road P&R to site PR.02.

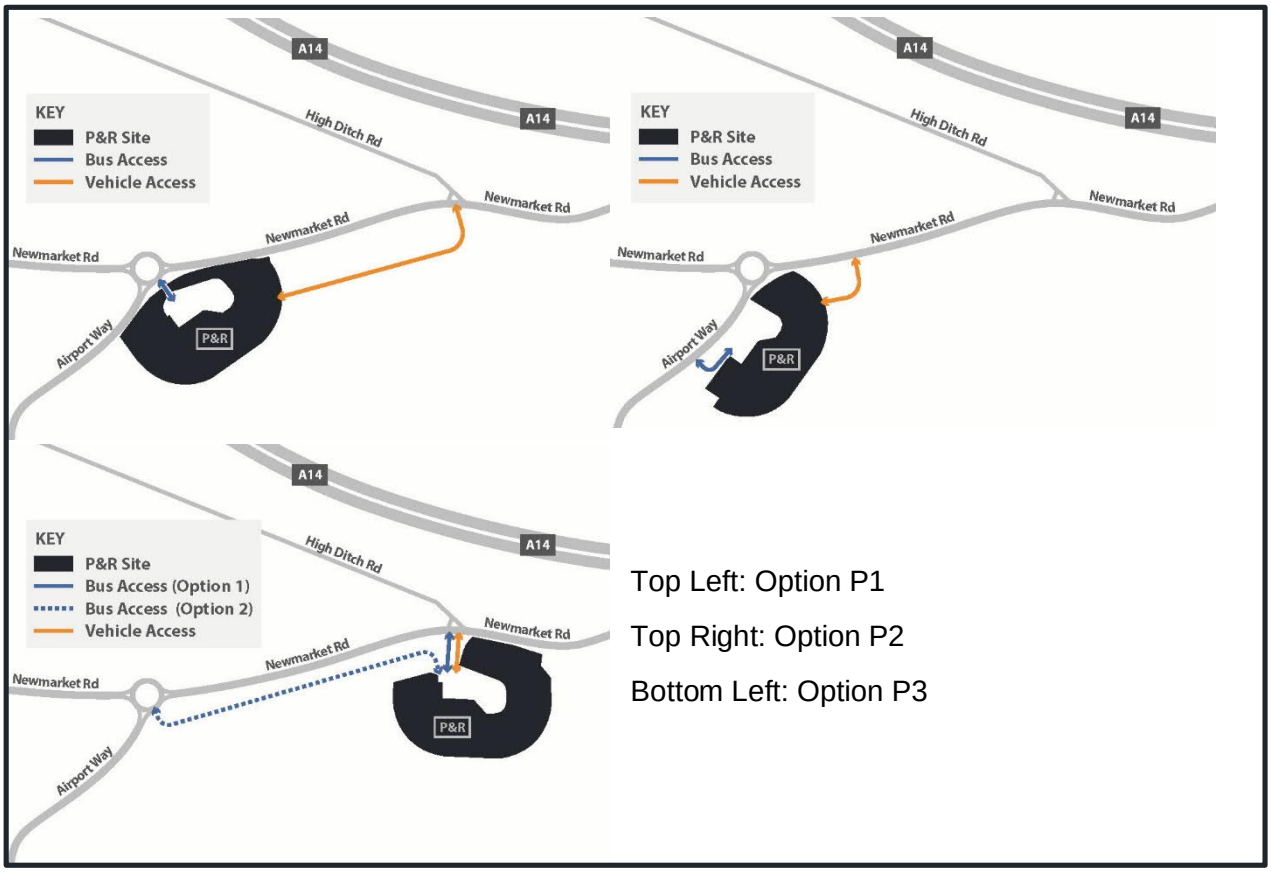
Figure 3-2 – SOBC Hybrid Package



3.3 P&R CONCEPT DESIGN OPTIONS

3.3.1. WSP were instructed by the GCP to produce 2,000 space concept design P&R options for relocating the existing P&R to strategic site PR.02 (identified as the preferred site in the SOBC). Figure 3-3 shows the three high-level concept design options that were developed by WSP within site PR.02.

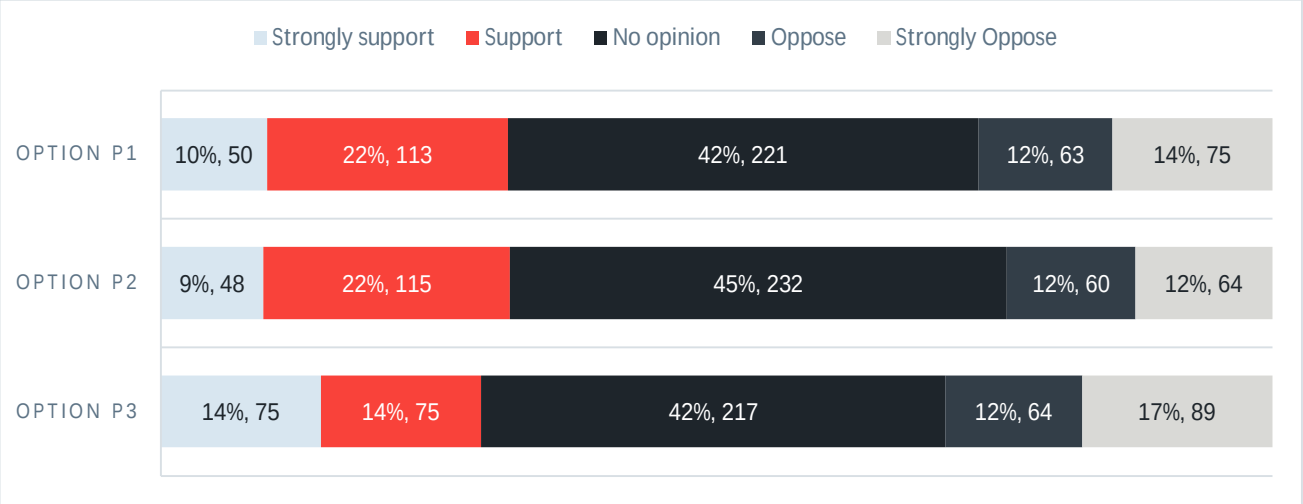
Figure 3-3 – Site PR.02 P&R Concept Design Options



3.4 CONCEPT DESIGN PUBLIC CONSULTATION

3.4.1. The three P&R concept design options were included in a CEA public consultation exercise undertaken in December 2021 that also included concept designs for improving Newmarket Road. The public were asked 'how much they support each P&R proposal'. Figure 3-4 shows that overall, 42%-45% of respondents had no opinion on the three options. Comparing the three options, there was slightly stronger support for P1 (32%) compared to P2 (31%) and P3 (28%). Of the three options P3 was most strongly opposed (17%).

Figure 3-4 – Public Consultation Support for the Newmarket Road P&R Relocation Proposals



3.4.2. Written representations on the three P&R concept design options within site PR.02 were also received from various stakeholders. Written comments from named stakeholders are summarised in Table 3-2 below.

Table 3-2 – Public Consultation Written Responses

Representative	Response	Option Preference
CPRE	Strongly oppose all three options as they are all in the Green Belt. Relocated P&R should within and on the edge of the existing airport boundary (once Marshalls has relocated) and not in the Green Belt	Object to All
Stagecoach	Preference for P3, closer to the A14, more people are likely to use it, locations closer to the city, reduces public's perception of journey time benefits of using the car.	P3
Natural England	Noted that the three P&R options are all located 'away from' the nearby Wilbraham Fens Site of Special Scientific Interest (SSSI); however, the closest option is located just 500m from the SSSI whilst the furthest is around 1km from the site. The site selection process will require thorough examination of the potential pathways for each option to affect the notified features and conservation objectives of the SSSI. This should include air and water mediated effects. Evidence will need to be provided to demonstrate that the preferred option can deliver a scheme without adverse impact to the notified features of the SSSI.	None
Historic England	Noted the potential impact on the setting of Teversham Conservation Area, and the setting of listed buildings within it, particularly the Church of All Saints (grade II*) will need to be carefully considered for all of the potential options, and the design modified where appropriate to avoid or minimise any negative harmful effects. This may include appropriate landscaping and screening, and consider options to reduce light pollution. Option P3 is also located immediately adjacent to the Milestone South West of Quy Mill at Ngr 505 594 (grade II), so this option should consider the potential for impacts on its setting.	None

Cambridge Biomedical Campus	CBC is supportive of the relocation and expansion of the P&R. The campus sees approximately 3,000 members of staff access the campus from the eastern area, both Newmarket and further afield. The opportunity for those individuals to integrate with reliable public transport from that area is very attractive. CBC would like to see direct public transport links to the CBC to divert motor vehicle traffic from the already congested road network servicing the CBC.	Support All
Cambridge University Hospitals	CUH is supportive of the relocation and expansion of the Newmarket Road Park and Ride. The campus sees approximately 3,000 members of staff access the campus from the eastern area, both Newmarket and further afield. The opportunity for those individuals to integrate with reliable public transport from that area is very attractive.	Support All
Marshall Group Properties	Marshall is also fully supportive of the proposals to relocate the P&R. Their early preference, based on the information provided, is P3 given that there is greater potential to intercept trips earlier and to avoid the car parking becoming an attractive option for car-based trips to the commercial uses at Cambridge East. For P3, Marshalls are confident that any impacts associated with the location can be mitigated through further technical and design work. Should P1 or P2 be preferred then an option that includes elements of each is supported and should be explored.	P3 or Hybrid P1/P2
Wilbraham River Protection Society	Objected to relocating the P&R. Should expand the existing site, proposed sites encroach onto the Eastern Fens, close to the Wilbraham Fen SSSI, will increase wildlife site footfall. A site north of High Ditch Road should be considered.	None
East Cambridgeshire District Council	Should consider options for locations to the north of the A14 near Quy	None
Cambridge Past, Present & Future	Strongly oppose the proposal to move the P&R as the relocation sites are in the Green Belt, capacity should be increased at the existing site, further away, less attractive to Park and Cycle, encourages car journeys which are not compatible with zero carbon planning, consider locating in the Airport site, should think again about other locations. Should be located as far as possible from ecological receptors (close to Airport Way). P&R if relocated should be confined to the triangular field south of Newmarket Road and east of Airport Way.	Object to All
Green Party	Opposes the relocation of the P&R as they will have a direct impact on the SSSI and loss of the Green Belt. Should utilise the existing site. Options further away from Cambridge are less attractive to cyclists and P&R's encourage car use and compete with bus services. Will result in increased carbon emissions. If relocated P&R is essential, should use the triangular field or be considered as part of the Airport development.	Object to All
Abbey Councillors Alex Bulat and Haf Davies	Need to consider the relocation of the Abbey Stadium further to the east and the impact this will have on the P&R location. Needs to provide a transport hub and encourage park and cycling.	None
Abbey War Councillor Naomi Bennet	Support all three options, welcome moving the P&R to the inbound side of the road.	All

Councillor Fen Ditton and Fulbourn	Oppose all options. None deal effectively with traffic from the north and east. Need greater development of bus services along the B1102, and the A1303 first otherwise Quy junction congestion will continue. All options could impact the SSSI and surrounding villages.	Object to All
Driveaway School of Motoring	No opinion on all options	None
Waterbeach of District Bridleways Group	No opinion on all options	None
Peter Moore Book seller	Support P2	P2
Anglia Ruskin University	Support P1 and P2, no opinion on P3	P2 & P3
The Chambers of Commence	P1-P3, no opinion. Supportive of public transport improvements across Cambridgeshire.	None
Fulbourn Forum for Community Action	Strongly oppose all options due to likely to be detrimental to adjacent wildlife sites of Little Wilbraham Fen and Quy Water. Alternative site must be found.	Object to All
Stow cum Quy Parish Council	Strongly oppose all three options. Support relocating to the other side of the Quy junction due to reduced traffic travelling westbound into Cambridge.	Object to All
Teversham Parish Council	Oppose any development in the Green Belt including the re-siting of the Park and Ride site.	Object to All
Little Gransden Parish Council	No opinion on all options.	None
CTC Cambridge	No opinion on all options.	None
Camcycle	Oppose all options. Any relocation of the P&R must protect and improve existing routes including NCN 51.	Object to All

3.4.3. The key themes from the public consultation responses were:

- Concerns with the impact of the scheme on the Green Belt,
- Proximity of the options to the Wilbraham Fen SSSI;
- Lack of consideration for alternative sites including the existing site, within the Airport, north of High Ditch Road and north of the Quy Interchange.

Relevant to the site selection process: In response to the key concerns raised in the public consultation, this report demonstrates the requirement for a Green Belt location and appraises the P&R site options identified in the feedback responses including the existing site, north of High Ditch Road and Quy Interchange.

3.5 SUMMARY

3.5.1. This chapter has summarised the previous CEA studies that have been undertaken to identify and appraise the existing and potential sites to accommodate a relocated P&R. It has also identified that additional P&R relocation sites were identified by stakeholders during the concept design public consultation exercise in December 2021.

3.5.2. Having reviewed both the previous OAR, SOBC and the feedback from the concept design public consultation event, WSP recommended to the GCP that the P&R site identification and appraisal process is revisited to ensure:

- Documented evidence is recorded setting out why the existing P&R site cannot be expanded;
- An evidence base is produced demonstrating the requirement for a Green Belt location for the P&R;
- A thorough long-list of potential P&R sites is identified based on a clear and transparent 'area of search' and key operational, environmental and planning policy constraints; and
- A robust and consistent appraisal of the identified sites is undertaken, resulting in a recommendation of a preferred site(s).

3.5.3. This report addresses these issues by identifying a clear and evidenced P&R 'area of search', a thorough long-list of potential P&R relocation sites and their appraisal, including the existing site, sites within the Airport, north of High Ditch Road and north of the Quy roundabout identified in the public consultation responses.

Relevance to the site selection process: Sites PR01-PR03 identified in the OAR will be reappraised along with the additional sites identified from the concept design public consultation. PR04 has not been considered further and the reasons for this are set out in Chapter 5.

4 TRANSPORT AND PLANNING POLICY

4.1 INTRODUCTION

4.1.1. The relocation and expansion of Newmarket Road P&R needs to align with national, regional and local policy and strategy. This chapter summarises the relevant planning and transport polices that support the expansion and relocation of the P&R and impact on the available sites with eastern Cambridge.

4.2 PLANNING POLICY FRAMEWORK

4.2.1. The Area of Search is situated within the administrative area of South Cambridgeshire District Council. The development plan that any application for planning permission would be considered against is as follows:

- The National Planning Policy Framework (NPPF) (amended July 2021);
- South Cambridgeshire Local Plan (SCLP) (2018);
- The adopted Cambridge East Area Action Plan (2008) (excluding CE/3 and CE/35 which are replaced by Local Plan Policy 13) – Sites P1 to P9 within the northern boundary of this plan; and
- Cambridgeshire and Peterborough Minerals and Waste Local Plan (CPMWLP).

NATIONAL PLANNING POLICY FRAMEWORK

4.2.2. The NPPF 2021 represents the most up to date central government planning policy guidance and as such is a material consideration for the determination of planning applications. The following sections are considered to be the most relevant to the determination of this particular planning application:

- Chapter 2: Achieving sustainable development;
- Chapter 4: Decision-making;
- Chapter 6: Building a strong, competitive Economy;
- Chapter 8: Promoting healthy and safe communities;
- Chapter 9: Promoting sustainable transport;
- Chapter 11: Making effective use of land;
- Chapter 13: Protecting Green Belt land;
- Chapter 14: Meeting the challenge of climate change, flooding and coastal change; and
- Chapter 15: Conserving and enhancing the natural environment.

4.2.3. Of particular relevance to an application for planning permission for the Proposed Scheme is Chapter 9 that sets out detailed guidance in relation to the promotion of sustainable transport. Paragraph 104 of the NPPF 2021 states that transport issues should be considered from the earliest stages of plan-making and development proposals, so that impacts of development on transport networks can be addressed, opportunities from proposed transport infrastructure, and changing transport technology and usage, are realised, opportunities to promote walking, cycling and public transport use are identified and pursued, environmental impacts of traffic and transport infrastructure can be identified, assessed and other transport considerations are integral to the design and contribute to making high quality places.

4.2.4. It is noted that the majority of the identified P&R sites (Chapter 6) are located within a designated Green Belt. Paragraph 147 of the NPPF 2021 states that '*Inappropriate development'* is, by definition, harmful to the Green Belt and should not be approved except in very special circumstances.

4.2.5. Paragraph 149 of the NPPF 2021 goes on to state that:

> '*When considering any planning application, local planning authorities should ensure that substantial weight is given to any harm to the Green Belt. 'Very special circumstances will not exist unless the potential harm to the Green Belt by reason of inappropriateness, and any other harm resulting from the proposal, is clearly outweighed by other considerations*.

4.2.6. Paragraph 150 of the NPPF does however state that certain forms of development may be appropriate in the Green Belt '*provided they preserve its openness and do not conflict with the purposes of including land within it'*. Item C of Paragraph 150 specifically identifies '*local transport infrastructure which can demonstrate a requirement for a Green Belt location'.*

4.2.7. The Proposed Scheme may therefore be considered to fall within the list of developments within paragraph 150 of the NPPF 2021, provided that it can be considered to (1. demonstrate a requirement for a Green Belt location, (2. preserves the openness of Green Belt and (3. does not conflict with the purposes of including land within it.

4.2.8. Paragraph 154 of the NPPF states that new development should be planned for in ways that:

> *"avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and*
>
> *can help to reduce greenhouse gas emissions, such as through its location, orientation and design."*

4.2.9. Paragraph 180 of the NPPF 2021 is a particularly relevant material consideration in assessing a transport planning application. This states that:

> *"When determining planning applications, local planning authorities should apply the following principles:*
>
> > *if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
> >
> > *development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
> >
> > *development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*

development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate".

4.2.10. Paragraph 182 of the NPPF 2021 states that the presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects) unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

4.2.11. The proposals to relocate and expand Newmarket P&R supports the key principles of paragraph 104 of the NPPF 2021 by:

- Supporting a reduction in vehicle emissions due to a decrease in congestion on main routes.
- Providing an attractive opportunity to increase walking, cycling and public transport, reducing existing dependence on private vehicle travel.
- Supporting economic growth in Cambridge by ensuring growing employment attractors in the city are accessible and journeys here are quick, safe and easy to travel to.

Relevance to the site selection process: The requirement for a Green Belt location (NPPF 2021 para 150) is demonstrated in Chapter 5, the potential impact on the Green Belt is demonstrated in the Greenbelt Option Assessment Report (WSP May 2022) and the need to avoid significant harm to biodiversity (NPPF para 180) is considered within the site appraisal presented in Chapter 6 and 7. The NPPF 2021 also promotes sustainable development and identifies the importance of developing sustainable transport infrastructure such as a Park &

LOCAL PLANNING POLICY

4.2.12. The Adopted Development Plan for South Cambridgeshire provides the local land use policies which planning applications in South Cambridgeshire are determined against. This comprises the following documents relevant to the Proposed Scheme:

- South Cambridgeshire Local Plan (2018);
- The adopted Cambridge East Area Action Plan (2008) (excluding CE/3 and CE/35 which are replaced by Local Plan Policy 13) – Sites P1 to P9 within the northern boundary of this plan.
- Cambridgeshire and Peterborough Minerals and Waste Local Plan (2021); and
- Adopted Policies Map (2018).

South Cambridgeshire Local Plan (2018)

4.2.13. The following South Cambridgeshire Local Plan allocations are considered of most relevance to the Area of Search. Plans showing the extent of the relevant planning policies are provided in Appendix A:

- Policy SS/3: Cambridge East - Land at Cambridge East was taken out of the Green Belt through the Cambridge Local Plan 2006 and Cambridge East Area Action Plan (AAP) 2008 for the development of a major new urban extension.
- Policy S/4 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. New development in the Green Belt will only be approved in accordance with Green Belt policy in the National Planning Policy Framework'.

- Policy TI/6 – '*Within the Cambridge Airport Public Safety Zone, identified on the Policies Map, there is a general presumption against new development or changes of use except for a change of use which could not reasonably be expected to increase the numbers of people living, working or congregating on the land';*
- Air Safeguarding Zones – '*Applications for development within Cambridge Airport's Air Safeguarding Zones will be the subject of consultation with the operator of the airport and the Ministry of Defence. Restrictions in height, or changes to the detailed design of development may be necessary to mitigate the risk of aircraft accident and maintain the operational integrity of the airport*' - (shown in Figure 12 of the Local Plan – the Area of Search is covered by height restriction of 15m above ground level for structures)
- Policy NH/5 Site of Special Scientific Interest:
  1. *Proposed development likely to have an adverse effect on land within or adjoining a Site of Biodiversity or Geological Importance, as shown on the Policies Map (either individually or in combination with other developments), will not normally be permitted. Exceptions will only be made where the benefits of the development clearly outweigh any adverse impact.*
  2. In determining any planning application affecting Sites of Biodiversity or Geological Importance the Council will ensure that the intrinsic natural features of particular interest are safeguarded or enhanced having regard to:
     a. The international, national or local status and designation of the site;
     b. The nature and quality of the site's features, including its rarity value;
     c. The extent of any adverse impacts on the notified features;
     d. The likely effectiveness of any proposed mitigation with respect to the protection of the features of interest;
     e. The need for compensatory measures in order to re-create on or off the site features or habitats that would be lost to development.
  3. Where appropriate the Council will ensure the effective management of designated sites through the imposition of planning conditions or Section 106 agreements as appropriate.
- Policy NH/12 - Local Green Space – '*Local Green Space identified on the Policies Map will be protected from development that would adversely impact on the character and particular local significance placed on such green areas which make them valued by their local community. Inappropriate development, as defined in the National Planning Policy Framework, would not be approved except in very special circumstances and in discussion with the local community'*
- Policy CC/9: Managing Flood Risk

4.2.1. Other relevant policies from the South Cambridgeshire Local Plan (2018) include the following:

- Policy CC/1 (Mitigation and Adaptation to Climate Change);
- Policy CC/4 (Water Efficiency);
- Policy CC/8 (Sustainable Drainage Systems);
- Policy NH/2 (Protecting and Enhancing Landscape Character);
- Policy NH/4 (Biodiversity);
- Policy NH/5 (Sites of Biodiversity or Geological Importance);
- Policy NH/8 (Mitigating the Impact of Development in and adjoining the Green Belt);

- Policy NH/14 (Heritage Assets);
- Policy SC/10 (Noise Pollution);
- Policy SC/12 (Air Quality); and
- Policy T1/2 (Planning for Sustainable Travel).

Cambridge East Area Action Plan (2008)

4.2.2. The following Cambridge East Area Action Plan (AAP) allocations are applicable to the Area of Search. Plans showing the extent of the relevant planning policies are provided in Appendix B:

- Policy CE/3 - The Site for Cambridge East – new urban quarter of 10,000 to 12,000 dwellings and associated employments, services, facilities, and infrastructure
- Policy CE/21(1) Country Park - A new country park is proposed east of Airport Way and north of Teversham, where people can also find the facilities which would enable them to experience informal countryside leisure activities, with provision of publicly accessible wildlife areas and habitats, and areas solely for nature conservation.
- Policy CE/32 Cambridge Airport Safety Zones – '*Within the Cambridge Airport Public Safety Zones identified on the Proposals Map, there is a general presumption against new development or changes of use except for a change of use which could not reasonably be expected to increase the numbers of people living, working or congregating on the land*'.

4.2.3. The government's policy paper on the 'Control of development in airport public safety zones (October 2021)[1] states that new transport infrastructure should not be permitted within Public Safety Zones including P&R schemes.

Relevance to the site selection process: The extent of Local Plan planning policies SS/3, CE/32, CE 21(1), NH/5 and NH/12 has been considered in the initial P&R long-list sift presented in Chapter 6.

EMERGING LOCAL PLAN

4.2.4. Cambridge City Council and South Cambridgeshire District Council are currently preparing a new joint Local Plan for the two local authority areas; referred to as the Greater Cambridge Local Plan. The joint plan will ensure a consistent approach to planning and building across both areas over the next 20 years.

4.2.5. The Greater Cambridge Local Plan (GCLP) is currently at the 'Issues and Options' stage in the plan making process. Therefore, no material weight would be attributed to it in the determination of a planning application, as there are no proposals, simply options or reasonable alternatives. However, as the plan reaches an advanced stage of development, it could be an important and relevant consideration, even if still as an advanced draft of the policies. As such, this needs to be kept under review.

[1] Control of development in airport public safety zones - GOV.UK (www.gov.uk)

4.2.6. Adoption of the joint plan is expected in either the autumn 2023 or spring 2024. Once adopted, the joint plan will supersede the Cambridge Local Plan (2018) and South Cambridgeshire Local Plan (2018) in its entirety.

CAMBRIDGESHIRE AND PETERBOROUGH MINERALS AND WASTE LOCAL PLAN (2021)

4.2.7. The following Cambridgeshire and Peterborough Minerals and Waste Local Plan allocations are applicable to parts of the CEA Route:

- Policy 5: Mineral Safeguarding Area (Sand and Gravel) – '*Development within MSAs which is not covered by the above exceptions will only be permitted where it has been demonstrated that the mineral can be extracted where practicable prior to development taking place; or(j)the mineral concerned is demonstrated to not be of current or future value; or(k)the development will not prejudice future extraction of the mineral; or(l)there is an overriding need for the development (where prior extraction is not feasible)'*
- Policy 15: Transport Infrastructure Areas
- Policy 16 Consultation Areas (Waste)

NATIONAL PLANNING PRACTICE GUIDANCE

4.2.8. In addition, the National Planning Practice Guidance, which is a web-based resource bringing together all planning guidance into one place, is a relevant consideration. In particular, at Paragraph: 002 Reference ID: 64-002-20190722 PPG states that:

> *'Where it has been demonstrated that it is necessary to release Green Belt land for development, strategic policy-making authorities should set out policies for compensatory improvements to the environmental quality and accessibility of the remaining Green Belt land. These may be informed by supporting evidence of landscape, biodiversity or recreational needs and opportunities including those set out in local strategies, and could for instance include:*
>
> - *new or enhanced green infrastructure;*
> - *woodland planting;*
> - *landscape and visual enhancements (beyond those needed to mitigate the immediate impacts of the proposal);*
> - *improvements to biodiversity, habitat connectivity and natural capital;*
> - *new or enhanced walking and cycle routes; and*
> - *improved access to new, enhanced or existing recreational and playing field provision'*.

SUPERSEDED NATIONAL PLANNING PRACTICE GUIDANCE (PPG 2)

4.2.9. There have been several recent appeal decisions relating to the interpretation of inappropriate development within the Green Belt and the tests that should be applied. These are considered relevant to whether the Proposed Scheme can be considered to be 'not inappropriate' development within the Green Belt or whether 'Very Special Circumstances' are required to apply.

4.2.10. A summary of the relevant appeal decision is provided in Appendix 3 of WSP's Cambridge Eastern Access Planning Policy Appraisal & Consenting Report (December 2021).

4.2.11. Notable is the Supreme Court decision on the Samuel Smith Case, where the Judge cited the relevance of the now surpassed Planning Practice Guidance notes (PPG) in relation to the development of a P&R site in the Green Belt.

4.2.12. Importantly, in relation to the interpretation of paragraphs 89-90 (NPPF 2012) (now paragraphs 149 to 150 of the 2021 NPPF), the Supreme Court judgement references that the NPPF replace a rather fuller statement of policy for the "Control of Development" in section 3 of PPG 26. It is stated in the Supreme Court judgement that section 3 of PPG 2 covers substantially the same ground respectively as the NPPF (paragraphs 149 and 150 of the NPPF 2021), but in rather fuller terms. PPG 2 is therefore a useful guide to testing any future development of a P&R site within the search area.

4.2.13. In this regard paragraph 3.17 of PPG 2 sets out 5 tests, whereby P&R development is not inappropriate development in the Green Belt. The section states:

'The countryside immediately around urban areas will often be the preferred location for park and ride schemes. In many instances, such land may be designated as Green Belt. The Government's commitment to maintaining the openness of the Green Belt means that when seeking to locate park and ride development, non-Green Belt alternatives should be investigated first. However, there may be cases where a Green Belt location is the most sustainable of the available options. Park and ride development is not inappropriate in Green Belts, provided that:

- *a thorough and comprehensive assessment of potential sites has been carried out, including both non-Green Belt and, if appropriate, other Green Belt locations, having regard to sustainable development objectives, and the need to be flexible about size and layout;*
- *the assessment establishes that the proposed green belt site is the most sustainable option taking account of all relevant factors including travel impacts;*
- *the scheme will not seriously compromise the purposes of including land in Green Belts, as set out in paragraph 1.5 (of PPG 2);*
- *the proposal is contained within the local transport plan (or in Greater London the Local Implementation Plan) and based on a thorough assessment of travel impacts; and*
- *new or re-used buildings are included within the development proposal only for essential facilities associated with the operation of the park and ride scheme'*

4.3 LOCAL TRANSPORT STRATEGY

TRANSPORT STRATEGY FOR CAMBRIDGE AND SOUTH CAMBRIDGESHIRE

4.3.1. The Transport Strategy for Cambridge and South Cambridgeshire (TSCSC) provides a detailed policy framework and programme of schemes to support planned growth to 2031. The TSCSC has 21 policies, many of which are directly supported by P&R infrastructure including:

- Policy TSCSC 2: Catering for travel demand in Cambridge with measures to use passenger transport services for journeys into, out of and within the city.
- Policy TSCSC 7: Supporting sustainable growth by introducing/relocating new and improved public transport infrastructure such as Outer P&R sites. This infrastructure will have bus priority measures as the focal point, especially in areas where congestion impacts current services.
- Policy TSCSC 9: Access to jobs and services-access to areas of employment and services will be maximised by sustainable modes of travel such as public transport as part of the P&R schemes.
- Policy TSCSC 11: Improving community transport services, such as P&R sites to allow the public to change from their car to sustainable public transport alternatives, such as buses.

- Policy TSCSC 12: Encouraging cycling and walking- P&R sites will provide an alternative connectivity option for commuters to complete their journey. For example, those who live too far to cycle or walk into south or central Cambridge.
- Policy TSCSC 17: Air Quality- P&R sites will reduce the car trips into the south and centre of Cambridge as well as improving air quality in critical locations.
- Policy TSCSC 19: Carbon Emissions- enhanced and improved P&R sites offer users a chance to reduce their personal carbon footprint by offering a sustainable mode as part of their commute. Ultimately helping to meet national and regional transport related carbon emission goals.

4.3.2. The TSCSC demonstrates that P&R site are a key component of the Transport Strategy and are required to intercept more car journeys, support sustainable growth and the future economic prosperity of the region. The strategy identifies the need to expand and for some sites, relocate the existing P&R sites to locations further out from Cambridge to improve capacity and facilities.

4.3.3. Of particular relevance to the Newmarket Road P&R, the TSCSC includes the long-term proposal to relocate the existing Newmarket Road P&R to Airport Way. The strategy states that:

> *'In order to cater for trips that aren't made by rail, the current Newmarket Road Park & Ride site will be relocated to Airport Way and expanded to create 2,500 spaces. A segregated car access to the new site will be provided from the Quy interchange to enable users to access it directly.'*

4.3.4. This statement demonstrates the strategy support for relocating and expanding the Newmarket Road P&R to intercept more trips travelling into Cambridge from the east.

THE CAMBRIDGESHIRE & PETERBOROUGH LOCAL TRANSPORT PLAN (LTP)

4.3.5. The Cambridgeshire & Peterborough Local Transport Plan (LTP) is the first Local Transport Plan for Cambridgeshire and Peterborough, replacing the previous the Interim Local Transport Plan, which was published in June 2017 and was based upon the existing Local Transport Plans for Cambridgeshire (Local Transport Plan 3) and Peterborough (Local Transport Plan 4).

4.3.6. The LTP provides the long-term vision and strategic framework for investment in shaping the travel choices and the role of transport in the years to come. The high-level goals of the LTP are as follows:

- Economy: Deliver economic growth and opportunity for all our communities.
- Society: Provide an accessible transport system to ensure everyone can thrive and be healthy.
- Environment: Protect and enhance our environment and tackle climate change together.

4.3.7. In terms of the challenges the LTP seeks to address it states:

> *'To improve people's journeys into and around Greater Cambridge, we need to significantly improve and expand the public transport network and invest in better active travel infrastructure….Park & Ride sites will continue to provide sustainable options for those who do not have a feasible alternative to the car. These will be better integrated into surrounding local transport networks, acting as travel hubs with high-quality interchange between CAM and local bus and demand responsive services, together with the walking and cycling network. Local buses – and demand-responsive transport within South Cambridgeshire – will be designed to ensure that no one is outside of the reach of safe, reliable public transport, and hence helping to maximise social inclusion for those who lack access to a car.'*

4.3.8. The adopted LTP is currently being updated and renamed as the Local Transport & Connectivity Plan (LTCP) and due to be published in Spring 2022. This updated document will place greater emphasis on the Combined Authority's commitment to deliver integrated connectivity to all communities with a drive towards a net zero carbon future including a greater emphasis on digital and bus network improvements.

Relevant to the scheme: Both the Cambridge South Cambridgeshire Transport Strategy (TSCSC) and Cambridgeshire & Peterborough Local Transport Plan support P&R sites as a key component of the transport strategy for the region. Specifically, the TSCSC supports the relocation of the Newmarket P&R to Airport Way and to increase capacity to 2,500 spaces.

4.4 SUMMARY

4.4.1. This chapter has identified and summarised the policy framework relevant to the proposals to relocate and expand Newmarket Road P&R. It is considered that the policy framework is supportive of P&R infrastructure to provide enhanced access to sustainable transport modes, indicating a presumption in favour of the grant of planning permission subject to there being no other material considerations such as non-compliance with relevant environmental policies.

4.4.2. The transport policy framework demonstrates that P&R sites have a continued important role to play in providing sustainable transport options for people travelling into Cambridge and are a key component for accommodating increased travel demands and supporting planned growth.

4.4.3. The importance of undertaking a thorough site selection process for the P&R is consistent with national and local Green Belt policy and has been considered in the report. Suitable mitigation and compensation measures will help to deliver the aims of specific environment policies and should seek to ensure that the Proposed Scheme will not result in significant environmental effects or seek to reduce these are far as reasonably practicable to reduce consenting risk.

4.4.4. Once a preferred site has been selected, careful consideration will need to be given to the development of a sympathetic site layout that responds to the site-specific conditions and that a robust landscaping (including maintenance) and boundary strategy are developed to ensure the policy requirements are met.

5 PARK AND RIDE AREA OF SEARCH

5.1 INTRODUCTION

5.1.1. This chapter sets out the Newmarket Road P&R ride site specific objectives that have been used to define the 'area of search' for potential relocation sites. This chapter also sets out the justification for relocating the existing P&R site to a Green Belt location (Outcome 1) and why it must be located within the A1303 Corridor (Outcome 2).

5.2 STAGE 1: SCHEME OBJECTIVES

5.2.1. The first stage of the P&R site identification and appraisal methodology was to identify a series of Newmarket Road P&R objectives and assessment criteria specifically relating to this facility within its local context in order to develop and evidenced 'area of search' within which the P&R should be located. The identified objectives are summarised in Table 5-1 below.

Table 5-1 – Newmarket Road P&R Site Objectives

Objective	Assessment	Data/Evidence Sources
Maximises the potential for journeys to be undertaken by sustainable modes	Sites must be within 25 minutes bus journey time of Cambridge city centre.	TRACC Analysis
	Sites must be within 25 minutes cycling journey time of Cambridge City Centre	TRACC Analysis
Maximises access to sustainable 'last mile' modes from locations to the east of Cambridge	Site must be accessible from the strategic road network	GIS Analysis
	Sites must be located within 500m of the A1303 Newmarket Road corridor	GIS Analysis

5.2.2. For a P&R facility to be attractive it is considered that it should be located on or close to a main radial route, easily accessible from the wider road network, accessible from local communities on foot and bicycle, and provide attractive onward connections by bus and active travel modes. Some of the key factors that influence the attractiveness of the P&R are therefore journey time, bus frequency, location and access, and parking availability.

5.2.3. These key locational factors have been considered within the local context of eastern Cambridge to identify a P&R site 'area of search'. One of the key criteria to identify the eastern extent of the 'area of search' is the existing journey time into central Cambridge by bus and cycle. For the Newmarket P&R, a 25-minute onward journey travel time has been used to inform the extend of the 'area of search'. The adoption of a 25-minute journey time for this appraisal is considered a good proxy for a maximum onward travel time of between 20 and 30 minutes when taking into consideration the variability in traffic congestion levels and peoples cycling abilities and speeds.

5.2.4. A 25-minute cycle time (allowing for variations in peoples cycling speeds) equates to approximately 3 miles/5km which is considered to provide an appropriate onward journey travel distance that many potential P&R users would be willing to consider when also factoring in travel time to the P&R and interchange with a bicycle.

5.2.5. The same onward journey time by bus has been adopted, as the journey time by bus increases the P&R site is likely to become less attractive. The existing Cambridge P&R sites inbound timetabled bus journey times in the weekday AM peak hour are 12-21 minutes and therefore 25 minutes provides an appropriate proxy for a maximum onward bus journey time from eastern Cambridge.

5.3 STAGE 2: IDENTIFICATION OF THE P&R AREA OF SEARCH

5.3.1. The objectives and their assessment criteria presented in Table 5-1 have been used to establish the extent of the P&R area of search presented in Figure 5-1. The rationale for these two overarching scheme objectives, their assessment criteria along with other factors that have informed the extent of the P&R area of search are set out below.

RATIONALE: MAXIMISES THE POTENTIAL FOR JOURNEYS TO BE UNDERTAKEN BY SUSTAINABLE MODES

5.3.2. The overarching purpose of a P&R site is to intercept trips at the periphery of the city and enable site users to complete their onward journey to their destination in Cambridge by sustainable modes (bus and active travel modes). It is therefore justified that maximising the opportunity for journeys to be undertaken by sustainable modes is the main overarching objective to help define the area of search.

25 Minute Bus Journey Time to Cambridge City Centre

5.3.3. An AM and PM peak bus journey time contour has been generated for existing bus services travelling to and from Drummer Street bus station respectively using TRACC software. This uses current bus timetable information (2022) to identify public transport journey times in 5-minute bands. The bus journey time contour is presented in Appendix C.

5.3.4. The AM and PM peak bus journey time isochrone plans show that along Newmarket Road, an existing 25-minute journey time extends to just beyond Junction 35 of the A14 including Stow cum Quy village. This journey time boundary has been used to inform the **eastern extent of the area of search**.

5.3.5. Limiting the eastern extent of the P&R area of search to an existing 25-minute bus journey time to central Cambridge is considered appropriate as the P&R bus journey time needs to be attractive to existing and potential site users. Taking into consideration P&R users will have already had to travel to the P&R site, it is considered that up to 25 minutes existing bus journey time is an appropriate proxy for the maximum bus journey time that will ensure the P&R site remains attractive to existing and potential users.

25 Minute Cycle Journey Time to Cambridge City Centre

5.3.6. The existing P&R sites are used to ‘Park and Pedal’, where site users park on site and then complete their onward journey by bicycle (either parked on site or transported in their vehicle). The location of the existing Newmarket P&R site on the NCN 51 makes this an attractive option. The area of search has therefore also been informed by a 25-minute cycling isochrone to Cambridge City Centre. The cycling journey time isochrone presented in Appendix C assumes a cycling speed of 10mph/16kmh.

5.3.7. The cycling journey time isochrone shows that along Newmarket Road, a 25-minute journey time to Cambridge city centre extends approximately to Junction 35 of the A14. Taking into consideration the increasing popularity of e-bikes and cycling speeds can vary between 10mph/16 kmh (considered to be a cruising speed) and 15mph/24kmh (fast commuter) it is considered that sites to the north of Junction 35 of the A14 will be within a 25-minute cycling distance for some 'Park and Pedal' P&R site users. This journey time boundary in combination with the bus journey time has been used to inform the **eastern extent of the area of search**.

5.3.8. Limiting the eastern extent of the area of search to sites broadly within an existing 25-minute cycle journey time of Cambridge is considered appropriate for the same reasons as the bus journey time. The onward cycle journey needs to be attractive to existing and potential site users when considered as part of the overall journey time, including travel time to the P&R.

RATIONALE: MAXIMISES ACCESS TO SUSTAINABLE 'LAST MILE' MODES FROM LOCATIONS TO THE EAST OF CAMBRIDGE

5.3.9. The five P&R sites in Cambridge have a been established for a long period of time and are popular with commuters and leisure users. As shown in Figure 1-2, the five existing P&R sites are an established component of the Cambridge Transport Strategy and are located on or close to the key radial access routes from the north, south, east (Newmarket Road) and west respectively. All five sites are located on the periphery of the built-up area of Cambridge to intercept movements before they travel into the city.

5.3.10. As shown in Appendix D the locations of the existing P&R sites means that:

- Journeys from the west of Cambridge are intercepted by the Madingley P&R;
- Journeys from the south of Cambridge are intercepted by the Trumpington and Babraham P&R's;
- Journeys from the north of Cambridge are intercepted by the Milton P&R; and
- Journeys **from the east** are intercepted by the Newmarket Road P&R.

5.3.11. Given that P&R sites need to be located on a main radial route (to maximise vehicle intercept rates), and movements from the north, south and west of Cambridge are already catered for by the other four P&R sites, it is justified to limit the P&R area of search to the A1303 Newmarket Road corridor to continue to intercept trips from locations to the east of Cambridge. This means that site PR.04 identified in the Tetra Tech OAR along with any potential sites along the B1047 Horningsea Road have been excluded from the P&R area of search.

5.3.12. Focusing the P&R area of search on the A1303 corridor is also justified on the basis that Horningsea Road can only be accessed from the A14 strategic road network via west-facing on and off-slips. This means a P&R site located in the vicinity of Junction 34 of the A14 would require the construction of east-facing slips to enable existing Newmarket Road P&R users from the east of Cambridge to access the site.

5.3.13. The construction of east-facing slips at Junction 34 of the A14 would add substantial capital costs to the scheme, would require National Highways approval, the purchase of third-party land, impact the proposed relocated Cambridge Wastewater Treatment Plant site and has the potential to substantially increase vehicle movements through Fen Dittion. The B1047 through Fen Ditton also provides limited opportunities to provide bus priority measures due to the width constraints of the carriageway prohibiting the introduction of substantial lengths of dedicated bus lanes. It is for these reasons that the **northern and southern extent of the area of search** is focused on the A1303 corridor.

> **Relevant to the site selection process**: Site PR04 identified in the original OAR and the B1047 corridor has not been considered further as it is located outside the P&R area of search.

Site must be accessible from the Strategic Road Network

5.3.14. The existing Newmarket Road P&R intercepts trips travelling from the east of Cambridge, including Newmarket, Bottisham, Burwell, Soham and Bury St Edmunds. Given the travel distances involved, including from rural villages, there will continue to be a demand in the future to be able to access the relocated P&R by car. The P&R therefore needs to be located on an appropriate main radial route into Cambridge that is easily accessible from the strategic road network.

5.3.15. Junction 35 of the A14 provides access to the A1303 from all directions. The A14 is a key strategic route to Cambridge, providing direct access to Newmarket, Bury St Edmunds, and Fordham and Soham via the A142. More local access routes from Bottisham, Burwell and the Swaffhams also converge on Junction 35 of the A14.

5.3.16. The A1303 Newmarket Road into Cambridge is therefore considered to be an appropriate radial route to locate a P&R given its direct all movement access to the A14 to enable people traveling from locations east of the site to access the site.

5.3.17. As identified above, good access to the strategic road network rules out the B1047 Ditton Lane as an appropriate location for the relocated P&R due to the limited access at Junction 34 of the A14.

500m from the A1303 Newmarket Road Corridor

5.3.18. A 500m contour from the A1303 Newmarket Road has been applied to create the **northern and southern extent of the P&R area of search.** The 500m contour has been applied in order to include areas that are easily accessible from the A14 strategic road network and the A1303 Newmarket Road corridor. The 500m contour means that sites a substantial distance from the A1303 are excluded, ensuring that vehicles would not need to travel significant distances on inappropriate roads.

RATIONALE: OTHER FACTORS

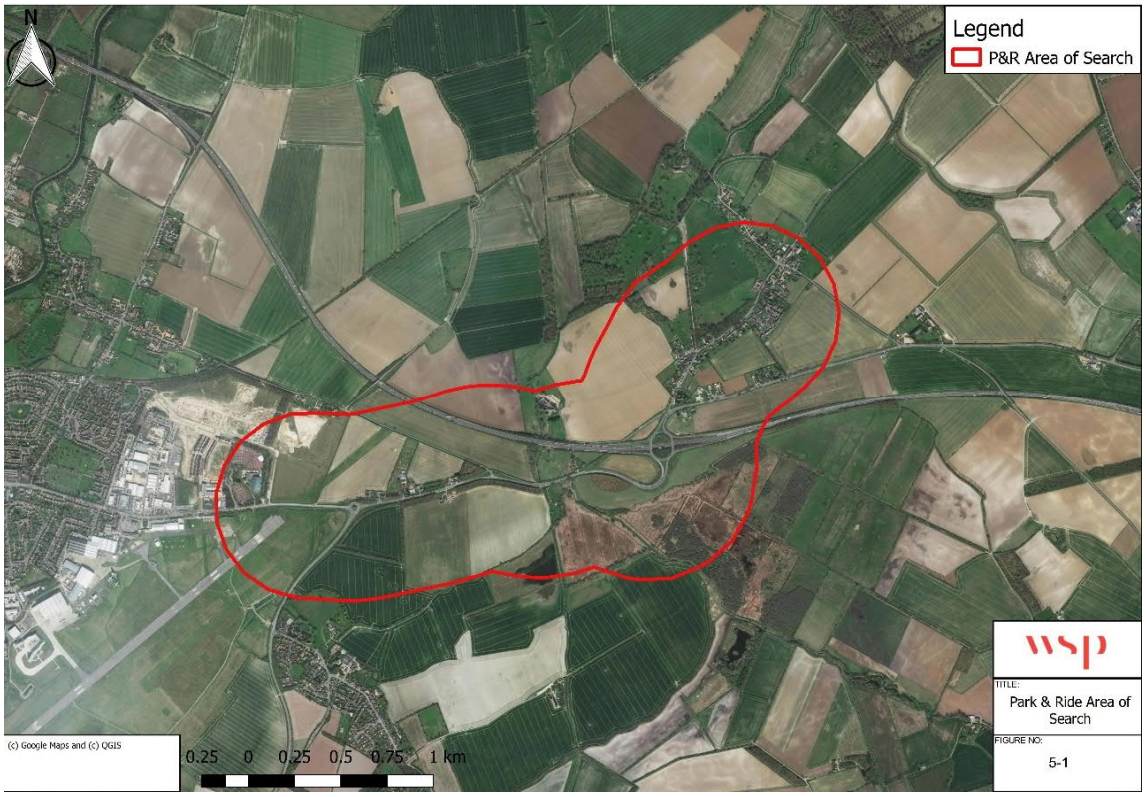
5.3.19. The location of the existing Newmarket P&R site has been used to set the **western extent of the P&R area of search**. This is justified on the basis that the P&R model requires the site to be located on the periphery of the urban area. A peripheral location is required in order that users arriving by car do not have to travel too far along congested urban roads during the peak travel periods to access the P&R site. If the P&R site is located to close to the city centre/key destinations, the journey time savings by bus will be reduced compared to completing the journey by car, reducing the attractiveness of the P&R.

5.3.20. In addition, the Cambridge East Policy Map in Appendix B and the Cambridge Green Belt map provided in Figure 5.2 below shows that there is no space west of the existing P&R that is not already developed, allocated for development or protected.

5.4 P&R AREA OF SEARCH

5.4.1. The identified P&R area of search is presented in Figure 5-1. Informed by the rational presented in Section 5.3, the area of search covers the A1303 corridor from the existing Newmarket Road P&R to Junction 35 of the A14.

Figure 5-1 – P&R Area of Search



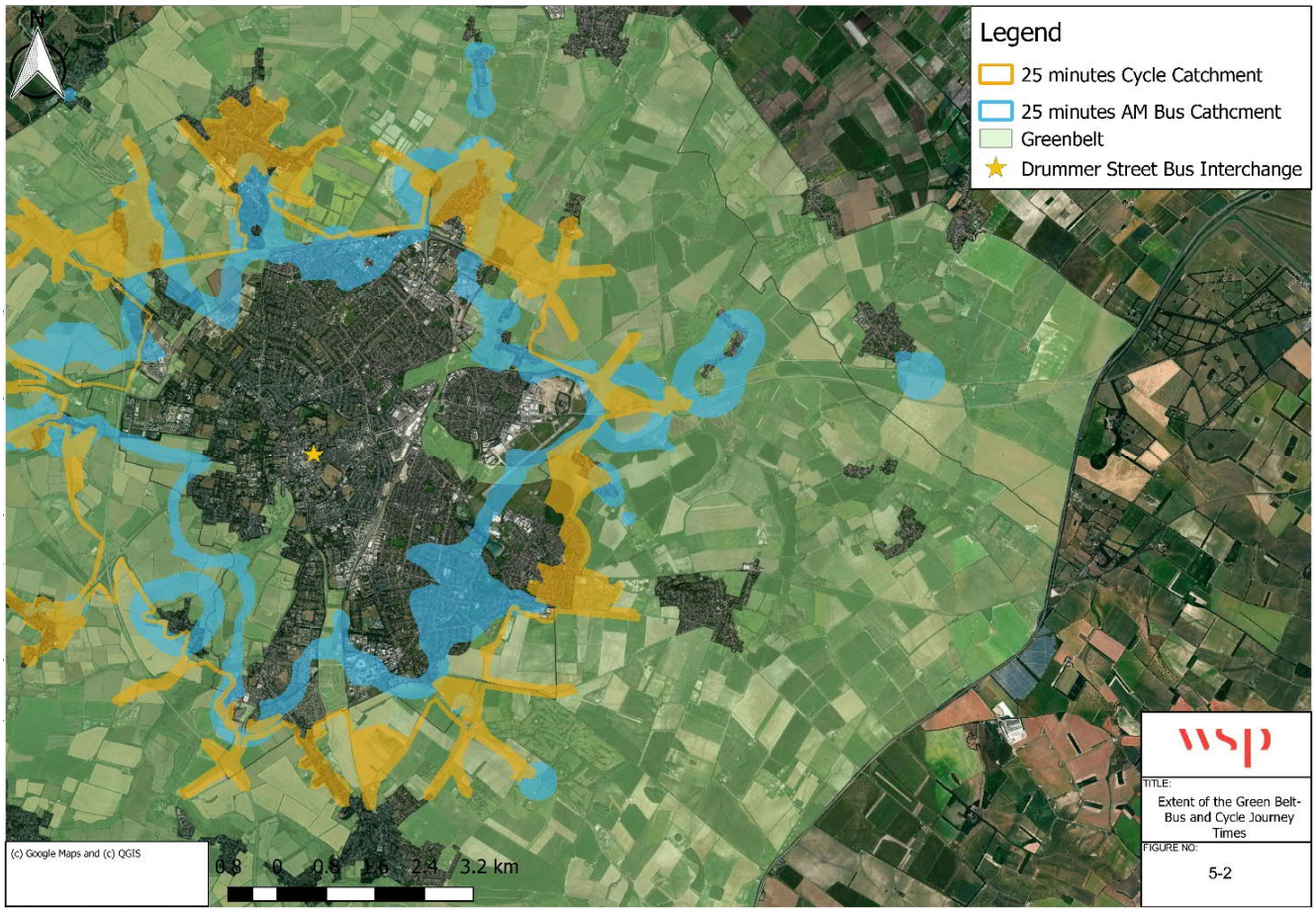
5.5 OUTCOME 1: REQUIREMENT FOR A GREEN BELT LOCATION

5.5.1. **Outcome 1 of this report is to demonstrate that the Newmarket P&R relocation site requires a Green Belt location**. The rationale set out in Section 5.3 along with the bus and cycling catchment plans presented in Appendix C demonstrate that a Green Belt location is required for a relocated Newmarket Road P&R site. For a P&R site to be attractive it needs to be easily accessible from the strategic road network and the onward journey time by P&R bus or active travel modes to be attractive when combined with the overall site access journey time.

5.5.2. The analysis presented in this section has demonstrated that the identified P&R area of search is located wholly within the Cambridge Green Belt. The main factor that results in the requirement for a Green Belt location is the requirement for the relocated P&R site to achieve attractive bus and cycling journey times to key destinations in Cambridge.

5.5.3. Figure 5-2 shows the full extent of the 25-minute cycling and public transport catchments overlaid on the Cambridge Green Belt. This shows that a P&R site beyond the Cambridge Green Belt would result in unattractive cycle and bus journey times into Cambridge. In addition, reviewing the extent of the Cambridge Green Belt in eastern Cambridge, it is clear there are no suitable sites that are not within the Green Belt that meet the Newmarket P&R objectives.

Figure 5-2 – Extent of the Green Belt – Eastern Cambridge



5.5.4. Figure 5-2 shows the only sites in eastern Cambridge that are not within the Green Belt are:

- Allocated for development, including the Cambridge Airport and the existing P&R site (Local Plan Policy SS/3 (4)); and
- The existing built-up areas of Barnwell, Fen Ditton, Teversham, Stow cum Quy and Bottisham.

5.5.5. To locate the P&R beyond the Green Belt, in the east of Cambridgeshire would require a P&R site to be located at:

- Lode on the B1102 Swaffham Road;
- Swaffham Bulbeck/Swaffham Prior on the B1102 Swaffham Road;
- A1303/A14/A11 limited movement interchanges;
- A11/London Road Six Mile Bottom limited movement interchange; and
- A11/ Balsham Road Junction.

5.5.6. These areas beyond the Cambridge Green Belt, within eastern Cambridgeshire would:

- Be difficult to access, with vehicles being required to travel on inappropriate roads and through local villages;
- Difficult to access from the strategic road network due to travel distances and/or limited access junctions;
- Result in unattractive bus journey times. The substantial increase in bus journey times along lower standard roads would substantially increase the cost of running reliable and frequent P&R buses services due to the increased travel distances and opportunities for service delays; and
- Result in unviable and unattractive cycling distances for many cyclists.

5.5.7. The information presented in this section on the extent of the existing Green Belt, combined with the rationale for the P&R area of search demonstrates that a Green Belt location is required for a relocated Newmarket Road P&R site.

Relevant to the site selection process: The P&R relocation sites have a requirement for a Green Belt location to ensure attractive bus and cycle journey times to destinations within Cambridge can be achieved.

5.6 OUTCOME 2: A1303 NEWMARKET ROAD CORRIDOR LOCATION

Outcome 2 of this report is to demonstrate that the Newmarket P&R should be located along the A1303 corridor. The scheme objectives and the information presented in Section 5.3 has demonstrated the need for the relocated P&R to be located within the A1303 Corridor. This is due to the need to be located on a main radial route into Cambridge (to maximise accessibility and intercepting pass-by trips), fully accessible from the strategic road network and located on the periphery of the city to ensure the site can achieve attractive bus and cycle journey times.

Relevant to the site selection process: The P&R relocation sites have a requirement for a location within the A1303 Corridor, with direct and/or convenient access from the A1303 and strategic road network.

5.7 SUMMARY

5.7.1. In summary, this chapter has presented a set of bespoke Newmarket Road P&R objectives and assessment criteria that have been used to produce an evidenced P&R 'area of search' within which the relocated P&R should be located. The extent of the P&R area of search has been informed by:

- Existing 25-minute AM and PM peak bus journey times to Drummer Street bus station;
- 25-minute cycle journey times to Cambridge city centre;
- A requirement for good site access from the strategic road network;
- A requirement for direct/and or convenient access from the A1303; and
- The requirement for a site location on the periphery of the Cambridge built-up area.

5.7.2. The explanation and justification provided in this chapter for the identified P&R area of search results in the following P&R outcomes:

- **Outcome 1:** The requirement for a Green Belt location; and
- **Outcome 2**: The requirement for a location along the A1303 Newmarket Road corridor, between the existing P&R and Junction 35 of the A14.

6 SITE IDENTIFICATION AND INITIAL SIFT

6.1 INTRODUCTION

6.1.1. This chapter presents a summary of the P&R site identification process which has been undertaken to generate a 'long-list' of potential sites within the 'area of search' presented in Chapter 5.

6.2 STAGE 3: LONG-LIST OF SITES

6.2.1. Stage 3 comprised a desktop-based exercise to generate a 'long-list' of potential sites within the P&R area of search along the A1303 corridor to accommodate the required facilities. This process utilised aerial mapping in GIS, with the broad site locations identified in an initial workshop attended by the project team and the GCP.

SITE IDENTIFICATION ASSUMPTIONS

6.2.2. In undertaking the identification of the long list of potential sites within the P&R area of search, a number of assumptions were applied to exclude land that:

- Contained private residential units;
- Committed development sites that are being actively built out (Marleigh residential development);
- Areas within Flood Zones 2, 3a and 3b; and
- Land parcels which cannot be safely access/egressed from the public highway.

RATIONALE FOR THE SITE IDENTIFICATION ASSUMPTIONS

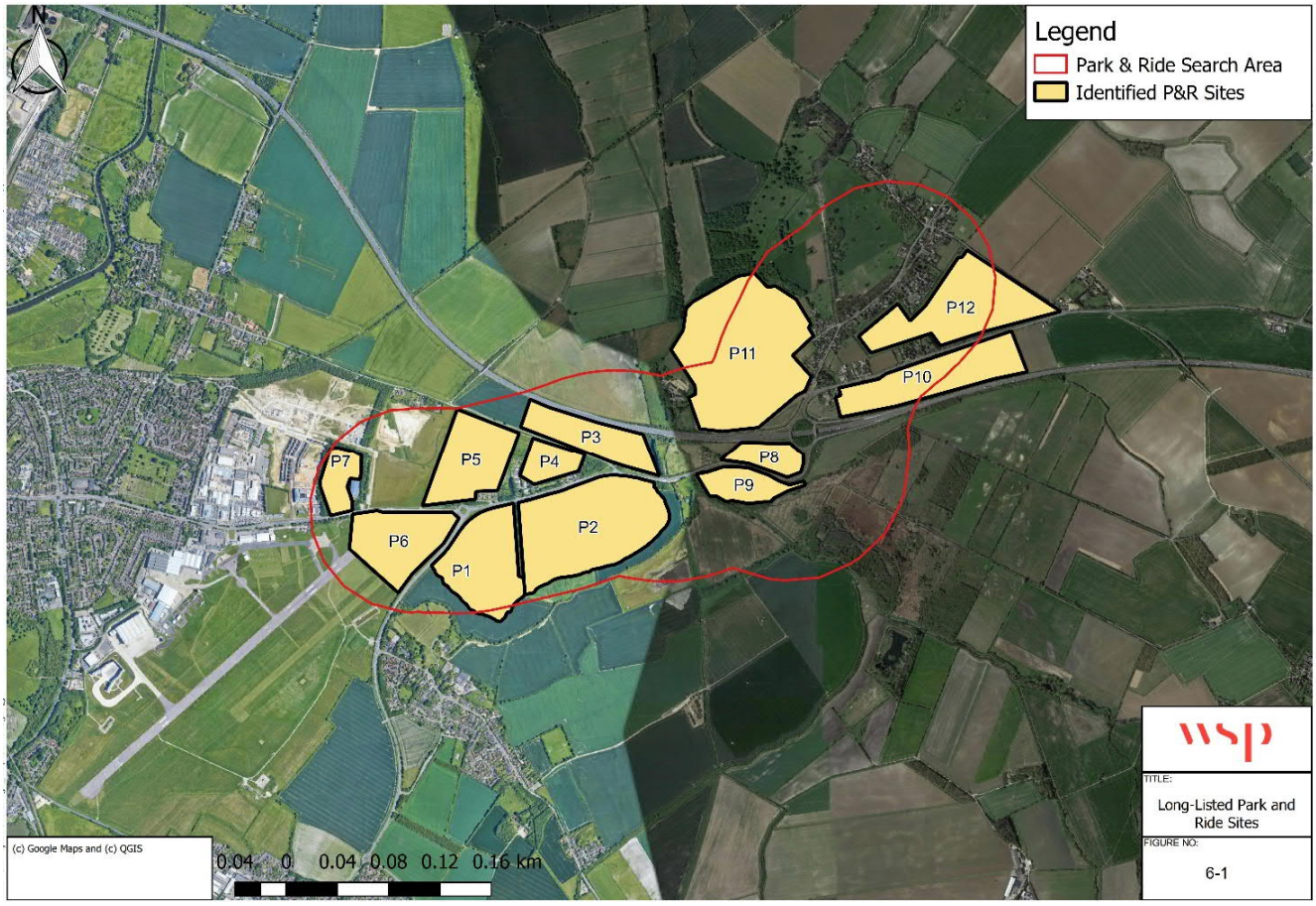
6.2.3. These assumptions were applied to the desktop-based land parcel identification process. The rationale for applying these assumptions to the identification of land parcels to include in each site was as follows:

- Including private dwellings within the site boundaries will result in more challenging land acquisition requirements, potentially involving the compulsory purchase of property which will impact both the cost of the P&R scheme and its deliverability.
- Active construction sites for committed developments rules out a site as being available for the P&R. Land within the Marleigh residential development to the north of the existing P&R has therefore been discounted;
- In line with the Sequential Test (Flood Risk) we have sought to avoid land parcels at highest risk of flooding (Flood Zones 2/3a/3b) in line with Paragraph 162 of the National Planning Policy Framework 2021 and Policy CC/9: Managing Flood Risk of the South Cambridgeshire Local Plan 2018 - as shown on the environmental constraints mapping in Appendix E. Land parcels around Quy Water have therefore been discounted; and
- The P&R site needs to be safely accessible on foot, by bicycle, car and bus. This results in discounting land parcels immediately to the south of the A14 westbound off slip.

6.3 OUTCOME 3: IDENTIFICATION OF A LONG LIST OF POTENTIAL P&R SITE LOCATIONS

6.3.1. **Outcome 3 of this report was to identify a long list of potential P&R site locations**. The desktop-based exercise, workshop and application of the site identification assumptions generated a long-list of 12 broad site locations within the 'area of search'. The location of these sites is shown in Figure 6-1 and included in Appendix F.

Figure 6-1 – Long List of Identified P&R Sites



6.3.2. A brief description of each long-listed site is provided in Table 6-1.

Table 6-1 – Stage 3 – Long-Listed Sites

Ref	Option Name	Option Description
P1	East of Airport Way	This site comprises approximately 16 hectares of land that is bounded to the east by Airport Way and to the north by Newmarket Road. The site comprises predominately greenfield agricultural land. The site is located within the Green Belt and the southern part of the site is covered by SCDC Local Plan Policy CE/21(1) Country Park.
P2	South of Newmarket Road	This site comprises approximately 28 hectares of land that is bounded to the north by Newmarket Road and the west by site P1. The site comprises predominately greenfield agricultural land. The site is located within the

		Green Belt and the eastern boundary is located in close proximity to Wilbraham Fens SSSI.
P3	North of High Ditch Road	This site comprises approximately 10 hectares of land that is bounded to the north by the A14 and the south by High Ditch Road. The site comprises predominately greenfield agricultural land. The site is located within the Green Belt and the site boundary has excluded the CE/32 Cambridge Airport Safety Zones located to the west of the site. The entire site sits within the Cambridge Wastewater Treatment Plant Relocation Project application boundary.
P4	South of High Ditch Road	This site comprises approximately 4 hectares of land that is bounded to the north by High Ditch Road and to the south by private properties. The site comprises predominately greenfield agricultural land. The site is located within the Green Belt.
P5	Adjacent to Marleigh	This site comprises approximately 13 hectares of land that is bounded to the north by High Ditch Road, the south by Newmarket Road and west by the Marleigh Development. The site comprises predominately greenfield agricultural land. The site is located within the Green Belt and is bisected by the CE/32 Cambridge Airport Safety Zone.
P6	West of Airport Way	This site comprises approximately 13 hectares of land within the Cambridge Airport site and is bounded to the north by Newmarket Road and to the east by Airport Way. The site comprises greenfield land and part of the main runway. All of the site is located within SCDC Local Plan Policy SS/3 Cambridge East and bisected by CE/32 Cambridge Airport Safety Zone.
P7	Existing Site	This existing P&R site comprises approximately 4 hectares of land that is bounded by the Marleigh development and Newmarket Road to the south. All of the site is located within SCDC Local Plan Policy SS/3 Cambridge East.
P8	South of Junction 35	This site comprises approximately 3 hectares of land that is bounded to the north by the A14 and to the south by Newmarket Road. The site comprises predominately greenfield agricultural land and located in the Green Belt. The site does not extend further west to avoid impacts on existing residential properties.
P9	East of Quy Water	This site comprises approximately 5.5 hectares of land that is bounded to the north by Newmarket Road and to the south by Great Wilbraham SSSI and an area of Flood Zone 2 and 3. The site comprises predominately greenfield land and is located in the Green Belt. The site does not extend further south or east due to these environmental constraints.
P10	North of A14 East	This site comprises approximately 16 hectares of land that is bounded to the north by Newmarket Road and to the south by the A14. The site comprises predominately greenfield agricultural land and is located in the Green Belt. Sections of the northern boundary of the site are allocated as Local Green Space, Policy NH/12 in the SCDC Local Plan.
P11	North of A14 West	This site comprises approximately 37 hectares of land that is bounded to the east by Stow cum Quy and is accessible from Church Road. The site comprises greenfield agricultural land and is located in the Green Belt. Sections of the south-eastern boundary of the site are allocated as Local Green Space, Policy NH/12 in the SCDC Local Plan.

P12	South of Stow cum Quy	This site comprises approximately 23 hectares of land that is bounded to the west by Stow cum Quy and to the south by Newmarket Road. The site comprises predominately greenfield agricultural land and is located in the Green Belt. Almost the entire site is allocated as Local Green Space, Policy NH/12 in the SCDC Local Plan.

Relevance to the site selection process: A thorough 'long-list' of potential P&R sites have been identified within the area of search, including the existing site and sites identified during the P&R Concept Scheme public consultation exercise, December 2021.

6.4 STAGE 4: INITIAL SIFT OF THE LONG LIST OF SITES

6.4.1. The long list of 12 broad P&R locations have been through an initial sift to discount any sites that failed to meet one or more of the following criteria:

- **Operational Requirements**: Sites below the minimum 5.0 hectares requirement have been discounted;
- **Site Availability**: sites with extant planning permission, allocated for development in an Adopted Local Plan and/or substantially protected by existing planning policies have been discounted; and
- **Key Environmental Constraints**: sites that are located in close proximity to key environmental constraints have been discounted. This included consideration of the following constraints:
  - Proximity to sites with designated environmental protection including Sites of Special Scientific Interest (SSSI); and
  - Proximity to existing communities and sensitive receptors.

RATIONALE FOR THE INITIAL SIFT CRITERIA

6.4.2. The rationale for applying these initial sift criteria is set out below.

Operational Requirements

6.4.3. The GCP provided a set of P&R site requirements set out in Section 2.3 which are supported by the scheme identified in the Transport Strategy for Cambridge and South Cambridgeshire. It is estimated that a single P&R site needs to provide a minimum of 5.0 hectares to accommodate these requirements, and sites below this minimum size requirement are therefore discounted.

6.4.4. Only single sites that are in excess of 5.0 hectares have been considered as the P&R should be provided at a single location within the A1303 corridor. Providing multiple smaller sites has not been considered due to the additional construction impacts and costs and the inefficiencies in operating P&R buses from multiple locations.

6.4.5. The single site minimum size requirement effectively resulting in discounting the provision of decked car parking at the P&R site locations. This is considered appropriate from the outset as decked car parking will increased the scheme construction, maintenance, and demolition costs, but will also increase the visual impact of the schemes within the Green Belt locations.

Site Availability

6.4.6. Consideration was also given to areas that are allocated in the adopted Local Plan for uses that may conflict with the proposed P&R use. For example, an identified Newmarket Road P&R option that is located within a site that is allocated for development in the SCDC Local Plan has been discounted as the site will be required to deliver a defined quantum of specified development within the allocated site.

6.4.7. The P&R will require 5.0 hectares of land within the allocated site which will then be unavailable for delivering the required level of development. Removing 5.0 hectares of development land from the allocated site could impact the site's ability to deliver the required levels of development, impact the scheme viability and negatively impact the sites transport strategy by introducing substantial levels of free on-site car parking.

6.4.8. Similarly, sites that have extant planning permission for uses that may conflict with the proposed P&R use have also been discounted. Consideration has also been given to live planning applications currently awaiting decision.

6.4.9. Consideration has also been given to policy/allocations that directly conflict with the proposed P&R use – e.g., Policy TI/6 in the SCDC Local Plan 2018 (Airport Public Safety Zone), Policy CE/21(1) Country Park and Policy NH/12 Local Green Space.

Key Environmental Constraints

6.4.10. Consideration was given to other key environmental constraints and related policies that may conflict with the proposed P&R use such as:

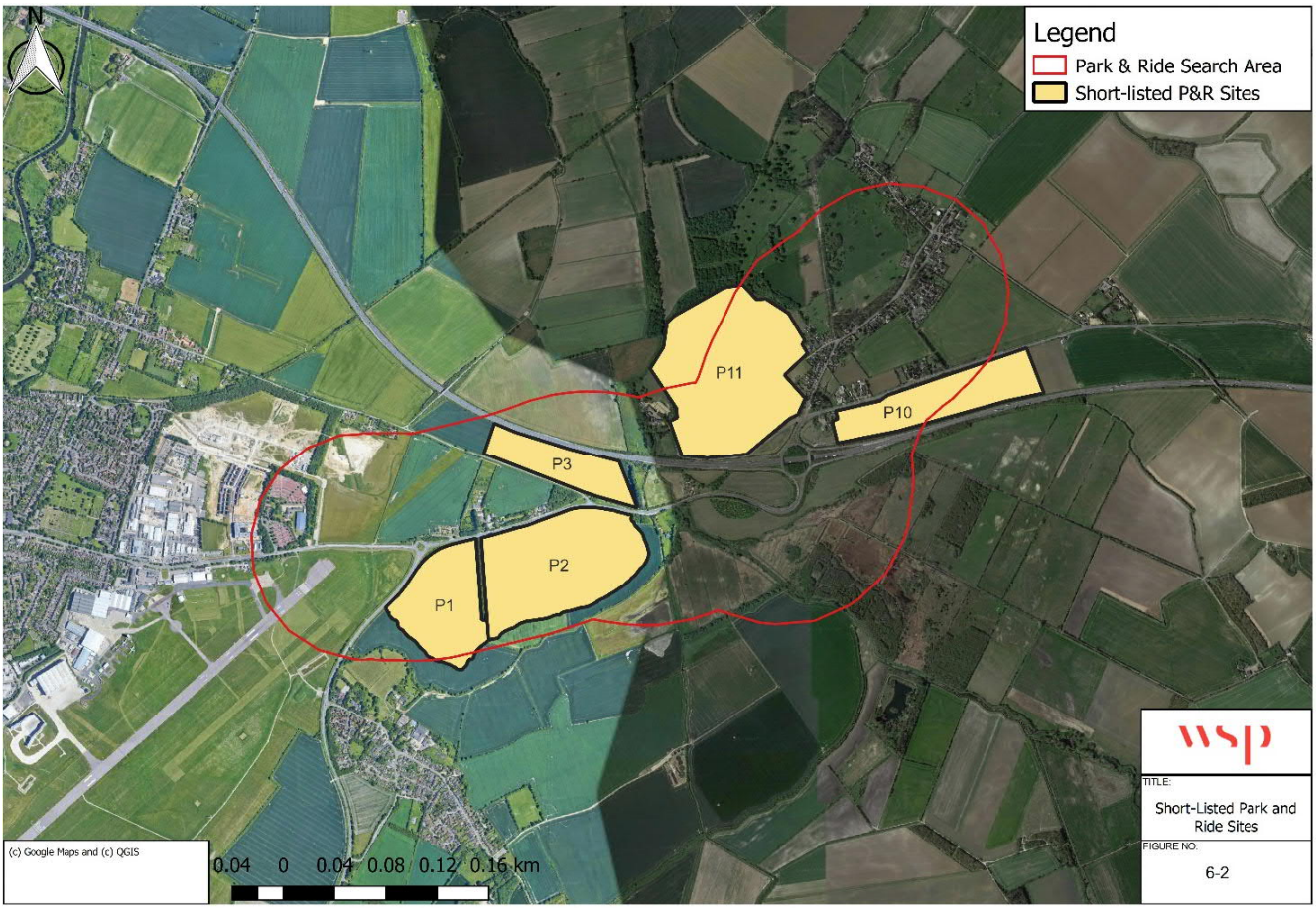
- International, European and National designated sites such as Ramsar, Special Protection Areas, Special Conservation Areas and Sites of Special Scientific Interest – all sites within such designations have been discounted in line with SCLP Policy NH/5. Indirect impacts on such designations that lie in close proximity to identified sites have been considered further;
- In line with the Sequential Test (Flood Risk) we have sought to avoid land parcels at highest risk of flooding (Flood Zones 2/3a/3b) in line with Paragraph 162 of the National Planning Policy Framework 2021 and Policy CC/9: Managing Flood Risk of the South Cambridgeshire Local Plan 2018; and
- Land parcels that include highly sensitive environmental receptors such as designated Ancient Woodland (SCLP Policy NH/4) and heritage assets (Listed Buildings, Scheduled Monuments, Registered Parks and Gardens in line with SCLP Policy NH/14 (Heritage Assets)).

6.5 OUTCOME 4: SHORT LIST OF P&R SITE LOCATIONS

6.5.1. **Outcome 4 of this report was to identify a short-list of potential P&R site locations.** The MCAF that has been used to appraise the long list of sites is provided in Appendix G. This includes the results of the initial sift of the long list of broad locations.

6.5.2. Following the assessment of the long list of sites against the operational requirements, site availability and key environmental constraints criteria, a total of **5 sites** remained. The location of the short-listed sites is shown in Figure 6-2 and provided in Appendix F.

Figure 6-2 – Short List of Identified P&R Sites



6.5.3. The initial sift assessment of each P&R site is summarised in Table 6-2. This sets out whether the site passed or failed the initial assessment criteria and a brief summary on the reason for being short-listed or discounted.

Table 6-2 – Stage 4– Initial Sift Results

Ref	Option Name	Site Size (Ha)	Meets Min Size Req	Site Available	Likely to have unacceptable environmental impacts?	Progress to Stage 5	Commentary
P1	East of Airport Way	16.14	Yes	Yes	No	**Yes**	Site meets size requirements, is available (owned by Marshalls) and subject to mitigating impact on the SCDC Local Plan Policy CE21/1 Country Park area should be considered further.
P2	South of Newmarket Road	28.13	Yes	Yes	No	**Yes**	Site meets size requirements, is available (owned by Cambridgeshire County Council) and subject to mitigating impact on SSSI located to the east should be considered further.

P3	North of High Ditch Road	10.16	Yes	Yes	No	**Yes**	Site meets size requirements, owned by a single private landowner. Key risk is site forms part of the Cambridge Wastewater Treatment Works planning application boundary, however not considered to prevent the site being considered further.
P4	South of High Ditch Road	4.26	**No**	N/A	N/A	**No**	Site discounted as land parcel does not meet the minimum operational space requirements.
P5	Adjacent to Marleigh	13.4	Yes	**No**	N/A	**No**	Site bisected by Cambridge Airport Safety Zone (SCDC Local Plan Policy CE/32) prohibits development for P&R use before 2031. Adopted SCDC Local Plan states Cambridge Airport to remain until at least 2031
P6	West of Airport Way	12.65	Yes	**No**	N/A	**No**	Site bisected by Cambridge Airport Safety Zone (SCDC Local Plan Policy CE/32) prohibits development for P&R use before 2031 and allocated for major development – SCDC Local Plan Policy CE/3.
P7	Existing Site	3.78	**No**	**No**	N/A	**No**	Site too small, leased from Marshalls and is allocated for major development – SCDC Local Plan Policy CE/3.
P8	South of Junction 35	3.27	**No**	N/A	N/A	**No**	Site discounted as land parcel does not meet the minimum operational space requirements
P9	East of Quy Water	5.48	Yes	Yes	Yes	**No**	Boarders a local SSSI that will be a significant environmental feature to consider. Given sites area available further from the SSSI, this site has been discounted.
P10	North of A14 East	15.83	Yes	Yes	No	**Yes**	Site meets size requirements, is available (owned by Cambridgeshire County Council) with only the northern boundary of the site covered by SCDC local Plan Policy NH/12 – Local Green Space
P11	North of A14 West	37.2	Yes	Yes	No	**Yes**	Site meets size requirements, is available (not allocated for development) with only the south-eastern boundary of the site covered by SCDC local Plan Policy NH/12 – Local Green Space

P12	South of Stow cum Quy	23.26	Yes	Yes	Yes	**No**	Site northern boundary abuts Stow cum Quy village which could result in unacceptable amenity impacts. Site is also almost entirely covered by SCDC Local Plan policy NH/12 Local Green Space.

6.5.4. Table 6-2 and the MCAF provided in Appendix G summarise the results of the initial sift. A more detailed justification for the short-listing and discounting of each site is provided below.

6.5.5. **P1:** The broad area within P1 is **shortlisted** as it is not allocated for development, it is owned by a single private landowner, access from Newmarket Road and Airport Way is possible, it's not located within an area of high flood risk, does not contain sites designated for environmental protection or contain highly sensitive receptors. The initial sift identified the need for careful site design to minimise the ecological impacts to the existing mature flora and on the County Park allocation in the Cambridge East Area Action Plan Policy C3/21/1 (Appendix A) In principle, it should be possible to mitigate some of these impacts through the P&R scheme design.

6.5.6. Figure 1 in Appendix F shows an area of approximately 5.9 hectares is available within the mature hedgerow boundaries in the northern area of P1 that is not subject to the Country Park Policy constraint, which should be of sufficient size for the P&R scheme. It should therefore be possible to locate a P&R facility within the northern land parcel which would be naturally screened by the existing mature tree hedgerows.

6.5.7. **P2:** The broad area within P2 is **shortlisted** as it is not allocated for development, it is owned by Cambridgeshire County Council, access from Newmarket Road is possible, it's not located within an area of high flood risk, does not contain sites designated for environmental protection or contain highly sensitive receptors. There is a Grade II listed structure (Milestone) in the verge along Newmarket Road. The initial sift identified the need for careful site design to minimise the ecological impacts to the Wilbraham Fen SSSI located towards the eastern end of the site. However, the broad site is substantially larger than the operational space required for the P&R (5.0 hectares) so in principle it should be possible to mitigate any potential impacts through careful site design.

6.5.8. **P3**: The broad area within P3 is **shortlisted** as it is owned by a single private landowner, access from High Ditch Road is possible and it's not located within an area of high flood risk, does not contain sites designated for environmental protection or contain highly sensitive receptors. The initial sift identified the entire site is included within the proposal application boundary for the Cambridge Wastewater Treatment Works (WWTW) relocation project.[2] However, the Phase Three Draft Development Consent Order Plans[3] show that the P3 site is not included within the works. The site has therefore been shortlisted; however, a risk remains that the site may be required as part of the WWTW works.

6.5.9. **P4**: This site has been **discounted** as the site does not meet the minimum operational space requirements for the P&R site. The P4 land parcel was not extended to the north to include P3 as it would result in High Ditch Road bisecting the site, which would result in a substantial constraint on the P&R site layout. The site is also constrained by the Darwin Nurseries site and existing residential properties fronting Newmarket Road. With larger sites available within the area of search it is appropriate to discount this site from further assessment.

6.5.10. **P5**: This site has been **discounted** as it is bisected by Cambridge Airport Safety Zone SCDC Local Plan Policy CE/32 which has a presumption against new development (including P&R sites) that would 'increase the numbers of people living, working or congregating on the land'. This policy constraint will remain whilst Cambridge Airport remains operational (stated as at least until 2031 in the Adopted SCDC Local Plan). The GCP require the relocated P&R to be operational before 2031. The area of land within the site to the east of policy area CE/32 is in excess of 5.0 hectares so could potentially accommodate a relocated P&R. However, the remaining available land is a suboptimal shape for a P&R facility and will be in close proximity to existing residential properties fronting Newmarket Road. Therefore alternative, less constrained sites have been taken forward.

6.5.11. **P6**: This site has been **discounted** as it is bisected by Cambridge Airport Safety Zone SCDC Local Plan Policy CE/32 and is located wholly within SCDC Policy Area SS/3 (4) which allocates the Cambridge Airport site for major residential and employment development after 2031. Given that alternative sites are available that are not allocated for development, it is appropriate to discount this site from further assessment. This decision is further supported by SCDC's Adopted Local Plan that states the airport will be operational on the site until at least 2031, with the P&R relocation being required to be completed prior to this date.

[2] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/WW010003/WW010003-000033-WW010003%20-%20Scoping%20Report.pdf
[3] https://cwwtpr.com/wp-content/uploads/2022/02/DCO-Works-Plan-9.pdf

6.5.12. **P7**: **Outcome 5 of this report was to demonstrate the requirement to relocate the existing P&R to a new greenfield site.** The existing P&R site has been **discounted** as it is too small and is located wholly within SCDC Policy Area SS/3 (4) which allocates the site for major residential and employment development after 2031. Therefore, the site is required to deliver housing and employment space to support the long-term growth needs of the city. In addition, this site is constrained by the surrounding Marleigh residential development and an existing dense tree belt. It is also understood the site is leased from Marshalls which also impacts the ability for the site to be redeveloped for a larger P&R scheme in the medium to longer-term.

6.5.13. **P8**: This site has been **discounted** as it is too small to accommodate the operational requirements of the P&R. The site area cannot be extended to the north, south or east due to the alignments of the A14 and Newmarket Road. Extending the site to the west has also been discounted as the minimum 5.0 hectares would require purchase of the residential properties west of P8. Sites that require the purchase of residential properties have been discounted as there are substantial areas of less constrained land available within the area of search.

6.5.14. **P9**: This site has been **discounted** due to its proximity to the Wilbraham Fen SSSI. The SSSI will be a significant environmental feature to consider if the proposed scheme is shortlisted. Given there are other sites available that a do not border a SSSI, this site has been discounted.

6.5.15. **P10**: The broad area within P10 is **shortlisted** as it is not allocated for development, it is owned by Cambridgeshire County Council, access from Newmarket Road is possible, it's not located within an area of high flood risk, does not contain sites designated for environmental protection or contain highly sensitive receptors. During the initial sift, direct access to the site from the A14 has been discounted due to the site's proximity to Junction 35 and the high infrastructure costs. The northern boundary of the site is close to existing residential properties and sections of the site along the northern boundary are allocated as Local Green Space in SCDC Policy NH/12. However, there appears to be sufficient space within the southern area of P10 to accommodate the P&R with minimal impact on the allocated Local Green Space for site access.

6.5.16. **P11**: The broad area within P11 is **shortlisted** as it is not allocated for development, it is owned by a single private owner, access from Church Road is possible, it's not located within an area of high flood risk, does not contain sites designated for environmental protection or contain highly sensitive receptors, although the eastern and western boundaries are in close proximity to Grade II and Grade II* properties including St Marys Church. The eastern boundary of the site is close to existing residential properties and sections of the site along the south-eastern boundary are allocated as Local Green Space in SCDC Policy NH/12.

6.5.17. **P12**: This site has been **discounted** as it almost entirely allocated as Local Green Space in SCDC Policy NH/12. The northern boundary of the site also abuts Stow Cum Quy village resulting in greater potential for amenity impacts as well as being located the furthest from Junction 35 of the A14 which will result in the highest access journey times from the A14 and the highest bus and cycle journey times towards Cambridge.

Summary: This chapter has demonstrated that an appropriate and proportionate assessment has been undertaken on the long list of P&R sites to identify the short-listed sites for further more detailed assessment in Chapter 7.

7 STAGE 5: SHORT LISTED SITE APPRAISAL

7.1 INTRODUCTION

7.1.1. This chapter presents a summary of the assessment of the short-listed P&R sites following the Stage 4, Initial Sift. The assessment of the five short-listed sites uses a bespoke P&R MCAF based on the Department for Transports Early Assessment and Sifting Tool (EAST).

7.2 MULTI-CRITERIA ASSESSMENT METHODOLOGY

7.2.1. The P&R site MCAF spreadsheet is provided in Appendix G. The MCAF is a decision support tool, developed to provide a proportionate assessment of the short-listed P&R site options in a clear and consistent format, based on available desktop information. Its purpose is to provide the GCP with relevant, high-level comparative performance information to help inform their decision on which option should be taken forward as the preferred site.

7.2.2. The MCAF results will help inform the GCP's decision on a preferred location. It is acknowledged that certain factors may be more important in the assessment of one site compared to the context of another site and therefore a final comparative assessment of the relative merits of each short-listed sites is provided in Section 7.4.

ENVIRONMENTAL APPRAISAL

7.2.3. The first component of the MCAF was the consideration of the potential environmental impact of each short-listed site. The adopted criteria, the rational for inclusion in the MCAF and the data source is provided in Table 7-1.

Table 7-1 – Environmental MCAF Criteria

Criteria	Rationale/Explanation	Data Source	RAG Rating
Air Quality	Air quality is an important consideration. As well as having direct effects on public health, habitats and biodiversity, pollutants such as particulate matter (PM_{10} and $PM_{2.5}$) and nitrogen dioxide (NO_2) can combine in the atmosphere to form ozone, a harmful air pollutant (and potent greenhouse gas) which can be transported great distances by weather systems. Odour and dust can also be a planning concern, for example, because of the effect on local amenity. Central Cambridge is located within an AQMA, though this does not extend as far as the P&R site options. The relocation and expansion of the P&R aims to reduce traffic in Cambridge and its associated air quality impacts. However, in doing so, we need to consider the local air quality impacts resulting from changes in traffic flows, and the short-term and long-term impacts associated with the P&R itself (construction and operation).	Professional judgement / Environmental Features Mapping / Magic Maps	▪ Major Positive ▪ Minor Positive ▪ Neutral ▪ Minor Negative ▪ Major Negative
Noise	Noise needs to be considered when development may create additional noise or conversely would be sensitive to the prevailing acoustic environment. Noise is an important consideration as the average	Professional judgement / Environmental	▪ Major Positive ▪ Minor Positive ▪ Neutral ▪ Minor Negative

	noise levels for some of the surrounding villages is already high (between 55.0 – 64.9 dB). Noise pollution can cause health effects such as raised blood pressure, heart disease, sleep disturbances, and stress in humans.	Features Mapping	▪ Major Negative
Landscape/Townscape	Our landscapes and townscapes reflect the relationships between people and places and the part they play in forming the setting to our everyday lives. Assessment enables us to influence design by understanding the sensitivities of and opportunities from the receiving landscape. At the eastern edge of Cambridge, the landscape is quite open making visibility a key issue and a strong influence on design and mitigation.	Professional judgement / Environmental Features Mapping / Magic Maps	▪ Major Positive ▪ Minor Positive ▪ Neutral ▪ Minor Negative ▪ Major Negative
Carbon Emissions	The construction industry is one of the largest carbon polluters in the UK today. Carbon dioxide and other greenhouse gases cause various aspects of climate change. Carbon performance is, however, unlikely to vary greatly between the options.	Professional judgement	▪ Major Positive ▪ Minor Positive ▪ Neutral ▪ Minor Negative ▪ Major Negative
Historic Environment	Assessment of known historic assets and an assessment of the risk of encountering buried remains allows us to shape the scheme design that respects the history of the receiving environment. We consider the integrity and setting of designated assets such as listed buildings, scheduled monuments, registered parks and gardens and conservation areas. Where information is available, we also consider the archaeological record to indicate the risk of encountering remains. Cultural heritage has the potential to promote access to and enjoyment of cultural diversity. It can also enrich social capital and create a sense of individual and collective belonging, which helps to maintain social and territorial cohesion.	Professional judgement / Environmental Features Mapping / Historic England	▪ Major Positive ▪ Minor Positive ▪ Neutral ▪ Minor Negative ▪ Major Negative
Biodiversity	It is important that we assess the impact of developments on protected sites and species specifically, and of biodiversity generally. We need to protect and preserve the wealth and variety of species, habitats, ecosystems, and genetic diversity. It is also important for our health, wealth, food, fuel, and services we depend on. Biodiversity is essential for the processes that support all life on Earth. Biodiversity is essential to increase the resilience of communities and reduce their vulnerability in the face of shocks such as climate change. There is information on designated sites, such as SSSIs, that helps inform the assessment, along with more focused on general records of priority habitats.	Professional judgement / Environmental Features Mapping / Magic Maps	▪ Major Positive ▪ Minor Positive ▪ Neutral ▪ Minor Negative ▪ Major Negative
Water Environment	It is important that we accurately assess the impact of developments on the water environment (groundwater and surface water). Water is at the core of sustainable development and is critical for socio-economic development, healthy ecosystems and for human survival itself. It is vital for reducing the global burden of disease and improving the health, welfare and productivity of populations. It is also important that we assess against the risk of flooding (to the	Environmental Features Mapping / Magic Maps / Environment Agency Catchment Data Explorer	▪ Major Positive ▪ Minor Positive ▪ Neutral ▪ Minor Negative ▪ Major Negative

	development and to other receptors), whether that be from groundwater, river (fluvial), surface water (pluvial), estuary/coastal (tidal), or from sewer sources.		

P&R OPERATIONAL REQUIREMENTS

7.2.4. The second component of the MCAF is consideration of the potential operational performance and accessibility of the site. The adopted criteria, the rational for inclusion in the MCAF and the data source is provided in Table 7-2.

Table 7-2 – P&R Operational MCAF Criteria

Criteria	Rationale/Explanation	Data Source	RAG Rating
Pass-by Intercept Trips	P&R sites ideally should be located directly on busy radial routes in-order to intercept inbound trips to destinations within the built-up area. Sites located on busier routes have a high propensity to intercept pass-by trips.	AM 2041 Do Minimum Cambridge Paramics Model	▪ High Potential (**Green**) ▪ Medium Potential (**Amber**) ▪ Low Potential (**Red**)
Site Access/Egress by Car	Safe and suitable access for car users of the potential site must be feasible. Consideration has been given to whether each P&R option could result in access junctions that have the potential to cause unacceptable harm to the safe and efficient operation of the local road network.	Professional judgement	▪ No Significant Constraints (**Green**) ▪ Minor Constraints (**Amber**) ▪ Major Constraints (**Red**)
Households within 10 min cycle	Existing local residents may use the P&R to access frequent bus services. A 10-minute journey is considered to be a reasonable maximum journey to access a P&R for a local resident, longer journeys are unlikely as residents will be able to access other bus stops or complete a door-to-door journey.	GIS analysis, Experian MOSAIC data	▪ Greater than 900 households (**Green**) ▪ 400-900 households (**Amber**) ▪ Less than 400 households (**Red**)
Cycle Journey time to Cambridge City Centre	The Cambridge P&R sites are used for 'Park and Pedal'. The sites therefore need to be located within reasonable cycling distance of key destinations within Cambridge. The short the cycling distance, the more attractive the site will be.	Cyclestreets journey planner – fastest route to Grand Arcade cycle park at a cruising speed 12.5mph/20kph	▪ Less than 25 mins (**Green**) ▪ 20-25 mins (**Amber**) ▪ Greater than 25 mins (**Red**)
Site Access/Egress by Bicycle	Safe and suitable access for cycle users of the potential site must be feasible. Consideration has been given to whether each P&R option could be	Professional judgement	▪ No Significant Constraints (**Green**) ▪ Minor Constraints (**Amber**)

	safely accessed and egressed by bicycle.		▪ Major Constraints (**Red**)
Households within 10 min walk	Existing local residents may use the P&R to access frequent bus services. A 10-minute journey is considered to be a reasonable maximum journey to access a P&R for a local resident, longer journeys are unlikely as residents will be able to access other bus stops or complete a door-to-door journey.	GIS analysis, Experian MOSAIC data	▪ Greater than 250 households (**Green**) ▪ 50-250 households (**Amber**) ▪ Less than 50 households (**Red**)
Site Access/Egress by Pedestrians	Consideration has been given to whether each P&R option could be safely accessed and egressed on foot from local surrounding communities.	Professional judgement and Experian MOSAIC GIS data analysis.	▪ No Significant Constraints (**Green**) ▪ Minor Constraints (**Amber**) ▪ Major Constraints (**Red**)
AM Peak Bus Journey Time to Drummer Street Bus Station.	The bus journey time from the P&R to Cambridge City centre is a key consideration in the site location. Minimising the bus journey time will increase the attractiveness of the site to potential users. The current journey time is less than 20 minutes.	AM 2041 Do Minimum Cambridge Paramics Model	▪ Less than 17 mins (**Green**) ▪ 17-20 mins (**Amber**) ▪ Greater than 20 mins (**Red**)
Opportunity to deliver segregated bus priority access/egress	Reliable and consistent bus journey times are a key attractor to P&R bus services. It is therefore considered each P&R site should be complemented with bus priority measures that enable buses to bypass locations of substantial vehicle congestion.	Professional Judgement	▪ No Significant Constraints/Costs ▪ (**Green**) ▪ Moderate Constraints/Costs (**Amber**) ▪ Major Constraints/Costs (**Red**)
Plot Shape/topography constrain development	An efficient P&R layout minimises the walking distance from the surrounding car/cycle parking to the bus stops (optimum are square site plots). Sites that are irregular shaped, particularly is they are close to the minimum size requirement will be harder to accommodate the P&R requirements.	Aerial Mapping	▪ Ample Space/efficient plot shape ▪ (**Green**) ▪ Irregular shape/ample space (**Amber**) ▪ Irregular shape/close to min size (**Red**)
Land Ownership/Availability	The land within each site needs to be deemed reasonably available to the GCP/CCC to deliver a P&R site. Sites with multiple owners will be more difficult	Land Registry	▪ Public Sector ▪ (**Green**)

	to deliver compared to sites in single ownership.		▪ Single Private Owner/Willing Owner (**Amber**) ▪ Complex/Multiple Ownership (**Red**)

P&R CONSTRUCTABILITY APPRAISAL

7.2.5. Professional judgement has been applied to each of the sites to determine if any of the five short-listed sites are likely to be more challenging to construct based on the available desktop information. The constructability appraisal applied a RAG based assessment as follows:

- No significant challenges - Green
- Some challenge - Amber
- Complex/constrained – Red

7.2.6. The constructability has focused on the potential to drain the site and connect to existing utilities, given the MCAF has already considered site access feasibility and all sites are located on similar greenfield plots.

GREEN BELT OPTION ASSESSMENT

7.2.7. Chapter 5 set out the justification for a Green Belt location. With the requirement for a Green Belt location established, a Green Belt Option Assessment report has been produced by the WSP Landscape team. The purpose of the Green Belt Option Assessment was to appraise the potential impact of a P&R located within each of the short-listed site options against the Green Belt purposes. Each of the five short-listed sites were assessed against the policy tests set out in NPPF and South Cambridgeshire Local Plan Green Belt Policy as follows:

- NPPF Paragraph 150:
  - Requirement for a Green Belt Location (set out in Chapter 5 of this report);
  - Preserves the openness of the Green Belt; and
  - Does not conflict with the purposes of including land in the Green Belt.

7.2.8. Paragraph 138 of the NPPF sets out the national purposes for Green Belt land:

- 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.

7.2.9. In addition to the five national purposes of the Green Belt, three purposes of the Cambridge Green Belt are identified within Policy S/4 of the adopted South Cambridgeshire Local Plan (2018):

- Preserve the unique character of Cambridge as a compact, dynamic city with a thriving historic centre;
- Maintain and enhance the quality of its setting; and
- Prevent communities in the environs of Cambridge from merging into one another and with the city.

7.2.10. Each of the five short-listed sites were assessed against each of the five national and three local Green Belt policy considerations in the Green Belt Option Assessment to determine the potential scale of impact of a P&R scheme located within each of the sites on these functions.

7.3 MULTI-CRITERIA ASSESSMENT RESULTS

7.3.1. The full MCAF results are presented in Appendix G. The MCAF shows the appraisal results of each of the five shortlisted sites against each of the assessment criteria and the recommended scheme ranking. A summary of the MCAF results for each of the shortlisted sites is provided in this section.

ENVIRONMENTAL APPRAISAL RESULTS

7.3.2. Table 7-3 provides a summary of the high-level environmental constraints assessment of each of the five short-listed sites.

Table 7-3 – MCAF Environmental Assessment Results Summary

Criteria	P1	P2	P3	P10	P11
Air Quality	Minor Positive	Minor Positive	Minor Positive	Minor Negative	Minor Negative
Noise	Minor Negative	Minor Negative	Neutral	Minor Negative	Minor Negative
Landscape/Townscape	Neutral	Neutral	Neutral	Minor Negative	Minor Negative
Carbon Emissions	Minor Negative	Minor Negative	Minor Negative	Minor Negative	Minor Negative
Historic Environment	Minor Negative	Major Negative	Major Negative	Minor Negative	Major Negative
Biodiversity	Minor Negative	Major Negative	Minor Negative	Minor Negative	Minor Negative
Water Environment	Neutral	Minor Negative	Minor Negative	Neutral	Minor Negative

7.3.3. In undertaking the high-level environmental constraints assessment, the impact assessment has been based on the short-listed site footprint and therefore, depending on the location of the P&R site within the site, it may be possible to mitigate some of the environmental constraints identified. In addition, a Preliminary Ecological Appraisal and Protected Species Report has been prepared for sites P1 and P2, which has informed the decision on the likely ecological features in sites P3, P10 and P11.

7.3.4. Likewise, for the Historic Environment, archaeological information on the High Ditch Road area of Newmarket Road (sites P2 and P3) was provided by Cambridgeshire County Council, but this information did not cover sites P1, P10 and P11, meaning not all sites could be assessed using consistent information.

Air Quality

7.3.5. The proposed sites are located further east of Cambridge city centre than the existing P&R site. Cambridge city centre is located in an Air Quality Management Area (AQMA) extending part way along Newmarket Road, just past the retail park. There may be some local benefits west of Airport Way, where traffic accessing the current P&R site will shift eastwards.

7.3.6. There may be impacts on the AQMA depending on projected use rates of the P&R and how these impact on journeys in and out of Cambridge, though this is yet to be determined and would in any case not vary between the options.

7.3.7. There may also be local air quality impacts at all the proposed sites resulting from changes in traffic flows. It is not clear whether these would be better or worse.

7.3.8. Options P1, P2 and P3 are located closer to Teversham than the existing site, with P1 being the closest (>450m), and Option P3 being the furthest (>1,500m). This is not expected to adversely impact on air quality for the village.

7.3.9. Options P10 and P11 are located immediately adjacent to the village of Stow cum Quy; both within 100m of the southwest edge of the village. This is expected to have a minor negative impact on air quality for the village due to the proximity of Options P10 and P11 to the village.

Noise

7.3.10. The proposed sites and the existing P&R site do not fall within a Noise Important Area, though two small (and inexplicable) NIAs on Newmarket Road would be affected by vehicles passing to P1 and P2.

7.3.11. Teversham will have a number of sensitive residential receptors for Option P1 and P2, however, no long-term impacts on noise are expected either from short-term impact from construction noise or operational noise from vehicles using the site.

7.3.12. The village of Stow-cum-Quy is a sensitive receptor for Options P10 and P11. A minor negative impact on noise for the village of Stow-cum-Quy is expected from short-term impact from construction noise and operational noise from vehicles using the site.

Landscape/Townscape

7.3.13. The proposed sites lie largely on farmed land and within the Green Belt. A separate Green Belt Option Assessment has been undertaken with the results summarised later in this section. There are no designated or protected landscapes within each site.

7.3.14. There are likely to be temporary visual impacts from construction for residents in 450m distance of Teversham (Options P1 and P2) and more notably at Stow cum Quy and the Quy Mill hotel (Options P10 and P11, which are within 100m from the receptors). In the long term, visual impacts may affect these same residents, depending on any vegetation loss. Lighting from the sites could result in spillage to the surrounding areas.

7.3.15. Public Rights of Way have been identified at Options P11 and P2 which would need to be diverted.

Carbon Emissions

7.3.16. Carbon emissions cannot effectively be evaluated at this early stage, though it is expected that there will be no long-term impacts nor differences between the proposed sites. Potential benefits from modal shift have not been determined at this initial site appraisal stage.

7.3.17. Potential short-term negatives are expected from the removal of topsoil during construction and loss of embodied carbon this provides. The embedded carbon within the new facilities will also have an impact.

Historic Environment

7.3.18. Options P1, P2 and P3 could affect the settings of five Grade II listed buildings and one Grade II* listed building in Teversham, though these will be minor given their distance away. The closest listed buildings are greater than 450m from the closest site (Option P1).

7.3.19. Option P11 extends up to two Grade II and one Grade II* buildings, namely the Garden Wall of Guy Mill House, Quy Water Mill and Parish Church of St Mary respectively. Potential direct impacts on adjacent listed buildings from construction and potential indirect permanent impacts on the setting and of listed buildings have been identified. Both buildings are within 100m of the site. A possible major impact is predicted.

7.3.20. Options P10 and P11 are located very close to the village of Stow cum Quy where there are eleven Grade II listed buildings and two Grade II* listed buildings, though it is unlikely that there will be any impacts on these structures.

7.3.21. The Grade II listed Milestone southwest of Quy Mill on the northern edge of Option P2 and directly south of Option P3 could experience a minor impact.

7.3.22. There is one Grade II listed structure on the north edge of Option P10, a milestone east of St Marys Parish Church. At this stage it is not clear if access roads or other park and ride infrastructure would permanently impact on the listed structure. Due to its proximity (<10m), it is assumed there could be minor impact.

7.3.23. Anglo-Saxon burials have been identified adjacent to the far north-eastern end of Option P2 and within 50m of the south-eastern edge of Option P3. Given the proximity, it is likely that the burial site will extend into both sites. A major impact is to be expected.

7.3.24. Adjacent to the north of High Ditch Road, and within Option P3, are a number of sub-circular enclosures thought to be indicative of an Iron Age Settlement. These have been identified from crop marks on historic aerial photographs, together with rectangular enclosures thought to be indicative of a Roman settlement 70m north of P3 and 250m west of Option P11. A possible minor impact is to be expected.

7.3.25. There are no known archaeological features at Options P1 and P10. However, based on the Roman and Anglo-Saxon features identified in the vicinity of P3 and the north-eastern end of P2, there is a likelihood that similar features exist at other sites. A possible minor impact is expected.

Biodiversity

7.3.26. The closest designated site to the proposed sites is Wilbraham Fen SSSI. This extends within 500m of the eastern edge of Option P2 and 250m from the southern edge of Option P11. There is reedbed habitat of likely to be SSSI quality at Teversham Fen. This extends closer still (<250m). There is a high likelihood of bird disturbance and a risk of pollution. Pollution risk may include:

- water run-off from roads and car parking areas,
- dust and emissions from construction activities, and
- traffic-born pollutants.

7.3.27. A preliminary ecological assessment was undertaken at sites P1 and P2. The conclusions from the assessment identified the following:

- Priority habitat (primarily hedgerows) within both site boundaries that could be lost as a result of the proposals.
- Important habitat, including broadleaved woodland types; hedgerows; lines of trees that could be avoided; suburban mosaic of developed natural surfaces; and, well as varied habitats supporting a variety common and of protected species, such as barn owls, badgers, great created newts and bats.
- In developing at the location of Option P1 there is likely to be minor impact on hedgerows and trees if not fully enclosed within the existing treeline.
- Works should be avoided in the areas to the south of Newmarket Road at the east of the site as well as areas immediately adjacent to the three streams; all of which fall within the boundary of Option P2.
- In developing at Option P2 there is likely to be a major impact on biodiversity and ecology, notably on the adjacent reedbed habitat of likely to be SSSI quality at Teversham Fen, with potential disturbance of important wintering and breeding birds.

7.3.28. Protected species with the potential to utilise the varied habitats in the site have been found at Options P1 and P2. These species include breeding birds, (including kingfishers and barn owl), badgers, great crested newts, bats, reptiles, water vole and otter. Drawing on the conclusions from the ecological assessment, a minor negative impact on protected species is expected at Option P1 and major impact is expected at Option P2.

7.3.29. No assessment of protected species or ecological assessments have been conducted at Options P3, P10 or P11, so no precise conclusions can be drawn at this time. However, based on the findings of ecological and habitat assessments carried out at Options P1 and P2, it is assumed that there will be similar features of biological and ecological significance (i.e., Priority Species and Habitat) and therefore the options are likely to have a minor negative impact.

Water Environment

7.3.30. The nearest main river to the proposed sites is Quy Water. The Quy Water is classified under WFD as having ‘moderate ecological status’ and ‘moderate physicochemical status’, with quality element phosphate being assessed as ‘poor’. Also, the watercourse does not support good for ‘hydrological regime’ (i.e., entire state of water movement).

7.3.31. Although it is recognised that changes in land use might bring about some minor benefits in reducing agricultural runoff and the impact phosphate (a failing quality element), there is the potential for short-term adverse impacts from the construction works (i.e., sediment deposition) and longer-term impacts (where these are not managed adequately) from road run-off (i.e., oils, greases, heavy metals).

7.3.32. Options P2, P3 and P11 are all directly adjacent to the watercourse and have been assessed as having a likely minor negative impact (options for pollution control and enhancement / biodiversity net gain (BNG) are discussed in the recommendations).

7.3.33. The short-listed sites are in a Flood Zone 1 area which means there is a low probability of flooding. However, any changes in flows due to road run off, or alterations or modifications to watercourses will need to consider potential increased risk of flooding to nearby properties and downstream areas (i.e., flood risk assessment).

7.3.34. Option P10 is located in the proximity of drinking water source protection zone (SPZ) 3 (<1000), though it is not anticipated that P10 will have any impact.

P&R OPERATIONAL REQUIREMENTS APPRAISAL RESULTS

7.3.35. Table 7-4 provides a summary of the high-level P&R operational requirements assessment of each of the five short-listed sites.

Table 7-4 – MCAF P&R Operational Requirements Assessment Results Summary

Criteria	P1	P2	P3	P10	P11
Pass-by Intercept Potential					
Site Access/Egress by Car					
Households within a 10 min Cycle					
Cycle Journey time to Cambridge city centre					
Site Access/Egress by Bicycle					
Households within a 10 min walk					
Site Access/Egress by Pedestrians					
AM Peak Bus Journey Time to Drummer Street Bus Station					
Opportunity for Segregated Bus Priority Access/Egress					
Plot Shape/Topography					
Land Ownership/Availability					

Site P1

7.3.36. P1 has the shortest average AM peak hour inbound bus journey time to Cambridge city centre (15 minutes 46 seconds), being located furthest west. It has high intercept potential due to the relatively high traffic flows on Newmarket Road and Airport Way. Vehicle access is also possible direct from the A1303 Newmarket Road and Airport Way, east and south of the Airport Way roundabout respectively. This provides flexibility in how P1 can be accessed and egressed by private vehicles and buses. P1 also provides the opportunity to directly link into the adjacent Cambridge Airport strategic development in the longer-term providing sustainable transport benefits to this large development site. This location therefore directly supports Phase B of CEA which includes proposals for a high-quality public transport route through Cambridge Airport site to support the planned redevelopment.

7.3.37. Access and egress from P1 is possible by bicycle, with the opportunity to link directly to NCN 51 along the northside of Newmarket Road at the Airport Way roundabout and the existing shared-use path on the west side of Airport Way. The site is also closest to the eastern end of the proposed cycle infrastructure improvements to Newmarket Road and will have the shortest cycle journey times to destinations in Cambridge (23 minutes to the city centre). As a result, no substantial additional cycle infrastructure is required to connect P1 to the CEA Newmarket Road proposals or the existing surrounding cycle networks.

7.3.38. P1 is the closest short-listed site to the Marleigh development and the long-term redevelopment of Cambridge Airport. The P&R is within easy cycling distance of both these strategic development sites and can therefore directly support their sustainability by providing access to high frequency bus services to Cambridge and potentially new services delivered as part of the GCP Making Connections bus proposals that serve the relocated P&R site. P1 therefore provides the highest opportunity to directly support planned development.

7.3.39. The RAG appraisal shows that P1 has good potential to be used by existing local residents, with the whole of Teversham and sections of Newmarket Road west towards Barnwell roundabout and east towards Junction 35 of the A14 within a 10-minute cycling distance (Appendix H). There are a limited number of existing households (18) within a 10-minute walk (Appendix H) of P1 (red), however as identified, the site is immediately adjacent to a planned strategic mixed-use development site on Cambridge Airport.

7.3.40. Access and egress from P1 is also possible on foot via connections to the existing shared-use paths along the northside of Newmarket Road and the west side or Airport Way. It is considered that no substantial additional pedestrian infrastructure is required to connect P1 to the CEA Newmarket Road proposals or the existing surrounding walking networks.

7.3.41. P1 has no substantial constraints in providing segregated bus priority access and egress to the site. Additional bus lanes will form part of the CEA improvements to Newmarket Road which can be extended from the Airport Way roundabout, westwards towards Cambridge. As access into P1 for buses can be achieved at the Airport Way roundabout, no substantial additional bus infrastructure will be required to connect the site to the CEA Newmarket Road scheme.

7.3.42. Finally, the site is owned by Marshall's who are supportive in principle of relocating the existing P&R site and the flat topography and regular plot shape means there will be limited constraints to the development, except those identified in Section 7.2, relating to seeking to avoid impacts on the existing hedgerows and planned County Park across the southern site area.

Site P2

7.3.43. Site P2 has the second shortest average AM peak hour inbound bus journey time to Cambridge city centre (17 minutes and 8 seconds), being located adjacent to P1. It has slightly lower intercept potential compared to P1 as the site is only fronted by Newmarket Road. However, Newmarket Road is a key radial route into the city so is considered to provide high intercept potential. Vehicle access is also possible direct from the A1303 Newmarket Road, east of the Airport Way roundabout. It is considered that to avoid existing accesses on the north side of Newmarket Road opposite the site, it is considered that access into this site should be provided opposite the High Ditch Road junction, effectively creating a 4-arm junction with High Ditch Road.

7.3.44. Access and egress from P2 is possible by bicycle, with the opportunity to link directly to NCN 51 along the northside of Newmarket Road at the proposed High Ditch Road junction. The site is also second closest to the eastern end of the proposed cycle infrastructure improvements to Newmarket Road and will therefore have the second shortest cycle journey times to destinations in Cambridge city centre (24 minutes). As a result, no substantial additional cycle infrastructure is required to connect P2 to the CEA Newmarket Road proposals via the existing NCN 51 on the northside of Newmarket Road.

7.3.45. Access and egress from P2 is possible on foot via connections to the existing NCN 51 shared-use path along the northside of Newmarket Road. It is considered that no substantial additional pedestrian infrastructure is required to connect P2 to the existing surrounding walking networks.

7.3.46. The RAG appraisal shows that P2 has poor potential to be used by existing local residents, with only 385 existing households within a 10-minute cycling distance compared to 965 households for P1. Only the northern part of Teversham and sections of Newmarket Road west towards Barnwell roundabout and east towards Junction 35 of the A14 are within a 10-minute cycling distance (Appendix H). As per P1, there are a limited number of existing households (28) within a 10-minute walk of P2 (red). With P2 being located further east than P1 the site provides a lower opportunity to directly serve existing local and future residents (Appendix H).

7.3.47. P2 will require the construction of additional segregated bus priority measures when compared to P1 due to being located further east, resulting in an amber grading compared to green for P1.

7.3.48. P2 is owned by Cambridgeshire County Council and therefore is assumed to be available to the GCP. The flat topography and regular plot shape means there will be limited constraints to the development, except those identified in Section 7.2, relating to seeking to avoid impacts on the SSSI and Fen habitats along the eastern boundary and the County Park allocation along the southern boundary of P2 respectively.

Site P3

7.3.49. Site P3 has the third shortest bus journey time to Cambridge city centre (17 minutes and 56 seconds), being located opposite P2. It is considered to have the same high intercept potential as P2 due to being located close to Newmarket Road and on High Ditch Road. The main difference between P1/P2 and P3 is that inbound vehicles from the A14 will have to turn right into the site which will have a slightly higher impact on the operation of Newmarket Road compared to options P1/P2 which are located on the 'inbound' side of Newmarket Road.

7.3.50. It is considered that the most appropriate point to access the site would be via a new junction located at the site of the existing High Ditch Road/ A1303 Newmarket Road junction. The reconfigured junction layout would need to make suitable provision for High Ditch Road, NCN 51 as well as the P&R site access. Direct access/egress from the A14 is not considered to be feasible due to the site frontages proximity to the Junction 35 west facing slips. The Design Manual for Roads and Bridges (DMRB) CD 122 Geometric design of graded separated junctions' paragraph 4.5 requires a minimum distance of 1km between junctions on all-purpose rural roads.

7.3.51. Access and egress from P3 is possible by bicycle, with the opportunity to link directly to NCN 51 along the northside of Newmarket Road at the proposed High Ditch Road junction. The benefit of P3 compared to P1/P2 is that cyclists will not need to cross Newmarket Road to access NCN 51 from the P&R site. The site is the third closest to the eastern end of the proposed cycle infrastructure improvements to Newmarket Road and will therefore have the third shortest cycle journey times to destinations in Cambridge city centre (25 minutes). No substantial additional cycle infrastructure improvements will be required to connect P3 to the CEA Newmarket Road proposals via the existing NCN 51 on the northside of Newmarket Road.

7.3.52. Access and egress from P3 is possible on foot via connections to the existing NCN 51 shared-use path along the northside of Newmarket Road. It is considered that no substantial additional pedestrian infrastructure is required to connect P3 to the existing surrounding walking networks. However, compared to P1 and P2, P3 is located further from Marleigh and the Cambridge Airport development site, and compared to P10 and P11, located further from Stow cum Quy and therefore is less accessible from existing and planned local communities.

7.3.53. The RAG appraisal shows that P3 has poor potential to be used by existing local residents, with only 346 existing households within a 10-minute cycling distance compared to P1 (965 households). Only the northern part of Teversham and sections of Newmarket Road west towards Marleigh and east including parts of Stow-cum-Quy village are within a 10-minute cycling distance (Appendix H). As per P2, there are a limited number of existing households (28) within a 10-minute walk of P3 (red). Compared to P2, Quy Mill Hotel is within a 10-minute walk of P3 along with existing properties along Newmarket Road between Junction 35 of the A14 and the Airport Way roundabout (Appendix H). However, compared to P1 which will be directly accessible from the Cambridge Airport development in the future there, is a lower potential to directly support local existing and planned developments.

7.3.54. P3 will require the construction of additional segregated bus priority measures when compared to P1 and P2 due to being located further east, resulting in an amber grading compared to green for P1. To achieve prioritised bus access to P3 would require the extension of the proposed bus lanes on Newmarket Road to the High Ditch Road roundabout. This will add cost and complexity to delivering P3 compared to P1 and P2 if bus priority measures are required between the site and the CEA Newmarket Road scheme.

7.3.55. P3 is wholly owned by a private individual and is not allocated for development (assuming it's not required for the Cambridge WWTW relocation), therefore it is considered that the site could be available to the GCP, but the commercial terms are unknown at this stage. The flat topography and regular plot shape means there will be limited constraints to the development, except those identified in Section 7.2, relating to potential heritage assets.

Site P10

7.3.56. Site P10 is forecast to result in the slowest AM peak hour inbound bus journey time to Cambridge city centre (23 minutes and 48 seconds) due to the increased travel distance and routing through Junction 35 of the A14. Without bus priority measures, AM Peak inbound bus journey times are predicted to be approximately 6 minutes longer compared to P3 and 8 minutes longer compared to P1, highlighting the relatively high levels of congestion at Junction 35 and inbound along Newmarket Road in the AM Peak Hour.

7.3.57. P10 will therefore require the construction of substantial additional segregated bus priority measures when compared to options P1, P2 and P3 due to being located 2.4km further to the east, resulting in a red grading. Bus priority measures on Newmarket Road and at Junction 35 of the A14 would be required to enable a consistent and attractive bus journey times to be achieved between P10 and central Cambridge. It is considered that there are no opportunities to provide bus lanes along the A1303 Newmarket Road prior to Junction 35 of the A14 without the purchase of third-party land.

7.3.58. The provision of bus priority measures on the approach to Junction 35 and on the circulatory carriageway will likely require signalisation of the junction and the reallocation of road space to buses. This would have a substantial impact on junction capacity resulting in additional off-slip congestion which National Highways would object to if queuing occurs back onto the mainline. The junction approaches and overbridges could be widened to provide additional segregated bus lanes, but the substantial cost would likely be prohibitive.

7.3.59. The benefit of P10, compared to P1, P2 and P3 is that vehicles arriving from the A14 and Newmarket Road north of the A14 will not have to travel through Junction 35 of the A14 and towards Cambridge along the congested section of Newmarket Road south of the junction in the morning peak period. This could result in some congestion relief in the AM peak period at Junction 35 of the A14 and Newmarket Road south of the A14 as vehicle trips are intercepted by the P&R site earlier. However, the key trade-off to reducing the number of inbound vehicles along Newmarket Road south of Junction 35 of the A14, is that without bus priority measures, bus journey times could be up to 8 minutes longer compared to P1 which could result in the P&R site being less attractive to potential users.

7.3.60. In addition, the benefits provided by locating the P&R north of the A14 in reducing vehicle movements through Junction 35 and along Newmarket Road could be eroded overtime if 'induced traffic' or 'reassigned traffic' is attracted to use this route as it becomes less congested compared to alternative radial routes into Cambridge.

7.3.61. P10 has a lower direct vehicle intercept potential compared to P1, P2 and P3 due to lower traffic flows on Newmarket Road passing the site. However, the site can also be easily accessed via the A14 Junction 35.

7.3.62. It is considered that the most appropriate point to access the site would be via a new junction located on the A1303 Newmarket Road. No direct access to and from the A14 can be provided due to the proximity of the southern site frontage to the east-facing slips at Junction 35 of the A14.

7.3.63. Access and egress from P10 is possible by bicycle, with the opportunity to link directly to NCN 51 along the northside of Newmarket Road. The site is the furthest from the proposed cycle infrastructure improvements to Newmarket Road and will therefore have the longest cycle journey times to destinations in Cambridge city centre (31 minutes). No substantial additional cycle infrastructure improvements will be required to connect P10 to the CEA Newmarket Road to the existing NCN 51 on the northside of Newmarket Road.

7.3.64. To travel towards Cambridge, cyclists will need to either route along the Quy Mill hotel access road, under the existing A14 underpass before continuing along Newmarket Road or cycle through Junction 35 of the A14 which provides no segregated cycle infrastructure. Compared to P1, P2 and P3, cycle access towards Cambridge is therefore less direct and will take longer, resulting in being less attractive to 'Park and Pedal' users.

7.3.65. Access and egress from P10 is possible on foot via connections to the existing NCN 51 shared-use path along the northside of Newmarket Road. It is considered that no substantial additional pedestrian infrastructure is required to connect P10 to the existing surrounding walking networks. P10 is located close to Stow cum Quy village, but there is a lack of direct pedestrian routes between the site and the main village.

7.3.66. The RAG appraisal shows that P10 provides the potential to be used by existing local residents living in Stow-cum-Quy with 434 existing households predominately within the village located within a 10-minute cycling distance (Appendix H). This is higher number of existing households within a 10-minute cycle of sites P2 and P3, but lower than P1. As per P1, P2 and P3, there are a limited number of existing households (68) within a 10-minute walk of P10 (amber). A 10-minute walking catchment to P10 includes the southern part of Stow-cum-Quy village only due to the lack of direct footways and footpaths (Appendix H).

7.3.67. P10 is wholly owned by Cambridgeshire County Council and is not allocated for development, therefore it is assumed that is could be available to the GCP. The relatively flat topography and regular plot shape means there will be limited constraints to the development, except those identified in Section 7.2, relating to potential heritage assets.

Site P11

7.3.68. Site P11 has the second slowest bus journey time to Cambridge city centre (22 minutes and 51 seconds), being located on the north side of the A14. As per site P10, without bus priority measures, P&R buses would have to travel through the congested A14 Junction 35 and along a longer section of the A1303, including through the congested two-lane westbound merge in the AM peak period. Compared to P1, the AM inbound bus journey time is predicted to be approximately 7 minutes longer.

7.3.69. P11 could result in the same benefits to Junction 35 of the A14 as P10, intercepting vehicle trips destined for Cambridge prior to travelling through Junction 35 and along Newmarket Road towards Cambridge. As per P10, this could improve the operation of the junction, particularly in the weekday AM peak period when traffic queues on the approach arms for movements towards Cambridge.

7.3.70. However, as identified for P10, P11 would also require the construction of substantial additional segregated bus priority measures when compared to P1, P2 and P3. As per P10, bus priority measures would be required on Newmarket Road between P11 and the Airport Way roundabout to provide attractive bus journey times during peak travel periods. Reallocating road space or constructing additional segregated bus lanes along Newmarket Road and through Junction 35 of the A14 will be a very expensive solution when compared to locating the P&R closer to Cambridge.

7.3.71. Therefore, one of the key trade-offs between sites P10/P11 and P1/P2/P3 is whether to minimise car access times or bus journey times, with sites closer to Cambridge having shorter bus and cycle journey times, but longer vehicle access times, and vice versa for sites P10 and P11.

7.3.72. P11 will have the lowest direct intercept rate compared to P1, P2, P3 and P10 due to lower traffic flows on Church Road directly passing the site. However, the site can also be easily accessed via the A14 Junction 35. However, changes would be required to the Church Road/Newmarket Road junction to enable cars to turn right from Newmarket Road into Church Road to access the site. This will impact the operational efficiency of the signalised junction which is located only 120m north of Junction 35 of the A14. If a right turn facility was not provided, vehicle would either have to u-turn at Junction 35 or more likely would route through Stow-cum-Quy village, leading to increased local traffic movements.

7.3.73. It is considered that the most appropriate point to access the site would be via a new junction incorporating Newmarket Road, Church Road and the access road to the Quy Mill Hotel which may require third party land acquisition. The hotel access road is public highway up to the point where the subway under the A14 is located due to NCN 51 using this access road. The junction could incorporate the right turn movement from Newmarket Road to Church Road which is currently prohibited.

7.3.74. Direct access into site P11 from the A14 is not considered a feasible option as the southern frontage is located adjacent to the eastbound off-slip.

7.3.75. Access and egress from P10 is possible by bicycle, with the opportunity to link directly to NCN 51 along the Quy Mill Hotel access road. The site is the second furthest from the proposed cycle infrastructure improvements to Newmarket Road and will therefore have the second longest cycle journey times to destinations in Cambridge city centre (30 minutes).

7.3.76. No substantial additional cycle infrastructure improvements will be required to connect P11 to NCN 51. To travel towards Cambridge, cyclists will need to route through the existing A14 underpass before continuing along Newmarket Road. Compared to P1, P2 and P3, cycle access towards Cambridge will take longer, but is more direct compared to P10. P11 will therefore be less attractive to 'Park and Pedal' users compared to P1, P2 or P3.

7.3.77. Access and egress from P11 is possible on foot via connections to the existing NCN 51 shared-use path along the Quy Mill Access road and existing footways along Church Road, linking the site with Stow cum Quy. It is considered that no substantial additional pedestrian infrastructure is required to connect P11 to the existing surrounding walking networks. P11 is better located to provide good local walking and cycling access from Stow cum Quy village when compared to P10.

7.3.78. The RAG appraisal shows that P11 provides the potential to be used by existing local residents living in Stow-cum-Quy with 452 existing households predominately within the village located within a 10-minute cycling distance (Appendix H). This is higher number of existing households within a 10-minute cycle of sites P2 , P3 and P10, but lower than P1. Compared to P1, P2, P3 and P10, P11 provides to greatest potential to be accessed on foot by existing local residents with 208 households and Quy Mill Hotel within a 10-minute walk (Appendix H).

7.3.79. P11 is wholly owned by a private owner (amber) and is not allocated for development, therefore it is assumed that is could be available to the GCP, but the commercial terms are unknown at this stage. The relatively flat topography and regular plot shape means there will be limited constraints to the development, except those identified in Section 7.2, relating to potential amenity impacts.

P&R CONSTRUCTABILITY APPRAISAL RESULTS

7.3.80. Table 7-5 provides a summary of the high-level P&R constructability assessment of each of the five short-listed sites, focused on drainage and utility connections.

Table 7-5 – MCAF P&R Constructability Assessment Results Summary

Criteria	P1	P2	P3	P10	P11
Constructability					

7.3.81. Table 7-5 shows that P1 to P3 have been assessed as amber, P10 as red and P11 as green.

7.3.82. There are no substantial concerns with the constructability of a P&R on site P1. The underlying soils, comprise sand and gravel according to the British Geological Survey website. This type of soil may support infiltration as a form of surface water drainage. If infiltration is not viable, the nearest watercourse is approximately 200m to the south of the site. Access to this watercourse will be over third-party land and flows will be restricted to pre-development greenfield run-off rates, approx. 1.68 l/sec for a 1-year return period rainfall event. This will result in large amounts of attenuation storage, either at ground level in the form of basins, swales or underground in the form of buried storage tanks within the site. Foul water drainage may be achieved by a package treatment tank which discharges into the watercourse.

7.3.83. Existing utilities include a 11 kilovolt overhead cable running across the southwest corner of the site outside of the preferred P&R location in the northwest corner of P1. Main's water runs along the northside of Newmarket Road and telecoms cables route along the south side of Newmarket Road and the east side of Airport Way. Utilities connections to the site should therefore be possible.

7.3.84. The preferred strategy would be the use infiltration for the surface water drainage, however if that is not possible, access to the southern watercourse may be required which will provide some challenges due to the lathe amount of attenuation storage required.

7.3.85. There are no substantial concerns with the constructability of a P&R on site P2. The underlying soils, comprise chalk according to the British Geological Survey website. This type of soil may support infiltration as a form of surface water drainage. If infiltration is not viable, the nearest watercourse is approximately 100m to the south of the site. Access to this watercourse will be over third-party land and flows will be restricted to pre-development greenfield run-off rates, approx. 1.68 l/sec for a 1-year return period rainfall event. This will result in large amounts of attenuation storage, either at ground level in the form of basins, swales or underground in the form of buried storage tanks. Foul water drainage may be achieved by a package treatment tank which discharges into the watercourse.

7.3.86. Existing utility records do not show any electricity cables running along Newmarket Road, however there are residential dwellings and small businesses present. As per site P1, there is main's water running along the northside of Newmarket Road and telecoms cables route along the south side of Newmarket Road.

7.3.87. As per P1, there are options available to deal with surface water drainage and to connect to exiting utilities along Newmarket Road.

7.3.88. There are no substantial concerns with the constructability of a P&R on site P3. The underlying soils, comprise sand and gravels according to the British Geological Survey website. This type of soil may support infiltration as a form of surface water drainage. If infiltration is not viable, the nearest watercourse is Quy Water approximately 200m to the east of the site. Access to this watercourse will be over third-party land and flows will be restricted to pre-development greenfield run-off rates, approx. 1.68 l/sec for a 1-year return period rainfall event. This will result in large amounts of attenuation storage, either at ground level in the form of basins, swales or underground in the form of buried storage tanks. Foul water drainage may be achieved by a package treatment tank which discharges into the watercourse.

7.3.89. As per P2, existing utility records do not show any electricity cables running along Newmarket Road, however there are residential dwellings and small businesses present. As per P2, there is main's water running along the northside of Newmarket Road and telecoms cables route along the south side of Newmarket Road. There is also cable networks crossing the existing priority junction with High Ditch Road on the north side of Newmarket Road. One of the existing cables is fibre optic which will be expensive to divert or lower.

7.3.90. There are more substantial concerns with the constructability of a P&R on site P10 compared to the other four sites. The underlying soils, comprise sand and gravels according to the British Geological Survey website. This type of soil may support infiltration as a form of surface water drainage. However, if infiltration is not viable, there is not a nearby watercourse available to accept the surface water run-off via gravity so surface water will need to be pumped. This is the least favoured solution to managing surface water run-off. Existing utility records are unknown for P10, however there are local residential properties in close proximity to the site.

7.3.91. There are no substantial concerns with the constructability of a P&R on site P11. The underlying soils, comprise sand and gravels according to the British Geological Survey website. This type of soil may support infiltration as a form of surface water drainage. If infiltration is not viable, the Quy Water River borders the western boundary which surface water run-off from the site can outfall in to. Flows will be restricted to pre-development greenfield run-off rates, approx. 1.68 l/sec for a 1-year return period rainfall event. This will result in large amounts of attenuation storage, either at ground level in the form of basins, swales or underground in the form of buried storage tanks. Existing utility records are unknown for P10, however there are nearby residential properties along Church Road.

GREEN BELT OPTION ASSESSMENT RESULTS

7.3.92. The results of the Green Belt Option Assessment are detailed in a separate WSP report and summarised below. The five short-listed P&R Site options assessed have been considered in the context of the tests as set out in the NPPF 2021 and the South Cambridgeshire Local Plan 2018 (SCLPPS/4). The assessment has considered the likely harm to the Green Belt for each site relative to the scale and nature of a P&R at these locations, assuming a 5.5 ha scheme which would be appropriately mitigated with boundary and internal landscape planting.

7.3.93. Table 7-6 summarises the predicted level of harm to the purposes of to the Green Belt as a consequence of development of the P&R at each site.

Table 7-6 – Green Belt Option Appraisal Results Summary

Criteria	P1	P2	P3	P10	P11
Predicted Level of Green Belt Harm	Moderate/High	Moderate	High	Moderate/High	Moderate

7.3.94. Table 7-6 shows that a P&R within sites P1 and P10 have been assessed as having a moderate/high level of harm to the purposes of the Green Belt. A P&R within site P3 is assessed as high, with P2 and P11 assessed as moderate. The rationale for these appraisal results are summarised below:

- **Site P1:** Being the closest to the edge of Cambridge, P1 is considered to make a significant contribution to preserving Cambridge's compact character, a moderate contribution to maintaining and enhancing the quality of Cambridge's setting, and a significant contribution to preventing communities in the environs of Cambridge from merging with the city. The scale of the P&R within this Site is relatively low, taking up approximately one third of the site within P1 subset. There is also significant existing vegetation, which is assumed would be retained and provide a visual buffer to the surrounding areas. The Site contribution to the Green Belt purposes along with the scale and nature of the P&R within the site, result in the likely harm to the purposes of the Green Belt as **Moderate high.**
- **Site P2**: makes no contribution to preserving Cambridge's compact character, a moderate contribution to maintaining and enhancing the quality of Cambridge's setting, and a relatively limited contribution to preventing communities in the environs of Cambridge from merging with the city. The scale of the P&R in the Site is low, only taking up one fifth of the total site area and can be located away from the SSSI. The belt of Priority Habitat Deciduous Woodland to the north of the Site is assumed to be retained along with existing boundary vegetation. The Site contribution to the Green Belt purposes along with the scale and nature of the P&R within the site result in the likely harm to the purposes of the Green Belt as **Moderate**.
- **Site P3:** is considered to make a significant contribution to preserving Cambridge's compact character, a relatively significant contribution to maintaining and enhancing the quality of Cambridge's setting, and a significant contribution to preventing communities in the environs of Cambridge from merging with the city. The scale of the P&R is moderate to high as it will make up over half of the Site to the east. There is some existing boundary vegetation with a strip of tall trees to the east assumed to be retained. The Site contribution to the Green Belt purposes along with the scale and nature of the P&R within the site result in the likely harm to the purposes of the Green Belt as **High**.
- **Site P10**: the landform falls to the south and the Site has some existing boundary vegetation. The Site makes no contribution to preserving Cambridge's compact character. It does, however, make a relatively significant contribution to maintaining and enhancing the quality of Cambridge's setting, and to preventing communities in the environs of Cambridge from merging with the city. The P&R will be located to the west of the site and make up approximately one third of the Site total area. The Site contribution to the Green Belt purposes along with the scale and nature of the P&R within the site result in the likely harm to the purposes of the Green Belt as **Moderate high**.
- **Site P11:** is the largest Site covering 37 ha west of Stow-cum-Quy and north of the A14. The existing vegetation on Site includes boundary hedgerows and areas of Priority Habitat Deciduous Woodland to the north. The Park and Ride will make up 5.5 ha and be located in the southeast of the Site. It makes no contribution to preserving Cambridge's compact character. It does, however, make a moderate contribution to maintaining and enhancing the quality of Cambridge's setting, and a relatively significant contribution to preventing communities in the environs of Cambridge from merging with the city. The scale of the P&R is very low with approximately 32 ha of the Site retained as open land. The Site contribution to the Green Belt purposes along with the scale and nature of the P&R within the Site result in the likely harm to the purposes of the Green Belt as **Moderate**.

7.4 FINAL COMPARATIVE ANALYSIS

7.4.1. Table 7-7 combines the environmental, operational, constructability and Green Belt Option Assessment results for the short-listed sites into a single comparative Table.

Table 7-7 – MCAF Comparative Results Summary

Criteria	P1	P2	P3	P10	P11
Air Quality	Minor Positive	Minor Positive	Minor Positive	Minor Negative	Minor Negative
Noise	Minor Negative	Minor Negative	Neutral	Minor Negative	Minor Negative
Landscape/Townscape	Neutral	Neutral	Neutral	Minor Negative	Minor Negative
Carbon Emissions	Minor Negative	Minor Negative	Minor Negative	Minor Negative	Minor Negative
Historic Environment	Minor Negative	Major Negative	Major Negative	Minor Negative	Major Negative
Biodiversity	Minor Negative	Major Negative	Minor Negative	Minor Negative	Minor Negative
Water Environment	Neutral	Minor Negative	Minor Negative	Neutral	Minor Negative
Pass-by Intercept Potential					
Site Access/Egress by Car					
Households within a 10 min Cycle					
Cycle Journey time to Cambridge city centre					
Site Access/Egress by Bicycle					
Households within a 10 min walk					
Site Access/Egress by Pedestrians					
AM Peak Bus Journey Time to Drummer Street Bus Station					
Opportunity for Segregated Bus Priority Access/Egress					
Plot Shape/Topography					
Land Ownership					
Constructability					
Predicted Level of Green Belt Harm	Moderate/High	Moderate	High	Moderate/High	Moderate

7.4.2. Table 7-7 shows that P1 (land adjacent to Airport Way) performs the best when considering the appraisal ratings in insolation, with no major negative environmental impacts, one red operational impact, amber constructability and availability concerns and a moderate high predicted level of harm to the Green Belt purposes.

7.4.3. Site P2, P3 and P10 all have four red ratings based on impacts to the historic environment, biodiversity, proximity to existing communities within walking and cycling distance, level of harm to the Green Belt (P3 High) or cycle and bus journey times to Cambridge (P10) and opportunities to provide segregated bus infrastructure (P10). P11 includes five red ratings related to potential impacts on the Historic environment, direct pass-by potential, cycle and bus journey times to Cambridge city centre and the challenges with providing segregated bus infrastructure.

7.4.4. As stated in section 7.2, the MCAF is a decision support tool that provides a proportionate assessment of the short-listed sites in a clear and consistent format to assist the GCP in deciding which short-listed site should be taken forward as the preferred P&R site. It is recognised that the number of 'red' ratings does not take into consideration the combined relative merits of each site. Therefore, the remainder of this section considers each short-listed sites relative merits by applying the combined professional judgement of the multi-discipline (environment, planning, landscape and transport planning) appraisal team.

7.4.5. Taking all the appraisal results into consideration, it is considered on balance that **Site P1 is the preferred site to accommodate the P&R facility**. From an environmental perspective P1 ranks more highly as a preferred option compared to the other four short listed sites. Option P1 is located closest to the village of Teversham. The site is likely to have a minor positive impact on air quality, a neutral impact on townscape, a minor negative impact on carbon, and a minor negative impact on noise for the village. Although Option P1 is located within 250m of the Quy Water, it is unlikely to have any notable impacts on the watercourse. Likewise, although there is a possibility of identifying archaeological features, there are yet no confirmed findings at the site.

7.4.6. Options P10 and P11 are close to Stow cum Quy, which is a sensitive receptor to noise, visual and air quality impacts, as well as the settings of listed buildings. There are some minor differences in the impact of both options, but overall, these scored similarly.

7.4.7. Both Options P2 and P3 are likely to have major impacts on archaeology and ecology. These sites are also close to Quy Water presenting risks of pollution, though equally, potential benefits from reduced phosphate loading from displaced farmland. There are also potential indirect negatives from these sites, such as increased use of local open spaces by people, with additional risks of disturbance to locally important wildlife and habitats.

7.4.8. From an operational perspective, P1 ranks as the best performing option, followed by P2, P3 and then P10 and P11. This is because P1 is the closest to Cambridge and therefore provides the quickest bus and cycle journey times to destinations in the city. It is also located on the 'inbound' direction of travel, can directly support the future communities at Marleigh and the Airport development as well as provides the opportunity to directly route additional bus services through the Airport development site or along Airport Way.

7.4.9. P1 provides flexibility in access options by all modes with frontages onto both Newmarket Road and Airport Way. This results in a high intercept potential as well as flexible access options into the site and the adjacent Airport Way mixed-use development site. The site is owned by Marshalls who are understood to be supportive in principle to relocating the P&R from its existing site to a site east of Airport Way.

7.4.10. P2 provides similar operational benefits to P1, but with the main difference being fewer people living with an easy walk and cycle distance of the site, slight increases to onward travel times on foot and by bicycle and no direct access into the Airport development site.

7.4.11. Moving away from Cambridge, sites P3, P10 and P11 all result in increasing bus and cycle journey times to Cambridge and increased need for extensive bus priority measures to maintain attractive bus journey times and are therefore considered less preferrable to P1.

7.4.12. It is recognised that P10 and P11 could provide benefits to people accessing the P&R facility by car due to being intercepted earlier and avoiding the need to travel through Junction 35 of the A14 and along Newmarket Road towards Cambridge. However, the car journey time benefits will be off-set by increased bus and cycle journey times. This will particularly be the case if substantial bus priority infrastructure is not provided from P10 or P11 to Cambridge, which will add significant additional costs to these two site options.

7.4.13. From a Green Belt impact perspective, P3 is considered to have the highest impact on the function of the Green Belt with P1 and P10 scored as moderate high, with P2 and P11 scored as moderate.

7.4.14. Taking all these matters into consideration it is considered that site P1 is the preferred site to accommodate the P&R facility as it performs the best from an operational and environmental perspective, with no significant constructability concerns. P2 is ranked second as it performs well operationally, is predicted to have a lower Green Belt impact, but increased concerns are raised around the potential for environmental impacts.

7.4.15. P3 is ranked third, performs well operationally, but is predicted to have the highest Green Belt impact and the potential for major negative heritage impacts. P10 and P11 are ranked last due to the increased bus and cycle journey times to Cambridge, the potential for environmental impacts on the existing residents in Stow cum Quy and the need for substantial bus priority measures towards Cambridge.

Outcome 6 Recommended preferred site: Taking the environmental, operational, constructability, planning policy and Green Belt appraisal results in this final comparative analysis into consideration, WSP recommends that, on balance P1 is the preferred site to accommodate the relocated and expanded Newmarket Road Park and Ride facility.

8 CONCLUSION AND RECOMMENDATIONS

8.1.1. This chapter presents the final conclusions on the Newmarket Road P&R site identification, selection and appraisal.

8.2 REPORT OUTCOMES

8.2.1. This report has demonstrated the following Newmarket Road P&R site outcomes:

- **Outcome 1 – Requirement for a Green Belt Location:** A reasoned approach has been applied to identify a 'P&R Area of Search' within which the site should be located. This was informed by a series of Newmarket Road P&R scheme objectives and operational requirements which demonstrated the P&R requires a Green Belt location. This is primarily due to the need for attractive onward travel times to Cambridge by bus and bicycle (less than 25 minutes).
- **Outcome 2 – Requirement for a location along the A1303 Newmarket Road Corridor:** The rationale for the extent of the 'P&R Area of Search' demonstrates the need to locate the P&R within the A1303 Newmarket Road corridor, between Airport Way and Junction 35 of the A14. The rationale is the need for the P&R to be located on a main radial route, easily accessible from the strategic road network (Junction 35 of the A14) and complement the existing and retained P&R's to the north, south and west of Cambridge.
- **Outcome 3 – Identification of a Long-List of Potential P&R site locations:** Within the clearly defined 'P&R Area of Search', this report has demonstrated that an extensive long-list of twelve broad P&R sites close to the Newmarket Road corridor have been identified that take into consideration existing environmental and development constraints. This includes sites identified by TetraTech at the SOBC stage and by stakeholders in the consultation on the P&R Concept Designs within the combined site P1/P2.
- **Outcome 4 – Identification of a Short-List of Potential P&R site locations:** The initial sift of the twelve long-listed sites resulted in the identification of five short-listed locations that were appraised in more detail using a bespoke MCAF. The initial sift discounted sites that were too small to accommodate a 2,000 space P&R, allocated for development in adopted Local Plans or extensively protected by existing planning polices or close to significant environmental designations. The initial sift ruled out sites within the allocated Airport development area, the Airport Safety Zone, less than 5.0 hectares in size, close to the Wilbraham Fens SSSI and extensively covered by Local Green Space designations.
- **Outcome 5 – Requirement to relocate the P&R rather than redevelop the existing site:** The existing P&R site (P7) was included in the long-list of sites. However, redeveloping the existing site has been discounted due to the site being too small (less than 5.0 hectares), allocated for development (Policy SS/3 South Cambridgeshire Local Plan) post 2031 and is leased from Marshalls resulting in a risk to the long-term availability of the site. As a result of these conclusions, alternative site locations have been appraised.
- **Outcome 6 – Recommended preferred site(s):** The MCAF appraisal combined with the projects team's professional judgement on the potential environmental, operational, constructability and planning policy impacts of each short-listed site results in, on balance, Site P1 as the preferred site to accommodate the P&R facility. P2 is ranked second, followed by P3 and then P10 and P11 as least preferred.

8.3 CONCLUSION

8.3.1. In drawing the final conclusions on the P&R site identification and appraisal, this report has demonstrated that a proportionate site identification and appraisal approach that has been undertaken to identify a preferred site for a 2,000 space P&R facility within the A1303 Newmarket Road corridor.

8.3.2. The assessment has demonstrated an evidence-led approach to identifying a 'P&R Area of Search' within which the P&R should be located. An extensive long listing of potential sites within the 'P&R Area of Search', taking into consideration existing environmental constraints and stakeholder recommendations has been undertaken. The assessment set out in Chapter 6 has demonstrated that sites which are too small or conflict substantially with existing planning policies have been discounted. Chapter 7 has demonstrated that the combined use of the bespoke MCAF and the project team's final comparative analysis results on balance with P1 as the preferred site, followed by P2, P3 and then P10/P11.

8.3.3. Based on the appraisal undertaken and having taken all matters in this final comparative analysis into consideration, WSP therefore concludes that on balance site **P1 is the preferred site to accommodate a 2,000 space P&R facility**.

8.4 RECOMMENDATIONS

CONCEPT DESIGN RECOMMENDATIONS

8.4.1. The environmental and planning policy appraisal identified that the 2,000 space P&R should be located within the northern land parcel of site P1 to minimise the impact on the existing mature hedgerows and allocated Country Park (Policy CE/21/1 Cambridge East AAP) across the south of P1.

8.4.2. It is therefore recommended that Concept Design Options are developed for a P&R facility within the northern land parcel that retains the existing hedgerows as far as possible and avoids the allocated Country Park area to the south. To inform the Concept Designs, the GCP will need to consider and confirm the P&R facility requirements including number of spaces, building facility requirements, number of bus stops and bus services that need to be accommodated within the site.

8.4.3. The Concept Design options should seek to identify:

- The opportunities for segregated bus access and egress to Newmarket Road, Airport Way and the future Airport development site;
- The opportunities for prioritised vehicle access to the P&R from the A14;
- Access on foot and by bicycle; and
- The maximum number of parking spaces that can be accommodated within the northern parcel.

8.4.4. If a P&R facility within P1 is taken forward by the GCP as the preferred location then, following the completion of the concept design, engagement with the planning authority and Marshalls (landowner) will need to be progressed to identify the planning submission requirements and whether the site is available on acceptable commercial terms respectively. A planning application for the P&R facility is likely to include an Environmental Statement (noting potential requirement for EIA), Transport Assessment (including traffic modelling), preliminary scheme design, various

surveys (ecology, noise, archaeology, air quality, topographical, drainage and trees) and associated environmental assessments.

ENVIRONMENTAL RECOMMENDATIONS

8.4.5. Considering the information provided by the archaeological advisor for Cambridge County Council on the initial proposal for Options P1 and P2, the WSP Cultural Heritage & Archaeology team recommended the preparation of a Heritage Constraints Appraisal.

8.4.6. It is recommended that any potential impact on listed structures (direct or indirect) and/or mitigation required is considered at an early stage and embedded into future designs.

8.4.7. Recommended further surveys from the Protected Species Scoping Report:

- Badger - Badger Survey,
- Bats - Preliminary Roost Assessment (PRA),
- Otter – Otter Survey,
- Wate Vole - Water Vole Survey,
- Great Crested Newt - Habitat Suitability Index, Presence/absence surveys eDNA
- Reptiles – Presence/Absence Surveys
- Breeding and wintering birds – Breeding Bird Survey, Barn Owl Survey, Kingfishers Survey

8.4.8. As of 2023, minimum of 10% biodiversity net gain will be required on all planning proposals, with the GCP setting a target of 20%. Several environmental impact mitigation measures have been recommended from the preliminary ecological appraisal that was undertaken for the combined P1 and P2 site. These mitigation measures would be applicable to all the short-listed sites:

- Avoid areas that fall within the impact risk zone of Wilbraham Fens SSSI and Teversham Fen. A suitable buffer zone should be established between any works and these areas/habitats which should be decided upon with consultation with Natural England.
- A construction Environmental Management Plan should be produced to ensure that any impact from works on the environment is minimalised within the context of compliance with local legislation.
- Loss of priority habitat should be minimised.
- Replacement habitats should be created onsite as part of the landscaping plan. Any habitat loss should be replaced with the same broad habitat type of habitats with higher distinctiveness.
- Creation of refugia on and around the site such as log piles for reptiles and mammals and the implementation of bat and bird boxes.

8.4.9. In addition to the above, as part of an effort to secure biodiversity net gain and to ensure impact on the surrounding environment is avoided, we have recommended some other measures.

8.4.10. It is recognised that under WFD, that the Quy Water does not meet ‘good ecological status’ and is classified as not supporting a good ‘hydrological regime’. Sections of the watercourse running close and adjacent to Options P1, P2, P3 and P11 are observed as being poor physical and ecological condition. Issues include:

- over-dredging / over-widening,
- poor hydro-morphology (i.e., overly straightened channel sections),

- overly steep bank profiles / gradients,
- lack of natural marginal vegetation,
- lack of natural in-channel vegetation,
- overshaded in areas by trees,
- reduced flow in section due to minor obstructions; and,
- lack of buffer strips between the watercourse and field margins.

8.4.11. Efforts to restore these features may help to improve the waterbody classification and in-term bring about wider positive changes for the water environment, including benefits for features such as the SSSI, and upstream reedbed habitat at Teversham Fen.

8.4.12. It is recognised under WFD, that the Quy Water is classified as 'poor' for the environmental quality element 'phosphate'. There are likely to be benefits in working with local landowners, to improved land management techniques within the project area and further afield. The aim being to reduce the impact of agriculture on the local environment. This could be achieved through measures such as:

- increasing buffers strips between field margins and watercourses,
- reducing agricultural run-off through better soil management,
- better application and control of pesticides and fertilizers; and,
- better control of grazing.

8.4.13. These measures could also be incorporated alongside actions to protect and improve biodiversity, such as:

- tree planning,
- wildflower seeding,
- habitat enhancement and creation; and,
- better management of the agri-environment.

8.4.14. It is recommended that engagement takes place between the developers, landowner, regulators, catchment partners and all local authorities, regarding opportunities to secure a minimum of 10% BNG.

8.4.15. High importance will be put on limiting harm to the Green Belt with the future design process considering design solutions for the final site that seek to comply with SCLP Policy NH/8 which states:

- *Any development proposals within the Green Belt must be located and designed so that they do not have an adverse effect on the rural character and openness of the Green Belt.*
- *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.*
- *Development on the edges of settlements which are surrounded by the Green Belt must include careful landscaping and design measures of a high quality.*

Appendix A

SOUTH CAMBRIDGESHIRE LOCAL PLAN POLICY MAPS

KEY

South Cambridgeshire District Boundary

Inset Map Boundary
(applicable to district wide maps 1-4)

Neighbourhood Area Boundary
for Neighbourhood Plan

Area Covered by Another Map

Area Outside SCDC Boundary

Area Action Plan Boundary
(applicable to insets A, C, D, E, F)

Proposed Area Action Plan Boundary
(applicable to inset B (east)

Strategic Site Boundary
(applicable to insets H and I)

Adopted Local Plan and Area Action Plan Policies

Ancient Woodlands (Policy NH/7)

Conservation Area (Policy NH/14)

Country Park
(Policies CE/21(1) & CSF/5(1a))

County Wildlife Site (Policy NH/5)

Development Frameworks (Policy S/7)

Employment Allocation
(Policies E/2, E/3, E/4 & E/5)

Established Employment Area
(Policy E/15 (2a - m))

Green Belt (Policy S/4)

Historic Parks & Gardens (Policy NH/14)

Housing Allocation (Policy H/1 (a-h))

Important Countryside Frontage (Policy NH/13)

Improved Landscaping
(Policies CSF/5 (1b-e) & CSF/5 (2f-m))

Landscape Buffer (Policy NS/13(1))

Local Nature Reserve (Policy NH/5)

Local Green Space (Policy NH/12)

Lordsbridge Restricted Area (Policy TI/7)

Lordsbridge Consultation Area 1 (Policy TI/7)

Lordsbridge Consultation Area 2 (Policy TI/7)

Major Development Site (Policies CSF/3,
NS/3, NW/4, SS/1, SS/2, SS/3 (1a),
SS/3 (1b), SS/4, SS/5, SS/6, SS/7, SS/8)

Safeguarded Land (Policy SS/3 (4))

Protected Village Amenity Area (Policy NH/11)

Scheduled Ancient Monument (Policy NH/14)

Site of Special Scientific Interest (Policy NH/5)

Special Policy Area (Policies E/1, E/6,
E/7, E/8, H/2, H/3, H/4, H/5, H/6, H/7
NS/11, SC/1 (1a-c, 2d-e), TI/1, TI/6)

Note on Adopted Local Plan and Area Action Plan Policies

Local Plan contains policies prefixed "S/", "SS/", "NH/", "H/", "E/", "SC/", "TI/".
Northstowe AAP contains policies prefixed "NS/".
Cambridge East AAP contains policies prefixed "CE/".
Cambridge Southern Fringe AAP contains policies prefixed "CSF/".
North West Cambridge AAP contains policies prefixed "NW/".

Great Abington Former LSA Estate Neighbourhood Plan Policies

Build Line Boundary
(Policies GAL/1, GAL/2)

House
(Policies GAL/1, GAL/2)

Site of Piggery
(Policies GAL/1, GAL/2)

The Adopted Policies Map should be read in conjunction with the Great Abington Former LSA Estate Neighbourhood Plan.

Cambridgeshire and Peterborough Minerals and Waste Development Plan Site Specific Proposals Development Plan Document (Adopted February 2012) (Cambridgeshire County Council)

Allocations and Consultation Areas


Area of Search


Mineral Consultation Area


Site Allocation


Transport Safeguarding Area


Waste Consultation Area


Waste Water Treatment Works Safeguarding Area

Existing Sites


Mineral


Mineral and Waste


Transport Zones


Waste


Waste Water Treatment Works

Mineral Safeguarding Areas


Chalk


Sand and Gravel

Notes

Ancient Woodlands were obtained from Natural England Open Data, data published 14/05/2018
© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2018

Local Nature Reserves were obtained from Natural England Open Data, data published 09/05/2018
© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2018
NB This national dataset is "indicative" not "definitive". Definitive information can only be provided by individual local authorities and you should refer directly to their information for all purposes that require the most up to date and complete dataset.

Sites of Special Scientific Interest were obtained from Natural England Open Data, data published 18/05/2018
© Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2018

The most publicly available up to date Natural England GIS Data can be obtained from the Natural England Open Data Geoportal http://naturalengland-defra.opendata.arcgis.com

Historic Parks & Gardens and Scheduled Monuments were obtained from Historic England.
© Historic England 2018. Contains Ordnance Survey data © Crown copyright and database right 2018

The Historic England GIS Data contained in this material was obtained on 18/05/2018.
The most publicly available up to date English Heritage GIS Data can be obtained from HistoricEngland.org.uk.

County Wildlife Sites were obtained from Cambridgeshire and Peterborough Environmental Records Office (CPERC). As the material shown on this layer does not go through a external consultation process the data is as was at Draft Submission July 2013. The most up to date County Wildlife Site Data can be obtained by contacting CPERC at https://www.cperc.org.uk

All maps within the South Cambridgeshire Local Plan document are subject to Ordnance Survey licencing,
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Flood Zones are not shown on the Policies Map as they are regularly updated.
For further information and maps showing the latest flood zones, please visit the GOV.UK website: https://flood-map-for-planning.service.gov.uk/

N

SS/3 (1a)

CE/32

SS/3 (4)

CE/21 (1)

SS/3 (4)

SS/3 (1b)

The area of Cambridge East within Cambridge City is included on the Cambridge Local Plan Policies Map

South Cambridgeshire Adopted Policies Map: September 2018

Inset C Cambridge East
Map 1 of 1
Scale 1:12500

South Cambridgeshire Adopted Policies Map: February 2019

District Wide (North East)
Map 2 of 4
Scale 1:75000

N

EAST CAMBRIDGESHIRE DISTRICT

SOUTH CAMBRIDGESHIRE DISTRICT

Willingham
Over
Rampton
Cottenham
Longstanton
Oakington
Histon
Impington
Milton
Girton
Dry Drayton
Hardwick
Coton
Barton
Comberton
Bar Hill
Fulbourn
Waterbeach
Landbeach
Denny End
Wilburton
Haslingfield
Harston
Newmarket
North Fen
Smithey Fen
The Holme
The Irams
Brook Field
Soldiers' Hill
Honey Hill
Lower Hinge
Queens Fm
Lark Hall Heath Fm
Mill Hill
Hospital
Business Park
Point-to-Point Racecourse
Cambridge Research Park
Airfield (disused)
Dairy Farm
Golf Course
Quy Mill
Wilking Mill Corner
Oxenholme Bloodstock Stables
Glebe Fm
Tibbits Fm
Norris Fm
Lingwood Fm
Setchel Fen
Fenleigh Fm
Lodge Fm
Two Tilt Fm
Iboroughs Fm
Beach Grove
Gravel Pit
Undertakers
Varsity Fm
Joist Fm
Bank Fm
Harlock Fm
New Fm
New Fm Cott
Wr Twr
Old Harbour Fm
Cambridge Guided Busway
Trinity College Fm
Highfield Fm
Brookfield Fm
Dalrington Barracks (disused)
Cuckoo Hill Fm
Warwick Field
Further Field
Hazlewell Ct
Slate Hall Fm
Bar Fm
Hill Fm
Meadow Sewage Works
Boxworth End
Scotland Fm
Whitwell Fm
Manor Fm
Abbey Fm
Hospital
Hotel
Mill Fm
Manor Country Park
Hornsea
Honey Hill
Black Hole
Tower
Hall Fm
Green Wratham
Green End
Barton
Grantchester
Lane End
Lime Fm
Bypass
A1303
A
B
C
F
G
H
72
5
27
84
111
98
99
103
21
8
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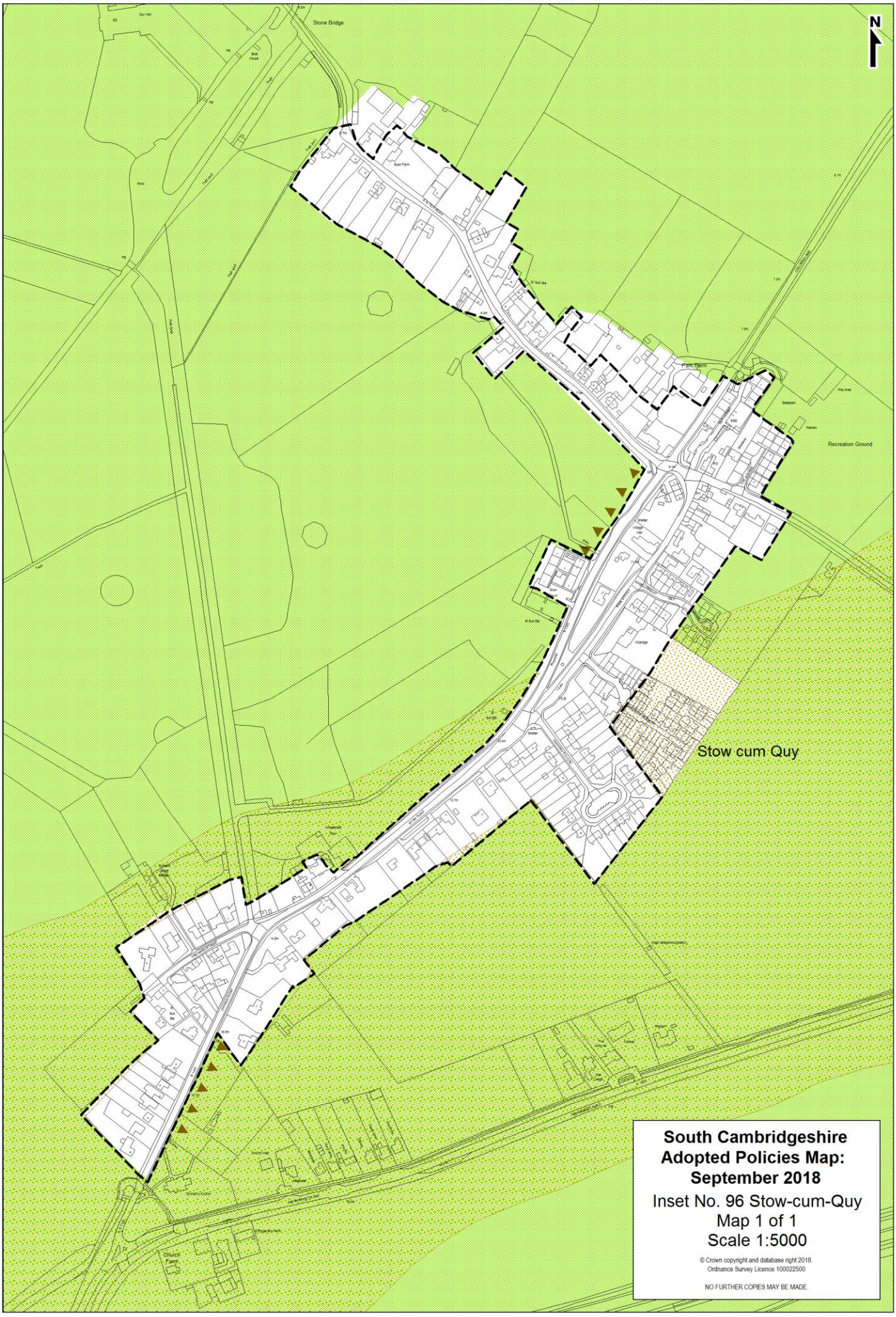


South Cambridgeshire Adopted Policies Map: September 2018

Inset No. 96 Stow-cum-Quy

Map 1 of 1

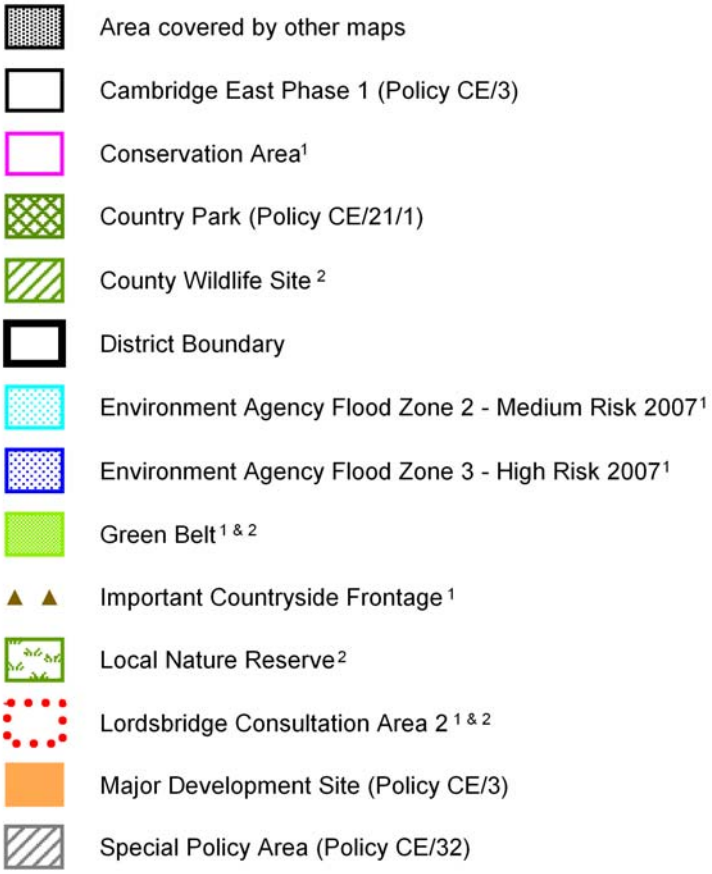
Scale 1:5000

Appendix B

CAMBRIDGE EAST ACTION PLAN POLICY MAPS

PROPOSALS MAP

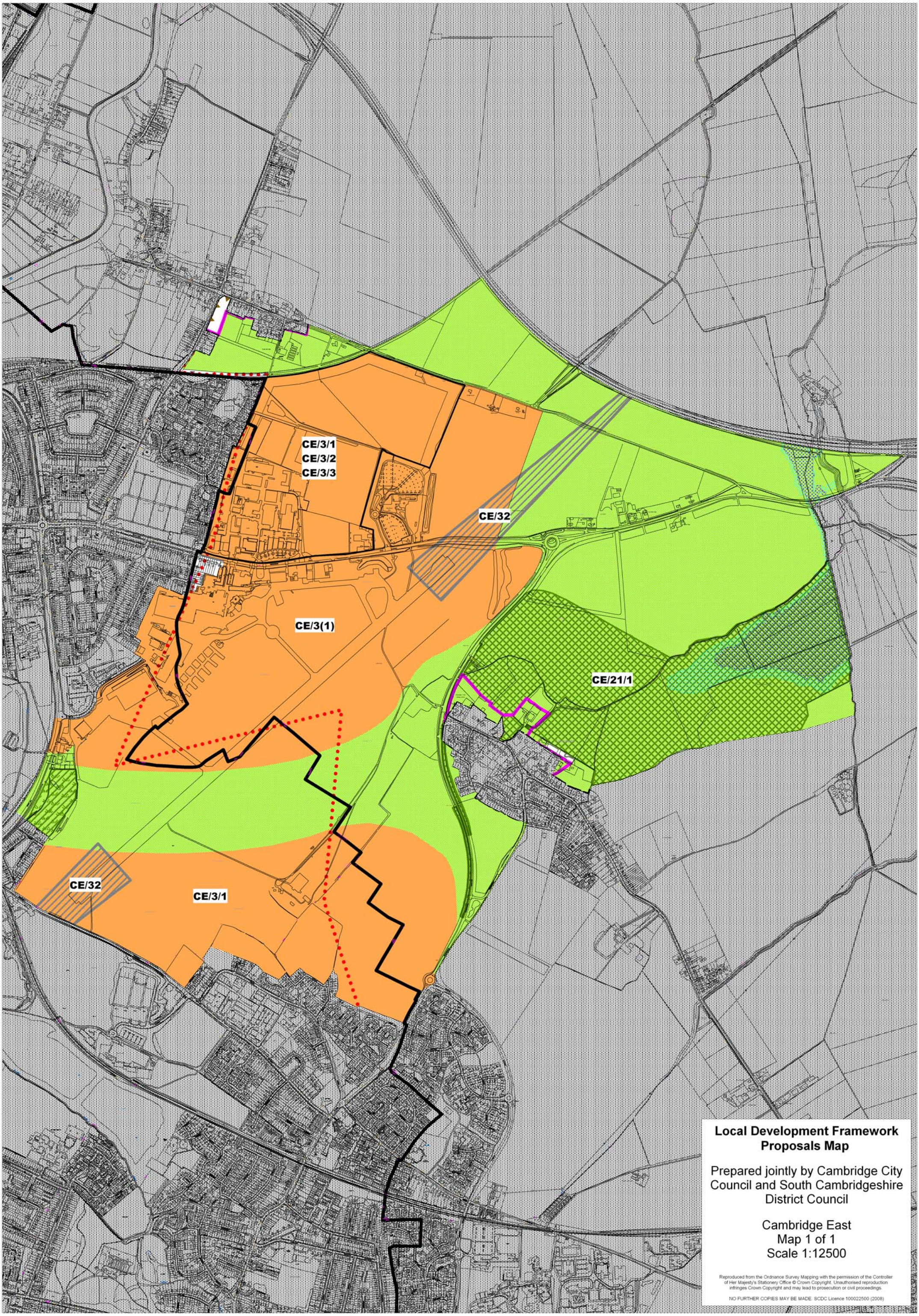
KEY



NOTE:
All policies relate to the Cambridge East Area Action Plan unless otherwise stated.

[1] Refer to policies in the South Cambridgeshire Development Control Policies DPD.
[2] Refer to policies in the Cambridge City Local Plan 2006.

For further information on the flood zones please view the Environment Agency's website:
http://www.environment-agency.gov.uk/



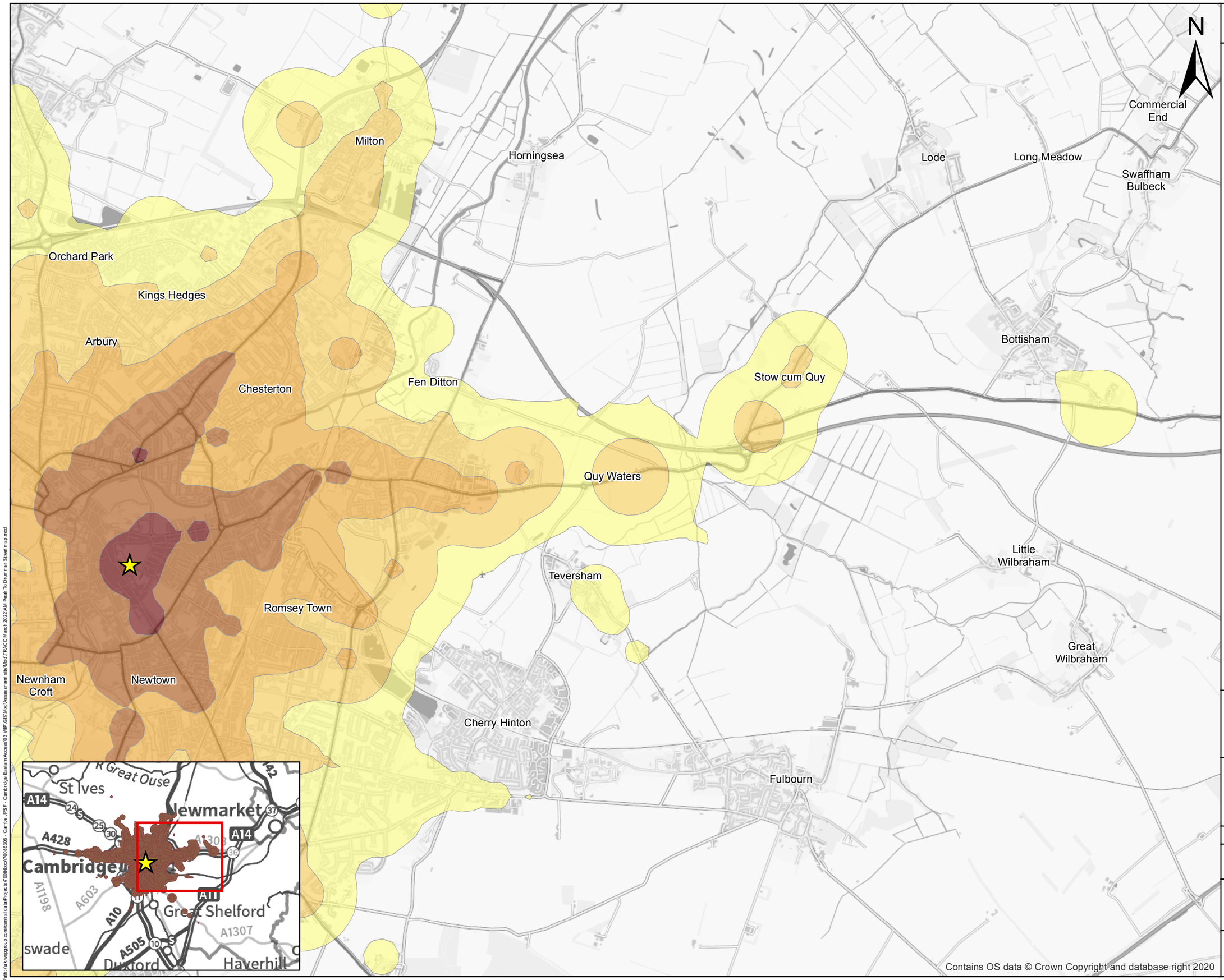
Local Development Framework Proposals Map

Prepared jointly by Cambridge City Council and South Cambridgeshire District Council

Cambridge East
Map 1 of 1
Scale 1:12500

Appendix C

AREA OF SEARCH PLANS



THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED AND ONLY WRITTEN DIMENSIONS SHALL BE USED

Key

Dummer Street Bus Interchange

Accessibility by Public Transport

- 0 - 5 Minutes
- 5 - 10 Minutes
- 10 - 15 Minutes
- 15 - 20 Minutes
- 20 - 25 Minutes

Job Title

Cambridge Eastern Access

Drawing Title

Bus Journey Time
AM Peak to Drummer Street

Scale at A3

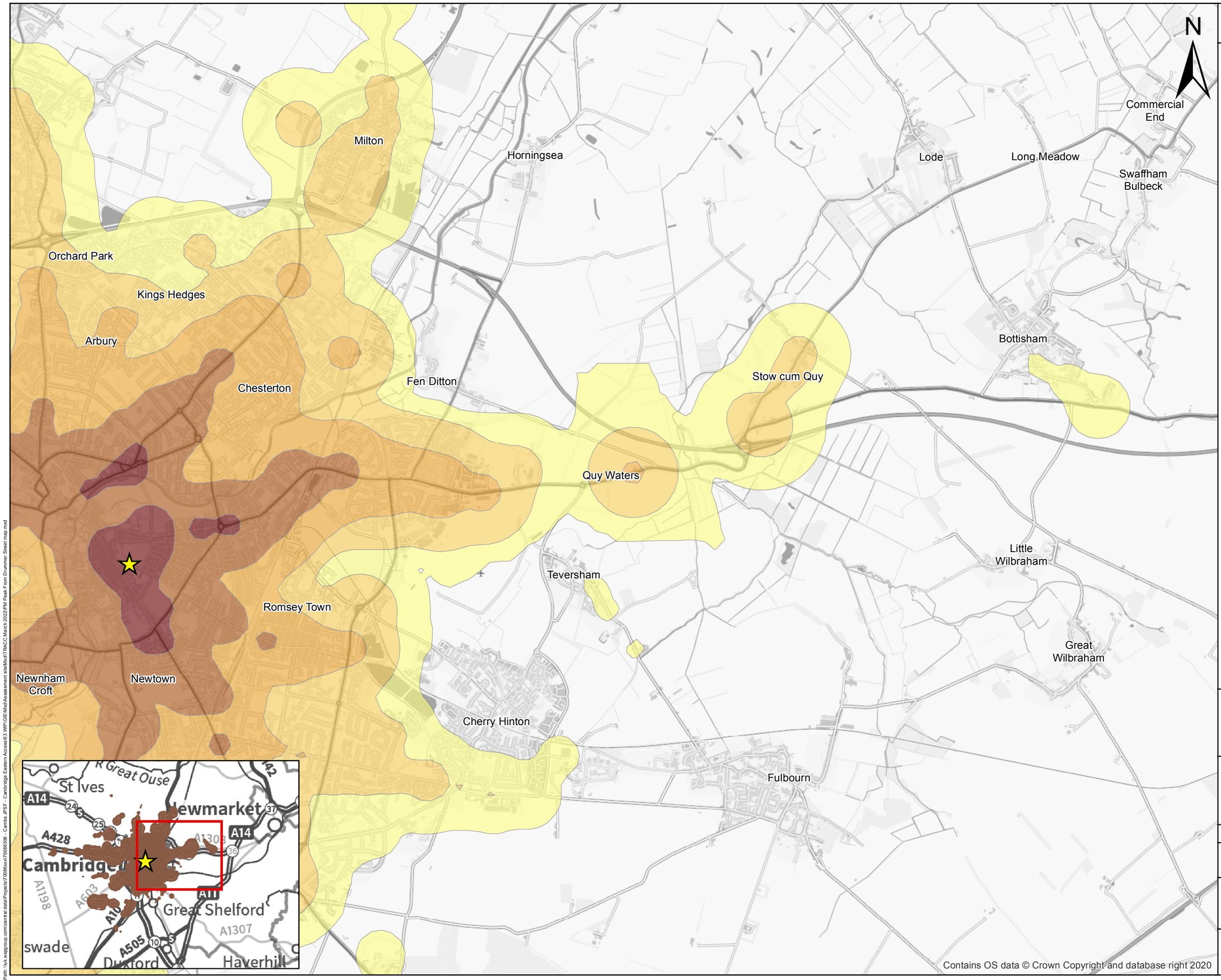
1:35,000

0 0.3 0.6 1.2

Kilometers

WSP House
70 Chancery Lane
London, WC2A 1AF
Tel: 020 7314 5000

Path: \\uk.wspgroup.com\central data\Projects\70086xx\70086306 - Cambs JPSF - Cambridge Eastern Access\03 WIP\GIS\Mxd\Assessment site\Mxd\TRACC March 2022\AM Peak To Drummer Street map.mxd



THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED AND ONLY WRITTEN DIMENSIONS SHALL BE USED

Key

Dummer Street Bus Interchange

Accessibility by Public Transport

- 0 - 5 Minutes
- 5 - 10 Minutes
- 10 - 15 Minutes
- 15 - 20 Minutes
- 20 - 25 Minutes

Job Title

Cambridge Eastern Access

Drawing Title

Bus Journey Time
PM Peak from Drummer Street

Scale at A3

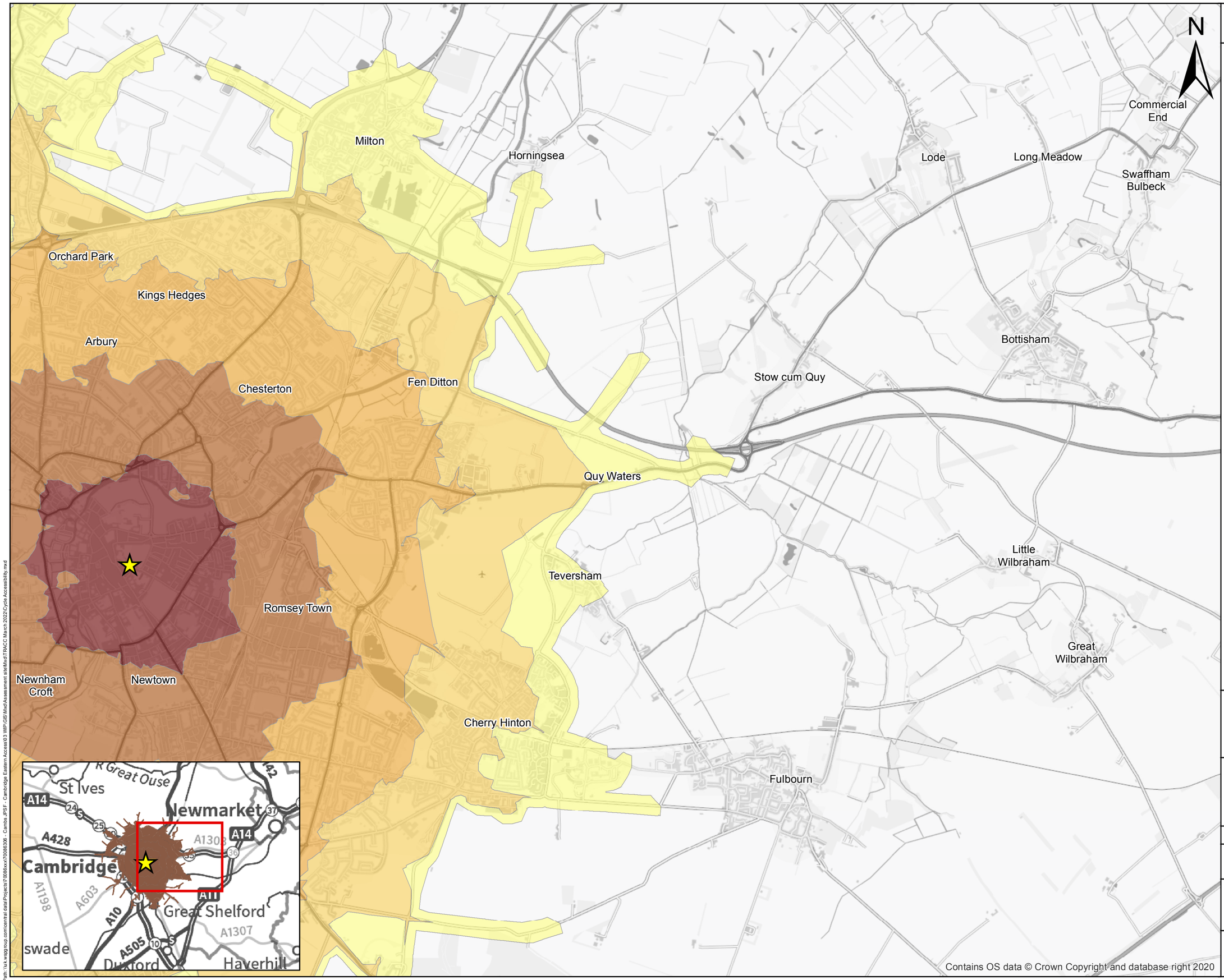
1:500,000

0 0.3 0.6 1.2

Kilometers

WSP House
70 Chancery Lane
London, WC2A 1AF
Tel: 020 7314 5000

Path: \\uk.wspgroup.com\central data\Projects\70086xx\70086306 - Cambs JPSF - Cambridge Eastern Access\03 WIP\GIS\Mod\Assessment site\Mod1TRACC March 2022\PM Peak From Drummer Street map.mxd



THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED AND ONLY WRITTEN DIMENSIONS SHALL BE USED

Key

Dummer Street Bus Interchange

Accessibility by Cycle

- 0 - 5 Minutes
- 5 - 10 Minutes
- 10 - 15 Minutes
- 15 - 20 Minutes
- 20 - 25 Minutes

Job Title

Cambridge Eastern Access

Drawing Title

Cycling Journey Time
Drummer Street Bus Interchange

Scale at A3

1:35,000

0 0.3 0.6 1.2

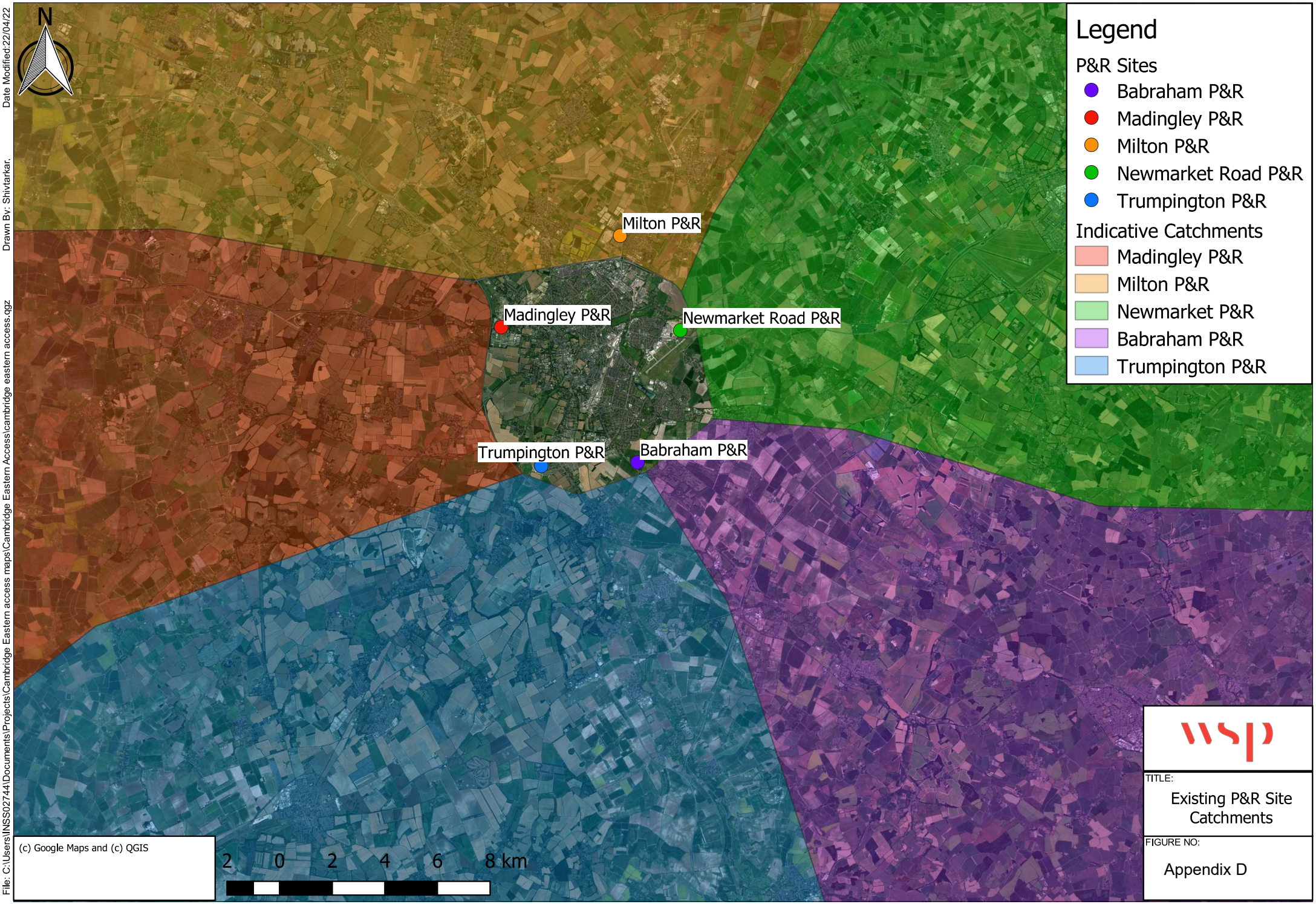
Kilometers

WSP House
70 Chancery Lane
London, WC2A 1AF
Tel: 020 7314 5000

Path: \\uk.wsgroup.com\central data\Projects\70086xxx\70086308 - Cambs JPSF - Cambridge Eastern Access\03 WIP\GIS\Mxd\Assessment site\Mxd\TRACC March 2022\Cycle Accessibility.mxd

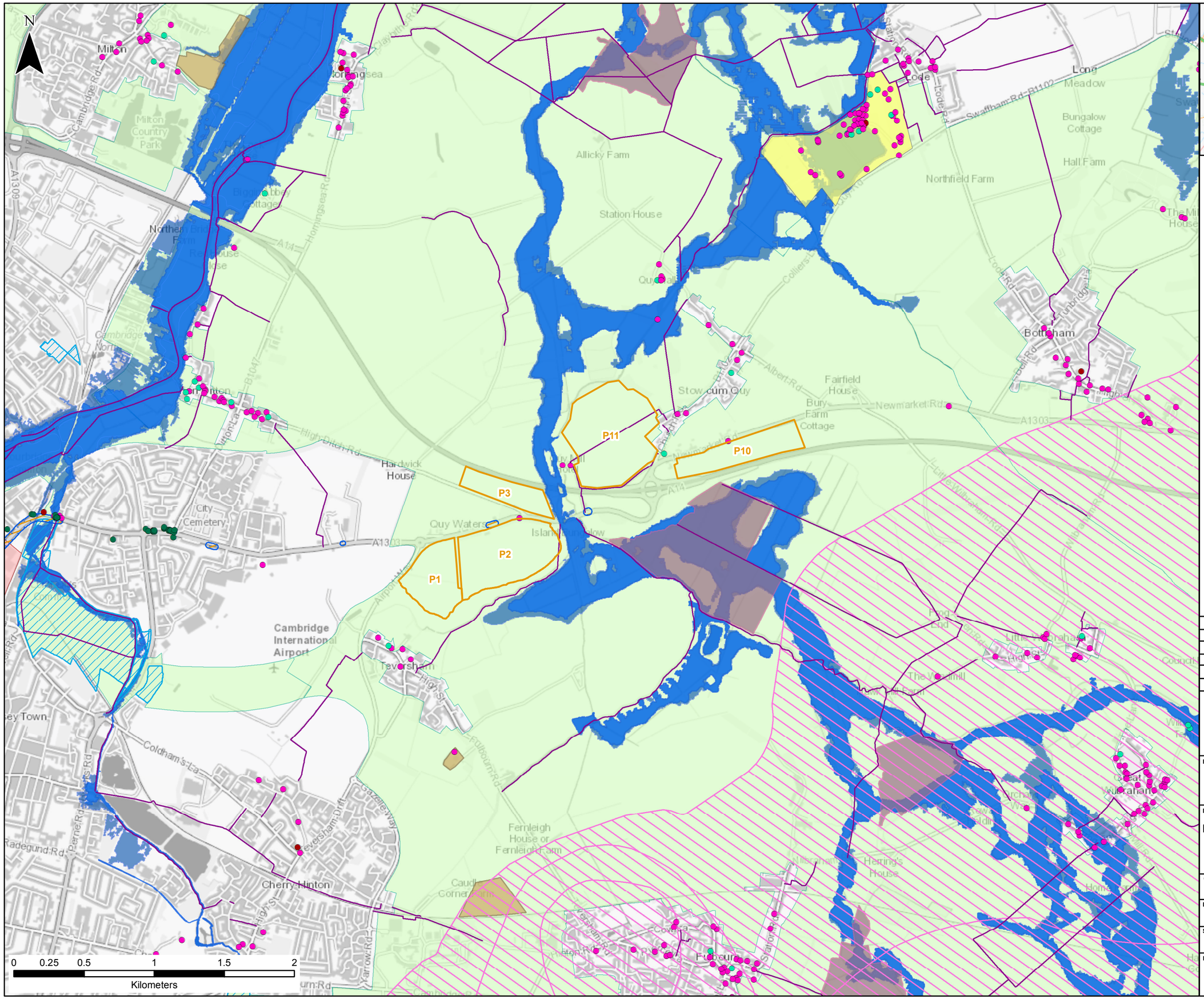
Appendix D

P&R CATCHMENT PLANS


N
Milton P&R
Madingley P&R
Newmarket Road P&R
Trumpington P&R
Babraham P&R
Legend
P&R Sites
Babraham P&R
Madingley P&R
Milton P&R
Newmarket Road P&R
Trumpington P&R
Indicative Catchments
Madingley P&R
Milton P&R
Newmarket P&R
Babraham P&R
Trumpington P&R
(c) Google Maps and (c) QGIS
2 0 2 4 6 8 km
TITLE:
Existing P&R Site Catchments
FIGURE NO:
Appendix D
Date Modified:22/04/22
Drawn By: Shivtarkar.
File: C:\Users\INSS02744\Documents\Projects\Cambridge Eastern access maps\Cambridge Eastern Access\cambridge eastern access.qgz

Appendix E

SHORT-LISTED SITES ENVIRONMENTAL CONSTRAINTS MAPS



Legend

- P&R - Detailed Assessment sites

Listed Building

- Grade I
- Grade II
- Grade II*
- Tree Preservation Order
- Public Right of Way
- Source Protection Zone
- Noise Important Areas Round 2
- Noise Important Areas Round 3
- Site of Special Scientific Interest
- Air Quality Management
- Greenbelt
- Parks and Gardens
- Scheduled Monument
- Local Nature Reserve
- Flood Zone 2
- Flood Zone 3

REVISION	DRAWN	CHECKED	APPROVED	DATE
P00	PM	JH	MR	29/03/2022

FIRST ISSUE

DESCRIPTION

PROJECT TITLE:

Newmarket Road Park & Ride

DRAWING TITLE:

Figure A.1: Environmental Constraints Map – Newmarket Road Park & Ride

CONFIDENTIALITY

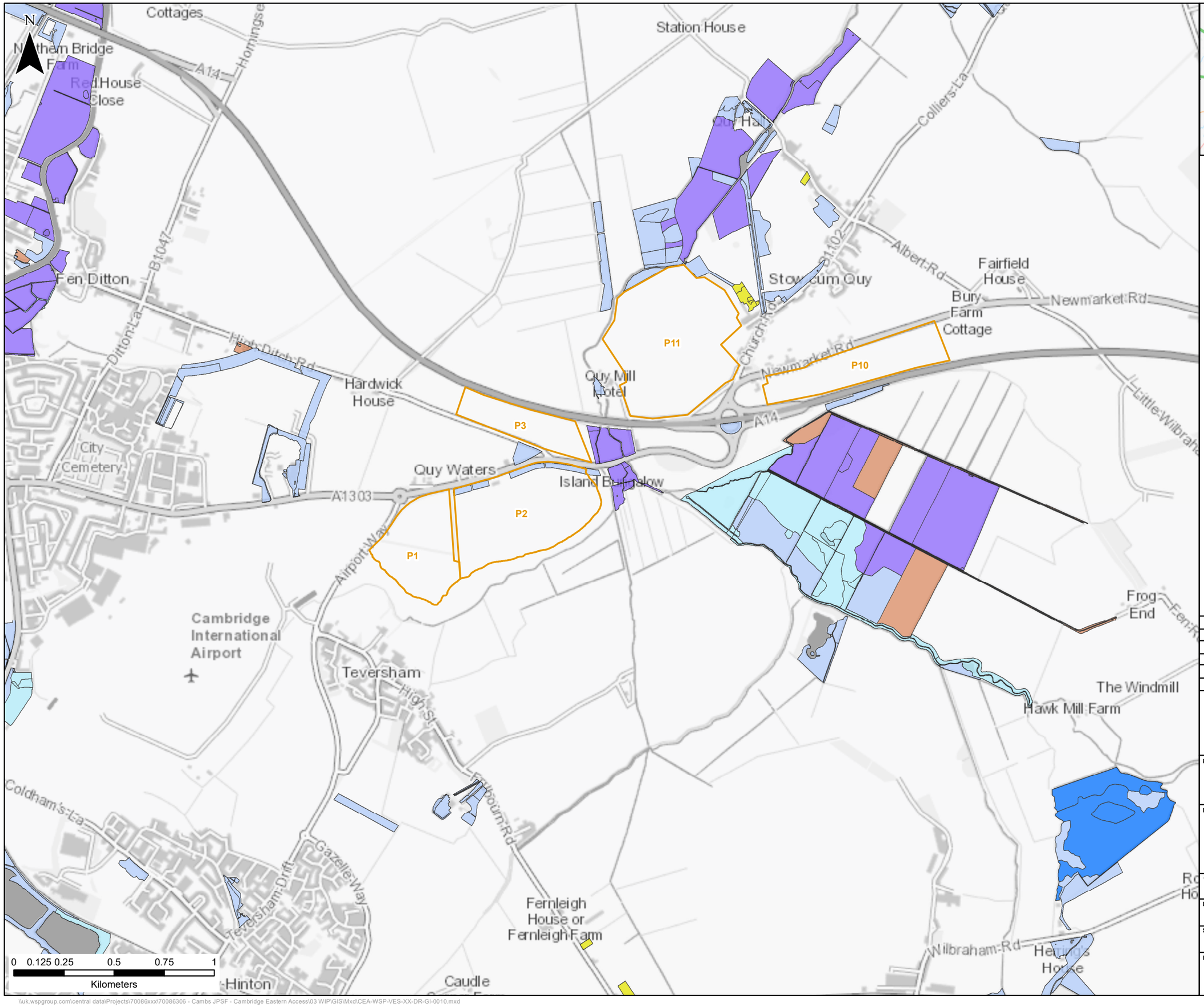
Internal

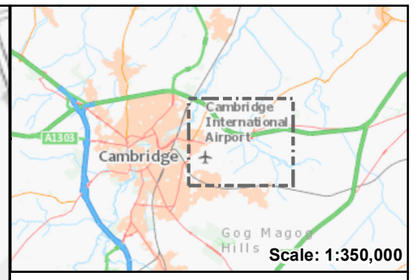
DRAWN:	CHECKED:	APPROVED:	AUTHORISED:
PM	JH	MR	AR

SCALE @ A3 SIZE:	DATE:	REVISION:
1:350,000	29/03/2022	P00

DRAWING NUMBER:

CEA-WSP-VES-XX-DR-GI-0009





Legend

- P&R - Detailed Assessment sites

Priority Habitat Inventory

- Coastal and floodplain grazing marsh
- Deciduous woodland
- Good quality semi-improved grassland
- Lowland fens
- No main habitat but additional habitats present
- Traditional orchard

REVISION	DRAWN	CHECKED	APPROVED	DATE
P00	PM	JH	MR	28/03/2022

DESCRIPTION: FIRST ISSUE

PROJECT TITLE: Newmarket Road Park & Ride

DRAWING TITLE: Figure A.2 : Priority Habitat Inventory Map – Newmarket Road Park & Ride

CONFIDENTIALITY: Internal

DRAWN:	CHECKED:	APPROVED:	AUTHORISED:
PM	JH	MR	AR

SCALE @ A3 SIZE:	DATE:	REVISION:
1:350,000	28/03/2022	P00

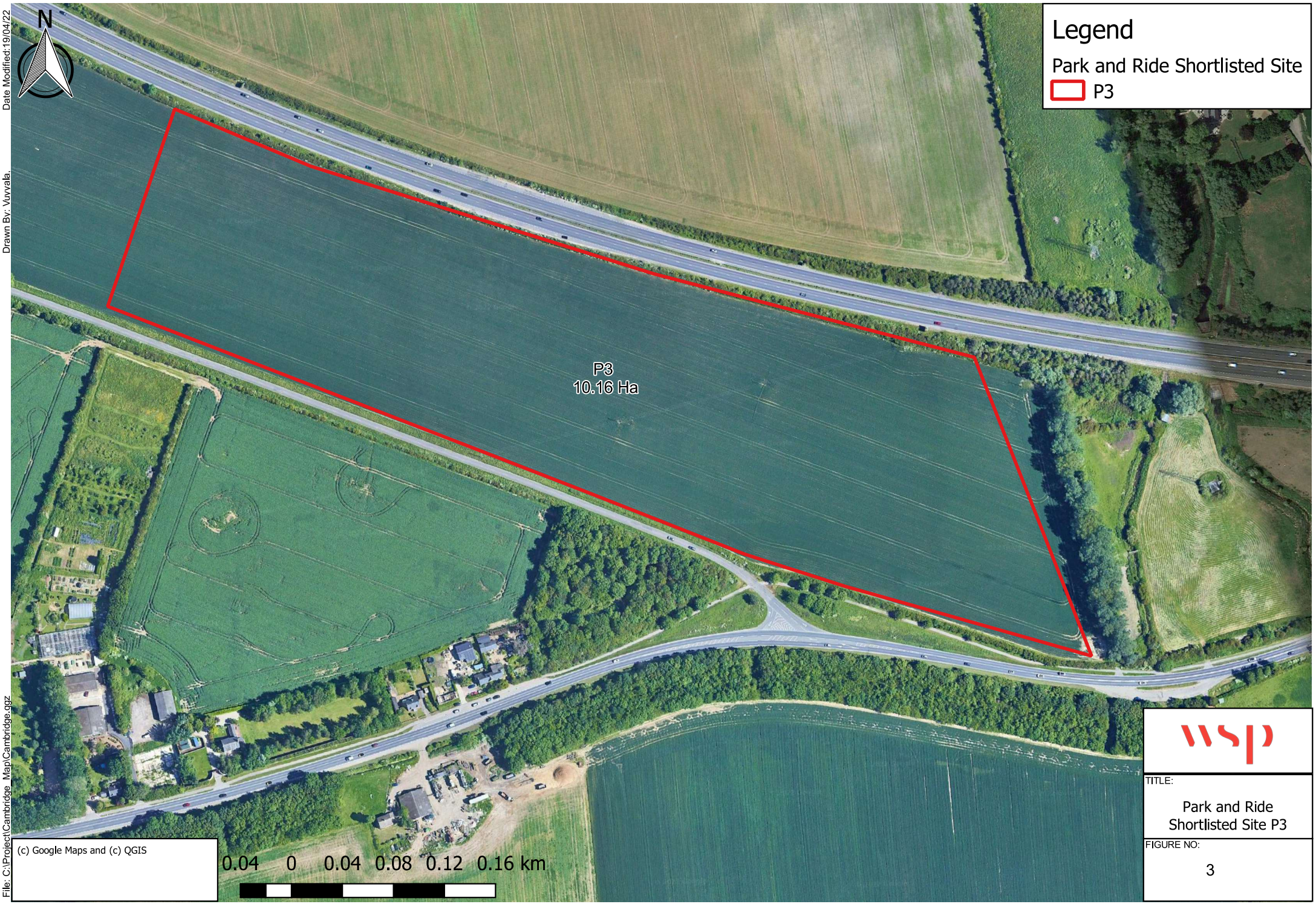
DRAWING NUMBER: CEA-WSP-VES-XX-DR-GI-0010

Appendix F

P&R SITE LOCATION PLANS


N
Legend
Park and Ride Shortlisted Site
P1
Park and Ride - P1 Subset
5.91 Ha
P1
16.14 Ha
(c) Google Maps and (c) QGIS
0.04 0 0.04 0.08 0.12 0.16 km
Date Modified:19/04/22
Drawn By: Vuvvala.
File: C:\Project\Cambridge_Map\Cambridge.qgz
wsp
TITLE:
Park and Ride Shortlisted Site P1
FIGURE NO:
1


N
Legend
Park and Ride Shortlisted Site
P2
P2
28.13 Ha
Date Modified:19/04/22
Drawn By: Vuvyala.
File: C:\Project\Cambridge_Map\Cambridge.qgz
(c) Google Maps and (c) QGIS
0.04 0 0.04 0.08 0.12 0.16 km
wsp
TITLE:
Park and Ride Shortlisted Site P2
FIGURE NO:
2


N
Legend
Park and Ride Shortlisted Site
P3
P3
10.16 Ha
(c) Google Maps and (c) QGIS
0.04 0 0.04 0.08 0.12 0.16 km
Date Modified:19/04/22
Drawn By: Vuvyala.
File: C:\Project\Cambridge_Map\Cambridge.qgz
wsp
TITLE:
Park and Ride Shortlisted Site P3
FIGURE NO:
3


N
Legend
Park and Ride Shortlisted Site
P10
P10
15.83 Ha
(c) Google Maps and (c) QGIS
0.04 0 0.04 0.08 0.12 0.16 km
Date Modified:19/04/22
Drawn By: Vuvyala.
File: C:\Project\Cambridge_Map\Cambridge.qgz
wsp
TITLE:
Park and Ride Shortlisted Site P10
FIGURE NO:
4


N
Legend
Park and Ride Shortlisted Site
P11
P11
37.2 Ha
(c) Google Maps and (c) QGIS
0.04 0 0.04 0.08 0.12 0.16 km
Date Modified:19/04/22
Drawn By: Vuvyala.
File: C:\Project\Cambridge_Map\Cambridge.qgz
wsp
TITLE:
Park and Ride Shortlisted Site P11
FIGURE NO:
5

Appendix G

MCAF OUTPUT

Cover Sheet

Project Name	Phase A - Cambridge Eastern Access P&R Relocation
Job Number	70086306
Version	1.0
File Path	\\uk.wspgroup.com\central data\Projects\70086xxx\70086306 - Cambs JPSF - Cambridge Eastern Access\03 WIP\TP Transport Planning\Phase A2 Park and Ride\P&R Appraisal Report\
File Name	Cambridge East_P&R Option Appraisal MCAF_V2.xlsx
Primary Contact Name	Andrew Redhead
Primary Contact e-mail	andrew.redhead@wsp.com

Disclaimer

This multi-criteria appraisal framework (MCAF) and its contents have been prepared and are intended solely for Greater Cambridge Partnership's information and use in relation to the Cambridge Eastern Access Project.

WSP Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this spreadsheet and/or its contents.

MCAF Overview

This MCAF tool documents the criteria and qualitative scoring relating to the list of P&R sites identified for relocating the Newmarket Road P&R.
A MCAF sifting tab has been created which assesses all the potential sites identified.

Tab List

	Tab Name	Description	Sheet Type
1	Versions	Version Control Summary	Reference
2	MCAF Option Sifting	MCAF options sifting framework	Calculation
3			
4			
5			
6			
7			
8			
9			
#			
#			
#			
#			
#			

Sheet Types
Reference Sheet
Calculation Sheet

Document History

Revision	Originated	Date	Contents/Self-Checks	Checked	Date	Reviewed	Date	Authorised	Date	Checks and Review Undertaken
1.0	AJR	09/05/2022	Draft MCAF for Discussion	AJR	09/05/2022	AJR	09/05/2022	GC	09/05/2022	All appraisal cells
2.0	AJR	17/05/2022	Final MCAF	AJR	17/05/2022	AJR	17/05/2022	GC	17/05/2022	Site availability appraisal

Phase A: Multi-Criteria Appraisal Framework

				INITIAL SIFT								
				Located within P&R Area of Search	Site meets GCP Minimum Size Requirements	Site Availability (Timescales/Land Ownership/Planning Status/Existing Land-Use)		Key Environmental Constraints		Key Uncertainties	Initial Sift Decision	
								Likely to have unacceptable Environmental Impacts	Free Text	Free Text	Park or Proceed with Location (Professional Judgement)	
Site Ref	Site Name	Site Description	Approximate land parcel size (Ha)	Yes/No	Yes/No	Yes/No/NA	Free Text	Yes/No/N/A			Park/Proceed	Free Text
P1	East of Airport Way	This site is south of Newmarket Road and immediately east of Airport Way. It extends as far east as the existing mature hedgerow	16.14	Yes	Yes	Yes	Allocated Green Belt Land Land owned by Marshalls - supportive in principle of relocating the P&R south of Newmarket Road and East of Airport Way Southern portion of P1 is located within allocated Country Park (Policy CE/21/1 of the Cambridge East AAP). All areas to south of existing hedge line are located with allocated Country Park Areas of site allocated under Policy 5: Mineral Safeguarding Area (Sand and Gravel) of the Cambridgeshire and Peterborough Minerals and Waste Local Plan 2018	No	Careful site design will be required to minimise ecological impacts to exiting mature flora and future impacts on the Country Park allocation in Cambridge East AAP that runs along the southern portion of the site - the removal of this allocated area and the provision of a suitable landscaping buffer should be considered further in terms of developable site area. P1 is located within allocated Green Belt. No other significant environmental features identified.	Northern section of the site can accommodate a 2,000 space P&R	Proceed	Short-listed, sufficient size, accessible, available and no substantial environmental constraints if site is contained to the north of the plot.
P2	South of Newmarket Road	This site is south of Newmarket Road to the east of P1.	28.13	Yes	Yes	Yes	Allocated Green Belt Land Land owned by Cambridgeshire County Council, assumed to be available. Small section of southern portion is located within allocated Country Park (Policy CE/21/1 of the Cambridge East AAP). Areas of site allocated under Policy 5: Mineral Safeguarding Area (Sand and Gravel) of the Cambridgeshire and Peterborough Minerals and Waste Local Plan 2018	No	Proximity to SSSI located to the east would need careful mitigation and management. Future impacts on the Country Park allocation in Cambridge East AAP that runs along the southern portion of the site - the provision of a suitable landscaping buffer should be considered further in terms of developable site area. Listed structure (Milestone) on boundary of site - https://historicengland.org.uk/listing/the-list/list-entry/1331307 Anglo-Saxon burials (HER ref: 0603) have been identified adjacent to the far north-eastern end of Option P2. The extent of the cemetery is not known, but the proximity to P2 and Option P3 suggests that there is a high potential that it may extend into the site. The assets described above are likely to be of medium or high heritage significance (most likely high). Further archaeological evaluation (most likely geophysical survey, followed by trial trench evaluation) will be required, almost certainly pre-determination. Public rights of way have been identified, which would need to be considered. P2 is located within allocated Green Belt. No other significant environmental features identified. **NOTE:** Whilst no environmental protection designations (with the exception of Green Belt) have been identified, it is recognised that the site boarders on areas of fenland habitat. Careful consideration of local flora, fauna and animal species will need to be considered if the scheme should proceed.		Proceed	Short-listed, sufficient size, accessible, available and no substantial environmental constraints if site is located away from the eastern end of the site.
P3	North of High Ditch Road	This site is north of High Ditch Road, bounded by the A14 along its northern boundary.	10.16	Yes	Yes	Yes	Allocated Green Belt Land Land privately owned and not allocated in the SCDC local plan for development. Entire site sits within proposed application boundary for Cambridge Wastewater Treatment Plant Relocation Project - a Nationally Significant Infrastructure Project (NSIP) for which Development Consent Order will be sought under the Planning Act 2008 - EIA Scoping Opinion adopted by SoS (Nov 2021) - https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/WW010003/WW010003-000033-WW010003%20-%20Scoping%20Report.pdf	No	The Anglo-Saxon burials (HER ref: 0603) have been identified within 50m of the south-eastern edge of Option P3. There is a high potential that it may extend into the site. Within P3 there are features indicative of an Iron Age settlement (HER ref: 09039). There are also features indicative of a Roman settlement to the north of the A14, 70m north of P3. The assets described above are likely to be of medium or high heritage significance (most likely high). Further archaeological evaluation (most likely geophysical survey, followed by trial trench evaluation) will be required, almost certainly pre-determination. P3 is located within allocated Green Belt. Other than a small area of deciduous woodland to the south of High Ditch Road (outside the curtilage of P3), there are no other significant environmental features with close proximity.	It is unclear what form of development is proposed at this site in relation to the Cambridge Wastewater Treatment Plant Relocation Project and site may contain medium to high heritage assets.	Proceed	Short-listed, sufficient size, accessible and no substantial environmental constraints,
P4	South of High Ditch Road	This site is south of High Ditch Road, bounded to the south and west by Darwin Nurseries and private properties.	4.26	Yes	No	N/A	Allocated Green Belt Land. Areas of site allocated under Policy 5: Mineral Safeguarding Area (Sand and Gravel) of the Cambridgeshire and Peterborough Minerals and Waste Local Plan 2018 N/A - site already discounted as too small to accommodate up to 2,000 space P&R site	N/A	N/A - site already discounted as too small to accommodate up to 2,000 space P&R site		Park	Discount too small
P5	Adjacent to Marleigh	This site is north of the Airport Way roundabout, bounded by High Ditch Road, Darwin Nurseries, Newmarket Road and the Marleigh development to the north, east, south and west respectively.	13.4	Yes	Yes	No	Site bisected by Cambridge Airport Safety Zone (Policy CE/32 Cambridge Airport Safety Zones) - presumption against new development that would 'increase the numbers of people living, working or congregating on the land' whilst Cambridge Airport remains operational (2031). Areas of site allocated under Policy 5: Mineral Safeguarding Area (Sand and Gravel) of the Cambridgeshire and Peterborough Minerals and Waste Local Plan 2018	N/A	N/A - Site already discounted as located within Airport Safety Zone		Park	Discount - bisected by Airport Safety Zone
P6	West of Airport Way	This site is located in the north-east corner of the Cambridge Airport site, bounded by Newmarket Road and Airport Way.	12.65	Yes	Yes	No	Site bisected by Cambridge Airport Safety Zone (Policy CE/32 Cambridge Airport Safety Zones) - presumption against new development that would 'increase the numbers of people living, working or congregating on the land' whilst Cambridge Airport remains operational (2031). Site allocated of major residential and employment development (Policy CE/3 The Site For Cambridge East in the Cambridge East AAP and Policy SS/3: Cambridge East in the SCDC Local Plan). Areas of site allocated under Policy 5: Mineral Safeguarding Area (Sand and Gravel) of the Cambridgeshire and Peterborough Minerals and Waste Local Plan 2018	N/A	N/A - Site already discounted as located within allocated development site.		Park	Discount - allocated for development post 2031
P7	Existing Site	This is the existing Newmarket Road P&R site.	3.78	Yes	No	No	Site allocated of major residential and employment development (Policy CE/3 The Site For Cambridge East in the Cambridge East AAP and Policy SS/3: Cambridge East in the SCDC Local Plan). Areas of site allocated under Policy 5: Mineral Safeguarding Area (Sand and Gravel) of the Cambridgeshire and Peterborough Minerals and Waste Local Plan 2018	N/A	N/A - Site already discounted as located within allocated development site. Site too small to accommodate up to 2,000 space P&R site		Park	Discount - too small and allocated for development post 2031
P8	South of Junction 35	This site is located immediately south of Junction 35 of the A14, on the northern site of the A1303 Newmarket Road.	3.27	Yes	No	N/A	Allocated Green Belt Areas of site allocated under Policy 5: Mineral Safeguarding Area (Sand and Gravel) of the Cambridgeshire and Peterborough Minerals and Waste Local Plan 2018. N/A - site already discounted as too small to accommodate up to 2,000 space P&R site	N/A	N/A - site already discounted as too small to accommodate up to 2,000 space P&R site		Park	Discount too small
P9	East of Quy Water	This site is located south of P8, bounded by the A1303 Newmarket Road to the north and Quy Water to the west.	5.48	Yes	Yes	Yes	Allocated Green Belt - not allocated for development. Areas of site allocated under Policy 5: Mineral Safeguarding Area (Sand and Gravel) of the Cambridgeshire and Peterborough Minerals and Waste Local Plan 2018	Yes	P9 is located within allocated Green Belt. P9 boarders a local SSSI. The SSSI will be a significant environmental feature to consider if the proposed scheme is shortlisted. Public rights of way are located very close to the scheme boundary, which would need to be considered. No other significant environmental features identified.		Park	Discount, sites further from the SSSI available
P10	North of A14 East	This site is north of the A14 and east of Junction 35. It is bounded to the north by the A1303 Newmarket Road and to the south by the A14.	15.83	Yes	Yes	Yes	Allocated Green Belt - not allocated for development Sections of the site along its northern boundary are allocated as Local Green Space (Policy NH/12 - Local Green Space) in the SCDC Local Plan. Areas of site allocated under Policy 5: Mineral Safeguarding Area (Sand and Gravel) of the Cambridgeshire and Peterborough Minerals and Waste Local Plan 2018	No	Site close to existing properties on the A1303 Newmarket Road, but located away from the main Stow cum Quy village P10 is located within allocated Green Belt. P10 is in proximity to grade II and II* listing building; one of which falls within the curtilage of the proposed scheme (List UID: 1127355). No other significant environmental features identified.		Proceed	Short-listed, sufficient size, accessible, available and no substantial environmental constraints.
P11	North of A14 West	This site is north of the A14 and west of Junction 35. Its eastern boundary is adjacent to the existing village of Stow cum Quy and accessed via Church Road.	37.2	Yes	Yes	Yes	Allocated Green Belt - not allocated for development. Sections of the site along its south-eastern boundary are allocated as Local Green Space (Policy NH/12 - Local Green Space) in the SCDC Local Plan. Areas of site allocated under Policy 5: Mineral Safeguarding Area (Sand and Gravel) of the Cambridgeshire and Peterborough Minerals and Waste Local Plan 2018	No	Southern part of the site separated from the existing village P11 is located within allocated Green Belt. P11 is in proximity to grade II and II* listing buildings. None of which fall within the curtilage of the proposed scheme; however, List UID: 1301986 is on the site boundary. Public rights of way have been identified, which would need to be considered. The site boundary is in very close proximity to a village and would likely be susceptible to amenity impacts. No other significant environmental features identified.		Proceed	Short-listed, sufficient size, accessible, available and no substantial environmental constraints.
P12	South of Stow cum Quy	This site is located to the south of Stow cum Quy village, bounded to the east by Albert Road and to the south by the A1303 Newmarket Road	23.26	Yes	Yes	Yes	Allocated Green Belt - not allocated for development The majority of the site is allocated as Local Green Space (Policy NH/12 - Local Green Space) in the SCDC Local Plan. Areas of site allocated under Policy 5: Mineral Safeguarding Area (Sand and Gravel) of the Cambridgeshire and Peterborough Minerals and Waste Local Plan 2018	Yes	The site is located furthest from Junction 35 of the A14, resulting in increased bus and car travel distances and is almost entirely covered by Policy NH/12 - Local Green Space. Therefore a P&R located within P12 would have a substantial impact on the designated Local Green space. P12 is located within allocated Green Belt. P12 is in proximity to grade II and II* listing buildings; none if which fall within the curtilage of the proposed scheme. The site boundary is in very close proximity to the village and would likely be susceptible to amenity impacts. No other significant environmental features identified.		Park	Discount - close to Stow Cum Quy and almost wholly covered by Local Green designation.

		LOCAL ENVIRONMENT													
		Air Quality: What impact does the option have on local air quality?		Noise: Does this option increase/reduce disturbance from noise?		Landscape/townscape: What is the overall impact on the natural and urban environment		Carbon Emissions: What is the expected impact of the intervention on carbon emissions?		Historic Environment: What is the expected impact on designated heritage assets?		Biodiversity: What is the expected impact of the intervention on biodiversity?		Water environment: What is the expected impact of the intervention on flood risk?	
Site Ref	Site Name	Major Positive Minor Positive Neutral Minor Negative Major Negative	Free Text	Major Positive Minor Positive Neutral Minor Negative Major Negative	Free Text	Major Positive Minor Positive Neutral Minor Negative Major Negative	Free Text	Major Positive Minor Positive Neutral Minor Negative Major Negative	Free Text	Major Positive Minor Positive Neutral Minor Negative Major Negative	Free Text	Major Positive Minor Positive Neutral Minor Negative Major Negative	Free Text	Major Positive Minor Positive Neutral Minor Negative Major Negative	Free Text
P1	East of Airport Way	Minor Positive	Not within an Air Quality Management Area (AQMA). Minor air quality benefits to locating the site further away from Cambridge AQMA. Possible local air quality impacts from changes in traffic flows. Not clear if these would be better or worse. Located closer to Teversham than the existing site. No impact on air quality expected.	Minor Negative	Does not fall within a Noise Action Planning Important Area. Receptors include the village of Teversham. Potential increase in noise arising from construction activities impacting the village Background noise increase during operation impacting the village. No long-term impacts expected.	Neutral	Situated within rural surrounds with the village of Teversham to the South and Stow cum Quy to the Northeast. Within the Greenbelt. No AONBs. Possible temporary visual impacts from construction. Alterations to the landscape character. No rights of way are expected to be impacted. No long-term impacts expected.	Minor Negative	Potential short-term negatives from removal of topsoil during construction and loss of embodied carbon. Embedded carbon within the new facilities will also have an impact Carbon emissions cannot effectively be evaluated at this stage, though it is expected that there will be no differences between options.	Minor Negative	5 Grade II listed buildings and 1 Grade II* listed building located in the village of Teversham which is within 600m of the site, though unlikely to be affected. No archaeological features identified. Anglo-Saxon and Roman features identified at other sites and in the vicinity of P1. Likely that similar features exist. Possible minor impact expected.	Minor Negative	Likely minor impact on biodiversity and ecology. The closest designated sites are WIbraham Fens SSSI, Barnwell LNR, and Coldham's Common LNR (All within roughly 2 km), though risk of impacts is low.	Neutral	The nearest main river is Quy Water, which is within 250m of the Southern edge of P1. The site is in a Flood zone 1 area which means there is a low probability of flooding. Changes in land use might bring about some minor benefits in reducing agricultural runoff. Potential for short-term minor impacts from the construction works, and longer-term impacts from road run-off (i.e., oils, greases, heavy metals), but unlikely. There are no other water receptors identified. No long-term impacts expected.
P2	South of Newmarket Road	Minor Positive	Not within an Air Quality Management Area (AQMA). Minor air quality benefits to locating the site further away from Cambridge AQMA. Possible local air quality impacts from changes in traffic flows. Not clear if these would be better or worse. Located closer to Teversham than the existing site. No impact on air quality expected.	Minor Negative	Does not fall within a Noise Action Planning Important Area. Receptors include the village of Teversham. Potential increase in noise arising from construction activities impacting the village Background noise increase during operation impacting the village. No long-term impacts expected.	Neutral	Situated within rural surrounds with the village of Teversham to the Southwest and Stow cum Quy to the Northeast. Within the Greenbelt. No AONBs. Possible temporary visual impacts from construction. Alterations to the landscape character. No rights of way are expected to be impacted. Public rights of way have been identified, which would need to be diverted. No long-term impacts expected.	Minor Negative	Potential short-term negatives from removal of topsoil during construction and loss of embodied carbon. Embedded carbon within the new facilities will also have an impact Carbon emissions cannot effectively be evaluated at this stage, though it is expected that there will be no differences between options.	Major Negative	Grade II listed building 'Milestone southwest of Quy mill' on the Northern border of the site. The milestone looks to be within the site boundary. Minor impact expected. 5 Grade II listed buildings and 1 Grade II* listed building are in the village of Teversham which within 1000m of the site, though unlikely to be affected. Anglo-Saxon burials identified adjacent to the far north-eastern end of site. Assets are likely to be of medium or high heritage significance. Possible major impact expected.	Major Negative	Eastern edge of site lies within 500m Wilbraham Fens SSSI and within 100m of SSSI quality reedbed. Important fenland habitat and wildlife much closer to the site including notable wintering and breeding birds. Likely to have a major impact on biodiversity and ecology. The closest designated sites are WIbraham Fens SSSI, Barnwell LNR, and Coldham's Common LNR (All within roughly 2 km), though risk of impacts is low.	Minor Negative	The nearest main river is Quy Water, which is immediately adjacent to the eastern edge of P2. Changes in land use might bring about some minor benefits in reducing agricultural runoff. Potential for short-term impacts from the construction works, and longer-term impacts from road run-off (i.e., oils, greases, heavy metals). Likely minor negative impact. The site is in a Flood zone 1 area which means there is a low probability of flooding. There are no other water receptors identified.
P3	North of High Ditch Road	Minor Positive	Not within an Air Quality Management Area (AQMA). Minor air quality benefits to locating the site further away from Cambridge AQMA. Possible local air quality impacts from changes in traffic flows. Not clear if these would be better or worse. Located closer to Teversham than the existing site. No impact on air quality expected.	Neutral	Does not fall within a Noise Action Planning Important Area. There are no known sensitive receptors. Stow cum Quy and Teversham are similar distances away to the existing park and ride. Impact on Villages during the construction phase not likely. No long-term impacts expected.	Neutral	Situated within rural surrounds with the village of Teversham to the South and Stow cum Quy to the East. Within the Greenbelt. No AONBs. Possible temporary visual impacts from construction. Alterations to the landscape character. No rights of way are expected to be impacted. No long-term impacts expected.	Minor Negative	Potential short-term negatives from removal of topsoil during construction and loss of embodied carbon. Embedded carbon within the new facilities will also have an impact Carbon emissions cannot effectively be evaluated at this stage, though it is expected that there will be no differences between options.	Major Negative	Grade II listed building 'Milestone Southwest of Quy mill' directly to the South of the site, though unlikely to be affected. Photographic evidence of remains for possible iron age settlement. Anglo-Saxon burials possibly extending into this site. The assets are likely to be of medium or high heritage significance. Possible major impact expected.	Minor Negative	It is assumed that there will be features of biological and ecological significance and therefore the intervention is likely to have a minor negative impact. The closest designated sites are Wilbraham Fens SSSI, Barnwell LNR, and Coldham's Common LNR (All within roughly 2 km), though there are no expected impacts.	Minor Negative	The nearest main river is Quy Water, which is immediately adjacent to the eastern edge of P3. Changes in land use might bring about some minor benefits in reducing agricultural runoff. Potential for short-term impacts from the construction works, and longer-term impacts from road run-off (i.e., oils, greases, heavy metals). Likely minor negative impact. The site is in a Flood zone 1 area which means there is a low probability of flooding. There are no other water receptors identified.
P4	South of High Ditch Road														
P5	Adjacent to Marleigh														
P6	West of Airport Way														
P7	Existing Site														
P8	South of Junction 35														
P9	East of Quy Water														
P10	North of A14 East	Minor Negative	Not within an Air Quality Management Area (AQMA). Minor air quality benefits to locating the site further away from Cambridge AQMA. Possible local air quality impacts from changes in traffic flows. Not clear if these would be better or worse. Located close to Stow Cum Quy. May have a minor negative impact on air quality.	Minor Negative	Does not fall within a Noise Action Planning Important Area. Sensitive receptors include the village of Stow cum Quy. Potential increase in noise and vibration arising from construction activities impacting the village. Background noise increase during operation impacting the village. Noise levels may raise long-term as a result of increased vehicle movements.	Minor Negative	Situated within rural surrounds with the village of Teversham to the Southwest and Stow cum Quy directly to the North. Within the Greenbelt. No AONBs. Possible temporary visual impacts from construction. Alterations to the landscape character. Expected long-term visual impacts on natural and urban environment for village of Stow cum Quy No rights of way are expected to be impacted.	Minor Negative	Potential short-term negatives from removal of topsoil during construction and loss of embodied carbon. Embedded carbon within the new facilities will also have an impact Carbon emissions cannot effectively be evaluated at this stage, though it is expected that there will be no differences between options.	Minor Negative	One Grade II listed building bordering the north side of the site: Milestone to east northeast of St Marys parish church. Eleven Grade II listed buildings and two Grade II* listed buildings in the village of Stow cum Quy which are within 250m to 1000m of the site. Direct impacts on listed buildings - construction and potential indirect permanent impacts on visual/amenity. No archaeological features identified. Anglo-Saxon and Roman features identified at other sites. Likely that similar features exist. Possible minor	Minor Negative	It is assumed that there will be features of biological and ecological significance and therefore the intervention is likely to have a minor negative impact. The site is located within proximity of a SSSI (<250m), though not anticipated that the intervention will have any impact on the designated site. Other designated sites include Barnwell LNR, and Coldham's Common LNR (All within roughly 2 km), though there are no expected impacts.	Neutral	The nearest river is Quy Water is roughly 1 km away, though there are no expected impacts. The site is in a Flood zone 1 area which means there is a low probability of flooding. The site is located in proximity of drinking water source protection zone (SPZ) 3 (<1000), though it is not anticipated that P10 will have any impact. There are no other water receptors identified.
P11	North of A14 West	Minor Negative	Not within an Air Quality Management Area (AQMA). Minor air quality benefits to locating the site further away from Cambridge AQMA. Possible local air quality impacts from changes in traffic flows. Not clear if these would be better or worse. Located close to Stow Cum Quy. May have a minor negative impact on air quality.	Minor Negative	Does not fall within a Noise Action Planning Important Area. Sensitive receptors include the village of Stow cum Quy Potential increase in noise and vibration arising from construction activities impacting the village. Background noise increase during operation impacting the village. Noise levels may raise long-term as a result of increased vehicle movements.	Minor Negative	Situated within rural surrounds with the village of Teversham to the Southwest and Stow cum Quy directly to the East. Within the Greenbelt. No AONBs. Possible temporary visual impacts from construction. Alterations to the landscape character. Expected long-term visual impacts on natural and urban environment for village of Stow cum Quy and Quy Mill Hotel. Public rights of way have been identified, which would need to be diverted.	Minor Negative	Potential short-term negatives from removal of topsoil during construction and loss of embodied carbon. Embedded carbon within the new facilities will also have an impact Carbon emissions cannot effectively be evaluated at this stage, though it is expected that there will be no differences between options.	Major Negative	Two Grade II and one Grade II* buildings bordering the site: Garden Wall of Guy Mill House, Quy Water Mill and Parish Church of St Mary Eleven Grade II listed buildings and two Grade II* listed buildings in the village of Stow cum Quy which are within 100m to 500m of the site. Major impact on listed buildings - construction and potential indirect permanent impacts on visual/amenity. Evidence of archaeological remains in 250m west of the site, thought to be indicative of a Roman settlement. Possible	Minor Negative	It is assumed that there will be features of biological and ecological significance and therefore the intervention is likely to have a minor negative impact. The closest designated sites are Wilbraham Fens SSSI, Barnwell LNR, and Coldham's Common LNR (All within roughly 2 km), though there are no expected impacts.	Minor Negative	The nearest main river is Quy Water, which is immediately adjacent to North / Northwest edge of P11. Changes in land use might bring about some minor benefits in reducing agricultural runoff. Potential for short-term impacts from the construction works, and longer-term impacts from road run-off (i.e., oils, greases, heavy metals). Likely minor negative impact. The site is in a Flood zone 1 area which means there is a low probability of flooding. There are no other water receptors identified.
P12	South of Stow cum Quy														

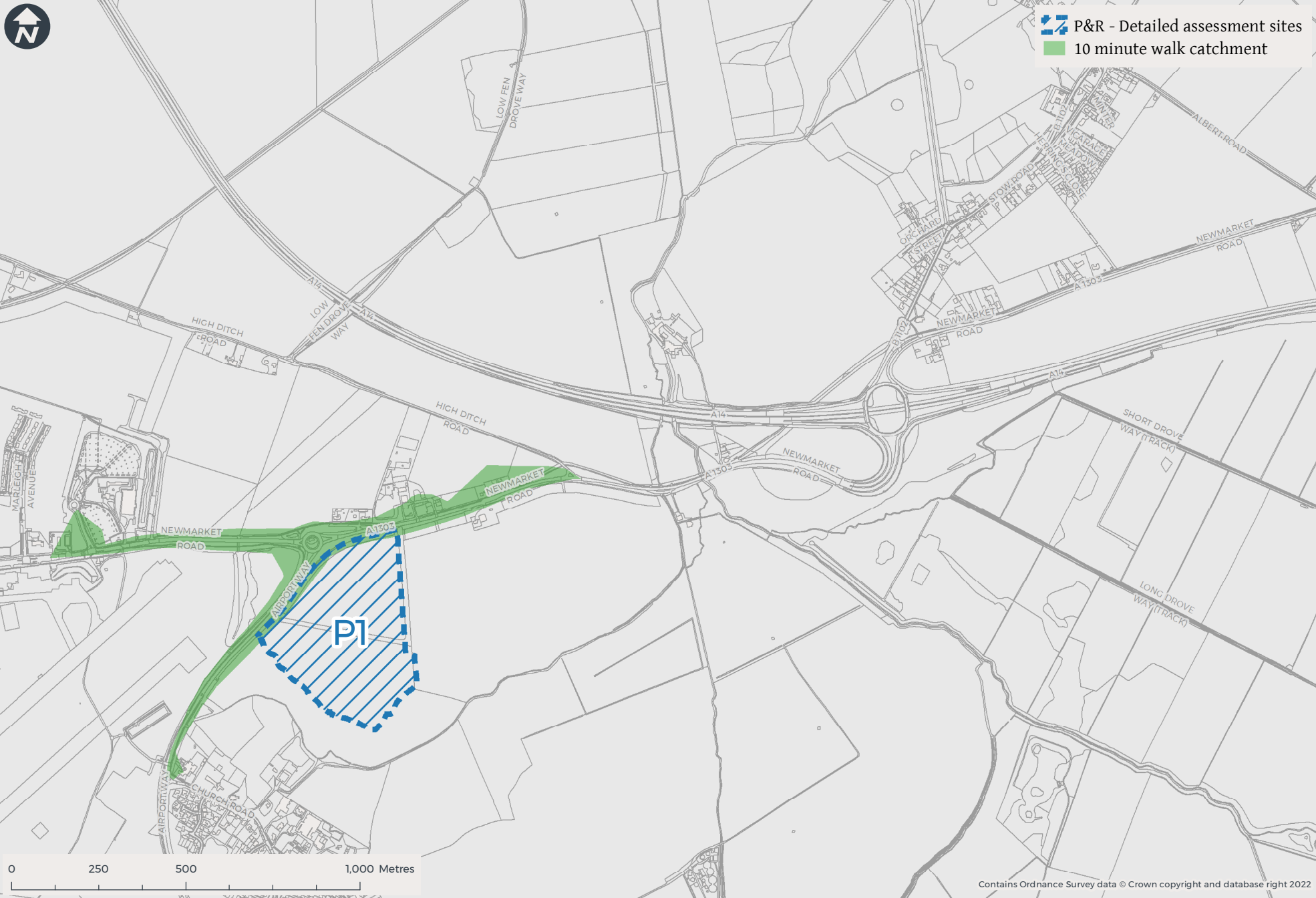
		DELIVERY CASE													
		DELIVERABILITY / OPERATIONA													
		AM Peak inbound Pass-by Intercept Potential		Site Access/Egress by Car		Households within 10 min Cycle		Cycle Journey time to Cambridge city centre		Site Access/Egress by Bicycle		Households within 10 min Walk		Site Access/Egress by Pedestrians	
Site Ref	Site Name	Red - Low Potential Amber - Medium Potential Green - High Potential	Free Text	Red - Major Constraints Amber - Minor Constraints Green - No Significant Constraints	Free Text	Red - less than 400 Amber - 400-900 Green - greater than 900	Free Text	Red - Greater than 25 mins Amber - 20-25 mins Green - less than 25 mins	Free Text	Red - Major Constraints Amber - Minor Constraints Green - No Significant Constraints	Free Text	Red - less than 50 Amber - 50-250 Green - greater than 250	Free Text	Red - Major Constraints Amber - Minor Constraints Green - No Significant Constraints	Free Text
P1	East of Airport Way	Green	AM Peak 2041 - **1,947** pass-by vehicle movements at the Airport Way roundabout.	Green	Access off the A1303 Newmarket Road at, or to the east of, the Airport Way roundabout and off Airport Way to the south of the roundabout is feasible. The A1303 Newmarket Road provides a direct link to the A1303/A14 fully grade separated interchange, enabling convenient access to the strategic road network. Access to P1 will be on the 'inbound' route towards Cambridge which provides easier access for arriving vehicles from the east.	Green	**965 households currently within a 10min cycle.** Teversham, Newmarket Road west to Barnwell Roundabout, Marleigh and future Airport development site within 10 min cycle	Green	Journey time is 23 minutes (12.5mph/20kmh) cycle cruising speed from P1 to Grand Arcade Cycle Store via the most direct route (Newmarket Road)	Green	Near the National Cycle Route No.51, which along with the CEA proposals for Newmarket Road, provide links to Cambridge City Centre No significant additional cycle infrastructure is anticipated to connect the CEA Newmarket Road scheme appropriately to a new P&R facility at this site. Direct access from P1 to the proposed cycle infrastructure on both sides of Newmarket Road can be provided at the Airport Way Roundabout. Direction cycle access can also be provided the existing cycle route alongside Airport Way and in the future into the Airport strategic development. People living in Marleigh and Teversham will also be able to easily access the P1 by bicycle.	Red	**18 households currently within a 10min walk.** Newmarket Road east towards High Ditch Road and west to the existing P&R site and the edge of Teversham. However the north-eastern path of the Cambridge Airport development site will be within 10 min walk in the future.	Green	There is an existing shared unsegregated footway/cycleway running alongside Airport Way on the west side There is also an existing shared unsegregated Footway/Cycleway (National Cycle route no. 51) running along the north side of Newmarket Road adjacent to the site. No significant additional pedestrian infrastructure is anticipated to connect the CEA Newmarket Road scheme appropriately to a new P&R facility at this site.
P2	South of Newmarket Road	Green	AM Peak 2041 - **1,657** pass-by vehicle movements on Newmarket Road	Green	Access can be achieved from the A1303 Newmarket Road to the east of the Airport Way roundabout. To avoid existing accesses on the north side of Newmarket Rd opposite the site, it is considered that access into this site should be provided opposite the High Ditch Road junction, effectively creating a 4-arm junction with High Ditch Road. Eastwards, the A1303 Newmarket Road provides a direct link to the A1303/A14 fully grade separated interchange, enabling convenient access to the strategic road network. Access to P2 will be on the 'inbound' route towards Cambridge which provides easier access for arriving vehicles from the east.	Red	**385 households currently within a 10min cycle.** Part of Teversham covered and less of the residential areas in Barnwell compared to P1. However Marleigh and the Airport development will be within 10m cycle distance	Green	Journey time is 24 minutes (12.5mph/20kmh) cycle cruising speed from P2 to Grand Arcade Cycle Store via the most direct route (Newmarket Road)	Green	Near the National Cycle Route No.51, which along with the CEA proposals for Newmarket Road, provide links to Cambridge City Centre. Connections. The site can be connected to the existing National Cycle Route 51 via a crossing across Newmarket Road. Compared to P1, the site is located further from Marleigh, the Cambridge Airport development site and Teversham, potentially users of the relocated Park and Ride.	Red	28 households currently within a 10min walk. Newmarket Road east towards the A14 and west to the Airport Way roundabout. The P&R site won't be within 10 min walk of Cambridge Airport development.	Green	There is an existing shared unsegregated Footway/Cycleway (National Cycle route no. 51) running along the north side of Newmarket Road adjacent to the site. No significant additional pedestrian infrastructure is anticipated to connect the CEA Newmarket Road scheme appropriately to a new P&R facility at this site.
P3	North of High Ditch Road	Green	AM Peak 2041 - **1,660** pass-by vehicle movements on Newmarket Road	Green	It is considered that the most appropriate point to access the site would be via a new junction located at the site of the existing High Ditch Road/ A1303 Newmarket Road Junction. The reconfigured junction layout would need to make suitable provision for High Ditch Road as well as the P&R site access. The A1303 Newmarket Road provides a direct link to the A1303/A14 fully grade separated interchange, enabling convenient access to the strategic road network. Access to P3 will require 'inbound' traffic from the A14 to turn right into the site which is slightly less convenient when compared to P1 and P2 and crosses the National Cycle Route 51.	Red	**346 households currently within a 10min cycle.** Just the northern part of Teversham, Marleigh, the north-eastern part of the Airport site and southern Stow cum Quy within a 10min cycle	Amber	Journey time is 25 minutes (12.5mph/20kmh) cycle cruising speed from P3 to Grand Arcade Cycle Store via the most direct route (High Ditch Road/NCN51)	Green	No significant additional cycle infrastructure is anticipated to connect the CEA Newmarket Road scheme appropriately to a new P&R facility at this site. The National Cycle Route No.51 routes along the southern boundary of P3 providing opportunities to provide direct access. However P3 is located further from Cambridge increasing cycle times and travel distance from Marleigh, Cambridge Airport development site and Teversham.	Red	**28 households currently within a 10min walk.** Newmarket Road east towards the A14 and west to the Airport Way roundabout. The P&R site won't be within 10 min walk of Cambridge Airport development but is within 10min walk of Quy Mill Hotel via the existing underpass.	Green	There is an existing shared unsegregated Footway/Cycleway (National Cycle route no. 51) running along the north side of Newmarket Road adjacent to the site. No significant additional pedestrian infrastructure is anticipated to connect the CEA Newmarket Road scheme appropriately to a new P&R facility at this site.
P4	South of High Ditch Road														
P5	Adjacent to Marleigh														
P6	West of Airport Way														
P7	Existing Site														
P8	South of Junction 35														
P9	East of Quy Water														
P10	North of A14 East	Amber	AM Peak 2041 - **793** pass-by vehicle movements on Newmarket Road. However it is recognised the site is also close to Junction 35 of the A14	Green	Access to the site will need to be off the A1303 Newmarket Road on the northside of the A14 and to the east of Stow Cum Quy. Westwards the A1303 Newmarket Road provides a direct link to the A1303/A14 fully grade separated interchange, enabling convenient access to the strategic highway network. Access to P10 will require vehicles from the A14 to turn right into the site.	Amber	**434 households currently within a 10min cycle.** Stow cum Quy village within 10 min cycle of P10	Red	Journey time is 31 minutes (12.5mph/20kmh) cycle cruising speed from P4 to Grand Arcade Cycle Store via the most direct route (High Ditch Road/NCN 51)	Green	Near the National Cycle Route No.51, which along with the CEA proposals for Newmarket Road, provide links to Cambridge City Centre No significant additional cycle infrastructure is anticipated to connect the CEA Newmarket Road scheme appropriately to a new P&R facility at this site.	Amber	**68 households currently within a 10min walk.** Southern part of Stow cum Quy village only and properties along Newmark Road fronting the site	Green	There is an existing shared unsegregated Footway/Cycleway (National Cycle route no. 51) running along the north side of Newmarket Road adjacent to the site. No significant additional pedestrian infrastructure is anticipated to connect the CEA Newmarket Road scheme appropriately to a new P&R facility at this site.
P11	North of A14 West	Red	AM Peak 2041 - **584** pass-by vehicle movements on Church Road. However it is recognised the site is also close to Junction 35 of the A14	Amber	Access to the site would need to be located via a new junction incorporating Newmarket Road, Church Road and the access road to the Quy Mill Hotel which may require third party land acquisition. The CCC website confirms the hotel access road is public highway up to the point where the subway under the A14 is located due to National Cycle Route 51 using this access road. The constraint of having only one location to provide access to the site makes this more constrained than the other sites. The A1303 Newmarket Road provides a direct link to the A1303/A14 fully grade separated interchange, enabling convenient access to the National Highways network.	Amber	**452 households currently within a 10min cycle.** Stow cum Quy village within 10 min cycle of P10	Red	Journey time is 30 minutes (12.5mph/20kmh) cycle cruising speed from P5 to Grand Arcade Cycle Store via the most direct route (High Ditch Road/NCN 51)	Green	Site is adjacent to National Cycle Route 51 providing access to Cambridge. No significant additional cycle infrastructure is anticipated to connect the CEA Newmarket Road scheme appropriately to a new P&R facility at this site.	Green	**208 households currently within a 10min walk.** Southern part of Stow cum Quy village and the Quy Mill Hotel.	Green	There is an existing shared unsegregated Footway/Cycleway (National Cycle route no. 51) running along the north side of Newmarket Road adjacent to the site. No significant additional pedestrian infrastructure is anticipated to connect the CEA Newmarket Road scheme appropriately to a new P&R facility at this site.
P12	South of Stow cum Quy														

L CASE

		Average AM Peak Bus Journey Time to Emmanuel Street Bus Stops		Opportunity to Deliver Segregated Bus Priority Access/Egress		Does the plot shape/topography constrain development?		Land Ownership/Availability		Constructability		Overall Decision	
Site Ref	Site Name	Red - Greater than 20 mins Amber - 17-20 mins Green - less than 17 mins	Free Text	Red - Major Constraints/Costs Amber - Moderate Constraints/Costs Green - No Significant Constraints/Cost	Free Text	Red - Irregular shape close to min size Amber - Irregular shape but plenty of space Green - Ample space and efficient plot shape	Free Text	Red - Complex/multiple ownership Amber - Single Private Owner/Willing Owner Green - Public Sector Ownership	Free Text	Red - Complex/Constrained Amber - Some Challenges Green - No Significant Challenges	Free Text	Scheme Rank Score	Decision Notes Free Text
P1	East of Airport Way	Green	15:46	Green	Site is the furthest west and therefore will require the shortest lengths of additional bus priority measures to and from the site. There is flexibility in being able to provide segregated bus access onto Airport Way, Newmarket Road and/or Airport Way. Newmarket Road, west of Airport Way has the land availability to accommodate additional inbound and outbound bus lanes to P1. The direct access onto Airport Way provides the opportunity to provide a direct HQPT into the Cambridge Airport Strategic Development Site.	Green	Overall P1 has ample space to accommodate a 2,000 space P&R. However, the initial sift identified the need for careful site design to minimise ecological impacts to existing mature flora and future impacts on the Country Park allocation in Cambridge East AAP that runs along the southern portion of the site. The available space within the north-west corner of the site is 5.9 hectares, which should provide sufficient space to accommodate the P&R.	Amber	Site owned by Marshalls who are in principle supportive of locating the P&R to the south of Newmarket Road and east of Airport Way.	Amber	Site is located in open farmland Surface Water Drainage by infiltration may be possible. If infiltration not viable, nearest watercourse is approx. 200m to the south of the site. Access to this watercourse will be over third-party land and flows will be restricted to pre-development greenfield run-off rates. This will result in large amounts of attenuation storage, either at ground level in the form of basins, swales or underground in the form of buried storage tanks. There are no records of any public Foul Water or Surface Water sewers in the area. Foul Water drainage may be achieved by a package treatment tank which discharges into the watercourse. Existing Utilities can be found in Newmarket Road which could provide service to the site.	1	P1 ranks '1', preferred site as its scores highest in minimising the environmental impact of the P&R facility, provides the best operational performance due to being located in the 'inbound' side of Newmarket Road and is the closest to Cambridge resulting in the quickest onward cycle and bus journey times. The site location in close proximity to Marleigh and the allocated Airport development means the P&R facility will be accessible from existing and future local communities. It is recognised that P1 scores 'moderate high' in likely harm to the Green Belt purposes. But on balance taking into consideration all the assessed factors P1 is considered to provide the most suitable site of the 5 shortlisted options.
P2	South of Newmarket Road	Amber	17:08	Amber	Compared to P1 - additional lengths of bus lane on Newmarket Road could be required to provide bus priority to and from the site.	Green	Overall P2 has ample space to accommodate a 2,000 space P&R. However, the initial sift identified the need for careful site design to minimise ecological impacts to the SSSI to the east of the site. The available space within the site means there is flexibility to locate the P&R away from the eastern edge to provide a sufficient buffer to the SSSI.	Green	Site wholly owned by Cambridgeshire County Council and therefore considered to be available to the GCP to accommodate a new P&R.	Amber	Site is located in open farmland Surface Water Drainage by infiltration may be possible. If infiltration not viable, nearest watercourse is approx. 200m to the south of the site. Access to this watercourse will be over third-party land and flows will be restricted to pre-development greenfield run-off rates. This will result in large amounts of attenuation storage, either at ground level in the form of basins, swales or underground in the form of buried storage tanks. There are no records of any public Foul Water of Surface Water sewers in the area. Foul Water drainage may be achieved by a package treatment tank which discharges into the watercourse. Existing Utilities can be found in Newmarket Road which could provide service to the site.	2	P2 is ranked second as operationally it is the second best site due to the proximity to Cambridge (short bus and cycle journey times) and located on the inbound side of Newmarket Road. Compared to P1, the potential harm to the Green Belt is assessed as 'moderate', however major concerns were raised regarding potential environmental impacts due to the immediate proximity to Teversham Fen (SSSI quality reedbeds) and heritage assets. It is recognised that these impacts may be mitigated to some degree by locating the P&R in the west of P2 and undertaking further surveys, but on balance, P1 is preferable due to the closer proximity to Cambridge and committed and planned communities.
P3	North of High Ditch Road	Amber	17:56	Amber	Compared to P1 - additional lengths of bus lane on Newmarket Road could be required to provide bus priority to and from the site.	Green	Overall P3 has ample space to accommodate a 2,000 space P&R. However, within the site it would be preferable to locate the P&R at the eastern end, close as possible to Newmarket Road to minimise bus journey times. The site appears to be relatively flat topography and is approximately 175 metres wide which would result in the need to provide a rectangular shaped site layout.	Amber	Site wholly owned by a single private owner. Not allocated for development so could be open to purchase discussions.	Amber	Site is located in open farmland Surface Water Drainage by infiltration may be possible. If infiltration not viable, nearest watercourse is Quy Water approx. 200m to the east of the site. Access to this watercourse will be over third-party land and flows will be restricted to pre-development greenfield run-off rates. This will result in large amounts of attenuation storage, either at ground level in the form of basins, swales or underground in the form of buried storage tanks. There are no records of any public Foul Water of Surface Water sewers in the area. Foul Water drainage may be achieved by a package treatment tank which discharges into the watercourse. Existing Utilities can be found in Newmarket Road which could provide service to the site. There are cable networks crossing the existing priority junction on the north side of Newmarket Road. One of these is fibre optic which will be expensive to divert/lower.	3	P3 is ranked third. Overall P3 scores better than P2 in terms of potential environmental impact as it is located further from the SSSI. However the site could have major heritage constraints based on the information provided by Cambridgeshire County Council. Located further east than P1 and P2, onward cycle and bus journey times will increase and the site is located on the 'outbound' side of Newmarket Road. P3 will therefore require more extensive bus priority infrastructure compared to P1 and P2, and is in private ownership. Green Belt impact is assessed as 'high', which is the highest potential level of harm of the fiver short-listed sites.
P4	South of High Ditch Road												
P5	Adjacent to Marleigh												.
P6	West of Airport Way												
P7	Existing Site												
P8	South of Junction 35												
P9	East of Quy Water												
P10	North of A14 East	Red	23:48	Red	Substantial bus priority measures would be required to enable P&R buses to avoid congestion at Junction 35 of the A14 during peak travel periods.	Green	Overall P10 has ample space to accommodate a 2,000 space P&R. However, within the site it would be preferable to locate the P&R at the western end, close as possible to Newmarket Road to minimise bus journey times. The site appears to be relatively flat topography and is approximately 145 metres wide which would result in the need to provide a rectangular shaped site layout.	Green	Site wholly owned by Cambridgeshire County Council and therefore considered to be available to the GCP to accommodate a new P&R.	Red	Site is located in open farmland Underlying soils sand and gravel according to the British Geological Survey website. This type of soil may support infiltration as a form of surface water drainage. If infiltration is not viable, there is not a nearby watercourse available to accept the surface water run-off via gravity so surface water will need to be pumped. The site lies outside the scope area of the C2 enquiries made for the Cambridge Eastern Access scheme so the location of any public Foul Water of Surface Water sewers or any other utilities in the area is not known.	4	Sites P10 and P11 are the least favoured sites to accommodate the P&R facility. Operationally, both sites would require extensive additional bus priority infrastructure to enable attractive bus journey times to Cambridge. The cycle time has also increased, making the sites less attractive to potential 'Park and Pedal' users. The proximity to Stow-cum-Quy village means there is potential for negative environmental impacts on existing residents. Site P10 and P11 are appraised as potentially having 'moderate high' and 'moderate' harm on the Green Belt functions. Concerns are also raised with the constructability of P10. It has been recognised that a P&R facility on the north side of the A14 will intercept Cambridge bound vehicle trips earlier, potentially reducing movements through Junction 35 of the A14 and along Newmarket Road towards Cambridge. However as set out earlier, extensive bus priority infrastructure would be required to provide attractive bus journey times to off-set any vehicle journey times. The bus priority infrastructure requirements would substantially increase the cost of a P&R facility at P10 and P11 and is not considered to outweigh the benefit of a reduced vehicle access journey time.
P11	North of A14 West	Red	22:51	Red	Substantial bus priority measures would be required to enable bus to avoid congestion at Junction 35 of the A14 during peak travel periods.	Green	Overall P11 has ample space to accommodate a 2,000 space P&R. However, within the site it would be preferable to locate the P&R at the south-eastern end, close as possible to Church Road to minimise bus journey times. The site appears to be relatively flat topography and could accommodate a very efficient P&R layout.	Amber	Site wholly owned by a single private owner. Not allocated for development so could be open to purchase discussions.	Green	Site is located in open farmland Surface Water Drainage by infiltration may be possible. If infiltration not viable, nearest watercourse is approx. 200m to the south of the site. Access to this watercourse will be over third-party land and flows will be restricted to pre-development greenfield run-off rates. This will result in large amounts of attenuation storage, either at ground level in the form of basins, swales or underground in the form of buried storage tanks. The site lies outside the scope area of the C2 enquiries made for the Cambridge Eastern Access scheme so the location of any public Foul Water of Surface Water sewers or any other utilities in the area is not known	4	
P12	South of Stow cum Quy												

Appendix H

SHORT-LISTED SITE LOCAL WALK AND CYCLE CATCHMENT PLANS


P&R - Detailed assessment sites
10 minute walk catchment
P1
A14
A1303
NEWMARKET ROAD
HIGH DITCH ROAD
LOW FEN DROVE WAY
AIRPORT WAY
CHURCH ROAD
MARLEIGH AVENUE
ALBERT ROAD
STOW ROAD
ORCHARD STREET
B1102
SHORT DROVE WAY (TRACK)
LONG DROVE WAY (TRACK)
0
250
500
1,000 Metres
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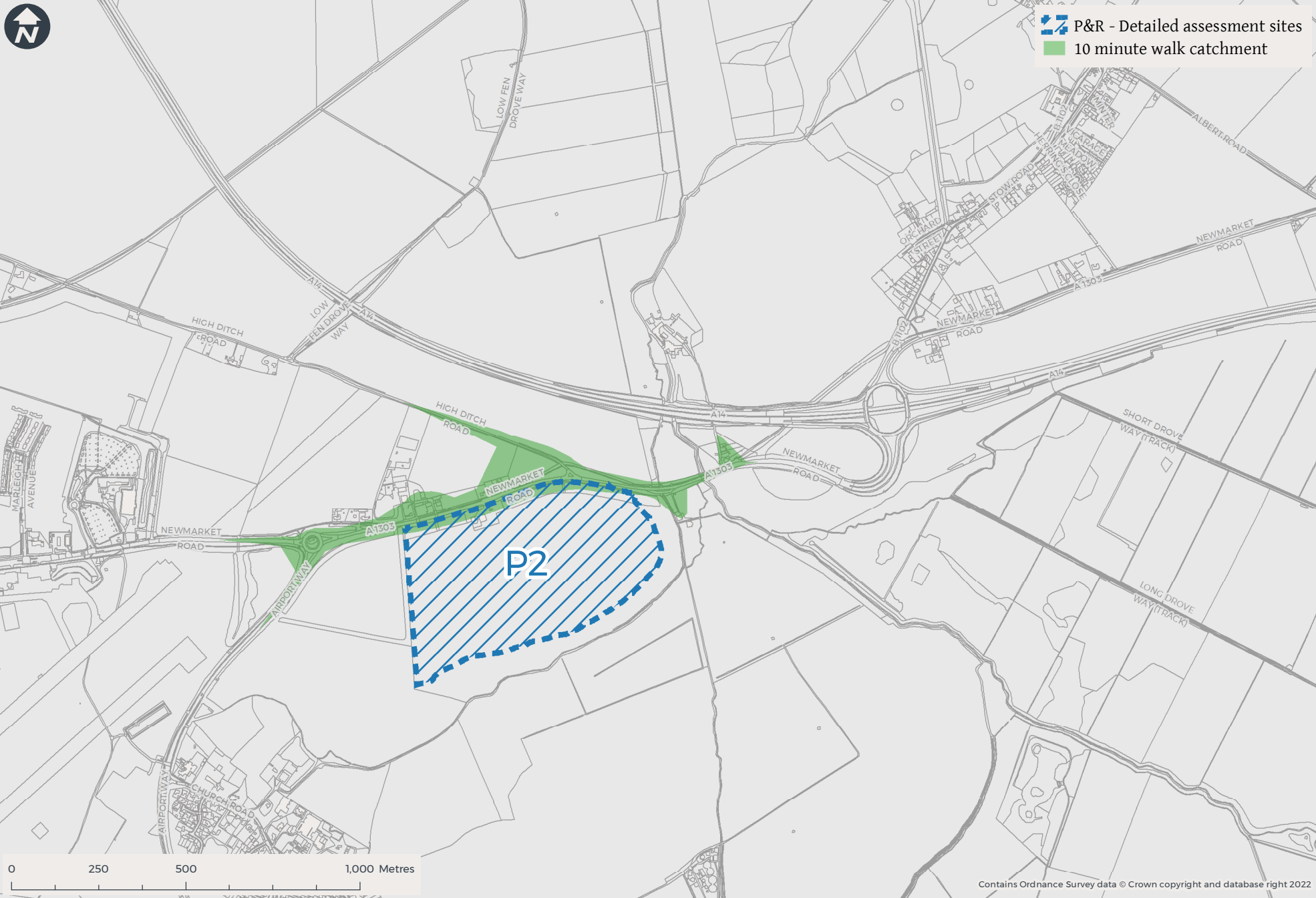
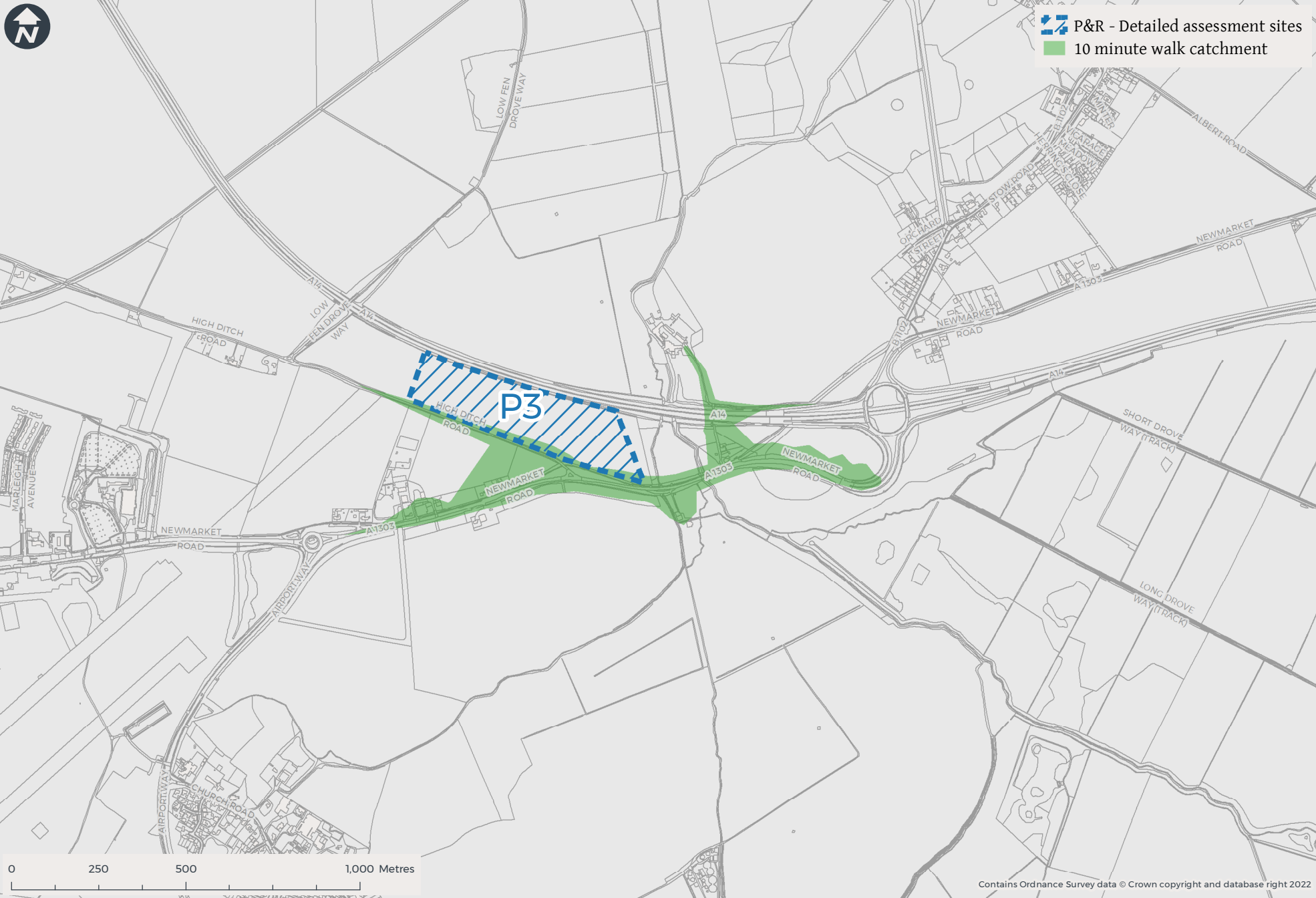
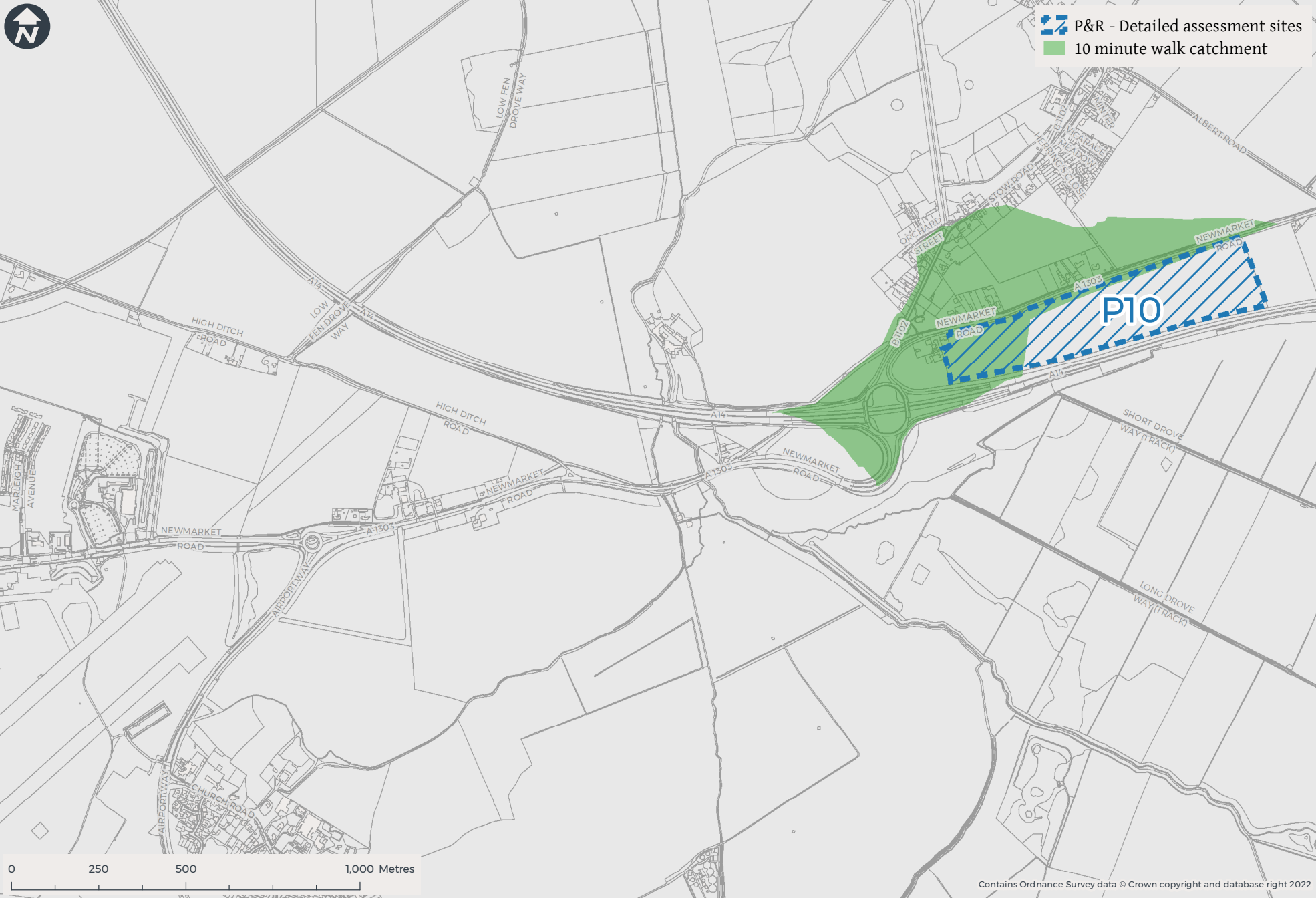
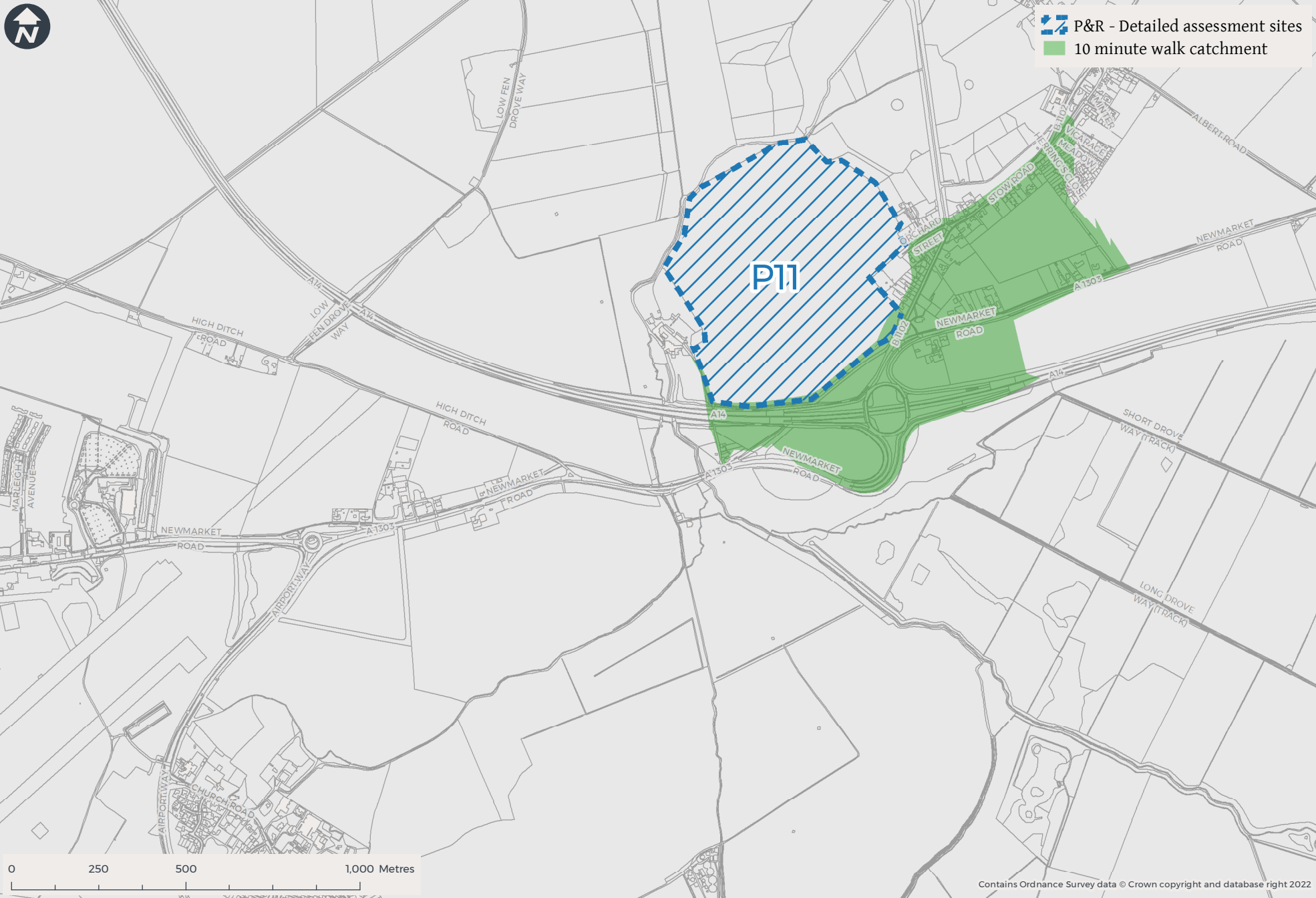
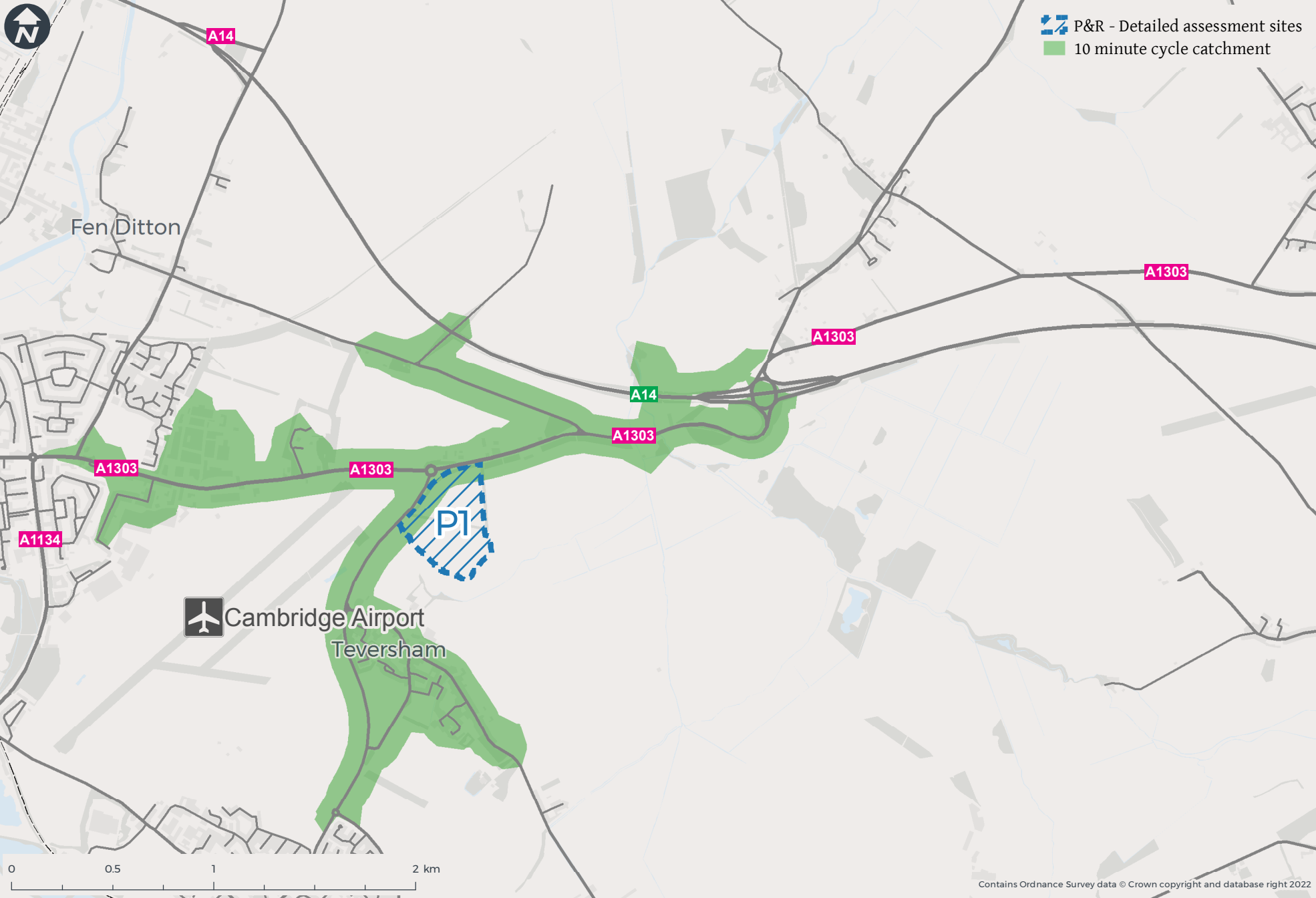
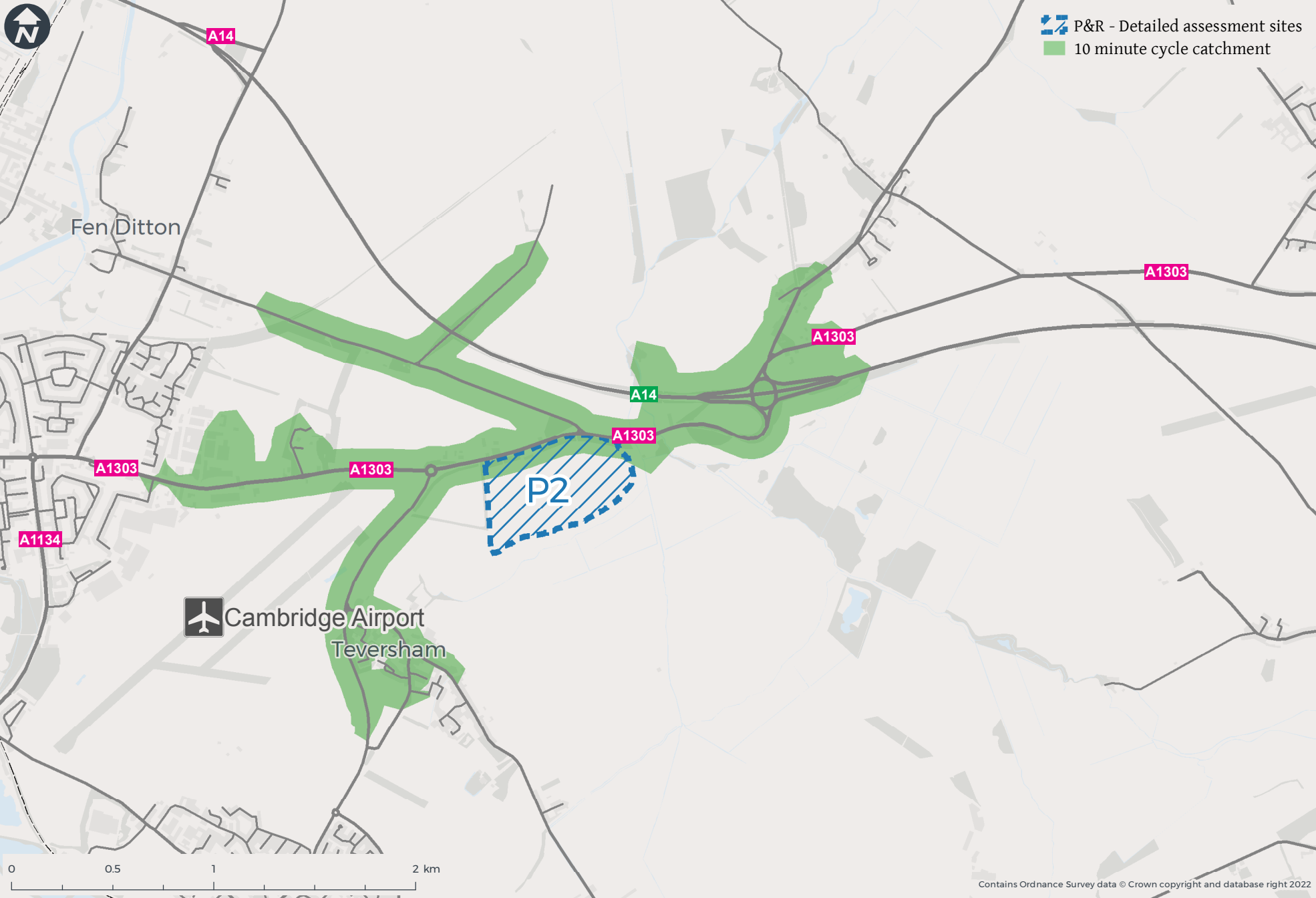


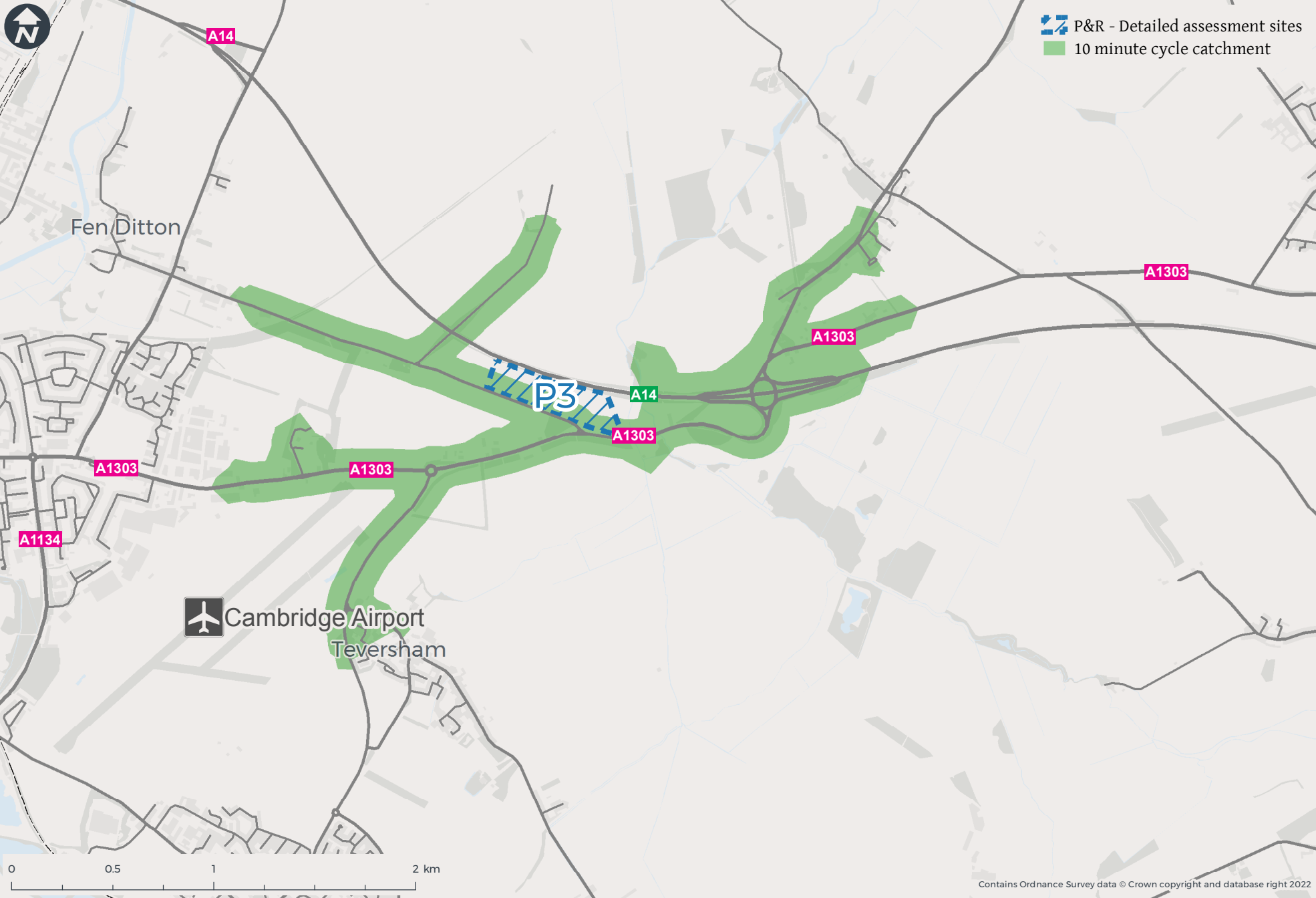


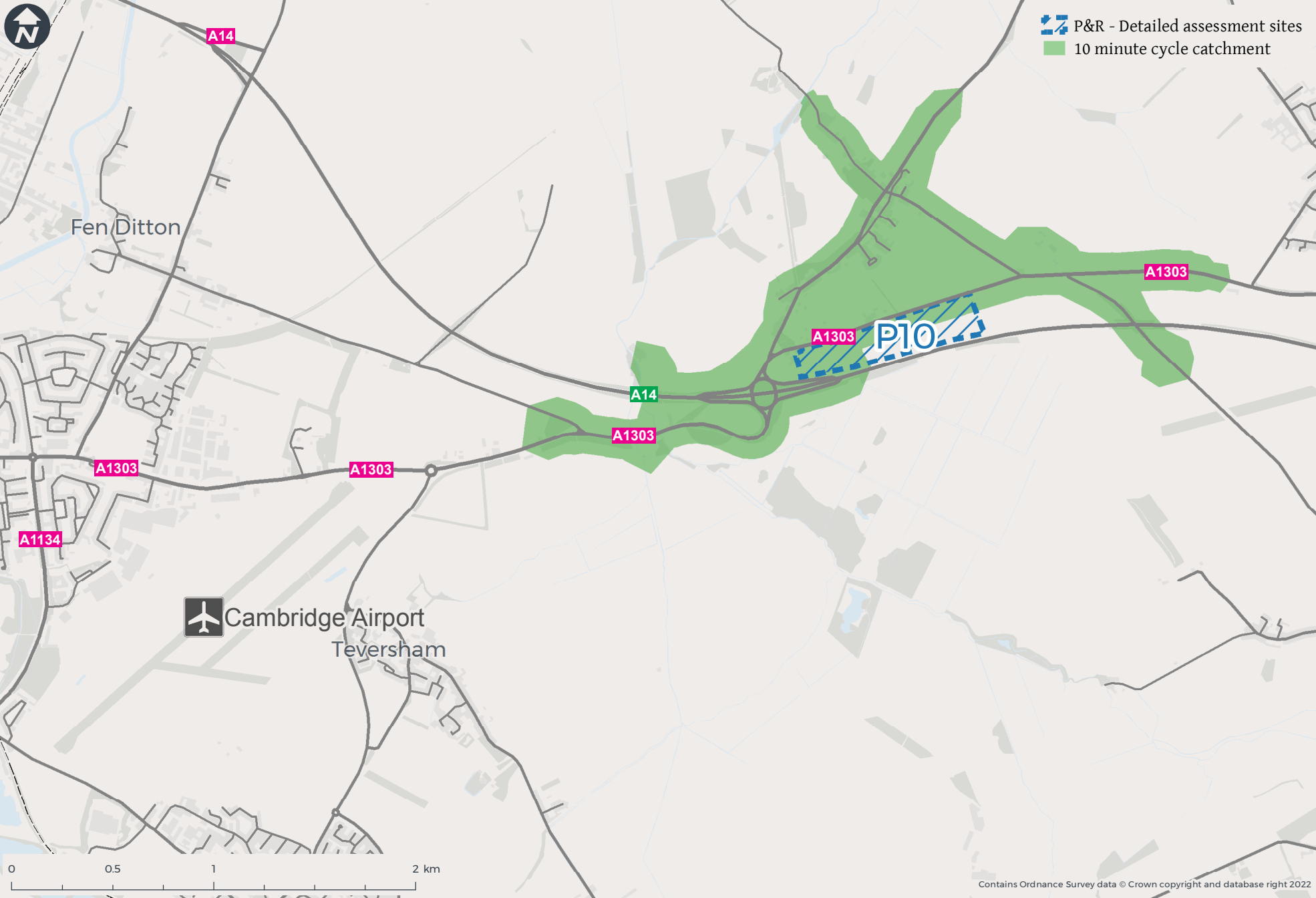



P&R - Detailed assessment sites
10 minute walk catchment
P11
A14
A1303
NEWMARKET ROAD
HIGH DITCH ROAD
LOW FEN DROVE WAY
B1102
STOW ROAD
ALBERT ROAD
SHORT DROVE WAY (TRACK)
LONG DROVE WAY (TRACK)
AIRPORT WAY
CHURCH ROAD
MARLEIGH AVENUE
0
250
500
1,000 Metres
Contains Ordnance Survey data © Crown copyright and database right 2022


P&R - Detailed assessment sites
10 minute cycle catchment
A14
Fen Ditton
A1303
A1303
A14
A1303
A1303
A1303
A1134
P1
Cambridge Airport
Teversham
0
0.5
1
2 km
Contains Ordnance Survey data © Crown copyright and database right 2022


P&R - Detailed assessment sites
10 minute cycle catchment
A14
Fen Ditton
A1303
A14
A1303
A1303
A1303
P2
A1134
Cambridge Airport
Teversham
0
0.5
1
2 km
Contains Ordnance Survey data © Crown copyright and database right 2022


P&R - Detailed assessment sites
10 minute cycle catchment
A14
Fen Ditton
A1303
A1303
P3
A14
A1303
A1303
A1303
A1134
Cambridge Airport
Teversham
0
0.5
1
2 km
Contains Ordnance Survey data © Crown copyright and database right 2022


P&R - Detailed assessment sites
10 minute cycle catchment
A14
Fen Ditton
A1303
P10
A1303
A14
A1303
A1303
A1303
A1134
Cambridge Airport
Teversham
0
0.5
1
2 km
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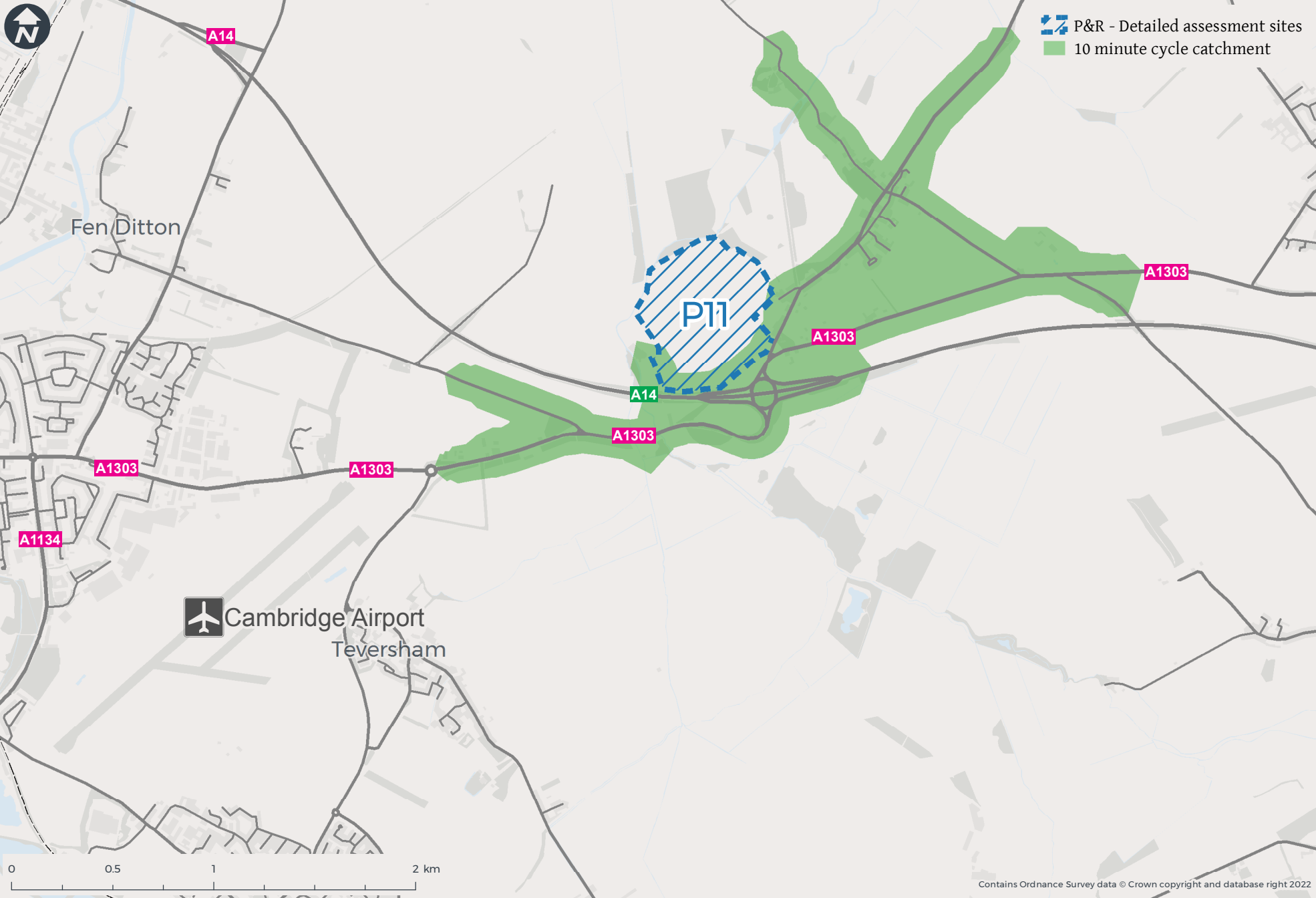
P&R - Detailed assessment sites
10 minute cycle catchment
P11
A14
A1303
A1303
A1303
A1303
A1303
A14
A1134
Fen Ditton
Cambridge Airport
Teversham
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Contains Ordnance Survey data © Crown copyright and database right 2022

62-64 Hills Road
Cambridge
CB2 1LA

wsp.com

Appendix C

DEMAND & BENEFITS MODELLING NOTE

TECHNICAL NOTE

DATE:	08 December 2022	**CONFIDENTIALITY:**	Internal
SUBJECT:	Cambridge Eastern Access Park and Ride OBC Modelling		
PROJECT:	Cambridge Eastern Access Park and Ride OBC	**AUTHOR:**	GG
CHECKED:	CW	**APPROVED:**	AR

INTRODUCTION

WSP has been commissioned by the Greater Cambridge Partnership (GCP) to develop the Outline Business Case (OBC) for the Newmarket Road Park & Ride relocation scheme that relocates the current Newmarket Road Park & Ride to the east of Airport Way and expands the capacity of the Park & Ride from 873 parking spaces to approximately 1,750 parking spaces. The 2041 forecast Preliminary Design Paramics Model has been used to assess the impact of the relocation of the Park & Ride on the mode shift, journey time and journey distance. The potential impact on the mode shift to buses has been assessed as well.

WSP updated and revalidated the 2017 Base Paramics Model originally built by Atkins. The model update and revalidation focused on the Newmarket Road area, as described in the Cambridge Eastern Access Local Model Validation Report, April 2022. This base model was used to develop the forecast year 2041 models with the demand obtained from the 2041 Cambridge Sub Region Model (CSRM2) F series.

This technical note has been prepared to describe the methodology used to assess the impact of the relocation of the Park & Ride, discuss the model results focusing on the car trips shifted to use Park & Ride due to the relocation of the facility, and the changes of journey time and distance for these trips.

MODEL REVIEW

The Paramics Models and the Cambridge Sub Region Model (CSRM) have been developed to assess the GCP schemes including for the Cambridge Eastern Access (CEA) programme. The Paramics Models cover the whole Cambridge City Centre area and focus on assessing the CEA programme. Therefore, it includes more details of the CEA schemes along Newmarket Road including the Elizabeth Way Cyclops junctions, Barnwell Road Cyclops junctions, cycle/pedestrian crossings at the signalised junctions, and the Newmarket Road Park & Ride relocation. The CSRM model covers the whole of Cambridgeshire and includes all the GCP schemes. The models available for the Park & Ride OBC are summarised as below. (No additional model runs have been undertaken.)

Paramics Model

- 2017 Base Paramics Model: Base model validated to the 2017 survey data
- 2041 DM Paramics Model: including the City Access scheme as policy
- 2041 Preliminary Design Model:
  - Including City Access scheme as policy
  - Including CEA scheme Phase 1: the Preliminary Design along Newmarket Road (Elizabeth Way and Barnwell Road changed to Cyclops junctions, bus lane updated, and the cycle/pedestrian facilities at the signalised junctions), and the Newmarket Road Park & Ride relocation

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CSRM Model

- CSRM DM (2026/2041):
  - Including Making Connection Scheme
  - Including all the GCP schemes
  - Including CEA Phase 1 Concept Design (Elizabeth Way and Barnwell Road changed to Cyclops junctions and the Newmarket Road Park & Ride relocation)
- CSRM DS (2026/2041):
  - Including Making Connection Scheme
  - Including all the GCP schemes.
  - Including CEA Phase 1 Concept Design (Elizabeth Way and Barnwell Road changed to Cyclops junctions and the Newmarket Road Park & Ride relocation), and Phase 2 (Marshall Development & Airport Busway)

As the CSRM model does not have the scenario without the Park & Ride relocation, it cannot be used to assess the impact of the relocation of the Park & Ride. Therefore, the Paramics Models have been used for this assessment.

METHODOLOGY

The Preliminary Design models were developed from the 2041 DM model which included the Preliminary Design scheme of Newmarket Road. The model demand was derived from the CSRM2 F series 2041 forecast model with the City Access Proxy by adding a time penalty for car trips ending in the charge area. By incorporating the City Access Proxy in the forecast CSRM2 model, it is expected that the traffic in the Cambridge City Centre can be reduced by 10% compared to the base model.

The Preliminary Design was developed based on the assumption that the car access for the Park & Ride is a priority junction located on Newmarket Road and bus access directly links to Airport Way Roundabout.

The existing trip rates of the Newmarket Road Park & Ride have been applied to the expanded Park & Ride capacity to calculate the trips originated from or destinated to the Park & Ride[1]. The existing Newmarket Road Park & Ride trip rates are comparable to the proposed M11 Park & Ride trip rates that have a similar number of parking spaces as the expanded Newmarket Road Park & Ride. Therefore, it is sensible to assume the existing trip rates can be applied for the expanded Park & Ride. The total demand of the whole network has been constrained to the original total demand. Table 1 compares the total demands to/from the existing and proposed Park & Ride.

[1] At the time of the Paramics modelling a working assumption of 2,000 parking spaces was applied.

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Table 1 – Park and Ride Demand Comparison

c	Preliminary Design Model (Park & Ride with 2,000 Spaces)		DM Model (Park & Ride with 873 Spaces)		Car trips shifted to Park & Ride	
	Origin	Destination	Origin	Destination	Origin	Destination
AM (07:00-08:00)	31	501	14	219	17	282
IP (11:00-12:00)	173	178	76	77	97	101
PM (17:00-18:00)	443	47	193	20	250	27

In the AM peak, about 61% of car trips shifted to the Park & Ride were generated from the east/north of A14 junction 35, 4% of the trips were generated from Teversham, and 10% of these trips were generated from Milton/Waterbeach Area. In the PM peak, about 62% of car trips shifted to the Park & Ride destinated at the east/north of A13 junction 35, 5% of these trips destinated at Tevesham, and 9% of these trips destinated at Milton/Waterbeach area. In general, the trip distribution demonstrates that the Park & Ride mainly attracts traffic from/to east of Cambridge, which is reasonable considering the location of the Park & Ride.

As the Paramics DM model does not include any scheme along Newmarket Road while the Preliminary Design model includes both Newmarket Road Preliminary Design scheme and the relocation of the Park & Ride, the direct comparison of the journey time/distance between DM and DS models also includes the impact of Newmarket Road Preliminary Design. Therefore, the direct comparison between DM and DS models is not appropriate to assess the impact of the relocation of the Park & Ride. The assessment therefore focuses on the number of car trips shifted to the Park & Ride, and the journey time/distance difference of these trips between using car and using the Park & Ride in the Preliminary Design Model. The assessment is based on the following assumptions:

- The new generated Park & Ride trips (Table 1) in the Preliminary Design model is considered to be the total car trips shifted to Park & Ride.
- The original Origin and Destination for these trips are identified in the model.
- Journey time saving for the trips shifted from car to the Park & Ride is assessed by comparing the car journey time between the identified Origins and Destinations to the journey time travelling from/to Park & Ride in the Preliminary Design Model. Please note the Journey Time travelling from/to Park & Ride is the car journey time, therefore, it does not include the bus journey time from/to Park and Ride to the final destination.

- Journey distance saving for the trips shifted from car to the Park and Ride is assessed by comparing the car journey distance between the identified Origins and Destinations to the journey distance travelling from/to Park & Ride in the Preliminary Design Model. Please note the journey distance travelling from/to Park & Ride in the Preliminary Design Model is the car journey distance, which does not include the bus journey distance from Park & Ride to the destination.

Another potential impact of the relocation of the Park & Ride is the mode shift from car to public transport along Newmarket Road because the relocation of the Park & Ride is expected to reduce the car trips along Newmarket Road and therefore reduce the bus travel time along Newmarket Road. Due to lack of comprehensive modelling, the number of car trips shifted to bus and possible journey time savings have been calculated by using the 2041 Preliminary Design model based on the assumptions below:

- All the zones within 100 metres of Newmarket Road buffer area are accessible to the bus services along Newmarket Road.
- All the zones in the city centre cordon (A1134/A603) can access the bus services along Newmarket Road.
- The residents at Fen Ditton can access the bus services along Newmarket Road.
- The residents along Barnwell Road can access the bus services along Newmarket Road.
- All the car trips travelling between these zones/areas will change to bus if the bus journey time is shorter than the car journey time and the bus journey time saving is more than 10 seconds in the Preliminary Design Model.
- The journey time saving has been calculated by comparing the bus journey time to the car journey time along Newmarket Road in the Preliminary Design Model.
- It is assumed that there is no journey distance difference between car and bus along Newmarket Road.

RESULTS

The journey distance and journey time skim matrices have been extracted from the Preliminary model for the AM, PM and Interpeak periods. Table 2 compares the journey time/distance by using car to the journey time/distance by using the Park & Ride for the trips shifted from car to the Park & Ride. In general, the model results demonstrate a journey time/distance saving by using the Park & Ride in all three time periods.

The most significant journey time saving can be observed in the PM peak due to the congestion in the network especially along the Newmarket Road. In the PM peak, the average car journey time along Newmarket Road inbound is about 3.4 minutes longer than in the AM peak, and the car journey time travelling along Newmarket Road outbound is 5.4 minutes longer than in the AM peak.

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Table 2 – Journey Time/Distance Saving for Car Trips Shifting to Park & Ride

	AM		IP		PM	
	Car	P&R	Car	P&R	Car	P&R
Total Travel Distance (Vehicle KM)	3,017	1,718	1,990	1,051	2,983	1,725
Total Travel Time (Vehicle Hours)	148	117	68	29	146	38

The bus journey time/journey distance (kilometres) between the relocated Park & Ride and Drummer Street in Cambridge City Centre has been summarised in the Table 3 below. The bus journey time is the average journey time during peak hour.

Table 3 – Bus Journey Time/Distance

	AM	IP	PM
Bus Journey Distance (Kilometre) Inbound (Park and Ride to Drummer Street)	5.17	5.17	5.17
Bus Journey Distance (Kilometre) Outbound (Drummer Street to Park and Ride)	5.6	5.6	5.6
Bus Journey Time Inbound (Minutes) (Park and Ride to Drummer Street)	15.5	14.7	20.0
Bus Journey Time Outbound (Minutes) (Drummer Street to Park and Ride)	25.0	27.0	31.9

As the relocation of the Park & Ride is expected to reduce car trips and bus journeys along Newmarket Road can be improved, it is expected that some trips will shift from car to bus. The number of car trips shifted to bus and the total travel time saving by bus compared to by car are summarised in Table 4 below:

Table 4 – Journey Time Saving for the Trips Shift from Car to Bus

	AM	IP	PM
The number of car trips shifted to Bus	181	182	251
Total Travel Time Saving (Vehicle Hours)	6.2	1.9	3.9

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CONCLUSION

The results demonstrate that the relocation of the Newmarket Road Park & Ride can result in car trips shifting to the Park & Ride. Due to the location of Newmarket Road, most of the trips shifted to the Park & Ride travel from/to north/east of A14 junction 35. Users journey time and journey distance can be reduced by using the Park & Ride compared to using car, especially in the PM peak when the congestion along Newmarket Road is significant.

As the relocation of the Park & Ride can reduce the bus journey time along Newmarket Road, a number of car trips travelling along Newmarket Road are expected to shift to public transport. The potential journey time saving has been analysed by comparing the bus journey time and car journey time along Newmarket Road in the Preliminary Design model.

Due to the absence of comparable DM and DS Paramics models that can only reflect the impact of the relocation of Park & Ride, the journey time and journey distance analysis focused on the shift in trips from car to Park & Ride or public transport. The impact on the remaining car trips cannot be represented by the models. The limitations of the methodology are summarised below:

- It cannot show the possible journey time saving for the car trips, which do not change travel mode.
- It does not provide a full picture of the impact of the relocation of Park & Ride including the journey distance, and journey time.
- The potential bus journey time saving can be overestimated as the bus journey time saving can also include the benefits resulting from the Newmarket Road Preliminary Design.
- The journey time and journey distance benefits generated from the trips shifted from car to Park & Ride can be the underestimated as the car journey time in the Preliminary Design model also includes the impact of the relocation of Park & Ride. Without the relocation of Park & Ride, the car journey time is expected to be longer and the journey time saving for the trips to Park & Ride is expected to be more significant.

Although the assessment has some limitations, it provides a proportionate assessment for the impact of the relocation of the Park & Ride on the mode shift from car to Park & Ride, journey time, and journey distance.

Appendix D

TEE, PA & AMCB TABLES

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	ALL MODES	ROAD	BUS and COACH	RAIL	OTHER	
User benefits	TOTAL	Private Cars and LGVs	Passengers	Passengers		
Travel time	11,175	5,190	5,986			-
Vehicle operating costs	-	-				-
User charges	-		-		-	
During Construction & Maintenance	-					
NET NON-BUSINESS BENEFITS: COMMUTING	11,175	*(14)* 5,190	- 5,986		-	

Non-business: Other	ALL MODES	ROAD	BUS and COACH	RAIL	OTHER	
User benefits	TOTAL	Private Cars and LGVs	Passengers	Passengers		
Travel time	13,692	8,970	4,722			-
Vehicle operating costs	-	-	-			-
User charges	-		-		-	
During Construction & Maintenance	-					
NET NON-BUSINESS BENEFITS: OTHER	13,692	*(15)* 8,970	4,722		-	

Business						
User benefits		Goods Vehicles LGVs	Business Cars & Passengers	Freight	Passengers	
Travel time	5,338	2,469	- 2,868			-
Vehicle operating costs	-	-				
User charges	-		-		-	
During Construction & Maintenance	-					
Subtotal	5,338	*(2)* 2,469	- 2,868	-	-	
Private sector provider impacts				Freight	Passengers	
Revenue	19,054		19,054		-	
Operating costs	-		-			
Investment costs	-		-			
Grant/subsidy	-					
Subtotal	19,054	*(3)*				
Other business impacts						
Developer contributions	-	*(4)*				
NET BUSINESS IMPACT	24,391	*(5) = (2) + (3) + (4)*				

TOTAL		
Present Value of Transport Economic Efficiency Benefits (TEE)	49,258	*(6) = (1a) + (1b) + (5)*

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.

All entries are discounted present values, in 2010 prices and values

Public Accounts (PA) Table

	ALL MODES	ROAD	BUS and COACH	RAIL	OTHER
Local Government Funding	TOTAL	INFRASTRUCTURE			
Revenue	-				-
Operating Costs	1,966	81			2,067
Investment Costs	15,868				15,868
Developer and Other Contributions	-				
Grant/Subsidy Payments	-				
NET IMPACT	17,855 *(7)*				
Central Government Funding: Transport					
Revenue	-				-
Operating costs	-				-
Investment Costs	-				-
Developer and Other Contributions	-				
Grant/Subsidy Payments	-				
NET IMPACT	- *(8)*				
Central Government Funding: Non-Transport					
Indirect Tax Revenues	3,253 *(9)*	3,253			-
TOTALS					
Broad Transport Budget	17,855	*(10) = (7) + (8)*			
Wider Public Finances	3,253	*(11) = (9)*			

Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers.

All entries are discounted present values in 2010 prices and values.

Analysis of Monetised Costs and Benefits (£000s)

Noise	380	*(12)*
Local Air Quality	692	*(13)*
Greenhouse Gases	1,010	*(14)*
Journey Quality	-	*(15)*
Physical Activity	-	*(16)*
Accidents	5,706	*(17)*
Economic Efficiency: Consumer Users (Commuting)	11,175	*(1a)*
Economic Efficiency: Consumer Users (Other)	13,692	*(1b)*
Economic Efficiency: Business Users and Providers	24,391	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	- 3,253	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	53,794	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	17,855	*(10)*
Present Value of Costs (see notes) (PVC)	17,855	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	35,938	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	3.01	BCR=PVB/PVC

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Appendix E

APPRAISAL SUMMARY TABLE

Appraisal Summary Table

Date produced:	13/01/2023

Contact:	
Name	Jo Baker
Organisation	GCP
Role	Promoter/Official

Name of scheme:	Newmarket Road Park & Ride Relocation and Expansion
Description of scheme:	The relocation of the existing Park & Ride (P&R) site provides the second part of Phase A of the CEA programme. The scheme will expand P&R provision from 895 parking spaces to around 1,750 and relocate it, allowing it to potentially accommodate additional bus services to support the 'Making Connections' bus strategy.

Impacts		Summary of key impacts	Assessment				
			Quantitative			Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	Journey time benefits will be experienced by both P&R users through a faster journey to central Cambridge by bus than in their car and for those who remain on the highway network and benefit from reduced congestion due to mode shift. Increased P&R ridership will increase revenue received by the bus operators.	Value of journey time changes(£) 5,337,667 Net journey time changes (£) 0 to 2min / 2 to 5min / > 5min			-	24,391,486	Slight benefit, with the P&R mainly attracting traffic from/to east of Cambridge
	Reliability impact on Business users	The scheme will enable car users to access the P&R services further from central Cambridge and hence prior to more congested and unreliable sections of the Newmarket Road corridor. Once on the P&R services, or cycling, priority measures will benefit reliable journeys into central Cambridge.	-			Slight Beneficial	-	
	Regeneration	Not applicable.	-			n/a	-	
	Wider Impacts	Improved journey time and reliability will support wider impacts, but not anticipated to be material and has not been assessed.	-			n/a	-	
Environmental	Noise	The relocated P&R and the existing site do not fall within a Noise Important Area (NIA), though two small (and inexplicable) NIAs on Newmarket Road would be affected by vehicles passing into the site. The monetised impact of mode shift has been estimated using MECs.	-			-	380,369	Slight benefit due to localised impacts from mode shift, but potential noise introduction for Stow-cum-Quy
	Air Quality	Central Cambridge is located within an Air Quality Management Area (AQMA), though this does not extend as far as the relocated P&R. There may be local air quality impacts at the relocated P&R resulting from changes in traffic flows. However, it is not yet clear whether these would be better or worse than with the current site. The monetised impact of mode shift has been estimated using MECs.	-			-	692,471	Slight benefit due to localised impacts from mode shift, but potential negative impact for Teversham
	Greenhouse gases	The net reduction in highway kilometres as a result of modal shift will lead to a net decrease in greenhouse gas emissions. The monetised impact of mode shift has been estimated using MECs.	Change in non-traded carbon over 60y (CO2e) Change in traded carbon over 60y (CO2e)			-	1,010,060	
	Landscape	There are no designated or protected landscapes within the preferred site. However, there are likely to be temporary visual impacts from construction for residents within 450m of Teversham.	-			Neutral	-	
	Townscape	An increase in sustainable 'last mile' modes as a result of the scheme will encourage human interaction with the townscape.	-			Neutral	-	
	Historic Environment	The relocated P&R could have minor effects on the settings of five Grade II listed and one Grade II* listed building in Teversham. The presence of non-designated heritage assets and buried archaeological remains is not known at this stage.	-			Slight Adverse	-	
	Biodiversity	Priority habitats (primarily hedgerows) within the relocated P&R site boundaries could be lost as a result of the proposals.	-			Slight Adverse	-	
	Water Environment	The relocated P&R is predominantly located within areas classified as Flood Zone 1, with only small areas within Flood Zones 2 and 3, so it is therefore anticipated that there will be a limited increase in flood risk as a result of the site.	-			Neutral	-	
Social	Commuting and Other users	Journey time benefits will be experienced by both P&R users through a faster journey to central Cambridge by bus than in their car and for those who remain on the highway network and benefit from reduced congestion due to mode shift.	Value of journey time changes(£) 24,866,748 Net journey time changes (£) 0 to 2min / 2 to 5min / > 5min			-	24,866,748	Slight benefit, with the P&R mainly attracting traffic from/to east of Cambridge
	Reliability impact on Commuting and Other users	The scheme will improve reliability for P&R users by enabling car users to access the P&R services further from central Cambridge and hence prior to more congested and unreliable sections of the Newmarket Road corridor. Once on the P&R services, or cycling, priority measures will benefit reliable journeys into central Cambridge.	-			Slight Beneficial	-	
	Physical activity	The expansion of cycle parking and lockers is anticipated to encourage an increase in active mode users wishing to benefit from the facilities along the corridor and at the P&R site.	-			Slight Beneficial	-	
	Journey quality	The relocated and expanded P&R site will broadly provide the same standard of facilities as currently exist and will not affect travellers' views or traveller stress (which are addressed through other phases of CEA).	-			Neutral	-	
	Accidents	The overall reduction in highway-kilometres travelled as a result of the scheme will reduce the number of highway accidents. The monetised impact of mode shift has been estimated using MECs.	-			-	5,705,532	Slight benefit for those who are more at risk of highway accidents, e.g. young adults and older people
	Security	The scheme will provide cycle lockers and CCTV for the site, but as these are also provided at the current site there will be no material improvement.	-			Neutral	-	Neutral
	Access to services	In the longer term it is anticipated that additional P&R services will operate from the site. However, for this appraisal the level of services and the physical accessibility of the relocated P&R site is assumed to be the same as for the current site.	-			Neutral	-	Neutral
	Affordability	The reduction in highway-kilometres travelled by those switching from car to public transport will result in reduced vehicle operating costs for drivers.	-			Slight Beneficial	-	Slight benefit for the socio-economic groups for whom affordability is most challenging
	Severance	It is not anticipated that the scheme will create or remove barriers to movement.	-			Neutral	-	Neutral
	Option and non-use values	The proposed scheme does not introduce new public transport options.	-			Neutral	-	
Public Accounts	Cost to Broad Transport Budget	The scheme requires funding from the GCP.				-	17,854,503	
	Indirect Tax Revenues	The reduction in private car use has a negative impact on indirect tax revenues to central government due to the reduction in fuel consumption and expenditure on bus fares rather than taxable expenditure.				-	-3,253,094	

Appendix F

COST SCHEDULE

Cambridge Eastern Access Park & Ride - Newmarket Road - Feasibility Design Cost Estimates

Client	Greater Cambridge Partnership		
Project	Cambridge Eastern Access Park & Ride - Newmarket Road		
Title	Feasibility Design Cost Estimates		
Project Number	70086306		
Date	13/12/2022		
Revision	1.2		
Prepared By	Asif Zubair	Staff Grade	P02
Checked / Approved By	Steve Keeley	Staff Grade	P07
Authorised By	Steve Keeley	Staff Grade	P07

Index

1.1 Estimate History

	Notes / Variations	Date Issued
1.1	Cambridge Eastern Access P&R Feasibility Design Cost Estimate v.1.1	18 November 2022
1.2	Cambridge Eastern Access P&R Feasibility Design Cost Estimate v.1.2 (revised Prelim/OH&P/TM and risk percentages)	13 December 2022

2.1 Document Register

Document Title	Document Reference	Revision	Format	Date
Option 1: Proposed Park & Ride General Arrangements	6306-WSP-00-XX-DR-CV-000801	P03	PDF	Jun-22
Option 3: Proposed Park & Ride General Arrangements	6306-WSP-00-XX-DR-CV-000803	P03	PDF	Jun-22

3.1 Notes

Pricing Notes

Estimates have been based on 4Q 2022 and also adjusted according to the assumed construction programme, '*Construction Start 1Q 2026 and Construction Finish 4Q 2026*' (see the cost profile).

An allowance of 3% inflation contingency per annum has been included to account for current market conditions

Estimates have been based upon drawing numbers as scheduled on the attached and viewing on Google maps

Exclusions

Optimism Bias
Land take
Legal issues
VAT

Assumptions

Land deemed relatively flat
Existing ground level within the site approximately same as existing road levels
Proposed surface car park level is 250mm higher than the existing road level
Soils condition are good - No hazardous and contaminated material are present on site
No need for geogrid or soil stabilisation
Topsoil can be reused - No imported topsoil needed
50% excavated material to be used at site
All other assumptions are included within the estimate

4.1 Cost Profile

Item Description	Cambridge Eastern Access P&R - Opt. 1	Cambridge Eastern Access P&R - Opt. 3
Construction costs incl Prelims, TM, OH & P @ 4Q'22	£15,818,485	£16,539,715
STATS Diversions	£791,000	£827,000
Design Fees, Supervision & Surveys	£3,163,700	£3,308,000
Risk / Contingency	£5,932,000	£6,202,500
Future Inflation	£3,563,000	£3,725,400
Inflation Contingency (@3% per annum)	£1,874,500	£1,960,000

	Construction Start	Construction Finish
	1Q 2026	4Q 2026

Option 1

	Years					
	2022-23	2023-24	2024-25	2025-26	2026-27	Total
Construction costs incl Prelims, TM, OH & P				30%	70%	100%
STATS				40%	60%	100%
Professional Fees	10%	20%	30%	20%	20%	100%
Future Inflation	1.08%	4.31%	8.89%	12.67%	15.63%	
Inflation Contingency (@3% per annum)	0.75%	3.75%	6.75%	9.75%	12.75%	
Construction costs incl Prelims, TM, OH & P	£0	£0	£0	£4,745,546	£11,072,940	£15,818,485
STATS	£0	£0	£0	£316,400	£474,600	£791,000
Professional Fees	£316,370	£632,740	£949,110	£632,740	£632,740	£3,163,700
Risk/Contingency	£94,911	£189,822	£284,733	£1,708,406	£3,654,084	£5,932,000
Future Inflation	£4,400	£35,500	£109,700	£937,900	£2,475,500	£3,563,000
Inflation Contingency (@3% per annum)	£0	£0	£0	£462,700	£1,411,800	£1,874,500
Outturn Cost excl OB	£415,681	£858,062	£1,343,543	£8,803,691	£19,721,663	£31,100,000

Option 3

	Years					
	2022-23	2023-24	2024-25	2025-26	2026-27	Total
Construction costs incl Prelims, TM, OH & P				30%	70%	100%
STATS				40%	60%	100%
Professional Fees	10%	20%	30%	20%	20%	100%
Future Inflation	1.08%	4.31%	8.89%	12.67%	15.63%	
Inflation Contingency (@3% per annum)	0.75%	3.75%	6.75%	9.75%	12.75%	
Construction costs incl Prelims, TM, OH & P	£0	£0	£0	£4,961,915	£11,577,801	£16,539,715
STATS	£0	£0	£0	£330,800	£496,200	£827,000
Professional Fees	£330,800	£661,600	£992,400	£661,600	£661,600	£3,308,000
Risk/Contingency	£99,240	£198,480	£297,720	£1,786,294	£3,820,680	£6,202,500
Future Inflation	£4,600	£37,100	£114,800	£980,600	£2,588,300	£3,725,400
Inflation Contingency (@3% per annum)	£0	£0	£0	£483,800	£1,476,200	£1,960,000
Outturn Cost excl OB	£434,640	£897,180	£1,404,920	£9,205,009	£20,620,781	£32,600,000

4.1 Cost Summary

Item Description	Option 1	Option 3
Direct Construction Costs	**£9,917,500**	**£10,369,700**
Minor Items not picked up due to design stage	£991,800	£1,037,000
Base Construction Cost	**£10,909,300**	**£11,406,700**
Indirect Construction Costs		
Main contractor and sub-contractor's Preliminaries/TM and Overheads and Profit	£4,909,185	£5,133,015
Indirect Non-Construction Costs		
STATS	£791,000	£827,000
Professional Fees	£3,163,700	£3,308,000
Total excl. Risk and Inflation	**£19,773,185**	**£20,674,715**
Risk / Contingency	£5,932,000	£6,202,500
Total excl. Inflation	**£25,705,185**	**£26,877,215**
Inflation (Construction mid-point 3Q 2026) (see cost profile)	£3,563,000	£3,725,400
Inflation Contingency	£1,874,500	£1,960,000
Total	**£31,100,000**	**£32,600,000**

Greater Cambridge Partnership
Cambridge Eastern Access Park & Ride - Newmarket Road
Feasibility Design Cost Estimates - Option 1

70086306
13/12/2022
1.2

Item Description	Notes / Assumptions	Quantity	Unit	Rate	Total
Series 200: Site Clearance					
General Site Clearance		6.91	ha	£5,000	£34,575
Series 500: Drainage works					
Attenuation pond	Assume 1.5m deep; incl. excavation and disposal of acceptable material.	4500	m3	£50	£225,000
Series 600: Earthworks					
Excavation					
Excavation of acceptable material Class 5A		6,497	m3	£6	£38,981
Excavation of acceptable and unacceptable material excluding Class 5A	Assume 50% excavated material to be used at site	13,206	m3	£8	£105,648
Excavation in Hard Material	Bituminous material; carriageway area at Newmarket Road.	130	m3	£75	£9,750
Disposal of Material					
Disposal of material	off site	9,851	m3	£30	£295,542
Disposal of unacceptable material	non-contaminated	100	m3	£50	£5,000
Disposal of tar bound material	contaminated / hazardous; carriageway area at Newmarket Road.	26	m3	£400	£10,400
Imported fill					
Capping layer	Imported acceptable 240mm thk. capping material for carriageway and car park	12,774	m3	£50	£638,712
Compaction of Material					
Compaction of fill material to large areas		12,774	m3	£2	£25,548
Completion of Formation and Sub-Formation					
Completion of sub-formation		53,226	m2	£3	£159,678
Completion of formation		54,874	m2	£2	£109,748
Series 700: Pavements					
Pavement					
Flexible pavement; full depth	Assume 40mm surface course and 60mm binder laid to 200mm base course, Type 1	4,233	m2	£110	£465,630
Surface car park; full depth	Assume 40mm surface course and 60mm binder laid to 100mm base course, Type 1	48,993	m2	£95	£4,644,536
Carriageway resurfacing	Assume 40mm surface course and 60mm binder course	1,889	m2	£45	£85,005
Cold Miling (Planing)					
Mill pavement to a depth of 100mm		1,889	m2	£5	£9,445
Series 1100: Kerbs, Footways and Paved Areas					
Kerbs, Channels, Edgings, Combined Drainage and Kerb Blocks and Linear Drainage Channel Systems					
Kerb	PCC Kerb	2525	m	£35	£88,375
Edging	PCC edging	483	m	£15	£7,245
Footways and Paved Areas					
Footway Construction; full depth	Comprising 100mm Type 1 subbase, 50mm binder course and 20mm surface course	1582	m2	£45	£71,190
Island; full depth	Comprising 100mm Type 1 subbase, 50mm binder course and 20mm surface course	66	m2	£45	£2,970
Series 2500: Special Structures					
Single storey building	Assume 100m2; waiting area with toilet blocks	1	sum	£320,000	£320,000
Series 3000: Landscape and Ecology					
General Landscaping					
Grass Verge	Assume excavated topsoil to be reused	2,014	m2	£10	£20,140
Landscaping area	Assume excavated topsoil to be reused	3,640	m2	£10	£36,400
Street furniture					
Cycle parking	Assume 8 numbers of cycle parking places with open access 2-tier bike racks; 20 cycle	8	no	£8,000	£64,000
Velo-Safe lockers	Assume 8 places for cycle lockers and each place contains 20 lockers; Velo-Safe triangular locker for 1 bike; supply and installation	160	no	£1,100	£176,000
Bus shelter	Assume 7 numbers of bus shelter with RTI	7	no	£15,000	£105,000
Signalised Junction					
Signalised junction	Signalised junction at bus only access at Airport Way roundabout; incl. signalised crossing at Newmarket Rd, buss only access, Airport Way roundabout and an ANPR	1	Sum	£250,000	£250,000
Signalised junction	3-Way signalised junction at vehicle access only.	1	Sum	£225,000	£225,000
Allowance for items not quantifiable					
Allowance for drainage		15%	Sum	£7,032,978	£1,054,947
Allowance for lighting columns		5%	Sum	£7,032,978	£351,649
Allowances for Electrical works		2%	Sum	£7,032,978	£140,660
Allowance for road markings and traffic signs		2%	Sum	£7,032,978	£140,660
				sub-total	£9,917,500
	Minor Items not picked up due to design stage			10%	£991,800
	Main contractor and sub-contractor's Preliminaries/TM and Overheads and Profit			45%	£4,909,185
				sub-total	£15,818,485
			STATS	5%	£791,000
			Professional Fees	20%	£3,163,700
				sub-total	£19,773,185
			Risk / Contingency	30%	£5,932,000
				sub-total	£25,705,185
	Inflation (Construction mid-point 3Q 2026) (see cost profile)				£3,563,000
	Inflation Contingency (@3% per annum) (see cost profile)				£1,874,500
Total Indicative Estimate				**Total**	**£31,100,000**

Item Description	Notes / Assumptions	Quantity	Unit	Rate	Total
Series 200: Site Clearance					
General Site Clearance		7.33	ha	£5,000	£36,652
Series 500: Drainage works					
Attenuation pond	Assumed 1.5m deep; incl. excavation and disposal of acceptable material.	4500	m3	£50	£225,000
Series 600: Earthworks					
Excavation					
Excavation of acceptable material Class 5A		6,800	m3	£6	£40,800
Excavation of acceptable and unacceptable material excluding Class 5A	Assume 50% excavated material to be used at site	13,720	m3	£8	£109,760
Excavation in Hard Material	Bituminous material; carriageway area at Newmarket Road.	130	m3	£75	£9,750
Disposal of Material					
Disposal of material	off site	10,260	m3	£30	£307,800
Disposal of unacceptable material	non-contaminated	100	m3	£50	£5,000
Disposal of tar bound material	contaminated / hazardous; carriageway area at Newmarket Road.	25	m3	£400	£10,000
Imported fill					
Capping layer	Imported acceptable 240mm thk. capping material for carriageway and car park	12,758	m3	£50	£637,920
Compaction of Material					
Compaction of fill material to large areas		12,758	m3	£2	£25,517
Completion of Formation and Sub-Formation					
Completion of sub-formation		53,200	m2	£3	£159,600
Completion of formation		56,180	m2	£2	£112,360
Series 700: Pavements					
Pavement					
Flexible pavement; full depth	Assume 40mm surface course and 60mm binder laid to 200mm base course, Type 1 200mm subbase	5,470	m2	£110	£601,700
Surface car park	Assume 40mm surface course and 60mm binder laid to 100mm base course, Type 1 200mm subbase	47,690	m2	£95	£4,521,012
Carriageway resurfacing	Assume 40mm surface course and 60mm binder course	4,150	m2	£45	£186,750
Cold Miling (Planing)					
Mill pavement to a depth of 100mm		4,150	m2	£5	£20,750
Series 1100: Kerbs, Footways and Paved Areas					
Kerbs, Channels, Edgings, Combined Drainage and Kerb Blocks and Linear Drainage Channel Systems					
Kerb	PCC Kerb	3200	m	£35	£112,000
Edging	PCC edging	620	m	£15	£9,300
Footways and Paved Areas					
Footway Construction; full depth	Comprising 100mm Type 1 subbase, 50mm binder course and 20mm surface course	2950	m2	£45	£132,750
Cycleway Construction; full depth	Comprising 100mm Type 1 subbase, 50mm binder course and 20mm surface course	1410	m2	£45	£63,450
Island; full depth	Comprising 100mm Type 1 subbase, 50mm binder course and 20mm surface course	70	m2	£45	£3,150
Series 2500: Special Structures					
Single storey building	Assume 100m2; waiting area with toilet blocks	1	sum	£320,000	£320,000
Series 3000: Landscape and Ecology					
General Landscaping					
Grass Verge	Assume excavated topsoil to be reused	2,780	m2	£10	£27,800
Landscaping area	Assume excavated topsoil to be reused	3,640	m2	£10	£36,400
Street furniture					
Cycle parking	Assume 8 numbers of cycle parking places with open access 2-tier bike racks; 20 cycle spaces at each parking	8	no	£8,000	£64,000
Velo-Safe lockers	Assume 8 places for cycle lockers and each place contains 20 lockers; Velo-Safe triangular locker for 1 bike; supply and installation	160	no	£1,100	£176,000
Bus shelter	Assume 7 numbers of bus shelter with RTI	7	no	£15,000	£105,000
Signalised Junction					
Signalised junction	4-Way Signalised junction at bus only access at Airport Way; incl. an ANPR camera.	1	Sum	£325,000	£325,000
Signalised junction	3-Way signalised junction at vehicle access only.	1	Sum	£225,000	£225,000
Allowance for items not quantifiable					
Allowance for drainage		15%	Sum	£7,331,021	£1,099,653
Allowance for lighting columns		5%	Sum	£7,331,021	£366,551
Allowances for Electrical works		2%	Sum	£7,331,021	£146,620
Allowance for road markings and traffic signs		2%	Sum	£7,331,021	£146,620
				sub-total	£10,369,700
	Minor Items not picked up due to design stage			10%	£1,037,000
	Main contractor and sub-contractor's Preliminaries/TM and Overheads and Profit			45%	£5,133,015
				sub-total	£16,539,715
			STATS	5%	£827,000
			Professional Fees	20%	£3,308,000
				sub-total	£20,674,715
			Risk / Contingency	30%	£6,202,500
				sub-total	£26,877,215
	Inflation (Construction mid-point 3Q 2026) (see cost profile)				£3,725,400
	Inflation Contingency (@3% per annum) (see cost profile)				£1,960,000
Total Indicative Estimate				**Total**	**£32,600,000**

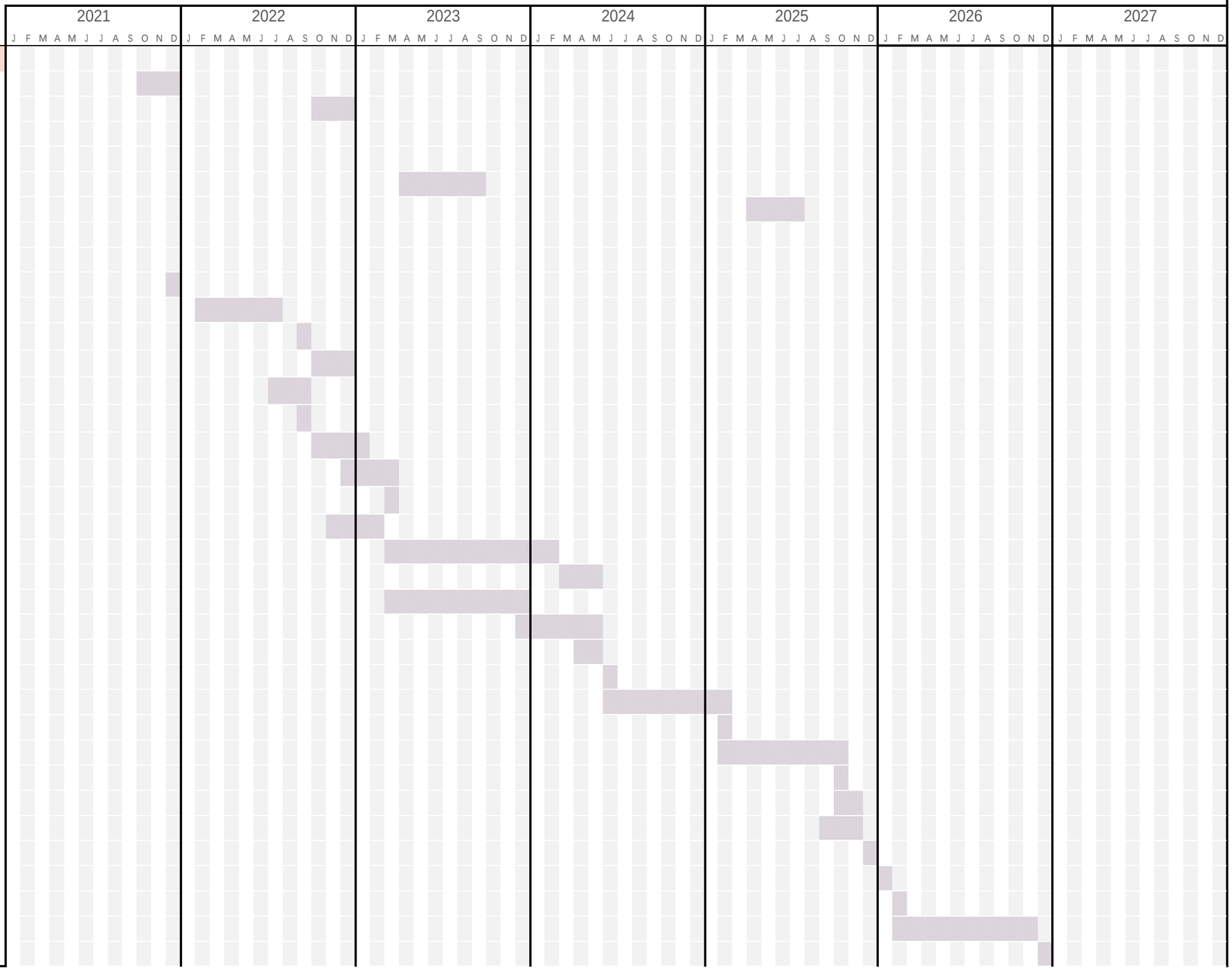
Appendix G

PROGRAMME

Cambridge Eastern Access

Phase A Programme v3.1 (August 2022)

ACTIVITY	PLAN START	PLAN DURATION
Stakeholder & Public Engagement		
Initial Stakeholder Engagement (to present Newmarket Road and P+R concept designs)	10	3
Second Stakeholder Engagement - Newmarket Road preliminary & P+R Site Selection	22	3
Highways Accesses for Park and Ride site		
Detailed design of P+R accesses (as part of detailed design of Newmarket Road scheme)	28	6
Construction of P+R access junctions (include with Newmarket Road Phase 3 works)	52	4
Park & Ride (Planning Application: TCPA)		
Feedback from initial engagement events	12	1
Site Selection Appraisal + Green Belt Option Assessment	14	6
Preliminary Presentation to GCP Board: Site Selection	21	1
Stakeholder Engagement - Site Selection	22	3
Preliminary design of P+R scheme access arrangements	19	3
Highways Stage 1 Safety Audit + Designer's Response	21	1
Schematic design of P+R (general arrangement)	22	4
Outline Business Case	24	4
Secondary Presentation to GCP Board: OBC	27	1
EIA Screening and Scoping process with planning authority (inc consultation process)	23	4
Ecological surveys	27	12
Preparation of Environmental Impact Assessment	39	3
Development of P+R design for submission with planning application t/w liaison with key stakeholders	27	10
Preparation of documents to support planning application (inc Transport Assessment & FRA & design drawings)	36	6
Preparation of Outline Planning Application (all Matters Reserved except Access)	40	2
Submit Outline Planning Application (June 2024)	42	1
PLANNING APPLICATION DETERMINATION (assume 9 months)	42	9
Anticipated Outline Planning Consent (assumes no public inquiry)	50	1
Detailed Design of P+R scheme & Reserved Matters/ Planning Conditions Submissions	50	9
Anticipated Reserved Matters Consent(s)	58	1
Tender Process	58	2
Full Business Case	57	3
GCP Board/ GCP award of Tender	60	1
Contractor Mobilisation	61	1
Start of P+R Construction Q1 2026	62	1
Construction of on-site P+R scheme	62	10
Opening of P+R Q4 2026	72	1



Appendix H

RISK REGISTER

Risk/Opportunity	Current Status	Impact Trend	Ref No.	Classification	Risk Category	Project Stage	Project Risk Description (If)	Potential Impact (Then)	Primary impact (time/cost):	Inherent Risk/Opp Rating			Risk Mitigation / Realisation Measures	Residual Risk Rating			Risk/Opp Action Owner
										Likelihood	Impact	Score		Likelihood	Impact	Score	
Risk	LIVE	▲	37	Technical	CCC Resources	DS3 - Preliminary Design	The programme of CSRM runs for CEA is likely to be delayed. The delay could substantially affect the appraisal of the prelim scheme highway impacts compared to without the scheme.	Scale of highway disbenefits reported in the FBC undermine the Value for Money case.	Start of works date	5	4	20	Focusing on a robust Active Travel appraisal benefits analysis to demonstrate overall benefit of the scheme. Appraise the scheme design once updated CSRM flows become available.	4	3	12	GCP PM
Risk	LIVE		25	Procurement	External Stakeholders	DS5 - Delivery	Phase A Park & Ride relocation will require third party land which if not purchased by agreement will require a CPO process.	P&R relocation delayed until land purchase concluded	Start of works date	4	4	16	Once preferred site confirmed, GCP to appoint a consultant to negotiate with land owners to acquire land by agreement. GCP to confirm who tenant of current preferred land is (P1), including proposed location of attenuation pond.	4	3	12	GCP PM
Risk	LIVE		31	Financial	External Stakeholders	DS3 - Preliminary Design	Schemes have a negative impact on Newmarket Road users, including existing business operators, Bus operators, existing road users and customer access by altering car/attractiveness due to increased journey times/congestion.	Potential objections to scheme design, that could lead to changes to scheme design. Potential financial impact on local businesses if footfall reduces as a result of the scheme.	Completion of works date	4	4	16	Early engagement with wider community, including retail operators. Recognising potential change in land use around some of the retail park area Mitigations in line with Risk #51	3	3	9	GCP PM
Risk	LIVE		54	Technical	Scheme Development	DS2 - Feasibility	Stagecoach review of bus routes has removed services to the east of Cambridge.	Potential to undermine scheme benefits included in the FBC.	Start of works date	4	4	16	Making Connections proposals would provide substantial increases to the level of bus use and viability of services. Monitor situation in consultation with GCP.	3	3	9	GCP PM
Risk	LIVE		4	Project	Project Funding	DS3 - Preliminary Design	Potential for scheme cost escalation (Newmarket Road, P&R and Busway) due to utility diversions, construciton cost inflation, procurement strategy etc.	Cost could increase to level where one or more of the schemes are no longer viable or have a substantial shortfall in funding.	Cost increase	3	5	15	Include a substantial construction cost risk contingency in early project budget estimates. Obtain and review C3's and preliminary design stage. Commission GPR and drainage surveys, review to inform utility diversion requirements, request C4 estimates. Value Engineering of scheme to be undertaken detailed design if required.	3	4	12	Service Provider
Risk	LIVE		51	Political	Scheme Development	SS0 - Policy & Strategy	Feasibility of the Newmarket Road Scheme is dependent on other proposed GCP road network and public transport schemes (Road Hierarchy Review and Making Connections). That should substantially reduce vehicular travel demand across Greater Cambridge.	If other schemes are delayed, reduced in scope or not progressed, traffic levels along the Newmarket Road Corridor may be higher than anticipated resulting in unacceptable delays to corridor users.	Start of works date	3	5	15	Ensure that a robust Business Case is produced that shows clear benefits of project in line with the other GCP road network projects. Making sure that regular communication with wider GCP project team to understand programme and components of the Making Connections project, and the commitment for its delivery Engagement with Milestone over other Greenways scheme	2	2	4	GCP PM
Opportunity	LIVE		6	Communications	External Stakeholder	DS3 - Preliminary Design	Committed Newmarket Road improvements impact on access designs including Marleigh, Ditton Lane, Chisholm Trail and Bottisham Greenways, East Barnwell, John Banks Honda Garage	Impact construction programme/phasing and scheme design.	Completion of works date	3	4	12	Obtain committed development scheme plans (Chisholm Trail, Marleigh, John Banks Honda, East Barnwell) and early engagement with Greenways and Stantec (Phase B). Regular, ongoing engagement with relevant developers, CCC development control to ensure all schemes are aligned.	2	2	4	Service Provider
Risk	LIVE		42	Environmental	Scheme Development	DS4 - Detailed Design	Foul sewer availability - risk of discharges to the environment from toilets and welfare facilities (construction and long-term) potential permitting (EPR) requirements	Increase in time and costs	Cost increase	3	3	9	Early consultation with the water company and/or Environment Agency - Foul sewer assessment or EPR pre-application discussions. Long term likelihood of foul sewer requirement from Cambridge East development is high	3	3	9	GCP PM
Risk	LIVE		11	Environmental	Environmental	DS4 - Detailed Design	20% Biodiversity Net Gain requirements not achieved within scheme boundary and therefore would require off-site compensation requiring additional land.	Additional land needs to be obtained.	Cost increase	3	3	9	BNG strategy developed during preliminary design once scheme requirements confirmed by GCP.	3	2	6	Service Provider
Risk	LIVE		12	Environmental	Environmental	DS3 - Preliminary Design	Impact on air quality	Decrease in air quality along the route / at the Park and Ride site during construction and operation	Start of works date	3	3	9	Ensure that air quality modelling is undertaken using traffic data and those outputs are considered during design	2	2	4	Service Provider
Risk	LIVE		13	Environmental	Environmental	DS4 - Detailed Design	Impact on noise and vibration	Noise and vibration resulting from construction and operational activities	Start of works date	3	3	9	Ensure that noise and vibration is considered throughout the design process and any reduction possible is embedded within design. This should be considered for the Park and Ride site as a priority due to the nearby NIAs and SSSI.	2	2	4	Service Provider
Risk	LIVE		14	Environmental	Environmental	DS4 - Detailed Design	Impact on the water environment	Impacts on the water environment resulting from construction and operational activities	Cost increase	3	3	9	Drainage to be considered throughout design, including flood storage, river/brook crossings (Coldhams Brook) and aquifer and groundwater resources. This should be considered for the Park and Ride site as a priority due to the land being undeveloped. The CEA route and the Park and Ride site both have small elements which sit within Flood Zone 2 (1% - 0.1% chance of annual flooding) and Flood Zone 3 (>1% of annual flooding), these area should be avoided, if possible, or mitigated against.	2	2	4	Service Provider
Risk	LIVE		15	Environmental	Environmental	DS4 - Detailed Design	Impact on biodiversity	Impact on biodiversity during construction	Completion of works date	3	3	9	Consideration of biodiversity when designing CEA route improvements. Biodiversity on the Park and Ride site is of paramount importance due to Wilbraham Fens SSSI being located within 0.4km of the current search area	2	2	4	Service Provider
Risk	LIVE		18	Technical	Design	DS3 - Preliminary Design	Newmarket Road and P&R relocation impact on bus journey times	Increased bus journey times during construction and operation.	Cost increase	3	3	9	Concept scheme modelling to assess scheme impacts on bus journey times, early engagement with bus operators on bus impacts.	3	2	6	Service Provider
Risk	LIVE		21	Environmental	Environmental	DS3 - Preliminary Design	Impact on the landscape and visual environment	Impact on landscape character, visual receptors and amenity values	Cost increase	3	3	9	Ensure that strategic landscape issues and impacts are considered during design an planning stages	3	3	9	Service Provider
Risk	LIVE		22	Environmental	Design	DS3 - Preliminary Design	Poor ground conditions may require increased highway/earthwork/structural foundations, which would increase the current construction cost estimate for the P&R	Increased scheme costs	Cost increase	3	3	9	A preliminary GI will need to be undertaken for the P&R site once a preferred location has been established	2	2	4	Service Provider
Risk	LIVE		23	Environmental	Statutory Process	DS3 - Preliminary Design	Potential for archaeological remains to be identified which could require extensive intrusive investigation (land access required). This could result in significant programme and cost impacts for the P&R scheme.	Increased scheme costs	Completion of works date	3	3	9	Desktop study will be required to inform the planning submission.	3	3	9	Service Provider

Risk	LIVE		27	Project	Statutory Process	DS3 - Preliminary Design	P&R planning application refused (greenbelt impacts/environmental impacts)	Public inquiry triggered, P&R relocation undeliverable.	Completion of works date	3	3	9	Consult with planners/stakeholders - robust EIA appraisal to be undertaken. Early engagement with CCC and GCSP on current documentation, seek formal comments on P&R relocation background documents	3	3	9	Service Provider
Risk	LIVE		43	Environmental	Scheme Development	DS4 - Detailed Design	Consideration of the impact of upstream pollutants (i.e. permitted discharges) and potential controls required for temporary / permanent discharges from the site. The Quy water is known to be failing for phosphate and PFAS (potentially linked to Agriculture and Aviation respectively)	Increase in time and costs	Cost increase	2	4	8	Early consultation with the Environment Agency - EPR pre-application discussions - consultation with other relevant stakeholder (i.e. landowners / airport operators)	3	3	9	GCP PM
Risk	LIVE		44	Environmental	Scheme Development	DS4 - Detailed Design	Potential in-combination impact on watercourses from proposed developments (i.e. the newly proposed waste water treatment plant) - potential impact on water quality and flood risk	Increase in time and costs	Cost increase	2	4	8	Early consultation with the Environment Agency - EPR pre-application discussions / flood risk assessment	3	3	9	GCP PM
Risk	LIVE		16	Environmental	Environmental	DS3 - Preliminary Design	Impact on biodiversity	Impact upon trees during construction	Cost increase	2	3	6	Ensure that a topographical and tree survey is undertaken so exact location of trees & their Root Protection Areas are known and avoided where possible. See risk #52	2	2	4	Service Provider
Opportunity	LIVE		50	Technical	Scheme Development	SS0 - Policy & Strategy	Proposed changes in land use to the Beehive centre from a retail park to a Science and Technology Park have a potential to change the nature of traffic using Newmarket Road. Planning application submission planned for late 2022/2023. Similar redevelopment of the Grafton Centre on East Road is possible in the future with the sale of the Grafton Shopping Centre Site	Traffic characteristics on Newmarket Road may change if either of the retail sites change land use resulting in less vehicle traffic due to changes in land use to office/retail. Change in land use to be less vehicle intensive would provide a greater opportunity to deliver a more pedestrian, cyclist and public transport friendly scheme		3	2	6	Ensure that design seek to maximise opportunity of potential land use changes. Consider phased development of Newmarket Road with detailed deisgn/improvements to EW delivered at the end of the construction programme.	3	3	9	GCP PM
Risk	LIVE		17	Environmental	Environmental	DS3 - Preliminary Design	Impact on the historic environment	Impact on heritage assets / heritage setting	Cost increase	2	2	4	Ensure that the one listed building that borders the Park and Ride site and the multiple that run along the CEA route are considered during design	2	2	4	Service Provider
Risk	LIVE		29	Political	Project Funding	DS3 - Preliminary Design	Proposed scheme does not attain funding approval from GCP board	Scheme undeliverable, requires redesigning.	Cost increase	2	2	4	Produce robust OBC demonstrating a strong strategic case for the scheme. Public consultation on preliminary scheme	2	3	6	GCP PM
Opportunity	LIVE		55	Technical	Scheme Development	DS3 - Preliminary Design	Water from the attenuation pond (after filtration) has potential to help replenish the fen area	Positive environmental benefits tie in with great Fen restoration project	Cost increase	2	2	4	Review use of greywater and potential reuse applications as part of the next design stage	2	2	4	Service Provider

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