

A Transport
Strategy to support
the improvement
and growth of the
Cambridge
Biomedical Campus
as part of the
Emerging Spatial
Framework

November 2023

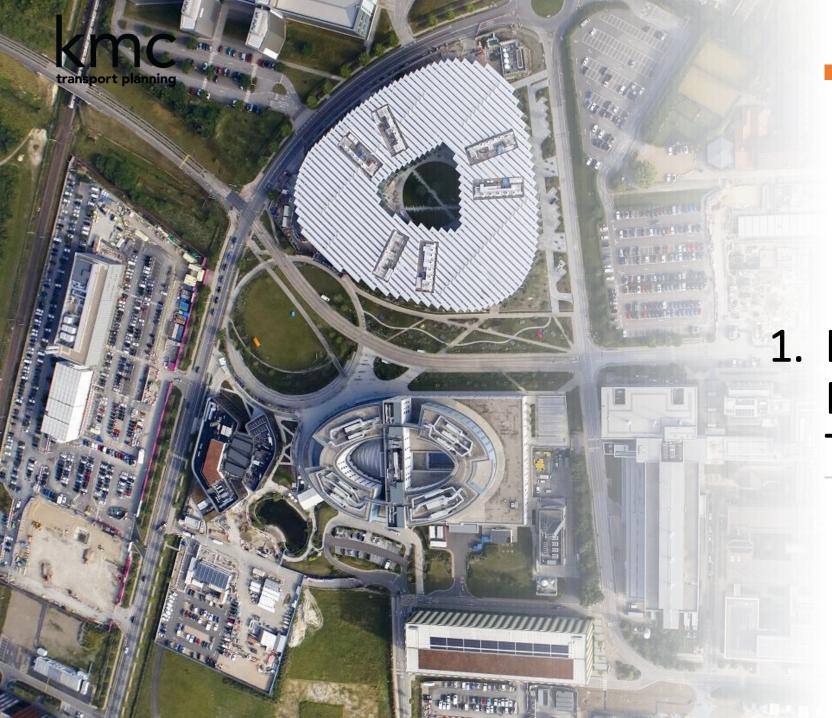
On behalf of Cambridge Biomedical Campus Landowner Collaboration Group (LCG)





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Introduction, Context,
 Planning History &
 The Need for Growth



#### **Introduction & Report Purpose**

KMC Transport Planning Ltd (KMC) is appointed by the Cambridge Biomedical Campus Landowner Collaboration Group (LCG) to provide transport advice pertinent to the enhancement, and expansion, of the campus as part of the Greater Cambridge Local Plan Development process.

This Transport Strategy supports and relates to, the Allies and Morrison (AAM) Emerging Spatial Framework. The AAM Emerging Spatial Framework builds on previous work undertaken by Hawkins Brown in 2022 and to which KMC also contributed.

This report supplements analysis undertaken in 2022 and reported by KMC as part of the 'Movement & Transport Strategy'.

This report, and the previously published Movement and Transport Strategy (2022), utilises to some extent the most significant body of transport work undertaken to understand the transport challenges associated with the Cambridge Biomedical Campus which is the 'Cambridge Biomedical Campus Transport Needs Review'. This was prepared by Atkins on behalf of the Greater Cambridge Partnership and Cambridgeshire County Council. It was first published in 2018 with an Addendum in 2019 and a more recent refresh in 2022. The Greater Cambridge Partnership (GCP) commissioned the study to understand the growth in travel demand at CBC and the resulting transport needs. The relationship of the referenced documents sits alongside.

The purpose of this report is to propose the possible and necessary transport interventions to support growth at the

campus and support movement between it and the Greater Cambridge area.

These measures are presented for the following key phases which correlate with time slices proposed and assessed by AAM:

- 2030
- 2035
- 2040
- 2050

To appreciate the high-level costs of the infrastructure and transport related interventions, an indicative schedule of costs (or contributions) is also summarised in this report. The costs have been prepared by AECOM.

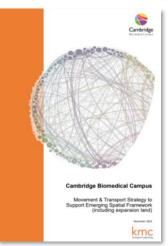
Ultimately the full transport strategy and associated costs will only be determined through a more detailed design process as part of a planning application, but this work can and will be used to inform the emerging Infrastructure Delivery Plan (IDP) which is a core component of a Local Plan and Major Site allocation process.

In order to understand the consequences of not allocating further land for development, beyond that already allocated, a further section of report considers the improvement schedule that could be delivered should only the existing estate and allocated land come forward.

This work supplements work being undertaken by the Greater Cambridge Shared Planning Service (GCSP) as part of the development of their emerging Local Plan.



2018-2022



#### December 2022



**Summer 2023** 



#### **Cambridge Biomedical Campus Context**

The site is located on the southern edge of Cambridge. It is abutted by the London to Kings Lynn railway corridor to the west, Long Road to the north and Hills Road and Babraham Road to the east. South of CBC lies open landscape which forms part of the city's Green Belt. An extension into the Green Belt to the south of the campus is proposed as part of the emerging Local Plan

The CBC is a major destination and generator of travel demand. In 2017 it was estimated that around 17,250 staff worked on-site and a further 14,500 visitors came to the site each day. By the end of 2023, it is estimated this will have increased to around 23,000 staff and 18,200 visitors. Further committed growth to 2031 sees this increase again and therefore travel demand needs ongoing management and growth beyond these figures needs both management and further investment.

Future development growth must be in the right place. The DfT has defined 'place-based solutions' as one of six strategic priorities for its Transport Decarbonisation Plan. Rapid decarbonisation will be difficult to achieve if transport investment is focussed on road capacity to more rural locations.

Poor spatial planning decisions will create an imbalance which lock-in high carbon travel

patterns by increasing road accessibility to land further away from existing urban centres. The investment in these areas also then encourages the relocation of residents and businesses to cheaper, car dependent locations and incentivises low-density development on lower-value land. This can increase overall traffic volumes, congestion, air pollution, and carbon emissions and have a greater environmental impact across the region as a result of car-based journeys but without anything material by way of mitigation.

Instead, growth should be focussed on areas that can support public transport, walking, cycling and measures to reduce travel demand at source.

CBC is this scenario, where sustainable transport investments are committed, car access and car parking can be minimised and managed, and the density of employment can ensure major public transport investments remain viable. CBC has demonstrated over a number of years that through active management and travel planning, car trips can be managed down.

CBC is also uniquely placed to reduce private motorised travel if development with higher levels of density, improved complementary land use mix and greater levels of non-car-based accessibility in conjunction with demand management can be achieved.

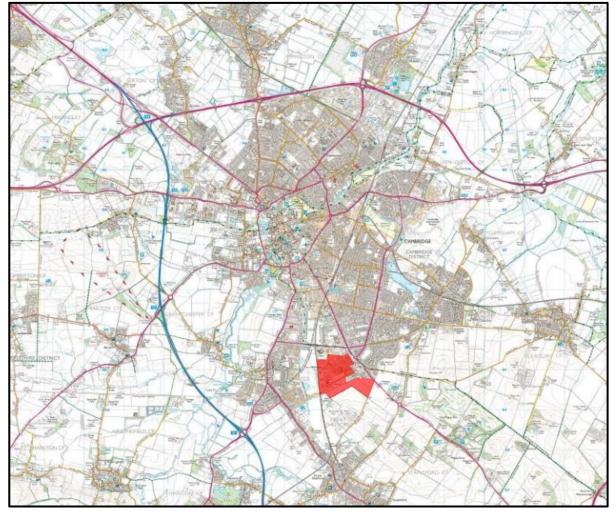


Figure 1: Cambridge Biomedical Campus with Preferred Options Site Expansion Land



#### **Planning History & Current Position**

In October 2009, the CBC Phase 1 outline planning application (06/0796/OUT) was approved. The outline planning application proposed the following at CBC:

- A total of 215,000m<sup>2</sup> floorspace of development consisting of the following:
  - 60,000 m² of clinical research and treatment;
  - o 115,000 m<sup>2</sup> of biomedical and biotech research and development;
  - 15,000 m² of biomedical and biotech research and development or clinical research and treatment; and o 25,000 m² of clinical research and treatment or higher education or sui generis medical research institute uses.
  - o A new MSCP.

The following have since been delivered under the outline consent received:

- Medical Research Campus for Molecular Biology (MRC) (07/0651/FUL). The MRC was brought forward as a full planning application but is located within Phase 1 land;
- MSCP2 (11/0780/REM);
- Papworth Hospital (14/1411/REM);
- AstraZeneca Phase 1a (14/1633/REM);
- Plot 8 Anne McLaren Building (16/0653/REM);
- Heart and Lung Institute (Project Atria) (16/1523/REM); and
- AstraZeneca Phase 1b (20/0527/REM).

The Cambridge Children's Hospital reserved matters application as part of the CBC Phase 1 outline planning application (21/04336/REM) was approved in 2022. The Children's Hospital comprises 46,300sqm of clinical land use, with a first phase building of 34,500 sqm due to open by 2028.

In September 2017, the CBC Phase 2 outline planning application (16/0176/OUT) was approved. The outline planning application proposed the following to be developed at CBC:

- 75,000 m<sup>2</sup> floorspace comprised of:
  - Research and Development;
  - Clinical, sui generis and higher education;
  - Supporting activities within use class A1, A4, B1, D1 and / or D2.
- Two further MSCPs.

The Abcam development was brought forward as a full planning application located within Phase 2 land Abcam and has since been delivered (16/0165/FUL). In January 2021, planning permission was granted for Plot 1000, Discovery Drive, a reserved matters application (20/03950/REM) for a five-storey mixed use laboratory and office building. A MSCP is due to be brought forward shortly to support the commercial uses, this is MSCP4 and is located at the western end of the Phase 2 land, adjacent Abcam, subsuming the existing surface car park currently in operation.

The other MSCP is MSCP3, located to the east of the Phase 2 land. No programme for the delivery of MSCP 3 is currently confirmed and the option for its delivery and use sits with CUH.

The adopted 2018 South Cambridgeshire Local Plan made provision for an expansion of the campus into the Green Belt. This land is referred to as Phase 3 and is covered by Policy 8 E/2: Cambridge Biomedical Campus Extension. The policy states that 'An extension to the Cambridge Biomedical Campus will be supported on land shown on the Policies Map for biomedical and biotechnology research and development within class B1(b) and related higher education and sui-generis medical research institutes.' No planning applications have yet been made against this allocation.

A new Cancer hospital is currently in the process of being developed within the campus. This does not yet have planning consent and sits outside of both the Phase 1 and Phase 2 approvals. Much of the new floorspace represents an improved cancer care facility from the services already on site as opposed to a new healthcare facility for services not currently provided. In transport terms this means that much of the travel demand associated with the new Cancer Hospital will be present on the site currently.



#### The Need for Further Growth

In September 2022, a report was published by CBC . This states that, as a global leader in healthcare R&D, in 2021 alone CBC supported an aggregate economic footprint of £2.2 billion worth of Gross Value Added to the UK economy and a collaborative operating income of £1.9 billion, as well as contributing £291million to the Exchequer through tax revenues.

Whilst the development of the medical and research buildings, and larger institutional features based on planning consents and earlier masterplans has been an undoubted economic success, the potential for shared amenity space and consistent high quality public realm has not fully come to fruition. The essential infrastructure for CBC has been added alongside the growth, but the pace of the growth has limited the ability of the partners to create the integrated, appealing quarter CBC needs to be to enable further and world leading innovation to flourish.

Cambridge presents the ideal model for how to support talent and enable collaboration between different organisations. The city offers the quality of life, institutions, and finance for workers and businesses; the accessible social spaces where chance encounters can take place; and the network of mentors to guide fledgling entrepreneurs and researchers. Expanding on this system by creating a liveable, thriving quarter will enable CBC to fulfil its promise. CBC has the foundations in place to act as a standout global centre of healthcare delivery, life sciences research and commercial activities, but needs to be nurtured to become more.

To reflect these ambitions and indeed global trends, CBC published their 2050 Vision in 2021. The Vision sets out an up to date forecast of a thriving, sustainable campus and the emerging Spatial Framework prepared by CBC and Hawkins Brown seeks to progress this ambition. The 2050 Vision seeks to ensure that the: Cambridge Biomedical Campus will be globally leading and locally rooted, the preferred destination for life sciences, where research, commercialisation and real-world application come together to create life-saving innovation in a vibrant local community. The updated AAM Emerging Spatial Framework maintains broad adherence to the Hawkins Brown proposals and therefore this Vision.

#### **Cambridge University Hospital Trust's Masterplan Summary**

CUH have produced their own masterplan in 2021 which makes the case for growth but primarily for

improved facilities using land within their control. The CUH masterplan, thinking, and aspiration has, and continues to be, central to the emerging CBC Spatial Framework.

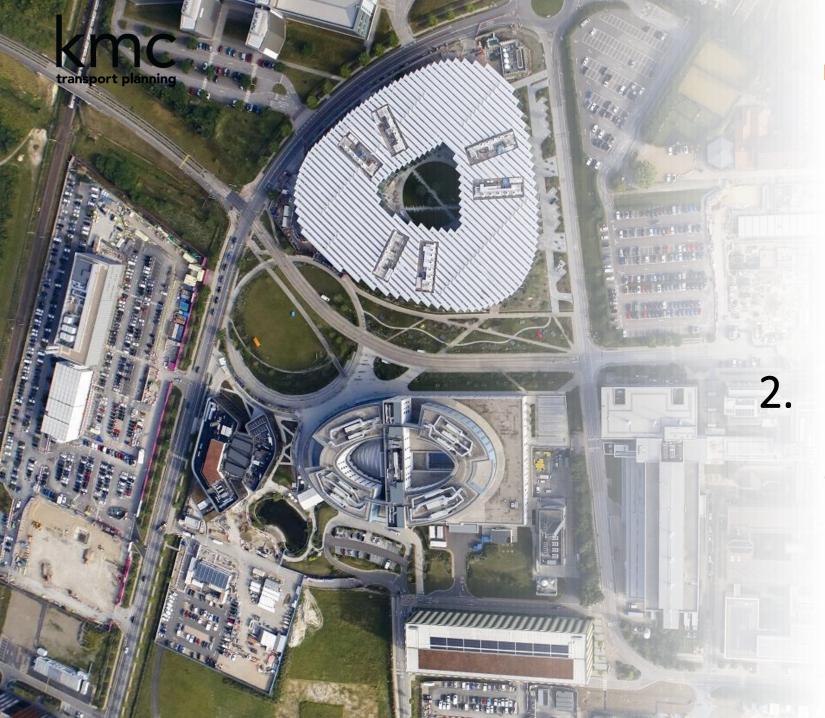
The CUH masterplan bases itself on the fact that there is a demand to progress forward with solutions for the Cancer Research Hospital and the Children's Hospital in the intermediate term. The accommodation where these services are currently located is seen as 'not fit for purpose' according to modern healthcare delivery standards. As well as this, the current capacity of both services will soon be insufficient to be able to cope with the demographic growth and increases in the workload across the region.

In the medium term, there are other services that will need to be replaced to fully allow the transition to the integrated clinical model, which will be able to provide the additional capacity to meet the future demand. This will include developing a new acute hospital with a dedicated planned care facility and a new outpatient and diagnostic hub. Currently, business cases are being developed for these projects and are collectively referred to as 'Addenbrookes 3'. The Addenbrooke's 3 programme includes:

- A new acute hospital (early 2030s)
- Planned care centre (early 2030s)
- · Outpatient and diagnostic hub (early 2030s)
- New clinical facilities to replace existing (prior to 2040)
- New clinical, administration and collaboration facilities (prior to 2040)
- Estates facilities and servicing facilities (prior to 2040)

The NHS has the ambition to be emission net zero by 2040 and one of the most effective methods to achieve this goal is for the NHS to replace its environmentally inefficient and aging estate. Therefore, the long-term CUH aim is to implement their masterplan, replacing remaining Trust services by relocating into modern accommodation, resulting in in the oldest parts of the hospital to be demolished.

The CUH masterplan for the hospital estate portfolio seeks to align short-term projects (Cancer Research Hospital and the Children's Hospital), and the longer term reprovision of remaining hospital services.



## 2. Existing Challenges& Issues Facing CBC



#### **Existing CBC Staff & Visitor Estimates**

The consents highlighted in Section 1 have meant that there has been, and will continue to be, an increase in employment and visitors to the site.

In 2017, CBC confirmed that there were 17,250 employees estimated to be working on-site on any given day with a further 14,500 daily patients/visitors on average.

It is now estimated that, with the occupation of several consented schemes, the number of jobs across CBC at the end of 2023 will sit at 23,000 with a further 18,200 daily patients/visitors. The schemes that have delivered this increase are as follows:

- AstraZeneca
- Jeffrey Cheah Building
- Royal Papworth
- Heart and Lung Institute
- · Plot 8 (Anne Mclaren Building)

Not all staff will be present on any single day and, for the purposes of assessing transport impacts, this distinction is appreciated in Table 1 below. The proportion of staff present on any single day is assumed to be 81% which is consistent with the Atkins Transport Needs Study and information provided by CBC.

Year	Total Jobs	Daily On-Site Staff	Daily Patients / Visitors
2023	23,000	18,697	18,200

Table 1: Existing Staff, Patient, and Visitor Numbers

#### **Location of Existing CBC Employees**

CBC supplied postcode data shows that the areas of east Cambridgeshire mostly, but also East Suffolk with Haverhill and Newmarket, provide the main areas for staff to reside. The overall catchment for staff is wide, which is reflective of the specialist nature of many of the employers within the CBC but also housing affordability in and around Cambridge. This shows that transport infrastructure from the south, east and north are equally important, particularly for longer distance journeys outside the city itself. The lack of staff shown to reside to the west of Cambridge will likely be due to the lack of accessibility from the west currently.

Roadside Interview surveys undertaken by Atkins, showed that vehicular access to the Campus was heavily biased to the south, with around 88% of vehicles approaching from Addenbrooke's Road or Babraham Road rather than the north. This significant weighting puts pressure on these southern approaches and impacts the Hills Road corridor significantly given the lack of specific access provision when compared to the Addenbrookes Access Road.

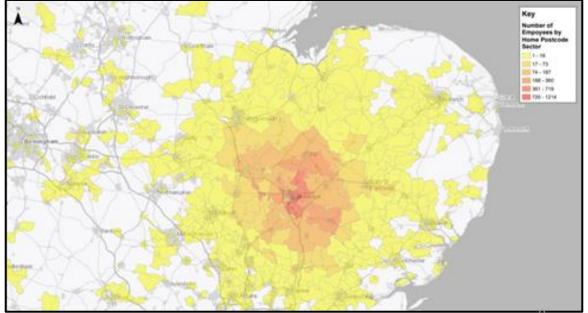


Figure 2: Heatmap of Existing Employee Residences (Extract from Stantec Report)



#### **Staff Satisfaction with Travel Times**

In 2020 Savills published a report for Cambridge University Hospitals NHS Foundation Trust (CUH) which assessed the housing needs of hospital workers.

Within the research, an assessment of relative satisfaction of commuting travel times was set out. The survey found that there was a relationship between commute time and dissatisfaction with commute. The increase in dissatisfaction was found to be gradual until 60 minutes + length of commute, when the proportion of those that are very dissatisfied more than doubles.

It should therefore be a focus of any transport strategy to reduce the amount of time spent travelling to work to less than an hour. Overall, 45% of the survey respondents are dissatisfied or very dissatisfied with their commute. Assuming this is representative of the whole of CBC employees then over 10,000 employees are dissatisfied or very dissatisfied with their commute.

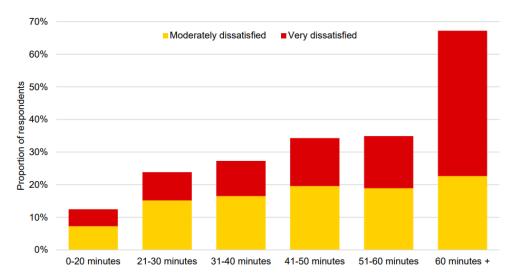


Figure 3: Journey Time Satisfaction Survey Results (CUH Workers)

Source: CUH NHS Foundation Trust

#### **Isochronal Accessibility Analysis**

An existing accessibility analysis of the campus has been undertaken using PODARIS software. This utilises walk times in combination with rail and bus timetables, stations and bus stops. The following time bands have been considered 0-15 minutes, 15-30 minutes, 30-45 minutes and 45 minutes to 60 minutes.

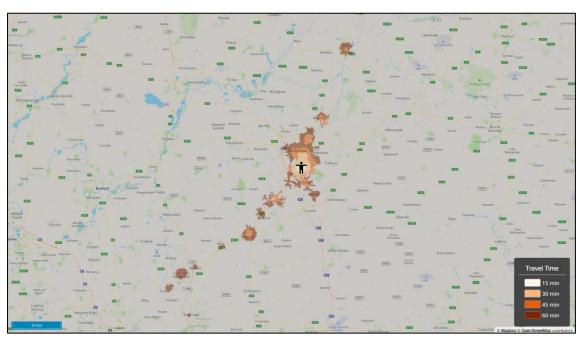


Figure 4: Existing Bus, Rail and Walk Access in 60 minutes

At a strategic level it is possible to see that existing access to and from the campus by bus and rail covers a relatively small part of the Greater Cambridge area. Even where trips originate along the railway corridor the catchment remains limited due to the time spent travelling from Cambridge Railway Station to the campus.

Any area east or west of the city is shown to have no access to the campus within the time parameters selected.



This lack of reasonable accessibility shown in the isochronal outputs is in stark contrast to the spread of employees shown previously. Assessing them both in combination i.e., the employee's postcodes and the public transport travel time has again been undertaken using PODARIS software. This is shown below. To calculate access times, only full postcodes are able to be used and these have been used as proxy for all staff to derive percentages of staff within each time band.

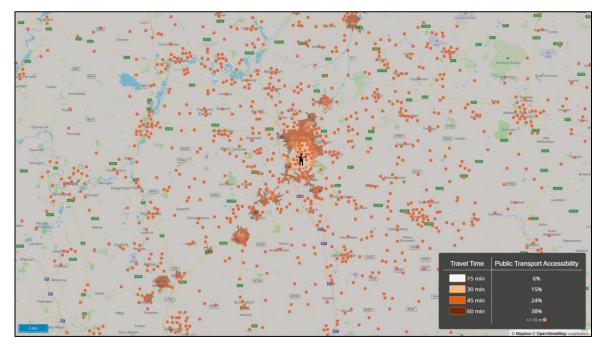


Figure 5: Bus, Rail, and Walking Accessibility up to 60-minutes for Staff Postcodes (Existing)

The number of staff residing within the time bands is shown in Table 2.

Of the employee postcodes provided, only 6% are within 15 minutes of the campus using modes other than the car, 15% within 30 minutes, 24% within 45 minutes and only 38% in total within 60%.

As stated, the CBC Travel Survey has indicated that a stepped change in dissatisfaction with commuting times occurs once travel times exceed 60 minutes (although noting that for many dissatisfaction occurs before this threshold). Given that 62% of postcodes currently do not have public transport options that would see them able to travel to the campus in under an hour, significant enhancements are needed to avoid dependency on car-based travel to provide a reasonable journey time to the campus.

It should be noted that the accessibility analysis is not able to accurately map the effects of P&R trips and as such these trips are excluded.

Travel Time	Travel Times (Existing) for Cumulative % Staff
15-minutes	6%
30-minutes	15%
45-minutes	24%
60-minutes	38%

**Table 2: Existing Staff Travel Times using Public Transport** 



#### **Existing City Scale Movement Challenges**

At a city scale, the site currently has a number of issues but plentiful opportunities.

By 2030/31, the Greater Cambridge Partnership is planning to have delivered a significant number of off-road busways providing reliable and quick public transport options to and from growth areas. However, the value of these connections is somewhat lessened due them not connecting to one another. Therefore, there is significant importance on the primary 'on road' bus corridors to support the bus network. In turn, these corridors are dependent upon the relatively few crossings of the rail network in order to connect the east of the city with the west.

Despite having the benefit of two bridge connections across the rail corridor, the CBC campus itself is currently a barrier to primary 'on road' bus routes with a distinct separation between the north south routes along Babraham Road, Cambridge Guided Busway (S), and services along Trumpington Road.

The implication of this compromised connectivity is that the campus itself can be accessed by public transport, but it does not support journeys through it, between other P&Rs and growth areas. This fails to maximise the opportunity of Cambridge South and in time, East West Rail. The campus needs to be redesigned to do more for connectivity at a city scale.

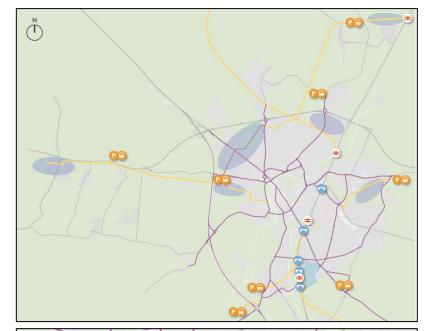
The Chartered Institute of Highways and Transportation has provided guidance on how to support Buses in Urban Developments. It states:

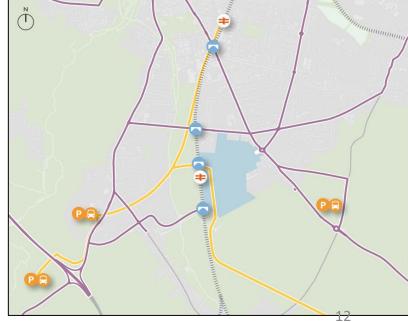
In terms of effective bus operations, the challenge bus operators face when trying to provide high-quality bus services are the following:

- Competition from the car, particularly where there is ample low-cost parking;
- Delays to services by congestion;
- Street layouts that make it impossible to provide an economically efficient bus service that is attractive to passengers.

Many out-of-town business parks use a layout consisting of a ring road off which business developments are located on culsde-sac. These tortuous street layouts make it impossible to provide an attractive and efficient bus service, even if it is physically possible for a bus to pass along. Thus, even where developments are appropriately located for bus provision, this cannot be done because of the inadequate street layout.

The opportunity for CBC is to address the existing challenges which undermine the ability to deliver high quality bus services and to provide a network that allows both bus and rail orientated growth to be achieved for the benefit of the campus and the wider city and southern fringe.





**Figure 6: Existing City Scale Movement** 



#### Pedestrian Infrastructure & Network

The pedestrian network within the campus lacks continuity, legibility, and quality. Often key pedestrian routes into the campus from surrounding areas are shared with cyclists which creates conflicts due to different speeds and design requirements when volumes are high. Conflicts have been observed on Addenbrookes Road, the shared path that crosses the railway alongside the busway and at Main Drive close to the Hills Road main entrance.

Within the campus itself the quality of footways are in places poor, narrow in many places with obstructions from street furniture and foliage. At junctions, footways are broken to give way to turning traffic. Additionally, surveillance along many routes is poor and this is particularly the case with regard to routes to Park and Ride sites which becomes less attractive at night.

Wayfinding within the campus is particularly challenging for visitors, patients and for those who do not come to the campus often. This is due to a lack of a coherent signage strategy but also as a result of consistency of routes and built form to provide the visual prompts.

In terms of key movement corridors, both the primary east-west and north-south routes are compromised by buildings and lack clearly define routes. This not only impacts campus users but also the wider communities who use the campus as a means to go elsewhere or access transport services.















Key pedestrian issues:

- Fragmented and indirect pedestrian network.
- Key north south and east west connections lack directness and or completeness.
- At crossings priority is often not afforded to pedestrians
- Some walking routes, particularly to Park and Rides lack activity.
- Street furniture clutters and narrows footways
- Condition of footways is inconsistent
- Legibility / wayfinding is poor

Main Drive and Adrian Way - Guardrail and Desire Lines

- Gateways to site can be hostile or lack notable features
- · Lack of quality infrastructure on approaches to site with shared infrastructure and 2-stage crossings.
- Dame Mary Archer Way signed for 20mph but designed for 30 mph
- Lack of direct connectivity to south and Babraham Road from heart of campus although Knightly Avenue and link to Babraham Road is strong connection



#### **Cycle Infrastructure & Network**

The National Cycle Route 11 connects CBC into Cambridge and to the north towards St Ives and into surrounding villages such as Great Shelford and Sawston to the south. This is a hugely beneficial asset for the campus. However, the cycle path is extremely well used and conflicts with pedestrians and other cyclists occur regularly. A lack of lighting along the length to Great Shelford can exacerbate these conflicts at night.

However, east west cycling connectivity is less favourable with limited longer distance strategic connections available. The campus itself also acts as a barrier to east west movement.

The gateways to the site are largely hostile environments for cyclists. The Hill Road main entrance has been subject to some recent improvement works but requires cyclists and pedestrians to mix for cyclists to be able safely negotiate the signalised roundabout. Addenbrookes Road also requires the convergence of cyclists and pedestrians at the Roundabout with Francis Crick Avenue and Dame Mary Archer Way as high-quality segregated infrastructure does not exist to enable full and safe segregated movements to occur. There are particular pressures in this location as it provides a route from southern communities towards the city centre. Robinson Way at the junction with Long Road has no segregated cycle infrastructure and highway design is for the benefit of vehicular traffic.













#### Key cycling issues:

- Fragmented and indirect cyclist network
- As with pedestrian network, key north/ south and east / west connections lack directness and or completeness.
- Lack of consistent segregated infrastructure with little provision able to meet LTN 1/20 standards.
- Hostile junctions/ gateways especially Hills Road and at Francis Crick Avenue.
- Crossings external to the site are often shared with pedestrians and 2- stage
- No coherent story as to how campus links with some offsite GCP proposals
- DNA path limited in usable width and condition but important asset
- Connections from P&R's lack surveillance and activity and are shared with pedestrians.
- Lack of direct connectivity to south and Babraham Road from heart of campus -although Knightly Avenue and link to Babraham Road is strong connection



#### **Other Micro-mobility & Shared Transport Solutions**

Technological advances and changes in personal choice have, in recent years, transformed micro mobility in our towns and cities. E-scooters, e-bikes and other forms of micro mobility have the potential to cut the congestion, emissions and noise pollution and represent a real tangible solution to the first- and last-mile transportation gap. The potential at CBC is significant.

Currently there is very little infrastructure or cognisance of micro mobility (beyond cycling) design needs or storage. Generally, e powered micro mobility can share cycle infrastructure if segregated and of good design quality to enable smooth and consistent journeys. Scooters in particular work well as part of a bus journey and for the first and last mile.

Shared transport solutions which typically include car clubs and micro mobility hire are only partially provided for on site. Voi scooter hire which exists across the city has a number of geo-fenced parking areas within the campus but car club operators do not have spaces. Voi scooters only operate within the city and thus do not provide connectivity to the villages south of CBC. No mobility hubs, which provide a physical and recognisable location for transport solutions, currently exist. There are a number of individual occupier schemes for pool bikes and cars which are distinct from a campus wide offer.

#### Key micro-mobility issues:

- Lack of segregated infrastructure within and to campus
- Lack of shared transport solutions
- Lack of mobility hubs to rationalise and advertise sustainable transport choices
- · No electric bike battery lockers or scooter parking













#### **Public Transport Network**

Public transport routes are a vital component of the CBC environment given constraints to car parking and the lack of affordable housing in the area meaning that longer distance journeys are inevitable.

However, currently there is a varying quality and inconsistency in public transport routes and waiting facilities around CBC, as well as a lack of quality interchange facilities between other modes and public transport which includes a lack of cycle parking adjacent to stops or limited crossing facilities within the immediate vicinity of bus stops. There is a lack of consistent information at bus stops which serves as a barrier to people visiting the campus or wanting to switch to buses from other modes.

There are however 19 bus services that currently stop at CBC. However, the majority of these services originate within the city, resulting in a lack of direct and fast services from the west and east of Cambridge. In addition, few of these services pass through the campus to connect the east to the west or the Babraham Road and Trumpington P&R's.

As stated previously there is a lack of physical connections that exist to provide east west connections and currently north south (the Cambridge Guided Busway runs north south but west of the campus). The orbital routes are substandard for public transport as it adds journey time and reduces legibility.

A lack of bus layovers restricts some flexibility around bus timetabling in the area.

There is currently no direct rail access into the campus.









#### Key public transport issues:

Existing Bus Network

- Poor interchanges (physical infrastructure and information)
- A constrained and operationally challenging Addenbrookes Bus station which results in conflicts with other users.
- A lack of east west connectivity
- Sub-optimal orbital bus routing
- A lack of bus layovers
- · The Babraham Road bus corridor suffers from congestion and therefore delays and reliability
- A lack of rail access



#### **Private Vehicle Network**

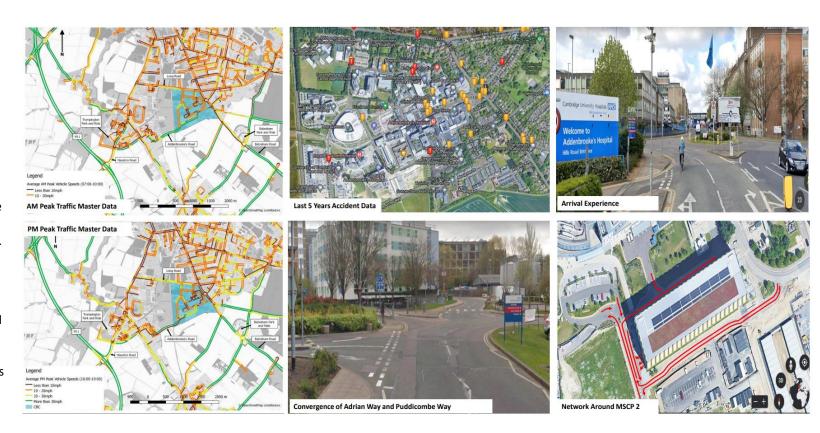
The road network around and inside CBC operates in a low traffic/congestion level for most of the day and night. However, during the two peak hours of the day (0800-0900 in the morning and 1700-1800 in the evening) the network gets close to capacity, notably Babraham Road and Hills Road in the AM Peak and parts of Addenbrooke's Road in the PM Peak. In terms of the performance of the local highway network, on-site observations found that although traffic was slow with points of congestion around junctions, there was not flow breakdown.

Through traffic is prohibited from using the CBC road network and enforced through the use of Automatic Number Plate Recognition (ANPR) cameras. This enforcement was a planning obligation from the Phase 1 S106 agreements. Despite ANPR technology being used, through traffic continues to be an issue.

Currently vehicular traffic accesses many parts of the campus as the road network lacks clear definition and hierarchy. The penetration of vehicular traffic into most areas of the campus results in conflict with other users and worsening environmental outcomes.

The primary network in particular is designed around the needs of the car. Roads are straight and junctions are designed to provide vehicular traffic with priority over pedestrians or crossing cyclists.

Whilst a number of the major car parks are located off or close to the primary road network, there are many smaller surface car parks that are spread across the campus which means car proliferation into many areas of the campus results from dispersed car parking.



#### Key issues of the private vehicle network:

- The private car dominates the campus and can make the environment for pedestrians and cyclists unpleasant.
- A primary orbital network which runs around the perimeter of the site with one secondary route (Robinson Way) which runs north to south through the centre .
- Congestion at key gateways and at peak hours –significant pressure on Babraham Road and Hills Road access.
- Dame Mary Archer Way has higher vehicle speeds making it difficult for people crossing who may have mobility difficulties
- Some rat running traffic and a lack of effective prohibition from existing ANPR cameras
- Dispersed parking model in conjunction with a lack of hierarchy of routes which results in car penetrating all parts of the campus and bringing them into conflict with pedestrians and cyclists.
- A clustering of road traffic collisions mainly focused on Main Drive



## 3. Existing Travel Patterns



#### **Existing CBC Staff & Visitor Mode Share**

Understanding the existing challenges and issues faced by CBC from a transport perspective, provides useful context to existing travel patterns of all CBC staff, patients, and visitors.

Each year in October, the CBC undertakes a Travel Survey to understand the transport patterns of its staff. The classified counts consider campus-wide entries/exits and can be used to calculate **the combined mode share of all staff and visitors.** Mode shares for the campus, as reported in the April 2022 CBC report prepared by Advanced Transport Research, are summarised as follows:

Mode	2017 Inbound	% Mode Share 2017	2018 Inbound	% Mode Share 2018		% Mode Share 2019	2020 Inbound	% Mode Share 2020	2021 Inbound	% Mode Share 2021
Car Driver	11354	36.7	11453	36.5	13105	37%	12723	42%	12634	40%
Car Passenger	4890	15.8	3557	11.3	4455	12%	5528	18%	3768	12%
Cycle	5855	18.9	6186	19.7	6161	17%	3969	13%	4771	15%
Scooter									167	1%
Pedestrian	2686	8.7	4666	14.9	4742	13%	3293	11%	4109	13%
Bus Passenger	4313	14.0	3941	12.6	4583	13%	2058	7%	3133	10%
HGV (Includes passenger)	244	0.8	242	0.8	168	0%	169	1%	292	1%
LGV (Includes passenger)	1382	4.5	1131	3.6	989	3%	1088	4%	1468	5%
Motorcycle (Includes passenger)	183	0.6	194	0.6	199	1%	173	1%	259	1%
Ambulance (Driver only)					133	0%	208	1%	204	1%
Taxi (Includes driver)					1110	3%	868	3%	1165	4%
Total	30907	100.0	31370	100	35645	100%	30077	100%	31970	100%

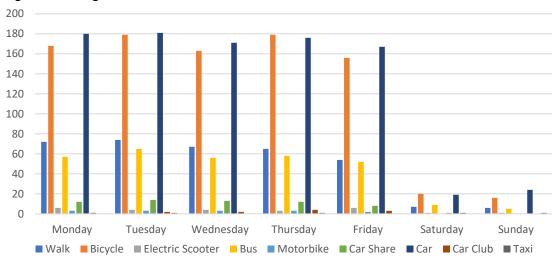
Table 3: Existing Staff, Patient, and Visitor Mode Share

In terms of staff-only mode share, the bar chart opposite has been developed based on ATR's interview surveys for staff. University of Cambridge staff also undertook a survey during the same period across their estate.

This indicates that around 35% of staff drive and overall, around 40%, arrive via car whether as a passenger or driver. These proportions are consistent with the mode shares presented as part of the Transport Needs Study for CBC which has also used data from previous annual travel surveys.

Highway demand to the site has been captured through surveys of the number of vehicles at key locations on the highway network. This shows that during the peak hours, Hills Road and Addenbrooke's Road are the most heavily used access points, with 827 vehicles accessing the site via Addenbrooke's Road during the AM peak and 640 departing in the PM Peak. Hills Road has 663 vehicles inbound in the AM peak and 590 vehicles outbound in the PM Peak. Over the course of the survey period (06:00 – 21:00), 15,569 vehicles entered the CBC site via the entrances shown.

Figure 7: Existing Staff Mode Share



In terms of overall directional arrival patterns, the following diagrams indicate 88% of employees arrive from the south and 80% of patients and visitors arrive from the south.



Figure 8: Direction of Staff Access to CBC

Figure 9: Direction of Patient/Visitor Access to CBC



#### **Existing Car Parking Provision**

Car parking across the campus is already managed carefully. Limited supply has been used effectively as a demand management measure for a number of years, but this results in demand exceeding supply and therefore any changes resulting from new buildings requires a car parking strategy to be produced to understand and manage the change.

These periodically produced management plans provide a high degree of granularity on the approach being adopted. The most recent submitted document relates to the Cambridge Cancer Hospital which illustrates the cumulative impact of the proposals on parking. It relies on temporary facilities to address demand prior to the opening of Cambridge South Station and other strategic infrastructure investments.

The current parking supply within CBC is 5,837. The total parking provision for CBC is made up mostly of multi-Story Car Parks but also includes surface car parking and temporary car parks. These space totals for each car park have been reviewed with key CBC stakeholders.

Using this dataset, it has been possible to derive a 2023 base understanding of the existing car parking stock categorised by one of the three principal land uses moving forwards: commercial, CUH, and education. A summary is provided below.

It should be noted that this summary includes a number of temporary car parks that are operational and managing specific needs in the shorter term.

Status	син	Education	Commercial	Total
Existing	3,977	1,158	649	5,784

Table 4: Existing Staff, Patient, and Visitor Mode Share

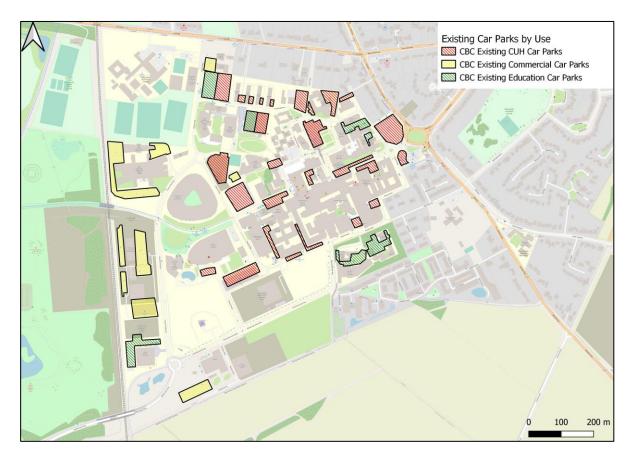
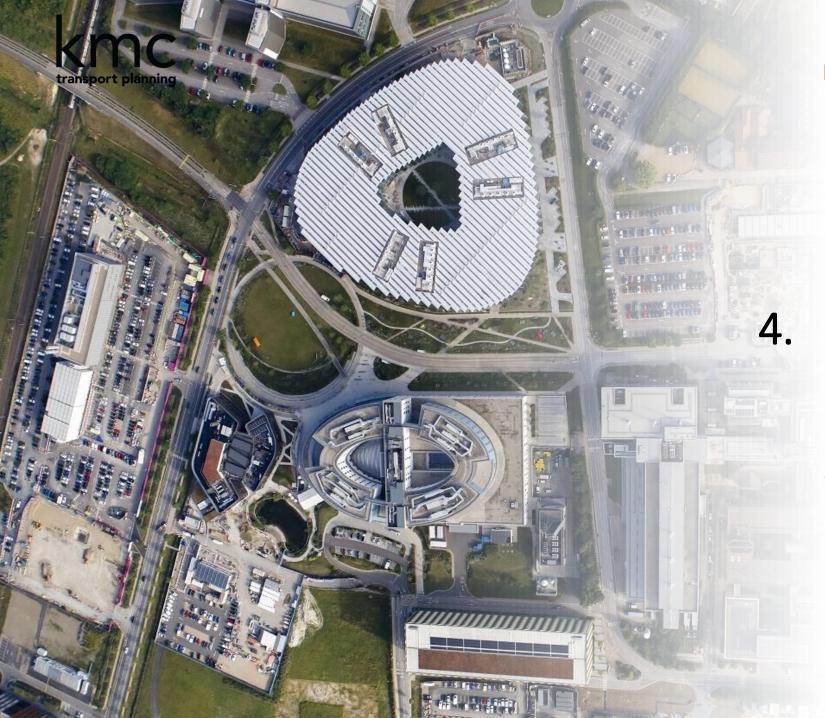


Figure 10: Existing Car Parks by Use



# 4. Emerging Spatial Framework Summary



#### **Full Masterplan by 2050**

Allies & Morrison have prepared the Emerging Spatial Framework which includes the full masterplan set out alongside in Figure 11. This masterplan proposal seeks create a better-established, better-defined edge to the southern gateway to the city. Framed by a significant green edge the masterplan will also seek to better integrate both physically and socially the campus into the city's southern fringe.

This masterplan proposal has been developed through close discussion with KMC Transport Planning and many of the aspects reported further into this Transport Strategy report are evident within this masterplan proposal.

The masterplan will deliver a significant amount of additional floorspace, and this is set out below. For the full detail on the proposals and the way in which they could be phased over time, the Allies & Morrison Emerging Spatial Framework report should be read.

The implications from a transport perspective are considered in the next section of this report.

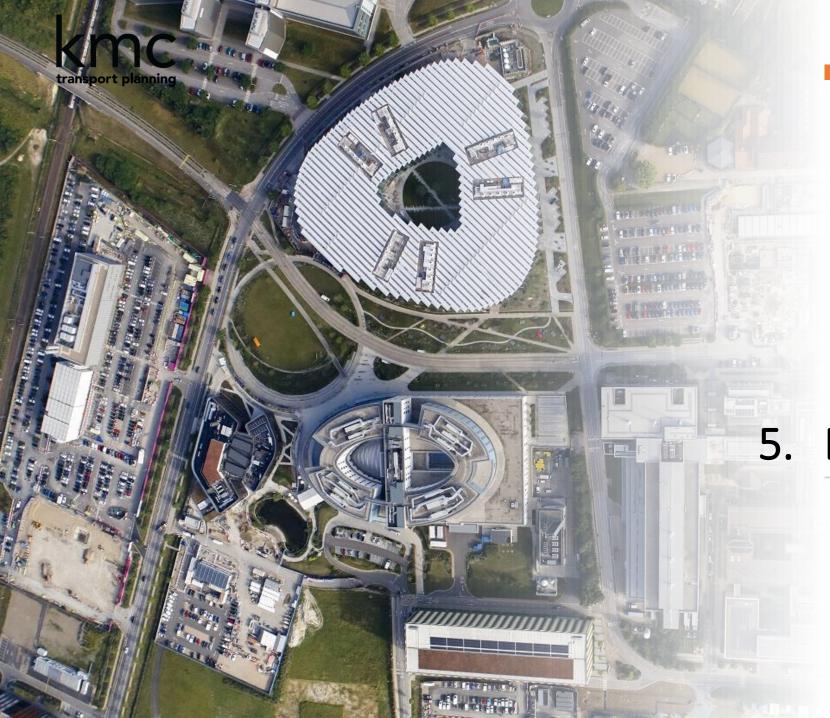
TOTAL PHASES (EQUALS TOTAL AREAS OF ENHANCEMENT) 1,225,277

TOTAL OVERALL CBC 2050 (Existing & Proposed) 1,583,499 CBC 2050 Vision - Illustrative Site Plan



Figure 11: Emerging Spatial Framework Full Masterplan

	Expension Edito 1 (1888) 5 dito 4					
	Inst.& Academic Research/Edu.		Residential	Leisure	Utilities	Parking
Edby Office	Recediting Edg.	ricamicaro	Residential	2010010	Ommoo	1 diking
594,529	196,974	439,725	66,300	62,393	19,214	222,050



## 5. Demand Forecasts



#### **Demand Forecasts**

Building upon the baseline travel patterns and the additional floorspace created by the Emerging Spatial Framework and summarised in Section 4, a first principles approach to forecasting future trip generation and travel demand has been undertaken. The approach and the forecasts is fully set out in **Appendix A**.

#### **Employees**

Using the combined consented and proposed floorspace areas for the 2050 horizon year, broken down by the primary land uses, employment densities have been applied to establish the net additional jobs that the CBC expansion is forecast to generate. Given that all density ratios are expressed in terms of Net Internal Area (NIA), the GEA totals provided in the AAM masterplan have been reduced by 19% to be consistent with the broader project team assumptions. The density assumptions are set out below in **Table 5**.

Land	l Use	Density	Source/Notes
Lab/0	Office	1 person per 35 sqm NIA	HCA Guide
Acad	lemic	· · · · · · · · · · · · · · · · · · ·	University of Cambridge information. This is considered a blended density accounting for students and staff.
Healt	hcare	1 person per 26 sqm NIA	Derived from existing healthcare staff & floorspace
Resid	ential	1.3 persons per unit NIA	60 sqm per unit assumed
Leis	sure	1 person per 120 sqm NIA	HCA Guide

#### **Table 5: Density Assumptions**

As with the calculation of existing staff numbers (Section 2), the proportion of future employees present on any single day is assumed to be 81%, which is consistent with the Atkins Transport Needs Study.

**Table 6** indicates that the net additional floorspace (consented & proposed) could generate **23,227 new daily on-site employees**.

Lond Hoo'	To	tal	Total John	Daily On-Site
Land Use`	sqm GEA	sqm NIA	Total Jobs	Employees
Lab/Office	532,471	430,290	12,294	9,994
Academic	116,200	93,901	3,756	3,053
Healthcare	368,425	297,724	11,451	9,309
Residential	62,900	50,829	652	530
Leisure	62,393	50,428	420	342
Total	1,142,389	923,165	28,573	23,227

Table 5: Forecasting Methodology for Future Employee Population

#### **Patient & Visitors**

In addition to new jobs, there will be an increase in the number of visitors that will be generated by any proposals. This will be most significant in terms of additional healthcare uses, which will result in increased patient numbers to the site as these facilities are expanded. The reflect this, a 4% growth rate per annum has been applied up to 2031 in line with estimates provided by Atkins (TNR, Part 3). Beyond 2031, new development will be limited predominantly to commercial uses rather than healthcare and a reduced growth rate of 1% per annum for visitors has been assumed beyond 2031 up to 2050. A further 11,892 patients and visitors are forecast in 2050 compared with 2023 resulting in a total of 30,092 patients and visitors.

#### Summary

The following table provides a summary of existing and future population totals for the CBC campus comprised of employees, patients, and visitors. Overall, CBC is projected to accommodate 72,016 daily person trips in 2050; an increase of 34,382 from a 2023 baseline.

	Employees	Patients & Visitors	Total
Existing	18,697	18,200	36,897
Consented/Proposed	23,227	11,892	35,119
Total	41,924	30,092	72,016

Table 7: Daily On-Site Employees, Patients, and Visitors for 2050



#### **Demand Forecasts**

#### **Daily & Peak Hour Vehicle Trips**

The projected growth of daily on-site employees, patients, and visitors has been translated into growth in terms of CBC-wide daily and peak hour vehicle trips. A summary of this process is outlined below:

- The most recent baseline for determining the number of person trips to CBC was derived by Atkins using CBC data for 2017. Whilst forecasts were also provided by Atkins for 2022 and 2031, these have since been superseded by KMC's updated assessment.
- An uplift equal to the increase in CBC population estimates from 2017 to 2050 (+127%) has been applied to 2017 daily person trips to estimate the daily person trips for 2050. Across all modes, approximately 94,000 daily person trips (one-way) are forecast for 2050.
- To derive peak hour vehicle trips, the following assumptions were applied to these daily person trip forecasts:
  - An existing CBC mode share for 'person car' (car driver + car passenger) trips of 69%.
  - Average vehicle occupancy rate of 1.83 people per vehicle, per Atkins assumptions.
  - Daily trips were converted to peak hours based on the ratio of existing traffic volumes at CBC, i.e., 8.8% and 7.0% of daily trips occurred during the AM and PM peak hour, respectively.

It should be noted that the 2017 trip observations have been compared simply based on the timing of the Atkins Study, and Atkins' desire to not exceed this level of traffic at their horizon year of 2031. A comparison between the resulting 2050 peak hour car driver trip forecasts and the 2017 baseline is presented in **Table 8**. This assumes unfettered growth with no interventions.

	AM Peak Hour	PM Peak Hour
2017 Baseline	2,730	2,169
2050 Forecast (No Interventions)	6,192	4,920
Net Difference	+3,462	+2,751

Table 8: Net Difference Between 2050 Forecast and 2017 Baseline (Car Driver Trips, 2-Way)

If no action was taken and travel patterns continued in accordance with patterns observed in 2017, Table 8 indicates there would be approximately 4,900-6,200 two-way car driver trips during the weekday peak hours. This step-change from 2017 is further illustrated below, along with other key horizon years examined in this assessment.

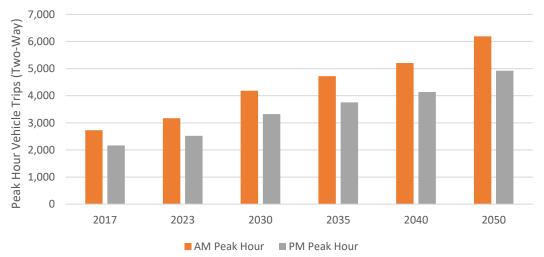


Figure 11: Unfettered Growth (No Interventions) in Vehicle Trips

This highlights the transformative change required to reduce car trips from a 'business as usual' growth forecast Given this position there is a clear and pressing need for interventions to change the trajectory from the 'do nothing' position outlined above.



#### **Demand Forecasts**

#### **Effects of Transport Interventions**

To reduce levels of vehicle trip-making at CBC in order to accommodate growth, a suite of transport interventions will be required, and these are outlined further into this Transport Strategy. The impact of these interventions has been calculated through a variety of methods which are more fully set out in Appendix A and are consistent with the KMC Transport and Movement report prepared in December 2022.

Inherent in the effectiveness of the interventions is that car parking is used as a demand management tool whereby the availability of car parking spaces on the campus is matched to the necessary vehicle trip outcomes.

The resulting peak hour car driver trip estimates 'with interventions' are presented in the charts opposite, paired with their unfettered growth counterparts.

Based on the measures and interventions discussed in this Transport Strategy, our analysis indicates that sufficient demand management and sustainable transport investment can be relied upon to help mitigate the additional growth. A 'Trip budget' will be determined based off the level of development and the measures and interventions discussed in this Transport Strategy (discussed further in Section 6 of this report).

#### **Sensitivity of Interventions**

The Demand Forecasting Topic Paper contained in Appendix A reports on a number of sensitivity tests undertaken using the Spreadsheet Tool developed. This exercise considers the sensitivity of transport interventions assumed and the impact of their removal. It should be noted that this is not a transport model and therefore the results are an indication of impact.

#### Future Baseline: With Interventions

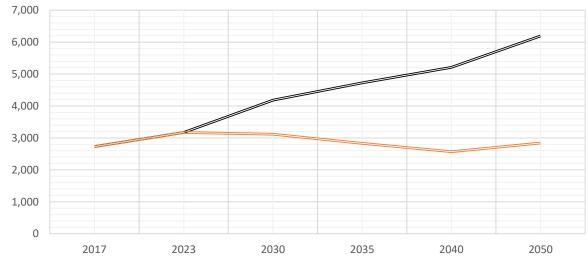


Figure 12: Effects of Transport Interventions on AM Peak Hour Car Driver Trips

# Future Baseline: With Interventions 6,000 4,000 3,000 1,000 2017 2023 2030 2035 2040 2050

Figure 13: Effects of Transport Interventions on PM Peak Hour Car Driver Trips

26



## **Planning Controls**



#### **Transport Strategy – Planning Controls**

#### **The Emerging Trip Budget**

All major sites, including CBC, within the emerging Greater Cambridge Local Plan will be required to work to, and within, a Trip Budget. As a refresher, the principle of a Trip Budget is defined by CCC as:

A transport policy approach that sets a limit on the level of vehicular trips that can be generated from a particular development. It seeks to ensure through all stages of the planning process that there are tools and mechanism in place to measure performance with reference back to this level of trip making.

The Trip Budget approach should consist of distinct stages that allow proportionate evidence at each stage of the plan making progress, planning application, delivery, and occupation. The stages are schematically shown below.



Figure 15: Stages for Determining Trip Budget

The range finding stage is considered appropriate for CBC as it reflects the pre-reg 18 stage of the Greater Cambridge Local Plan.

In range setting a trip budget for CBC at this early stage of the masterplanning and transport assessment process, previous studies and evidence has been sourced and reviewed.

From this process it has been determined that the traffic flows assessed and ultimately approved as part of a full EIA and Transport Assessment process for the Phase 2 Outline planning consents, would represent a robust and defensible position for any future masterplan.

The adoption of flows assessed for Phase 2 for a Trip Budget do not account for any traffic that was forecast to occur from Phase 3 allocated as part of the adopted 2018 Local Plan and do not assume a continuation of traffic generation for any further expansion of the campus. Therefore, it is considered that at a trip budget at this level continues to reflect a commitment to more sustainable travel over time and would reflect the significant infrastructure investments being made at the campus.

The flows approved as part of the Ph2 Outline Planning Consents, and which are therefore being proposed as a Trip Budget at this stage in the process are set out below.

Phase 2 (Ref: 16/0176/OUT) Two-way Peak Hour Vehicle Trips.

Period	Arrivals	Departures	Two-way
АМ	2,776	849	3,625
РМ	864	2,372	3,236



#### **Transport Strategy – Planning Controls**

#### **The Emerging Trip Budget**

Not only is it important to understand the Trip Budget options in terms of peak hour trips, but the feasibility from a mode share must also be considered. This is a critical consideration from a highway authority perspective i.e., is the car driver mode share both ambitious but also credible to support the trip budget selected?

To calculate the car driver mode share, the car trips outlined in the above scenarios have been divided by the 2050 person trips forecast of 16,461 and 13,078 two-way person trips during the AM and PM peak hours, respectively, for the fully built out masterplan (inclusive of the Phase 4 land).

The car driver mode share for each of the Trip Budget scenarios outlined above when considered against these two-way peak hour person trip totals.

Scenario	AM	PM	
CBC Ph. 2 Assessed and Approved Flows	22%	25%	

#### Table 10: Car Driver Mode Share of Trip Budget

Compared to other strategic employment sites on the fringes of Cambridge, a target mode share in this range positions CBC lower than all. However, given that the site is the most accessible in Greater Cambridge (once committed infrastructure is delivered) this could be considered reasonable and to be expected:

- Babraham Research Campus 50.2%
- Granta Park 53.6% (2021)
- Melbourn Science Park 79.5%
- Peterhouse Technology Park 47%
- Wellcome Trust Genome Campus 55.1%
- St Johns Innovation Centre 53%
- NECAAP Target Mode Share 29% (for employment)

The Local Plan transport evidence paper, calculated a car (rather than car driver) mode share proportion of 36% for the CBC model zone without site-specific mitigation.

From this comparative assessment, a car driver mode share in the region of ~22% to ~25% appears a reasonable and/or defendable at the range finding stage of identifying a trip budget. It would be a significant reduction from existing car driver mode share of 36% reflecting a positive direction of travel and the significant investments being made at the campus but does not reflect a shift which is likely to be unachievable or too restrictive for healthcare operations in particular.

#### **Car Parking Provision and Management**

Given that car parking provision has a strong relationship with vehicular trip generation it is anticipated that parking provision will have an important role to play in helping to manage traffic levels associated with development. Additional to this, the level of car parking provision needs to be evidenced as being required when compared back to the trip budget being considered.

However, at this stage, the level of car parking has not been specified as ultimately it is a product of an agreed trip budget and specific user requirements. The commitment to only provide car parking that supports the adherence to the trip budget is made by the LCG through this report.

The broad locations for car parking are set out further into this report with the absolute scale of the provision to be determined through more detailed assessment work. The broad locations for car parks reflect the design ambitions of the masterplan and seek to consolidate car parking into multistoreys so as to avoid inefficient and visually impactful surface parking.



7. Transport Vision & Key Moves to Unlock Movement & Connectivity



#### **Transport Vision & Objectives**

#### **Transport Vision**

Achieving the targeted car driver mode share and, consequently, the ultimate trip budget and corresponding parking supply recommendation, CBC's transport vision will need to be realized:

The Cambridge Biomedical Campus will evolve and improve. From a transport and movement perspective less impactful modes will be prioritised, and the campus will become inclusive to all. All stakeholders and visitors will be benefit from increased accessibility and a less hostile environment to work, visit and spend time. Transport, through placemaking, will stitch the campus together. Any growth will be sustainable growth predicated on transport investments that maintain and increase access, but which positively contribute to reaching lower carbon future.

This vision is based (and can only be fully achieved) on the presumption that current challenges and issues with access to and within the Campus are addressed. Without positive intervention, transport and access to the site has the potential to become a detriment. Providing capacity and easier access for sustainable modes instead of cars is imperative. This shift is consistent with the policy objectives of stakeholders within the campus and decision makers in local government. Delivering the vision will ensure that the campus can become a more attractive place to invest and enable continued economic growth. It would help CBC to contribute to the economic growth targets set for the Cambridge Sub-region by both the CPCA and GCP and attract further investment.

#### **Objectives**

In order to deliver this vision, the following objectives have been developed. These are objectives identified through this work but will exist longer term and should be used to validate subsequent choices through different stages of the planning process and, in the much longer term, implantation and delivery. They seek to address identified shortcomings and provide the platform and framework for an improved future.

1. Appreciating Adjacencies and the importance of Land Use Mix – Transport is a derived need. Even at a local level the relationship of separate buildings and uses can create or reduce travel demand, conflict and the reliance of infrastructure and capacity. Promoting a better mix of uses and a sensible distribution of buildings is part of the transport solution.

- 2. Design inclusivity, legibility, and wayfinding Ensure that the design of infrastructure, the use of materials and signage are both in keeping with best practice but also consistent within the campus and city. Ensure that infrastructure caters for all users and maximises inclusivity and reduces apprehension when using spaces and crossing roads. Pedestrians and cyclists should be afforded infrastructure that is coherent, direct, safe, comfortable, and attractive. Gateways to the site will be welcoming and safe.
- 3. Increased permeability and priority for selected user groups A hierarchy of users and connections will be reflected in designs and movement strategies. Sensible design responses to the car will allow increased granular connectivity for pedestrians, cyclists and improved reliability and penetration for public transport. Delivering east west public transport connectivity to connect into the north south corridors must be achieved.
- 4. Managed parking Adopt, over time, a campus wide approach to car parking whereby mutually exclusive peak demands are used to achieve more equitable and efficient use of car parks across the campus. Accept that growth cannot be predicated on increased car use and car parking and that the existing stock needs to be located appropriately and managed using 'smart' technology. Other than Blue Badge Parking, MSCP's should be the model of choice to increase flexibility, reduce inefficient use of land, allow technology to support management. Support changes to parking controls in neighbourhoods surrounding the campus. Cycle parking will be plentiful. Its location and design will be cognisant of user distinction and needs.
- **5. Designing to reduce the dominance of the car** Through sensibly located car parks and a hierarchy of routes that serve them. The blight of car traffic within the campus will be managed and designed for. The strategy for cars allows the strategy for other users to be successful.
- **6. Support and complement infrastructure investment** Significant investment in and policy direction for sustainable transport infrastructure is being made. CBC cannot dictate the pace of delivery but will embrace it and will seek to maximise the effectiveness of it. Designs will seek to allow ease of interchange, increased integration with the campus environment, and incentivisation to use.
- 7. Conditional Support to City Wide and Regional Policies Longer term transport solutions are needed to support continued growth. CBC will continue to support the transport authorities in the Greater Cambridge area to deliver radical and sustainable change. Interventions need to be timely.



#### **Key Moves to Unlock Movement & Connectivity**

To achieve the Vision and many of the stated objectives, two key moves have been identified as part of the evolution of the transport strategy and the Emerging Spatial Framework. These are reported in this section of the report and are then subsequently reflected in the structure of the masterplan and many of the supporting transport measures and interventions.

Structurally, the addition of two key connections are able to transform public transport connectivity in the south of the city:

- i. An enhanced gateway from Hills Road coupled with an East West High Street would provide the opportunity for busbased journeys to and from east Cambridge and the significant growth area at Cambridge Airport, through the campus via Cambridge South station and onwards to the southern Fringe and the Southwest Travel Hub.
- ii. A connection from Babraham Park and Ride to CBC, Cambridge South, and the Cambridge Guided Busway (S) provides the opportunity for buses to bypass congestion along Babraham Road and access the city centre via the existing segregation afforded by the CGB(S). Additionally, P&R to P&R services via CBC and Cambridge South station provide the potential for dedicated high frequency buses to link P&R sites and the campus.

The structural connectivity, as described, assists with the interception of car trips on the most appropriate radial corridors for their origins rather than cars navigating to the corridors upon

which their destinations lie i.e., a network is created, and CBC sits at the heart of it.

These two key moves in combination with other strategic investments being made at the campus would help to address many of the 'city scale' movement challenges set out in the earlier section of this report. Clearly many other issues also exist or will as a result of further growth and that will require different measures to be implemented. However, from an Access and Movement perspective these structural moves have been central to the thinking and development of the Emerging Spatial Framework.



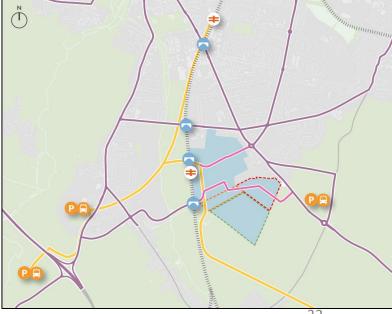


Figure 19: Existing City Scale Movement



## 8. Transport Strategyto Support Growth2030

The following section in an interpretation of the potential phasing of development, and how a progressive and incremental approach to infrastructure delivery, could support that growth. This is a first draft and anticipated to iterate as the Spatial Framework and evidence base is developed further to inform the first full draft Infrastructure Delivery Plan.



#### **Cambridge Biomedical Campus at 2030**

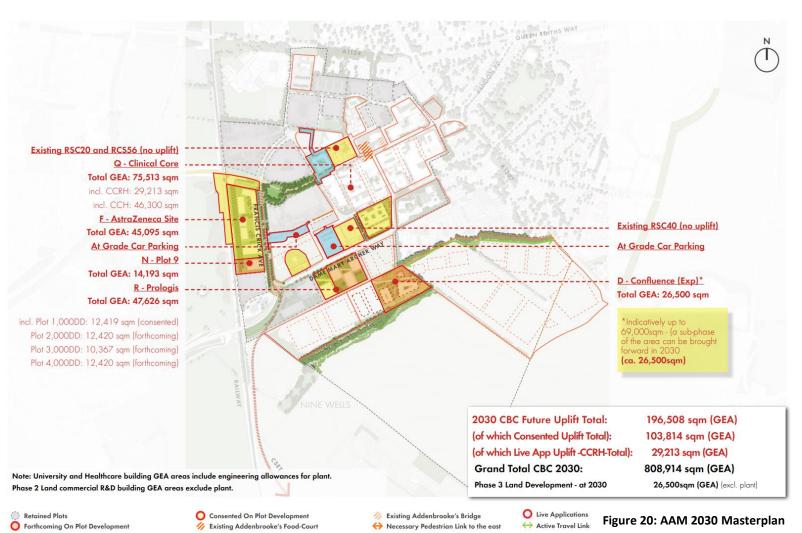
The AAM Emerging Spatial Framework has proposed that additional growth up to 2030 would be as follows and as set out alongside:

- The continual buildout of the Phase 2 land with the Prologis commercial space being opened;
- The first buildings of the Phase 3 allocation being built with the Confluence commercial space built and occupied;
- The completion of the Astra Zeneca site on the west of the campus and the associated multi story car park (along with Cambridge South Station);
- Plot 9 commercial building to the south of the AZ site; and
- The Cancer Research Hospital (RSC20) and the Childrens Hospital (RCS56) buildings (not resulting in any additional floorspace), will be operational by 2030.

These changes and growth assumptions would see 200,315 m² of additional floorspace delivered beyond the existing total. Of this figure 103,814 m² is already consented through the previous Phase 1 and 2 consents obtained.

To support this growth a number of transport related measures are deemed to be necessary and appropriate. These are documented on the following pages of this section of the report and include:

- Public Sector Investments (both on and off site) to be delivered by public bodies with potential that some further funding would be sourced through new planning consents.
- On Site Shared Infrastructure Deemed to be primary and critical infrastructure that relates to the Emerging Spatial Framework and can not be expected to be delivered through plot development
- Other Transport Measures Other transport measures or management strategies deemed necessary to support growth, but which are not to be delivered by public bodies or considered to be primary physical infrastructure necessary to support the overarching principles of the Emerging Spatial Framework.





#### **Cambridge Biomedical Campus** at 2030

The transport additions to be delivered by 2030 which will support and enable growth as envisaged by the Emerging Spatial Framework are shown in the following table.

The status of the public sector investments is that they can be expected to be delivered regardless of the further growth anticipated by the Emerging Spatial Framework although their business cases would be improved. These investments will therefore help to address an existing infrastructure deficit, support much needed accessibility improvements as well providing a platform for further growth as envisaged.

The on-site shared infrastructure by 2030 is limited given the quantum of additional floorspace beyond that which has already been consented. These measures largely relate to schemes that improve access, movement, and safety.

It is proposed that 26,500m2 of the Phase 3 land is brought forward by 2030 which is less than the 30,685m2 allocation and hence, there is no reliance on significant transport infrastructure beyond that which was assumed at the time of the allocation. However, the delivery of Primary Mobility Hub is an important intervention that brings a transport focus and interchange to coincide with Cambridge South Station and CSET.

The Shared Infrastructure for 2030 is shown alongside and further detail on all measures is provided in the remaining pages of this report.

Public Sector Investments	On Site Shared Infrastructure	Other Transport Measures
Cambridge South Station (Network Rail)	Mobility Hub as part of Amenity building and west of high street bus interchange with CSET and Cambridge South (CBC)	(3no.) Secondary Mobility Hubs
Cambridge Southeast Transport Study Phase 2 (CSET) (GCP) (on pause but still part of the GCPs schedule)	Additional pedestrian cycle connection from Babraham Road south of Nine Wells (CBC)	Temporary parking strategies linked to infrastructure delivery
SWTH (GCP)	Tactical small scale mobility Improvements within the campus (Phase 1 Land) (CBC)	Encourage Work-from-Home practices
Foxton Travel Hub (GCP)	Initial interventions to Addenbrooke's food-court (as a meanwhile use) to allow for east west public through route for pedestrians and cycles (CBC)	Bus pass subsidies for new / relocated staff
Planned On-Street Parking Controls (GCP)	Enhanced north south routes connecting Phase 2 into Phase 1 and western end of High Street	-
Sawston Greenway (GCP)	-	-
Cambourne to Cambridge (GCP)	-	-
Fendon Road Cycle Plus (GCP)	-	-
Hills Road Cycle Plus (GCP)		-

Table 13: Transport Measures in Place by 2030

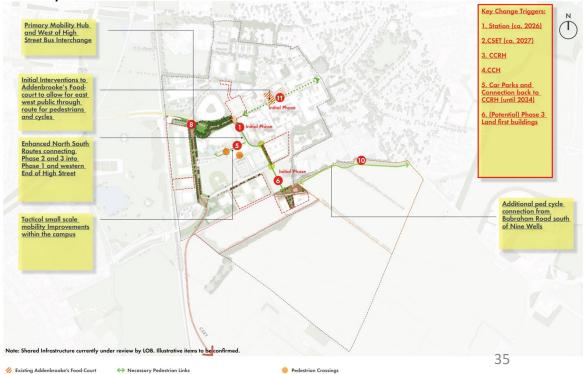


Figure 21: CBC at 2030 Shared Infrastructure



## Transport Strategy to support Growth to 2030: Public Sector Investments Scheme Summaries

#### Cambridge South Railway Station (Network Rail – Programmed opening 2025)

Cambridge South Railway Station is a new railway station that is located to the west of and adjacent to the campus. It will be accessed via Francis Crick Avenue to the east for drop offs, taxi, walking and cycling, and via Hobsons Park to the west on foot and by bicycle only.

There is to be cycle parking provided to both east and west of the railway, adjacent to the entrances, and bus stops are located on Francis Crick Avenue and on the Green where access to the existing Cambridge Guided Busway is provided. These stops and interchange will be enhanced through the Primary Mobility Hub proposed in this area.

Direct rail access will transform transport accessibility for the campus which will be enhanced further through longer term strategic rail investments such as East West Rail and Ely Area Capacity enhancement (EACE).

Funding is in place and construction has begun. It is anticipated that the station will open for passengers in 2025.

## Cambridge Southeast Transport Study (Phase 2) (GCP – Programmed Opening 2026) – CURRENTLY PAUSED

The Cambridge Southeast Transport project will offer better public transport and active travel options for the A1307 and A1301 area. It will improve journey times, reliability and link communities and employment sites in the area southeast of Cambridge.

Phase 1 of the CSET project focused on the safety of walk, cycle, and bus routes between Haverhill and Cambridge along the A1307 and will encompass part of the Linton Greenway.

Phase 2 includes a new segregated public transport route from a new Park& Ride at the A11 to CBC via stops in Sawston, Stapleford and Great Shelford. After serving CBC and Cambridge South Station the route would continue via the Cambridge Guided Busway to central Cambridge.

An application is planned to be submitted to Secretary of State for Transport as part of the Transport and Works Act Order Application in 2023.



Figure 21: Cambridge South Station Forecourt

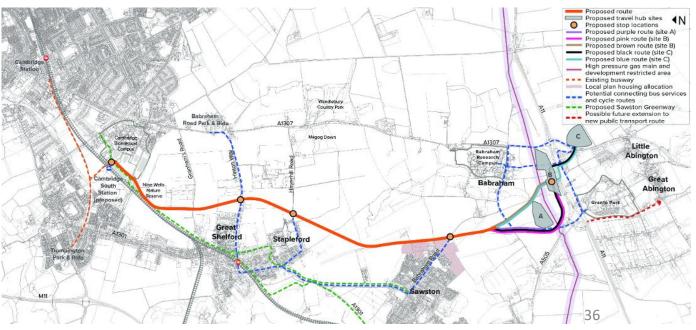


Figure 22: Cambridge Southeast Transport Study Phase 2



### Southwest Travel Hub (GCP – Programmed Opening 2026)

Junction 11 of the M11 is a key entry point into Cambridge from the south. A new travel hub is proposed by the GCP, thus helping reduce the number of cars travelling into the city.

The draft layout is shown alongside. A planning application for the hub was submitted in 2020 and the proposals include for 2,150 car parking bays and a segregated public transport route which link the Travel hub west of the M11 with the A1309/Hauxton Road north of the M11, bypassing M11 Junction.

The application was passed to the Secretary of State for final approval, which was granted in July 2022(ref: CCC/20/040/FUL). An opening year of 2026 is anticipated.

The CSWTH will provide significant benefits to the campus with car trips able to be intercepted at Junction 11 and then a fully segregated public transport trip to the heart of the campus or a fully segregated cycle trip alongside the busway.

In addition to the delivery of the SWTH, the GCP plans to expand the existing Trumpington Park & Ride site, thus helping to reduce the number of cars travelling into the city.

Foxton Travel Hub (GCP – Programmed Opening 2026)
The Foxton Travel Hub is planned to provide in the region of 500 car parking spaces and 150 cycle parking spaces to

provide more people with the opportunity to travel into Cambridge and the campus by train.

Similar to the CSWTH, the Foxton Travel Hub will intercept car trips before the city fringes and in this case along the A10 rather than the M11. The Foxton Travel Hub in combination with Cambridge South Station provides a further opportunity for expanded rail access for the campus.

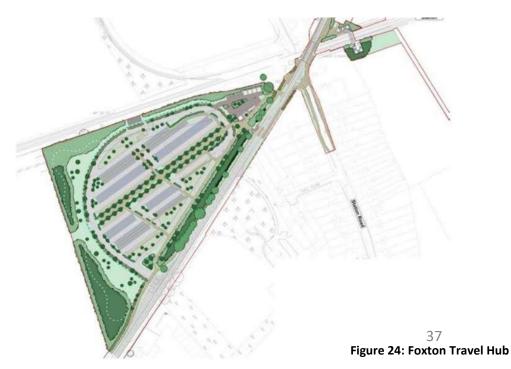
The application for the Foxton Travel Hub was submitted to the GCP's board in December 2021 and was given approval to go ahead with work to submit a planning approval by the GCP Executive Board. Subject to funding, a planning application is expected in 2021/2022 with construction and opening in 2023/2024

### Planned On-Street Parking Controls (GCP Scheme – Mid 2020s)

As part of the City Access Strategy, it is proposed to extend the On-street Parking Controls, already in place in the City Centre to areas around CBC, amongst others. In combination with parking restrictions on-site, this means that existing on-street parking is displaced, forcing drivers to make alternative travel choices that may include making use of a Park and Ride site.



Figure 23: Cambridge South West Travel Hub





### Sawston Greenway (GCP – Programmed opening 2025)

The Sawston Greenway will provide a safer and better route for people using active travel modes between Sawston and CBC. The Sawston Greenway will connect into Stapleford, and Great Shelford.

The Sawston Greenway will include a new highquality pedestrian and cycle crossing at the junction of Long Road and Robinson Way and safer, more direct cycle tracks on Robinson Way through the Addenbrooke's/Biomedical Campus. This will transform this existing hostile gateway.

Further to this the Linton Greenway, Melbourn Greenway, and the Chisholm Trail will connect into CBC. The Linton Greenway is under construction and partially completed, with full completion by 2025/26. The Melbourn Greenway will run from Royston and connect into the Foxton Travel Hub, Trumpington and then branch off to CBC. The Chisholm Trail will connect the current two train stations in Cambridge and then connect into the Greenways to connect into CBC.

The Greater Cambridge Greenways will follow offroad paths, along quiet streets or provide improved facilities along busier roads to provide more people with safer, easier and more direct routes in and out of Cambridge.

### Cambourne to Cambridge – Programmed opening 2026)

The C2C is one of four major corridor schemes that form part of the GCPs Sustainable Transport Program. The route is to link Cambourne to Cambridge via the new Bourn Airfield development and a new Travel Hub at Scotland Farm, Hardwick and West Cambridge campus. Outside of the city the route will be segregated from general traffic.

The proposals include a 6 buses per hour to the city centre and two per hour to CBC.

The route is made up of three key elements:

- A public transport route between Cambourne and Cambridge, providing reliable and sustainable services bypassing general traffic congestion.
- A new travel hub at Scotland Farm, off the A428/A1303.
- New cycling and walking links.

A Transport & Works Act Order (TWAO) is being prepared to approve the route and authorise the scheme to be built. The draft application documents for the TWAO were presented and discussed at the full council meeting at Cambridgeshire County Council on 21 March 2023



Figure 25: Sawston Greenway



Figure 26: Cambourne to Cambridge (C2C)



#### Fendon Road Cycle Plus (GCP – Programmed Opening 2027)

The Fendon Road Cycle Plus scheme will see much improved cycle infrastructure provide along the Fendon Road corridor from CBC towards the east of the city. It will also include upgrades to the **Addenbrookes Roundabout** upgrade.

The new design will also remove the two stage crossings on the Addenbrookes Roundabout and proposes to replace them with single stage crossings allowing pedestrians and cyclists to cross in one stage. The new design aims to make it safer and easier for all road users to access Addenbrooke's Hospital and CBC. The GCP has secured the funding from the Cambridgeshire and Peterborough Combined Authority (CPCA) and aims to deliver the scheme by 2024.

The current designs do not account for changes in traffic flows or wider redevelopment around the junction as part the Emerging Spatial Framework. Whilst the proposals are positive further reaching and more transformative arrangements could be delivered if undertaken in conjunction with the masterplanning of the campus.

A potential alternative arrangement that utilises some land outside of the public highway is shown alongside. This is an illustrative arrangement but demonstrates that a comprehensive redesign, in conjunction with the opportunities that can be provided through the Emerging Spatial Framework, can see a more complete design solution and a gateway more befitting the longer-term vision of the campus.

Figure 26:
Addenbrookes
Roundabout
Changes as part of
Greater Cambridge
Partnership
Fendon Road Cycle
Plus

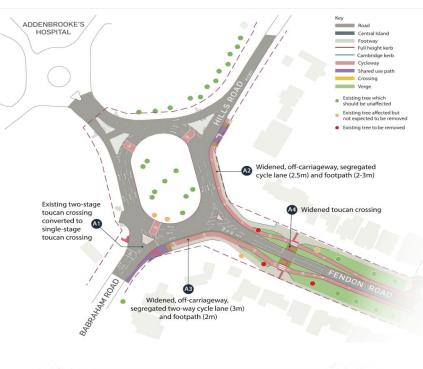


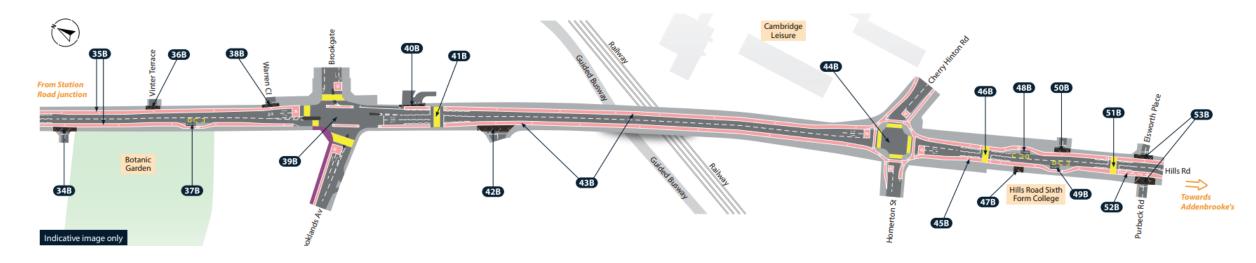
Figure 27:
Illustrative
Alternative
Addenbrookes
Roundabout
Changes enabled
by the Emerging
Spatial Framework





#### Hills Road Cycle Plus (GCP - Programmed Opening 2027)

Hill Road is a key route into the Centre of Cambridge as well as connecting into CBC, but the active travel infrastructure is suboptimal. Currently the GCP have a live consultation to allow people to comment on the two proposed options for Hill Road. The consultation is live until the 24th of July. The proposals include CYCLOPS junctions, extended cycle lanes, and floating bus stops to provide cyclists with a continuous path. Some of the aims of the scheme are to improve pedestrian and cycle safety along Hills Road and reduce bus journey times along Hills Road wherever practicable.



**Figure 28: Hills Road Cycle Plus Proposals** 



# Transport Strategy to support Growth to 2030: On-site Shared Infrastructure

Mobility Hub as part of Amenity Building and west of High Street with Bus Interchange with CSET and Cambridge South (CBC Transport Strategy – by 2030)

A mobility hub type facility will be located at the west end of the High Street and will be located close to Cambridge South Station and at the convergence of CSET and the existing Cambridge Guided Busway.

The design will use the existing public space around a large public transport hub to allow 'first & last mile' connectivity. The facility can be part of a planned amenity building and would be a front door to the campus for transport and travel information. The majority of the infrastructure is already in place or part of the plans for CSET or Cambridge South.

#### COMO UK Guidance states that:

Mobility hubs are highly visible, safe, and accessible spaces where public, shared and active travel modes are co-located alongside improvements to public realm, along with community facilities where relevant. The redesign and reallocation of space away from the private car enhances the experience for travellers and creates a more pleasant environment for everyone.

The mobility hub will be designed and spatially organised so as to facilitate access to and transport between modes, including human-powered and shared modes, as well as provide extra transport-related and digital services. In this location it will provide a recognisable network of defined areas providing services to connect people through sustainable travel and the public realm. It will have a direct and obvious relationship to Cambridge South station and CSET and any passenger's arrival experience.

An illustrative example of a Primary scale mobility hub is shown alongside whilst spatially, the area proposed, is also shown alongside its relationship to bus stops and Cambridge South Station.



Figure 29: Illustration Mobility Hub type facilities that can be integrated into the public realm

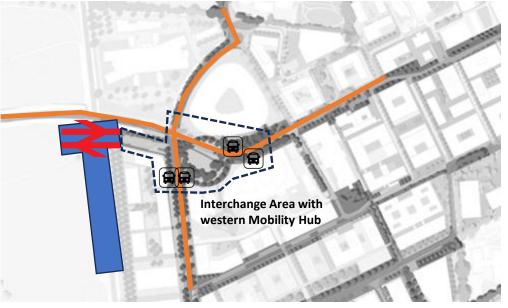


Figure 30: Illustrative location of Primary Mobility Hub



# Transport Strategy to support Growth to 2030: On-site Shared Infrastructure

Additional pedestrian and cycle connection from Babraham Road south of Nine Wells (CBC Transport Strategy – by 2030) This would see an extension of the existing Shared User Path from Babraham Road which currently connects into Knightly

Avenue and the Nine Wells residential area to the east of CBC.

The extension of this route would be to the south of Nine Wells and would connect Babraham Road into the Phase 3 land meaning better and more direct access from CSET Phase A and the Babraham Road Park & Ride to CBC.

### Tactical small scale mobility Improvements within the campus (Phase 1 Land) (CBC Transport Strategy – by 2030)

In advance of the delivery of more significant streetscape and infrastructure improvements afforded by further development a number of small-scale tactical improvements would be implemented. These would include dropped kerbs, pedestrian and parallel crossings, and small-scale connections provided to address failings in the existing campus.

A number of such improvements are proposed as part of CUH temporary car parking proposals.

One location where a small-scale improvement could be implemented is improving pedestrian and cycle connections between Francis Crick Avenue and Robinson Way south of the Royal Papworth Hospital.

### Enhanced North South Routes connecting Phase 2 into Phase 1 and western End of High Street

By 2030 the early delivery of what will become the North South route will be delivered. At this stage of the masterplan, the proposal will need to work with many of the constraints that exist within the current campus and prior to the benefiting from the 'breathing space' afforded through the Phase 4 land.

Nonetheless a better demarcated and legible connection will be delivered that will connect the Confluence to the South with the Western Primary Mobility Hub and Cambridge South Station. Minor early interventions may include:

- Resurfacing road and pavement
- Removal of canopy on West side of road;
- Provision of trees and associated pits at regular intervals
- update/refresh of external lighting
- road widening for new cycle way?
- soft landscaping



Figure 31: Additional Ped/Cycle Connection from Babraham Road, south of Nine Wells



Figure 32: Example of Parallel Crossing installation



Initial Interventions to Addenbrooke's Food-court (as a meanwhile use) to allow for east west public through route for pedestrians and cycles (CBC Transport Strategy – by 2030) In advance of full delivery of the East West High Street, it is proposed that a low-cost reconfiguration/ minor works amendment to the existing food court is explored to allow pedestrian and cyclist connectivity east west to support movements to, from and through the campus. This would have a clear and direct relationship to Cambridge South and CSET to the west.

This will however require a more detailed study as the extent of work required and associated costs for providing this is currently unclear. The conclusions of the further study will inform the viability of this 'meanwhile' scheme.

### (3no.) Secondary Mobility Hubs (CBC Transport Strategy – by 2030)

Secondary mobility hubs to be located northern, central and confluence.

Wayfinding and accessibility are at the forefront of Secondary Mobility Hubs and this view shows both these elements at the forefront of the design. These hubs can be in a linier design or can be more compact depending on the restrictions at each of the locations. The infrastructure of the hub does not need to be extensive but should be homogenous and give a sense of place. By providing quality infrastructure and services, new users can be enticed to try the hub and leave the car at home.

Secondary Mobility Hubs provide a 'first and last mile' solutions – as well as the bus, there could be a bike share and an EV car club along with journey planning information.

### Temporary parking strategies linked to infrastructure delivery (CBC Transport Strategy – by 2030)

Whilst the phases are implemented and constructed, temporary car parks will be needed before and whilst the proposed multistorey car parks are being constructed and also potentially in advance of major infrastructure.

This could be in the form of organising one temporary car park to close as the next is needed or timing it so that when permanent car parks are closed, the temporary car park can open.

CUH have two temporary car parks proposed which are shown and accounted for in the AAM on the 2030 land use plans. The temporary car park to the south of MSCP 2 is shown alongside with the proposed crossing points that would be delivered in conjunction.

## Encourage Work-From-Home (WFH) Practices (CBC Transport Strategy – by 2030)

Post-pandemic trends indicate that WFH activity will persist. Employment and labour market research indicates 14% of employees WFH exclusively with a further 24% of employees partaking in a hybrid model (Office of National Statistics, 2022). For this assessment, it is estimated that 20% of the admin/clerical staff would WFH.

### Free Bus Pass for New/Relocated Staff (CBC Transport Strategy – by 2030)

New / relocated staff to receive free bus passes that cover the first month of their employment to instill positive travel habits from the outset.



Figure 33: Illustrative Location of Further 3 No. Secondary Mobility Hubs ( • )



Figure 34: CUH Temporary Car Park, South of MSCP 2



# 9. Transport Strategyto Support Growth2035

The following section in an interpretation of the potential phasing of development, and how a progressive and incremental approach to infrastructure delivery, could support that growth. This is a first draft and anticipated to iterate as the Spatial Framework and evidence base is developed further to inform the first full draft Infrastructure Delivery Plan.



### **Cambridge Biomedical Campus at 2035**

The AAM Emerging Spatial Framework has proposed that additional growth up to 2035 would be as follows and as set out alongside:

- The redevelopment of the northern gateway, resulting in the loss of Car Park S;
- The Frank Lee Centre development comprising a mix of commercial and leisure floorspace;
- The additional Healthcare space associated with the Clinical Core and the Hospital expansion;
- The continued buildout of the Phase 3 land and its associated commercial floorspace;
- The eastern gateway with the Front Door commercial building (removing Car Park H);
- The upgrade to the existing Island Site;
- The development Bus Layover area;
- The redevelopment of the Forvie Site resulting in additional commercial floor area;
- The Confluence commercial space is split on the Phase 2 and Phase 3 land, with the Confluence building (and MSCP3) finishing the Phase 2 land and further commercial floorspace within the Phase 3 land;
- Finally, the start of the Phase 4 land will be built providing additional commercial floorspace.

These changes and growth assumptions by 2035 would see 457,363m² of additional floorspace delivered beyond the existing total. Of this figure 63,000m² would be delivered within the Phase 3 land and 65,000m² within the Phase 4 land. To support this growth a number of transport related measures are deemed to be necessary and appropriate. These are documented on the following pages of this section of the report and include:

- On Site Shared Infrastructure Deemed to be primary and critical infrastructure that relates to the Emerging Spatial Framework and can not be expected to be delivered through plot development
- Other Transport Measures Other transport measures or management strategies
  deemed necessary to support growth, but which are not to be delivered by public
  bodies or considered to be primary physical infrastructure necessary to support
  the overarching principles of the Emerging Spatial Framework.

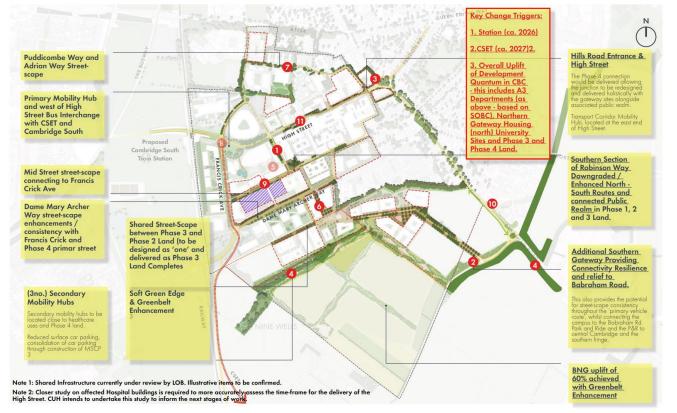


Figure 35: AAM 2035 Masterplan



### **Cambridge Biomedical Campus at 2035**

The transport additions to be delivered by 2035 which will support and enable growth as envisaged by the Emerging Spatial Framework are shown below in Table 5. By 2035 all known public sector investments are expected to be delivered except for East West Rail. The on-site shared infrastructure by 2035 is significant as it aligns with the delivery of the most significant quantum of floors space which is beyond any existing planning consents or allocations and therefore requires some further additionality to mitigate impact. The Shared Infrastructure for 2030 is shown alongside and further detail on all measures contained in Table 5 in the remaining pages of this report.



Public Sector Investments	On Site Shared Infrastructure	Other Transport Measures
East West Rail (Network Rail/ East West Rail Company)	Full High Street delivered including Gateway from Hills Road along with east High Street Bus Stops (CBC)	Bus services from:  Newmarket – A11 P&R – Cambridge South Babraham Park and Ride - Cambridge South – Cambridge Station – City Centre Foxton Travel Hub - Cambridge SW Travel Hub – Trumpington P&R - Cambridge South – Cambridge East - Milton Babraham Road P&R – Cambridge South – Trumpington P&R - SW Travel Hub A11 P&R – Cambridge South – Cambridge East DRT Service
	South section of Robinson Way downgraded.	Consolidation of car parking through construction of MSCP 3 and Phase 2 MSCP
	New Southern Gateway access only link plus bus, pedestrian, and cycle route from Granham's Road / Babraham Road	(3no.) Secondary Mobility Hubs
	Phase 4 Primary Street	Residential for key workers
	Puddicombe Way and Adrian Way Streetscape and infrastructure	Sensor and AI technology for Trip Budget Adherence and on-site priority and management
	Hospital Mid Street streetscape	Micro-Consolidation Centre in MSCP 1
	Dame Mary Archer Way streetscape enhancements / infrastructure consistency with Francis Crick and Phase 4 primary Street	
	Segregated infrastructure of Addenbrookes Road	

**Table 13: Transport Measures in Place by 2035** 



### East West Rail (Network Rail/ East West Rail Company – by 2035)

East West Rail provides the opportunity to unlock productivity in the Oxford-Cambridge region, with the railway also linking into Milton Keynes and Bedford. During the consultations for East West Rail, CBC is consistently referenced with regard to its national importance and therefore, in part, the justification for the new railway.

In June 2023, the final route from Bedford to Cambridge was announced, completing the route to Cambridge. The final route alignment serves Cambridge from the south, via CBC and Cambridge South Station. The southern approach was in part due to the importance of serving CBC and Cambridge South with EWR stating the southern approach '.... serves the Cambridge Biomedical Campus, which is an unparalleled centre for life sciences of global importance and is home to Addenbrooke's Hospital. Our work found a southern approach is more likely to unlock the region's potential for transformational economic growth and create jobs, attract investment and support the UK economic recovery.'

For CBC, the effect of EWR will be significant as it increases the accessibility of the hospital for staff and visitors living further away, particularly to the west which is currently only accessible using the car. Two new stations are proposed at Tempsford and Cambourne with the expectations being that these will also lead to the growth of these settlements significantly.

The DfT said "East West Rail will allow us to connect these vital sites with a much greater talent pool and allow the region to retain and grow its reputation globally".

Network Rail, as part of the Transport and Works Act Order confirmed that the design work for Cambridge South does not preclude options for East West Rail Central (EWR) Section from Bedford to Cambridge. The station and infrastructure design can be adapted relatively easily to meet the longer-term needs of the railway network in the area and thereby allow potential future EWR Central Section services to call at the new station.

Whilst this is the tested position with regard to the station and rail related infrastructure, the CBC masterplan and designs for the area around the station will need to be cognisant further EWR demand forecasts and physical changes when they are better known and understood.

The proposed route from Oxford to Cambridge with the approach into Cambridge are shown alongside.

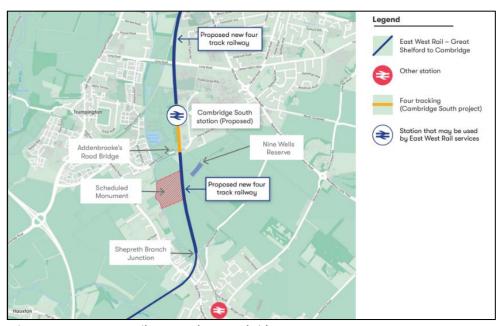


Figure 37: East West Rail Approach to Cambridge



Figure 38: East West Rail Preferred Route Plan with new stations at Tempsford and Cambourne



# Transport Strategy to support Growth to 2035: On-site Shared Infrastructure

Full High Street delivered including Gateway from Hills Road along with east High Street Bus Stops (CBC Transport Strategy – by 2035)

Whilst a a detailed feasibility study is required to establish options for early delivery of the High Street, the delivery of the Full High Street between Francis Crick Avenue and Hills Road is considered to be one of the two key structuring principles in the formulation of the access and movement aspects of the Emerging Spatial Framework.

The full high street, including the right turn from Francis Crick Avenue, would enable an east-west public transport connection to be achieved which would unlock the potential for direct and express services through the Campus that link to rail opportunities at Cambridge South, CSETS, but also provide interchange with the Guided Bus network and a number of the Park & Rides to the south and east of the city. 'Preferential routing' of bus services enables the distance by bus to be shorter than the equivalent journey by car. This can increase bus journey speeds and thus the attraction of choosing the bus over the car. As a 'virtuous circle', it can also reduce the amount of other traffic on the bus route, reducing delays.

This delivers not only benefits to the campus but the wider city and bus network. This east west connection helps to support connections from the east side of the city and orbital connectivity to support further growth. This is a hugely important connection that stakeholders will work together to deliver through further discussion on delivery mechanisms and timings.

By 2035, the existing Addenbrookes Bus Station is shown to be redeveloped. The 4 stops that currently exist within the station would be relocated to Hills Road and the High Street as on street stops. Additional stops or double cages will be necessary

for an increase bus services.

A number of the bus services referenced further into this section of the report are dependent on this connection being provided.

Whilst cyclists will be provided for along this corridor, full segregated cycle infrastructure is not proposed as it does not form part of the Primary Street network and width constraints preclude. Instead, the High Street will be a slow speed environment and the only traffic permitted to use it beyond public transport is for limited, low volume front door access to buildings.

Robinson Way Upgraded (CBC Transport Strategy – by 2035)
As a result of the Southern Gateway and the reorganisation of the Primary Road network, traffic is extracted from the existing eastern gateway (Addenbrooke's Roundabout) and the southeastern section of Robinson Way.

The change in the role for Robinson Way means that there is the opportunity to downgrade the southeastern section of Robinson Way to become a secondary route designed for pedestrian and cyclists and local access.

As a result of this change, there will also be scope to improve the crossings from Nine Wells and Red Cross Lane to access the heart of campus with the current severance effect of crossing the primary road network in these locations.

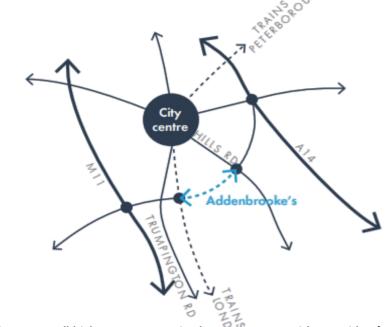


Figure 40: Full high street connecting busway to west with east side of city



Figure 41: Robinson way upgraded to route that provides access but no longer part of primary road network



# Transport Strategy to support Growth to 2035: On-site Shared Infrastructure

#### Southern Gateway (CBC Transport Strategy - by 2035)

The southern gateway into CBC would comprise:

- A new signal junction would be formed between the Phase 4 land and Granham's Road. This would include pedestrian and cyclist facilities to safely cater for demand from the south.
- Granham's Road is realigned at its eastern end and a new roundabout junction is formed with Babraham Road which would include the consented residential scheme to the east of Babraham Road.
- Bus priority between the Granham's Road junction and the Babraham Road P&R would be delivered using land in the control of the LCG or the adopted highway.
- The existing signal-controlled toucan crossing facility north of
  the existing Granham's Road junction would be brought 150
  metres south to align with a convergence of connections at
  this point and which would also provide access to the east and
  the historic Worts Causeway and Roman Road beyond. This
  crossing in conjunction with the crossing from the P&R means
  that a roundabout as part of the realigned Granham's Road is
  appropriate because pedestrians and cyclists do not need to
  cross at the roundabout to access CBC.
- The existing toucan crossing at the signal junction with the Park & Ride is retained. It is then supplemented by a new 2metre footway (and 3 metre cycle path) that runs from the crossing up to Granham's Road and onwards into the campus and onto an improved PROW towards Nine Wells.

The proposed roundabout plays on important role in providing a Better arranged arrival sequence to City and the campus. Importantly the southern gateway into CBC intercepts CBC bound

traffic sooner and reduces flows along Babraham Road and at the Hills Road access where around 40% of traffic relates to CBC. This capacity relief will result in more reliable and faster bus services along Babraham Road and provides an opportunity for a further improved Addenbrookes Roundabout.

With the Addenbrooke's roundabout relived of some of the demand currently using the site, it unlocks the opportunity for east / west bus connectivity to run through the site. Further measures outlined in subsequent pages of this report will need to come forward to successfully achieve a fully integrated east / west connection through the campus, but the southern gateway has an important relationship to it.

The southern Gateway and link road through Phase 4 has been identified as one of the key structural moves.

#### Phase 4 Primary Street (CBC Transport Strategy – by 2035)

The Phase 4 Primary Street will form part of the primary street network for the campus and will connect Granhams Road to the south with Dame Mary Archer Way. Its use will be restricted to traffic that has legitimate campus business but will also have a key role in providing accessibility for public transport, walking and cycling.

The approach to infrastructure design will be consistent with the rest of the Primary Street network whereby segregated unidirectional cycle tracks will be provided and wherever possible will be separated from the carriageway by a landscape strip. Footways will be generous and will be continuous across side road.

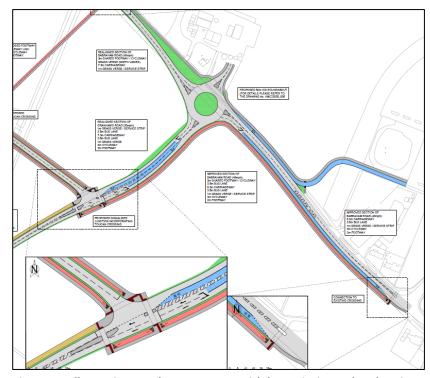


Figure 42: Illustrative Southern Gateway with bus priority and pedestrian and cycle infrastructure



Figure 43: Illustrative Primary Street Cross-Section



# Transport Strategy to support Growth to 2035: On-site Shared Infrastructure

Puddicombe Way and Adrian Way Streetscape and infrastructure (CBC Transport Strategy – by 2035)

Puddicombe Way and Adrian Way are part of the exiting primary street network within CBC and will continue to be so as the site expands.

As with the Phase 4 Primary Street, Puddicombe Way and Adrian Way will be redesigned to ensure that the streetscape and infrastructure are consistent and of the same quality as is proposed for the rest of the Primary Street network.

A more detailed study will need to be undertaken do determine the viability and scale of this improvement.

### Hospital Mid-Street streetscape (CBC Transport Strategy – by 2035)

As part of hospital relocation a new Hospital Mid street will be created between Robinson Way and Francis Crick Avenue.

It will provide some access to hospital use front doors but will not be a primary vehicle route. It is assumed to be 6.0 carriageway, 2.5m drop off bays and 3 metre footways with some soft landscape and consistent materials. It will include a hospital square as part of the public realm strategy.

Dame Mary Archer Way streetscape enhancements / infrastructure consistency with Francis Crick and Phase 4 primary Street (CBC Transport Strategy – by 2035)

The Southern Gateway allows access from south and connects into Dame Mary Archer Way. This will then upgrade Dame Mary Archer Way into part of the primary street network around the campus as it will connect the Southern Gateway with Addenbrooke's Road and Francis Crick Avenue. It will continue to provide access to the Phase 2 land as previously consented.

As part of the primary street network the streetscape and infrastructure typology will be consistent with the rest of the primary street network and as described previously.

#### Segregated infrastructure of Addenbrookes Road

As the campus expands south, Addenbrooke's Road takes on more importance for cyclists arriving from the southwest including the new southern fringe communities, the Greenways and the Park & Rides.

Addenbrookes Road is currently comprised of a duplication of cycle provision. The off-

road facility, separated from pedestrians by a painted white line, is punctuated by vehicle access points. The on carriageway mandatory cycle lane facilities are often sporadic and provide no protection from traffic.

It is proposed therefore that some of these arrangements should be replaced by the higher-quality cycle infrastructure that affords the level of prioritisation and convenience that is appropriate for this route. It is proposed that these would be targeted improvements rather than a full corridor re-design.

Should residential development west of the railway line come forward as previously proposed a full redesign could be expected with full segregation of cyclists from pedestrians and vehicles and priority at side road junctions. The entire corridor has previously been assessed and designed by Vectos. The extent of the route is shown alongside.

A more detailed study will be undertaken do determine the viability and scale of this improvement.



Figure 44: Mid-Street Example



Figure 45: Extent of segregated cycle infrastructure along Addenbrookes Road



## Updated Bus Services (CBC Transport Strategy – by 2035)

By 2030, The Greater Cambridge Partnership will have delivered a significant number of off-road busways providing reliable and quick public transport options to and from growth areas.

The GCP proposed a significant uplift in bus provision in and around Cambridge through the Making Connections road user charging scheme. This has subsequently failed to be agreed by the council, however there is likely to be future proposals that allow the increase in public transport provision as well as further active travel infrastructure schemes come forward, of which we would expect a number of which to connect into CBC.

However, there are no plans in the public domain currently that provide CBC with confidence that an increase active and public transport provision is possible, but there are a number of services which are deemed of necessary importance to support the growth considered in this report that would need to be funded through contributions or part subsidy. We note the CPCA's ongoing review of bus franchising in this vein.

The following services are proposed as part of this transport strategy. All take advantage of the new infrastructure provided by CSET and the Emerging Spatial Framework in the form of the East West High Street and Southern Gateway.

Newmarket – A11 P&R – Cambridge South

- Bus services from: Babraham Park and Ride - Cambridge South – Cambridge Station – Cambridge City Centre – Madingley P&R
- Bus services from: Royston Foxton
   Travel Hub Cambridge SW Travel Hub Trumpington P&R Cambridge South Cambridge East Milton (Waterbeach beyond)
- Bus services from: Babraham Road P&R

   Cambridge South Trumpington P&R 

   SW Travel Hub
- Bus services from: A11 P&R Cambridge South – Cambridge East
- DRT Bus Service (Autonomy enabled Cambridge Connector)

The proposals seek to directly link P&Rs to the campus and to one another. Whilst the service particulars and routes can be agreed in conjunction with bus operators, the principle of the routes being enabled through the campus and the key moves is a unique benefit that the masterplan can bring to transport connectivity in the city.

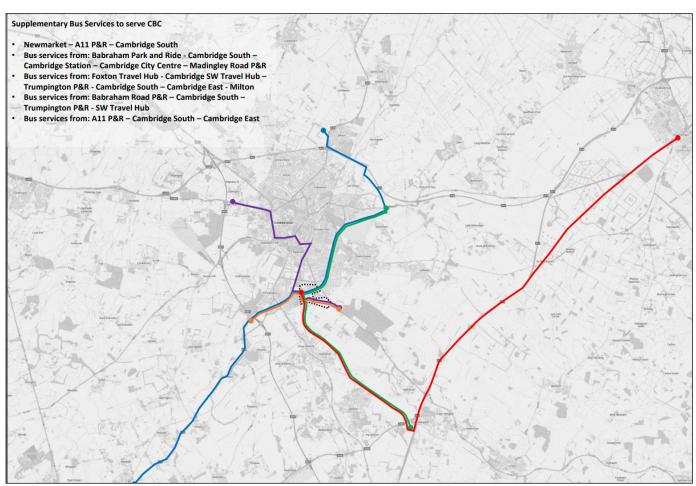


Figure 46: Supplementary bus services to serve CBC



The Demand Responsive Transport Bus Service is an enhanced version of the existing campus hopper service to embrace demand responsive transport with the aim of providing seamless integration of key interchanges and arrival points within the Campus. Consistent with the CUH masterplan we are seeking to identify a number of pick-up and drop-off stops for DRT or community services and to provide effective coverage of the Campus and compliment the fixed route services. It is anticipated that these services will become autonomous which will reduce operating costs over time.

Much of the Cambridge hinterland is relatively rural in nature, with small towns and villages. Semi demand responsive services (buses or smaller vehicles) are capable of maximising occupancy by developing routes that pick up a string of towns and villages relative to the demand. These services are likely to be focussed on CBC staff and hospital visitors and at the times at which those staff want to, or need to, travel. They are pre booked on a smart phone or computer. Over time, the system learns the likely locations of demand and adjusts routes and sizes of vehicle accordingly. Arriva Click is one example of a successful and growing demand responsive service in the UK whilst the CPCA operate an existing service through Stagecoach East named Ting which is currently serving West Huntingdonshire

The Greater Cambridge Partnership has been awarded £8.7 million by government, matched by industry, to pilot on-demand self-driving vehicles. The trials are across Cambridge University's West Cambridge campus and the Cambridge Biomedical Campus. The DRT service outlined above could be developed from these trials with the route of the trial being shown below. From this, it is apparent that the route between Babraham P&R and Trumpington P&R is proposed and would be a beneficiary of the southern gateway.

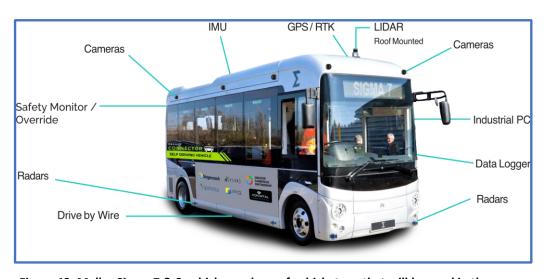


Figure 48: Mellor Sigma 7 & 8 vehicle mock-up of vehicle type that will be used in the Cambridge Connector trial due to start in March 2024

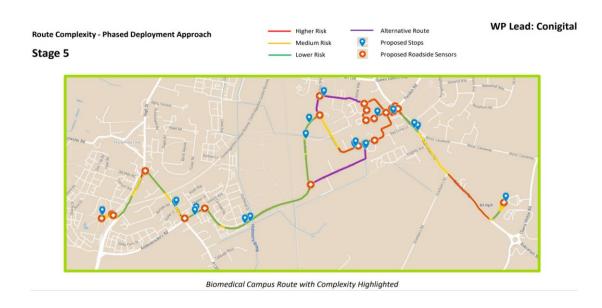


Figure 47: Cambridge Connector Trial Route at CBC



Reduced surface car parking, consolidation of car parking through construction of MSCP 3 and Phase 2 MSCP (CBC Transport Strategy – by 2035)

The rationalisation of existing car parking into MSCP's and the replacement of significant surface car parks where leases allow forms part of the land use and transport strategy. By 2035 it is proposed that the delivery of the Northern Gateway and The Front Door sites would replace the existing surface car parks in these same locations.

The loss of surface car parking in 2035 would be compensated by the construction of MSCP 3 for 1,200 spaces and the MSCP within the Phase 2 land.

The way in which car parking is proposed to be managed and provided for over time is complex.

### (3no.) Secondary Mobility Hubs (CBC Transport Strategy – by 2035)

3 further secondary mobility hubs are proposed by 2035. These complement the mobility hubs delivered by 2030. The additional hubs would be located at the north end of the Phase 4 land, between Phase 3 and 2 and at a location close to the island site. As with the previous commentary relating to mobility hubs, these will be for the use of employees, residents, community groups & neighbourhood businesses.

The secondary mobility hubs will be of a high design quality providing integrated transport services, coherently presented under one overarching brand alongside improvements in public realm.

The hub model will require collaboration between partners and the Local Authority. The local authority leads on and manages some elements and partners managing components are collaborating on management tasks and contributing to overall costs.

Wayfinding and accessibility are at the forefront of Secondary Mobility Hubs and this view shows both these elements at the forefront of the design. These hubs can be in a linier design or can be more compact depending on the restrictions at each of the locations. The infrastructure of the hub does not need to be extensive but should be homogenous and give a sense of place.

Secondary Mobility Hubs provide a 'first and last mile' solutions – as well as the bus, there could be a bike share and an EV car club along with journey planning information.

#### SUGGESTED COMPONENTS:

### The hub & its infrastructure



Buildings



Road changes



Signage



Information



Parklets



) Bench



Outdoor gym equipment

Practical facilities

EV charging network

Visual environmental

Package locker

& community



Community notice board

#### **Shared transport**

Public transport



Car club

Bus



Bike share

#### Figure 49: Illustrative components of secondary Mobility Hubs



Figure 50: Illustrative location of further 3 no. secondary Mobility Hubs ( • )



#### Residential for key workers (CBC Transport Strategy - by 2035)

The Emerging Spatial Framework includes proposals for an increased quantum of key work residential housing within the campus. Whilst detail on the exact quantum is to be determined, the inclusion of residential land uses within the masterplan has transport benefits through the internalisation of what would otherwise be external trips.

It is anticipated that all residential uses on the site would be car free except for blue badge car parking.

### Sensor and AI technology for Trip Budget Adherence and on-site priority and management (CBC Transport Strategy – by 2035)

Increasingly strategic sites in the Greater Cambridge area and the city itself are utilising Smart Sensors based on Vivacity hardware and software. The sensors provide access to real-time and historic data view on different types of transport modes, how they use roads and pathways, how they interact and how this is changing over time. This detailed data supports strategic decision making to improve the road network and urban environment, helping to make environments smarter, safer and more sustainable. In the case of CBC better and more accurate enforcement can also be undertaken. The data that would be captured by the installation of sensors would be:

- Classified Counts Pedestrian Cyclist Motorbike Car Taxi Van/LGV OGV 1 OGV 2 Public Service Vehicles/Buses. E-scooters and micro mobility
- Vehicle Path across the road space to understand interactions and to assess junction turning counts.
- Median Journey Time of road users with number plates between any two sensors within the network.
- Speed to capture travel behaviour, stopped vehicle detection and identify gueue formation.
- Origin/Destination can count a vehicle along routes between two sensors (points) for insight into traffic levels and travel patterns, tracked by anonymously hashed ANPR.
- Near Misses track paths to identify dangerous interactions between vulnerable road users and vehicles.
- Sensor Image on request, a blurred image or low-res video of the road space to help understand abnormal behaviour on a live data feed.

Adherence to trip budgets, understanding quantum of through traffic, station trip generation along with safety and conflicts would all be collected through sensors.

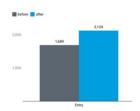
### **VivaCity Solution**

### **Proposed Sensor Locations**



### **Outcomes and Benefits of Long Term Monitoring**

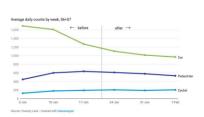
#### Trend / Intervention Analysis



Identify correlations between the time of day or week and traffic with the Trend Analysis tool.

Get the most out of your pre- and post-implementation data to evidence the success of active travel schemes and interventions going forward using our Intervention Analysis tool

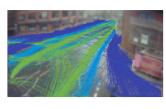
#### **Qualitative Modal Shift Evidence**



Baseline data will help your decision-making when developing the intervention or scheme, leading to a strategic investment with clear predetermined goals.

Compare this pre-implementation data with postimplementation data to assess modal shift following implementation.

#### Visual Behaviour Insights



Tracking the paths objects take across the sensor's field of view offers a clear understanding of the usage of precise spaces within an environment.

Colour coding for aggregate road user categories helps to maximise the legibility of the data.

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Figure 51: Vivacity proposal for sensor-based technology at CBC



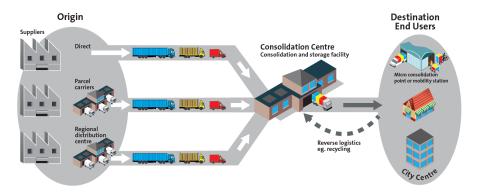
Micro-consolidation and micro-distribution in MSCP 1 (CBC Transport Strategy - by 2035)

Both terms refer to interventions at a small-scale and local level, which would be for the campus. They are an important part of last-mile logistics. Out of city consolidation is also important in reducing overall freight trips but would need to be led by the local authority as part of a city wide strategy.

Micro-consolidation is an approach whereby deliveries – most often items common to several businesses or departments, such as stationery or personal deliveries – are delivered to a single place before being distributed on to their end recipient. This allows for efficiency in terms of reducing trips and the need for multiple deliveries to be managed on-site.

For micro-consolidation to work well, there needs to be an agreed approach which the participants are signed up to, so can work well as part of collective procurement. It also needs a suitable place to store the deliveries, which is safe and secure and with chilled and ambient facilities as necessary. For CBC and at this stage in the process, it is proposed that MSCP 1 could be an appropriate location for a small scale facility.

Micro-distribution is the next step – the stored goods are distributed at agreed times by low impact modes, which can also reduce the overall number of trips. There are a number of such operators in Cambridge and some which are operating already at CBC.







# 9. Transport Strategyto Support Growth2040

The following section in an interpretation of the potential phasing of development, and how a progressive and incremental approach to infrastructure delivery, could support that growth. This is a first draft and anticipated to iterate as the Spatial Framework and evidence base is developed further to inform the first full draft Infrastructure Delivery Plan.



### **Cambridge Biomedical Campus at 2040**

The AAM Emerging Spatial Framework has proposed that additional growth up to 2040 would be as follows and as set out alongside:

- The redevelopment of the Sanctuary Housing site
- The further redevelopment of the Frank Lee Centre to provide healthcare related floorspace;
- Additional clinical special and cancer related services in the Clinical Core.
- General Clinical floorspace associated with the Hospital Expansion
- The completion of the buildout of the Phase 3 land and its associated commercial floorspace;
- The continued buildout of the Phase 4 land for commercial uses.

These changes and growth assumptions by 2040 would see  $334,415\text{m}^2$  of additional floorspace delivered beyond the 2035 total and the grand total at this stage for CBC would be  $1,538,315\text{m}^2$ . Of the growth between 2035 and 2040  $32,500\text{m}^2$  would be delivered within the Phase 3 land and  $169,000\text{m}^2$  within the Phase 4 land. To support this growth a number of transport related measures are deemed to be necessary and appropriate.

These are documented on the following pages of this section of the report and include:

- On Site Shared Infrastructure Deemed to be primary and critical infrastructure that relates to the Emerging Spatial Framework and can not be expected to be delivered through plot development
- Other Transport Measures Other transport measures or management strategies deemed necessary to support growth, but which are not to be delivered by public bodies or considered to be primary physical infrastructure necessary to support the overarching principles of the Emerging Spatial Framework.



Figure 52: AAM 2040 Masterplan

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### **Cambridge Biomedical Campus at 2040**

The transport additions to be delivered by 2040 which will support and enable growth as envisaged by the Emerging Spatial Framework are shown below in Table 6.

The on-site shared infrastructure by 2040 is less significant given that most of the shared infrastructure has been delivered by 2035.

The Shared Infrastructure for 2040 is shown alongside and further detail on all measures contained in Table 6 in the remaining pages of this report.

On Site Shared Infrastructure	Other Transport Measures	
2no. Secondary mobility hubs	Consolidation of car parking through construction of MSCP in Phase 4 land	
	P&R Travel Hub Expansions (as necessary)	
	Bus Service Frequency increase	
	Micro-Consolidation Centre in MSCP 4	
	Contribution to Addenbrookes Road to Shelford Tier 2 (LCWIP) active travel network	
	Southern edge Trail (part of landscape/ soft edge)	
	Babraham Road pedestrian / cycle connection	

Table 14: Transport Measures in Place by 2040



Figure 53: CBC at 2040 Shared Infrastructure



# Transport Strategy to support Growth to 2040: On-site Shared Infrastructure

Consolidation of car parking through construction of MSCP 4 in Phase 4 land (CBC Transport Strategy – by 2040)

By 2040 it is envisaged that a further MSCP will be provided in the Phase 4 land. This will provide a spatially sensible location for car parking within Phase for and for the floor area proposed.

The inclusion of a MSCP as a parking typology is consistent with the principles of consolidating car parking into more singular locations and which limits the number of private vehicle routes through the Campus and thus reduces the number of potential conflict points between pedestrians, cyclists and public transport users.

Locating future MSCPs close to the Primary Street reduces circulation within the Campus heart. MSCPs will also be served by future on demand public transport services, offering local connectivity from these car parks into the main hospital areas.

(2no.) Secondary Mobility Hubs (CBC Transport Strategy) Two further secondary mobility hubs will be located in the Phase 4 land and which will complement the other mobility hubs in campus.



Figure 55: Illustrative secondary mobility hub



Figure 56: Illustrative location of further 2 no. secondary Mobility Hubs ( • )



## P&R and Travel Hub expansions (Public Sector with CBC contributions) (CBC Transport Strategy – by 2040)

Whilst significant expansions and new provisions of P&R facilities are proposed close to CBC, the delivery of better cross city connections will enable CBC demand to be picked up on other corridors without drivers having to orientate their journeys to P&R's close to CBC.

The expansion possible future expansion of other and new P&R's subject to further modelling may be beneficial.

These P&R's should be accompanied by complementary feeder services and last mile connectivity to help address rural accessibility without the need to drive to the car park.

#### **Bus Service Frequency Uplift or Privately Procured Coaches**

Bus headways are relatively easy to increase with funding. Therefore, as required, bus services can be increased to accommodate additional demand originating at or terminating in the campus.

However, should clear failings exist in the bus network in 2040 then, much like existing schemes that currently operate to the south of the city, large employers may be required to run a bus or coach service for staff who do not have access to convenient and reliable public transport.

While this approach would be consistent with the wider sustainable growth strategy for the campus, such services undermine public services by abstracting patronage and therefore revenue. Therefore, and for this reason, the preferred approach at this stage is that the necessary subsidy

would be provided to support public services until which point, they are self sustaining are able to provide the necessary accessibility as part of a direct and reliable bus strategy for the campus.

### Micro-consolidation and micro-distribution in MSCP 4 (CBC Transport Strategy – by 2035)

As stated previously, a strategy to reduce the impact of servicing trips and from the campus will be needed and this is proposed through the adoption of Micro-consolidation and micro-distribution.

In addition to a facility within MSCP 1, it is proposed that a further facility in the MSCP in the Phase 4 land would be provided given its southern gateway location.

### Contribution to Addenbrookes Road to Shelford Tier 2 (LCWIP) active travel network

If not already delivered a contribution to assist in the delivery of this connection as set out in CCC's LCWIP would be appropriate.

#### Southern edge Trail (part of landscape/ soft edge)

As part of green infrastructure strategy, a trail connecting Babraham Road with Worts Causeway and Limekiln Road.

#### Babraham Road Pedestrian / Cycle connection

A route through the Ph4 public realm to connect into Babraham Road and connect into green corridor through Newbury Farm. Toucan Crossing across Babraham Road.





# 10. Transport Strategy to Support Growth 2050

The following section in an interpretation of the potential phasing of development, and how a progressive and incremental approach to infrastructure delivery, could support that growth. This is a first draft and anticipated to iterate as the Spatial Framework and evidence base is developed further to inform the first full draft Infrastructure Delivery Plan.



### **Cambridge Biomedical Campus at 2050**

The AAM Emerging Spatial Framework has proposed that additional growth up to 2050 would relate to the redevelopment of the existing hospital land uses and would be as follows and as set out alongside:

- The development of the Sunken Garden
- The delivery of commercial uses within the Eastern Gateway
- Additional clinical special and cancer related services in the Clinical Core.

These changes and growth assumptions by 2050 would see 233,184m<sup>2</sup> of additional floorspace delivered beyond the 2040 total and the grand total at this stage for CBC would be 1,583,499m<sup>2</sup>.

To support this growth a number of transport related measures are deemed to be necessary and appropriate. These are documented on the following pages of this section of the report and include:

- On-Site Shared Infrastructure Deemed to be primary and critical infrastructure that relates to the Emerging Spatial Framework and can not be expected to be delivered through plot development
- Other Transport Measures Other transport measures or management strategies deemed necessary to support growth, but which are not to be delivered by public bodies or considered to be primary physical infrastructure necessary to support the overarching principles of the Emerging Spatial Framework.







### **Cambridge Biomedical Campus at 2050**

The transport additions to be delivered by 2050 which will support and enable growth as envisaged by the Emerging Spatial Framework are shown below in Table 7.

The on-site shared infrastructure by 2050 is less significant given that most of the shared infrastructure has been delivered by 2035. The Shared Infrastructure for 2050 is shown alongside and further detail on all measures contained in Table 6 in the remaining pages of this report.

On Site Shared Infrastructure	Other Transport Measures
High Street Streetscape completed	Bus Service Frequency increase
2no. Secondary mobility hubs	

Table 15: Transport Measures in Place by 2050



Figure 58: CBC at 2050 Shared Infrastructure



**Transport Strategy - Cambridge Biomedical** 

Campus at 2050 - Full

#### **Completion of East West High Street**

Whilst the full East West High Street will have been delivered by 2035 in terms of connectivity, the streetscape for the element that abuts the CUH land as part of the existing hospital will not be completed util 2050.

In transport terms the interface between the new and the existing will need to be managed to ensure that no loss of service for pedestrians, cyclists and public transport would occur.

### (2no.) Secondary Mobility Hubs (CBC Transport Strategy – by 2050)

Two further secondary mobility hubs will be located along the High Street and close to Robinson Way.

These additional hubs complement the other hubs within the campus and complete the mobility hub offering for 2050.

#### Bus Service Frequency Increase as required.

Further frequencies and services as necessary based on demand forecasting.





## Transport Strategy -Cambridge Biomedical Campus at 2050 – Full Masterplan

### The Full Strategy

Set out alongside are all of the components of the Transport Strategy set out through this document. It should be noted that these are indicative until which time modelling has been undertaken to full test for ability of these schemes to mitigate the impact of growth.

Cambridge South Station (Network Rail)	Mobility Hub as part of Amenity building and west of high street bus interchange with CSET and Cambridge South	(3no.) Secondary Mobility Hubs
Cambridge Southeast Transport Study Phase 2 (CSET) (GCP)	Additional pedestrian cycle connection from Babraham Road south of Nine Wells (CBC)	Temporary parking strategies linked to infrastructure delivery
SWTH (GCP)	Tactical small scale mobility Improvements within the campus (Phase 1 Land) (CBC)	Encourage Work-from-Home practices
Foxton Travel Hub (GCP)	Initial interventions to Addenbrooke's food-court (as a meanwhile use) to allow for east west public through route for pedestrians and cycles (CBC)	Bus pass subsidies for new / relocated staff
Planned On-Street Parking Controls (GCP)	Enhanced north south routes connecting Phase 2 into Phase 1 and western end of High Street	-
Sawston Greenway (GCP)	-	-
Cambourne to Cambridge (GCP)	-	-
Fendon Road Cycle Plus (GCP)	-	-
Hills Road Cycle Plus (GCP)	-	-
Public Sector Investments	On Site Shared Infrastructure	Other Transport Measures
Public Sector Investments  East West Rail (Network Rail/ East West Rail Company)	On Site Shared Infrastructure  Full High Street delivered including Gateway from Hills Road along with east High Street Bus Stops (CBC)	Other Transport Measures  Bus services from:  Newmarket – A11 P&R – Cambridge South  Babraham Park and Ride - Cambridge South – Cambridge Station – City Centre  Foxton Travel Hub - Cambridge SW Travel Hub – Trumpington P&R - Cambridge South – Cambridge East - Milton  Babraham Road P&R – Cambridge South – Trumpington P&R - SW Travel Hub  A11 P&R – Cambridge South – Cambridge East  DRT Service
East West Rail (Network Rail/ East West Rail	Full High Street delivered including Gateway from Hills Road	Bus services from:  Newmarket – A11 P&R – Cambridge South  Babraham Park and Ride - Cambridge South – Cambridge Station – City Centre  Foxton Travel Hub - Cambridge SW Travel Hub – Trumpington P&R - Cambridge South – Cambridge East - Milton  Babraham Road P&R – Cambridge South – Trumpington P&R - SW Travel Hub  A11 P&R – Cambridge South – Cambridge East
East West Rail (Network Rail/ East West Rail	Full High Street delivered including Gateway from Hills Road along with east High Street Bus Stops (CBC)	Bus services from:  Newmarket – A11 P&R – Cambridge South  Babraham Park and Ride - Cambridge South – Cambridge Station – City Centre  Foxton Travel Hub - Cambridge SW Travel Hub – Trumpington P&R - Cambridge South – Cambridge East - Milton  Babraham Road P&R – Cambridge South – Trumpington P&R - SW Travel Hub  A11 P&R – Cambridge South – Cambridge East  DRT Service
East West Rail (Network Rail/ East West Rail	Full High Street delivered including Gateway from Hills Road along with east High Street Bus Stops (CBC)  South section of Robinson Way downgraded.  New Southern Gateway access only link plus bus,	Bus services from:  Newmarket – A11 P&R – Cambridge South  Babraham Park and Ride - Cambridge South – Cambridge Station – City Centre  Foxton Travel Hub - Cambridge SW Travel Hub – Trumpington P&R - Cambridge South – Cambridge East - Milton  Babraham Road P&R – Cambridge South – Trumpington P&R - SW Travel Hub  A11 P&R – Cambridge South – Cambridge East  DRT Service  Consolidation of car parking through construction of MSCP 3 and Phase 2 MSCP
East West Rail (Network Rail/ East West Rail	Full High Street delivered including Gateway from Hills Road along with east High Street Bus Stops (CBC)  South section of Robinson Way downgraded.  New Southern Gateway access only link plus bus, pedestrian, and cycle route from Granham's Road /B'ham Rd	Bus services from:  Newmarket – A11 P&R – Cambridge South  Babraham Park and Ride - Cambridge South – Cambridge Station – City Centre  Foxton Travel Hub - Cambridge SW Travel Hub – Trumpington P&R - Cambridge South – Cambridge East - Milton  Babraham Road P&R – Cambridge South – Trumpington P&R - SW Travel Hub  A11 P&R – Cambridge South – Cambridge East  DRT Service  Consolidation of car parking through construction of MSCP 3 and Phase 2 MSCP
East West Rail (Network Rail/ East West Rail	Full High Street delivered including Gateway from Hills Road along with east High Street Bus Stops (CBC)  South section of Robinson Way downgraded.  New Southern Gateway access only link plus bus, pedestrian, and cycle route from Granham's Road /B'ham Rd  Phase 4 Primary Street	Bus services from:  Newmarket – A11 P&R – Cambridge South  Babraham Park and Ride - Cambridge South – Cambridge Station – City Centre  Foxton Travel Hub - Cambridge SW Travel Hub – Trumpington P&R - Cambridge South – Cambridge East - Milton  Babraham Road P&R – Cambridge South – Trumpington P&R - SW Travel Hub  A11 P&R – Cambridge South – Cambridge East  DRT Service  Consolidation of car parking through construction of MSCP 3 and Phase 2 MSCP  (3no.) Secondary Mobility Hubs

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**Other Transport Measures** 

On Site Shared Infrastructure

infrastructure consistent with Francis Crick & Ph 4 Primary St

Segregated infrastructure of Addenbrookes Road

**Public Sector Investments** 

By 2035



# Transport Strategy Cambridge Biomedical Campus at 2050 – Full Masterplan

### The Full Strategy

Set out alongside are all of the components of the Transport Strategy set out through this document. It should be noted that these are indicative until which time modelling has been undertaken to full test for ability of these schemes to mitigate the impact of growth.

By 2040

Public Sector Investments	On Site Shared Infrastructure	Other Transport Measures
-	2no. Secondary mobility hubs	Consolidation of car parking through construction of MSCP in Phase 4 land
-	-	P&R Travel Hub Expansions (as necessary)
-	-	Bus Service Frequency increase
-	-	Micro-Consolidation Centre in MSCP 4

By 2050

Public Sector Investments	On Site Shared Infrastructure	Other Transport Measures
-	High Street Streetscape completed	Bus Service frequency increase
-	-2no. Secondary mobility hubs	-



11. Access & Movement Framework



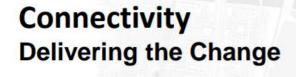
### **Access and Movement Framework**

The development of the masterplan and the transport strategy with key shared infrastructure interventions is predicated on an access and movement framework. This access and movement framework has been formulated to help achieve many of the sated objectives which underpin the vision for the campus. Of particular relevance are the below objectives:

- Increased permeability and priority for selected user groups A hierarchy of users and connections will be reflected in designs and movement strategies. Sensible design responses to the car will allow increased granular connectivity for pedestrians, cyclists and improved reliability and penetration for public transport. Delivering east west public transport connectivity to connect into the north south corridors must be achieved.
- Designing to reduce the dominance of the car Through sensibly located car parks and a
  hierarchy of routes that serve them. The blight of car traffic within the campus will be
  managed and designed for. The strategy for cars allows the strategy for other users to be
  successful.
- Support and complement infrastructure investment Significant investment in and policy direction for sustainable transport infrastructure is being made. CBC cannot dictate the pace of delivery but will embrace it and will seek to maximise the effectiveness of it. Designs will seek to allow ease of interchange, increased integration with the campus environment, and incentivisation to use.
- Conditional Support to City Wide and Regional Policies Longer term transport solutions are needed to support continued growth. CBC will continue to support the transport authorities in the Greater Cambridge area to deliver radical and sustainable change. Interventions need to be timely.

The following section of this report cover the ways in which the masterplan has developed to meet these objectives around the following principles:

- A Walkable Campus,
- Designing for Cycling
- · Facilitating a Genuine Bus Network, and
- Reorganising the Primary Road Network.



### 'A Walkable Campus'

- Permeable Block Structure between 50m and 100m
- Leisure / Community Uses distributed within 400m distances of all parts of the campus
- Walking routes designed around landscape
- Cambridge South close to maximum walking distance from Trumpington P&R and Babraham Road P&R





## **Connectivity – A Walkable Campus**

Safe, connected walking routes are an essential part of any movement strategy as walking critically makes up the first and final part of every other journey and must therefore be planned for in this context.

The CUH masterplan provides a good basis for pedestrian movement and connections across the campus. This seeks to deliver more legible, less conflicted, and a much-expanded set of routes to connect surrounding communities and onsite businesses to Cambridge South Station and the CSETS project. This increased connectivity will help to realise the full benefit that these schemes offer but also help to deliver a more pleasant and prioritised walking environment.

The primary aspects of the CUH strategy are that much improved east west pedestrian connectivity is achieved through the delivery of the 'High Street' that would connect Hills Road with Francis Crick Avenue (using Keith Day Road) and the forthcoming Cambridge South Station.

Additionally, a new strategic north south connection that would connect the Phase 2 land to the Frank Lee site would be provided.

These routes are retained in the Emerging Spatial Framework and are supported. The only proposed significant CUH connection where an amendment is proposed is Robinson Way. The CUH masterplan proposes that pedestrian connectivity would follow a newly formed street that connects into Francis Crick Avenue at its western end. Instead of this, it is proposed that pedestrians would pass through a series of public spaces to reach the same destination albeit with a slight weighting to the north to reflect the demand arising from Cambridge South station.

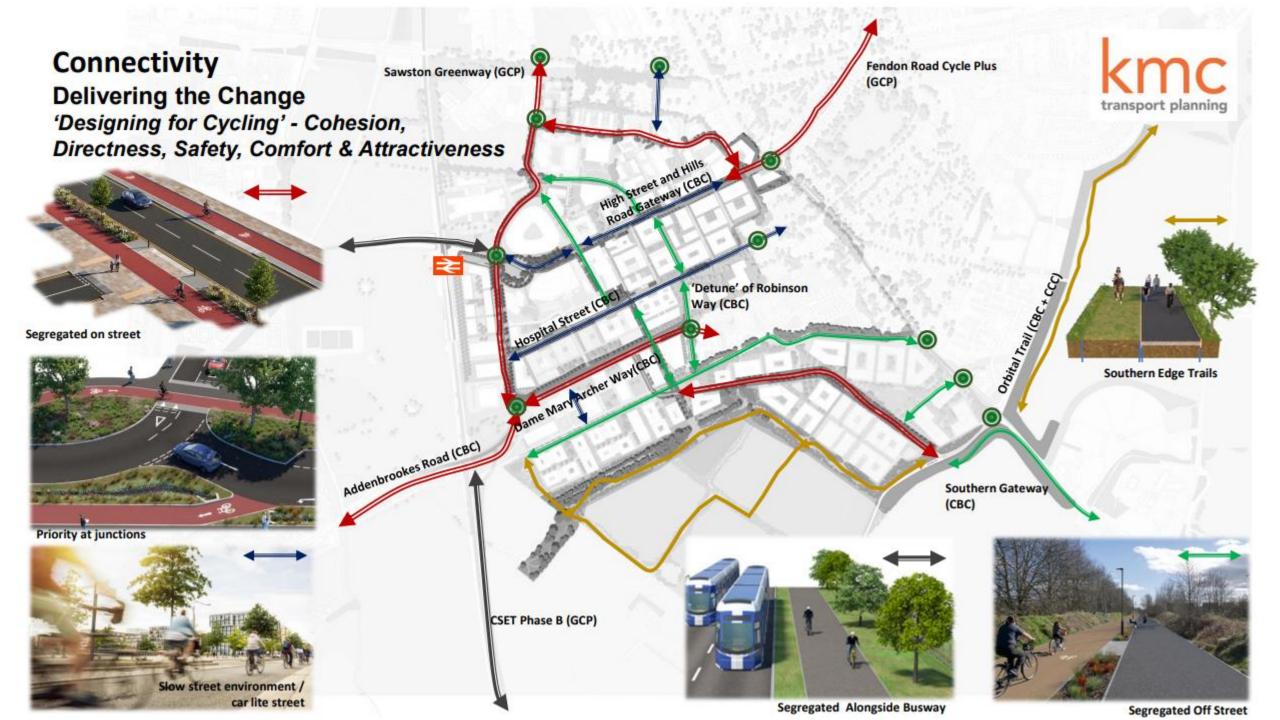
We are also proposing that **the Hills Road junction is redesigned** and configured to create a better gateway from the city alongside much safer walking and cycling conditions in this currently hostile location. This change would likely see the removal of the existing roundabout and it being replaced with a signal-controlled crossroads or roundabout with separate segregated outer ring for cyclists and single stage crossings for pedestrians subject to further design work and may be dependent on the removal of CBC traffic from this junction via the Phase 4 expansion land to facilitate this change.

The changes to the private vehicle network (summarised in 8.7) provide an opportunity to deliver a better and less conflicted route into the campus from Red Cross Lane. This high-quality segregated connection currently joins Robinson Way but provides little penetration from that point into the campus. The reduced conflict resultant from the changes to the private vehicle network in combination with the masterplan allow for a much stronger connection into the site for pedestrians from this eastern side of the campus.

However, the most significant change relates to the inclusion of the Phase 3 and 4 Expansion land to the south of the existing campus. This presents an opportunity to better connect and integrate the Babraham Road Park and Ride with the campus and also to improve the utility of the existing Public Right of Way that connects Granham's Road to Nine Wells Nature Reserve.

The pedestrian movement strategy will deliver.

- · Improved east west pedestrian connectivity is achieved through the delivery of the 'High Street'
- A new strategic north south connection that would connect the Phase 2 land to the Frank Lee site
- Hills Road junction is redesigned and configured to create a better gateway from the city
- Expansion land presents an opportunity to better connect and integrate the Babraham Road Park and Ride with the campus (to a greater or lesser extent subject to Granham's Road realignment or otherwise).
- Continuous footways across junctions will be provided.





## **Connectivity – Designing for Cycling**

The most well documented challenges for those arriving by bicycle including a lack of cycle parking availability around the busier buildings and that the legibility, quality, and security of routes within the Campus is sometimes lacking. Additionally, the gateways into the campus can feel hostile to cyclists – particularly the Hills Road junction and the Addenbrookes Road.

Again, our proposals support the CUH movement principles and network which are shown alongside. These prioritise a strategic east west connection along the High Street but also deliver a primary connection north south using Robinson Way and the route through the Phase 2 land.

The only substantial changes to these arrangements are those that are summarised in the pedestrian strategy. These include the expansion land being brought into the campus and with-it enhanced connectivity to the south and the changes to the western end of Robinson Way where connectivity to Francis Crick is afforded through public realm and spaces rather than as an extension of Robinson Way. Improvements to segregated cycling along Addenbrookes Road will be delivered.

All connections will seek to tie into existing and planned external enhancements to the cycle network such as CSET Phase 1 and 2, the access path alongside the Cambridge Guided Busway, and the Cross City cycle schemes delivered on Hills Road.

Additionally, to principles of the movement framework, cycle parking will be plentiful. As a principle, employee parking will be within secure, covered locations on-plot or at basement level within buildings. Visitor parking would be provided close to the building entrances and designed sympathetically into the public realm.

The cycle movement strategy movement strategy is summarised as follows:

- Prioritise a strategic east west connection along the High Street
- A primary connection north south using Robinson Way and the route through the Phase 2 land
- · All connections will seek to tie into existing and planned external enhancements to the cycle network
- Cycle parking will be plentiful.
- Connections to Babraham Road will be enhanced (to a greater or lesser extent subject to Granham's Road options).





### **Connectivity – Facilitating a Genuine Bus Network**

The Campus will soon be served by a host of high-quality public transport services, with a new national rail station at Cambridge South (2025/26) and the Cambridge South East Transport Study (CSETS) (currently on pause). These investments are in addition to the existing guided busway and many other local bus services.

The Spatial Framework proposes that an east-west public transport spine is delivered. This would unlock the potential for direct and express services through the Campus that link to rail opportunities at Cambridge South, CSETS, but also provide interchange with the Guided Bus network. This delivers not only benefits to the campus but the wider city and bus network. This east west connection helps to support connections from the east side of the city and potentially orbital connectivity to support further growth. This is a hugely important connection that stakeholders will work together to deliver through further discussion on delivery mechanisms and timings.

It also seeks to embrace demand responsive transport by with the aim of providing seamless integration of key interchanges and arrival points within the Campus. Consistent with the CUH masterplan we are seeking to identify a number of pick-up and drop-off stops for DRT or community services and to provide effective coverage of the Campus and compliment the fixed route services. It is anticipated that these services will become autonomous which will reduce operating costs over time.

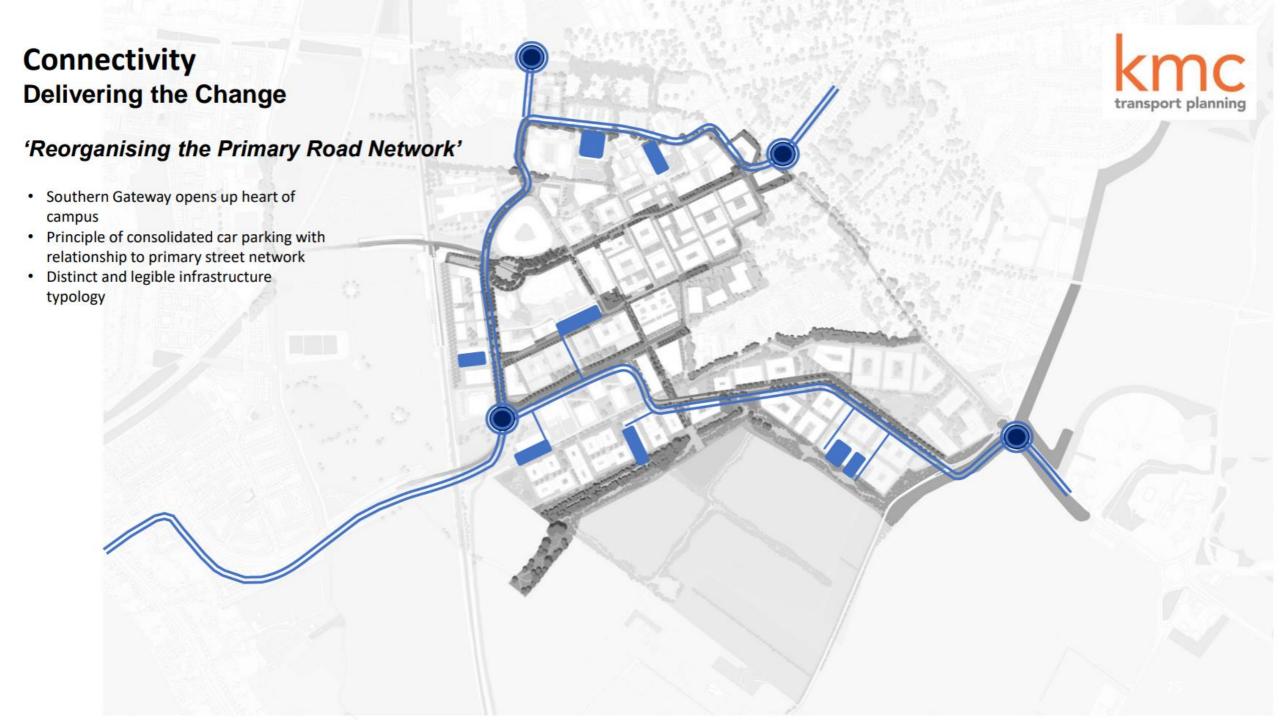
The integration of the expansion land to the south provides the opportunity for bus services to enter the campus from Babraham Road and avoid congestion on Babraham Road and Hills Road into the city. This connection allows services to serve the campus and then access the existing Cambridge Guided Busway via Cambridge South station.

This additional physical connectivity can also provide the basis for a high frequency 'P&R to P&R' service that could connect the SW Travel Hub with the Babraham Road P&R via the campus.

We propose to also remove the Hills Road bus station and replace it with stops on the eastern end of the 'High Street' and on Hills Road itself. The revised arrangement will delivery improved bus stopping efficiency and use of land around the junction.

The proposals with an illustration of envisaged stops and interchanges are shown alongside.

- An east-west public transport spine along Keith Day Road.
- Embrace demand responsive transport (DRT).
- Identify a number of pick-up and drop-off stops for DRT or community services.
- Expansion land to the south provides the opportunity for services to enter the campus from Babraham Road





### **Connectivity – Reorganising the Primary Road Network**

The approach to private vehicles is key to the success of many of the other elements of this movement strategy.

Like the CUH masterplan, it is proposed to minimise the volume of additional car parking available within the scheme by capitalising on the opportunities generated by Cambridge South Station and CSETS and other demand management tools and reduce the overall volume of car parking per head for staff, providing alternatives such as electric pool cars for those where travel by car is essential.

Further to this vehicular access would be rationalised by providing an orbital route around the campus to allow vehicles to navigate to key destinations (e.g. MSCPs) but reducing the level of general vehicular access to buildings by identifying a small number of access routes for specific buildings for drop off and short stay facilities. This approach limits the number of private vehicle routes through the Campus and thus reduces the number of potential conflict points between pedestrians, cyclists and public transport users. Locating future MSCPs on the orbital road, reducing circulation within the Campus heart and reducing conflicts with pedestrians and cyclists along key central desire lines. These MSCPs will also be served by future on demand public transport services, offering local connectivity from these car parks into the main hospital areas.

By restructuring the vehicular roads within the campus to provide an orbital route, it will allow vehicles to navigate to key destinations. Although vehicular access to some buildings will be reduced, by identifying a small number of access routes for these buildings, drop-off and short stay facilities can be provided to ensure that people can still travel to the buildings in question.

The primary changes between the CUH masterplan and our proposals relate to the removal of the eastern end of Robinson Way from the primary route network and the integration of the expansion land to the south. The expansion land means that additional access is provided and therefore a relief to the Babraham Road and Hills Road access north of Granham's Road. The traffic that currently enters the site at this point is now able to enter from the south which means that less pressure is applied at the this currently congested part of the network. It also allows for the re-configuration of the campus road network from what was proposed by the CUH proposals whereby the orbital route on south east of the campus including Robinson Way is removed.

A signal junction from Graham's Road into the Phase 4 expansion land is proposed. The street through the development would form part of the campuses primary street network and would serve the car parking proposed within Phase 3 and 4. It would connect into Dame Mary Archer Way and would be controlled by the same ANPR protocols in place for the wider campus. It would provide segregated infrastructure and be designed to ensure a low-speed environment is managed throughout.

- Minimise the volume of additional car parking available within the scheme
- An orbital route around the campus to allow vehicles to navigate to key destinations
- Reducing the level of general vehicular access to buildings by identifying a small number of access routes for specific buildings for drop off and short stay facilities
- Additional southern access is provided as a result of the Phase 4 expansion land



12. Revised Accessibility
Analysis



# Revised Accessibility Analysis accounting for Transport Strategy and Investments

The impact of the Transport Strategy in accessibility terms has been assessed using PODARIS software. From this assessment it is possible to see the difference between the percentages of existing CBC employees within the different time bands with the percentage of future CBC employees in the same time bands.

The existing accessibility analysis reported early in this report has used walk times in combination with bus and rail timetables, bus stops and existing railway stations. For the future accessibility analysis, the primary GCP segregated public transport corridors have been coded and which include:

- Cambourne to Cambridge
- CSET Phase B
- Waterbeach to Cambridge
- Eastern Access

In addition, Cambridge South Station and East West Rail are also coded into the future year assessment alongside separate bus services promoted through this Transport Strategy and resulting from the additional physical connectivity that the Phase 4 land provides.

Whilst comprehensive gravity modelling has not been undertaken to forecast robustly where new employees may live, growth areas in Greater Cambridge have been coded into the assessment to account for additional CBC staff that are likely to live in these new communities.

The changes that occur to the percentages of employees within the different time bands when compared to the existing assessment is shown in Table 11 alongside.

As with the base assessment, it should be noted that no P&R trips are picked up in this analysis due to the car trip to the P&R site. The inclusion of these trips would significantly increase the number of postcodes within the 60-minute time band given the new P&R's being proposed and the segregated links proposed to connect them.

The DRT provision touched upon earlier in this report is also not reflected in the accessibility analysis alongside but would be used to provide access to locations not served by fixed route public transport and would therefore add further benefit.

Travel Time	Existing 2023 Travel Time	Future Travel Time (% increase/decrease)
15-minutes	6%	6% (0%)
30-minutes	15%	24% (+9%)
45-minutes	24%	49% (+25%)
60-minutes	38%	59% (+21%)

Table 9: Existing and Future Staff Travel Times using Public Transport Comparison

From the analysis undertaken it is apparent that the change in percentages that live within a 60-minute public transport journey time is substantial. The application of the transport strategy sees 21% more employees now able to access the campus by public transport in up to 60 minutes with journey times for many others reducing substantially. The revised isochronal analysis is shown below. In real terms, it is likely this number will be greater again as new employees are more likely to be living in locations connected by new infrastructure (i.e. to the west) when compared to existing postcodes that have been used for this assessment.

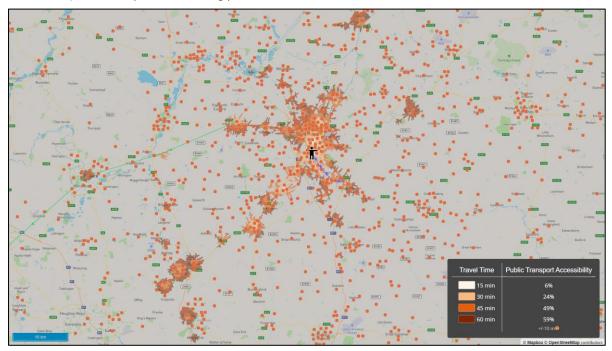


Figure 14: Bus, Rail, and Walking Accessibility up to 60-minutes for Staff Postcodes (Proposed) 78



13. The Consequence of Not Allocating Land for Additional Growth



# The Consequence of Not Allocating Land for Additional Growth

Should the Phase 4 land not be allocated as part of the Local Plan process, then the potential mitigation and improvement strategy as outlined in this report will be different. The difference will be in part due to the changed physical and spatial context but also the reduced ability of the commercial floorspace associated with Phase 4 to contribute to wider improvements. The resulting omissions from the transport strategy are shown below in Tables 10-13 as strikethroughs.

Public Sector Investments	On Site Shared Infrastructure	Other Transport Measures
Cambridge South Station (Network Rail)	Mobility Hub as part of Amenity building and west of high street bus interchange with CSET and Cambridge South	(3no.) Secondary Mobility Hubs
Cambridge Southeast Transport Study Phase 2 (CSET) (GCP)	Additional pedestrian cycle connection from Babraham Road south of Nine Wells (CBC)	Temporary parking strategies linked to infrastructure delivery
SWTH (GCP)	Tactical small scale mobility Improvements within the campus (Phase 1 Land) (CBC)	Encourage Work-from-Home practices
Foxton Travel Hub (GCP)	Initial interventions to Addenbrooke's food-court (as a meanwhile use) to allow for east west public through route for pedestrians and cycles (CBC)	Bus pass subsidies for new / relocated staff
Planned On-Street Parking Controls (GCP)	Enhanced north south routes connecting Phase 2 into Phase 1 and western end of High Street	-
Sawston Greenway (GCP)	-	-
Cambourne to Cambridge (GCP)	-	
Fendon Road Cycle Plus (GCP)		-
Hills Road Cycle Plus (GCP)	-	
Public Sector Investments	On Site Shared Infrastructure	Other Transport Measures
East West Rail (Network Rail/ East West Rail Company)	Full High Street delivered including Gateway from Hills Road along with east High Street Bus Stops (CBC)	Bus services from:  - Newmarket – A11 P&R – Cambridge South  — Babraham Park and Ride — Cambridge South — Cambridge Station — City Centre  — Foxton Travel Hub — Cambridge SW Travel Hub — Trumpington P&R - Cambridge South — Cambridge East — Milton  — Babraham Road P&R — Cambridge South — Trumpington P&R — SW Travel Hub  — A11 P&R — Cambridge South — Cambridge East  - DRT Service
	South section of Robinson Way downgraded.	Consolidation of car parking through construction of MSCP 3 and Phase 2 MSCP

(3no.) Secondary Mobility Hubs

Micro-Consolidation Centre in MSCP 1

Sensor and AI technology for Trip Budget Adherence and on-site priority and management

80

Residential for key workers

New Southern Gateway access only link plus bus,

**Phase 4 Primary Street** 

Hospital Mid Street streetscape

pedestrian, and cycle route from Granham's Road /B'ham Rd

Puddicombe Way / Adrian Way Streetscape + infrastructure

Dame Mary Archer Way streetscape enhancements / infrastructure consistent with Francis Crick & Ph 4 Primary St

Segregated infrastructure of Addenbrookes Road

By 2035



# The Consequence of Not Allocating Land for Additional Growth

Public Sector Investments	On Site Shared Infrastructure	Other Transport Measures
-	<del>2no. Secondary mobility hubs</del>	Consolidation of car parking through construction of MSCP in Phase 4 land
	-	P&R Travel Hub Expansions (as necessary)
-	-	Bus Service Frequency increase
	-	Micro-Consolidation Centre in MSCP 4
		Contribution to Addenbrookes Road to Shelford Tier 2 (LCWIP) active travel network
	Southern edge Trail (part of landscape/ soft edge)	
	Babraham Road pedestrian and cycle access	
Public Sector Investments	On Site Shared Infrastructure	Other Transport Measures
-	High Street Streetscape completed	

Bus service frequency increase

By 2050

By 2040

Whilst the comparative exercise undertaken is simplistic, it does demonstrate that the value of the Phase 4 land is significant from a transport perspective. Whether it's the additional transport services that can be both afforded or enabled, it is clear that without the Phase 4 land the transport solution for CBC becomes less effective for the campus and city.

This report has previously stated that two key moves strategic moves are deemed as central to the transport solution and access and movement framework. These are as follows and both of these key moves would fall away without the allocation of the Phase 4 land:

-2no. Secondary mobility hubs

- i. An enhanced gateway from Hills Road coupled with an East West High Street would provide the opportunity for bus-based journeys to and from east Cambridge and the significant growth area at Cambridge Airport, through the campus via Cambridge South station and onwards to the southern Fringe and the Southwest Travel Hub.
- ii. A connection from Babraham Park and Ride to CBC, Cambridge South, and the Cambridge Guided Busway (S) provides the opportunity for buses to bypass congestion along Babraham Road and access the city centre via the existing segregation afforded by the CGB(S). Additionally, P&R to P&R services via CBC and Cambridge South station provide the potential for dedicated high frequency buses to link P&R sites and the campus.

The East West High Street cannot happen until the relocation of the food court which has been identified as shared infrastructure and therefore requiring support from the expansion land and floor space delivered. The connection from Babraham Park & Ride into the campus explicitly relates to the Southern Gateway and clearly without Phase 4 land, this connection is not achieved.



14. Transport Strategy
Costs & Delivery



# Transport Strategy Costs and Approach to Delivery

The infrastructure anticipated to support the Emerging Spatial Framework has been costed by AECOM. This only considers physical infrastructure and not wider contributions that could be expected to paid through a S106 mechanism associated with a planning application which would, therefore, be additional.

Given the lack to specific detail around many items as part of an early design process, a number of assumptions have had to be made. For a full understanding of the cost process undertaken the 'CBC Landowners Vision 2050 Shared Infrastructure Capital Cost Order of Cost Estimate' report should be read.

The AECOM summary table is set out alongside. The infrastructure that has a relationship to access, movement and transport capacity and has been summarised in this report is highlighted in red.

In addition to these development costs, which include access arrangements to be delivered through S278 processes, it has been estimated that wider transport strategy would cost the following through contributions or off site works:

2030 – TBC 2035 – TBC 2040 – TBC

2050 – TBC

Total – TBC

	Item		
	2030		
0.1	Enabling Works		
0.2	Multi-Phase/ Site Wide Works & Works Risk Allowances		
1.0	Primary Mobility Hub, West High Street Bus Interchange		
2.0	Pedestrian/Cycle Connection - Babraham Road / South of Nine Wells		
3.0	Relocation of Addenbrooke's Foodcourt		
4.0	Enhanced North South Routes connecting Phase 2 and 3 into Phase 1		
	Tactical small scale mobility Improvements within the campus		
	Secondary Mobility Hubs		
8.0	Temporary parking strategy Sensor and Al technology for Trip Budget Adherence		
0.0	Sensor and Artechnology for Trip Budget Adherence		
	2005		
	2035		
0.1	Enabling Works		
0.2	Multi-Phase/ Site Wide Works & Works Risk Allowances		
1.0	Hills Road Entrance & High Street		
2.0	Southern Section of Robinson Way Downgraded		
3.0	Additional Southern Gateway to Babraham Road		
4.0	BNG uplift of 60% achieved with Greenbelt Enhancement		
5.0	Puddicombe Way and Adrian Way Street-scape		
6.0	Mid Street street-scape connecting to Francis Crick Avenue		
7.0	Dame Mary Archer Way street-scape enhancements		
8.0	Segregated infrastructure on Addenbrookes Road		
9.0	Construction of MSCP 3		
10.0	Secondary Mobility Hubs		
11.0	Soft Green Edge		
	Landscape Bunds		
	Confluence Square Hard and Soft Landscaping		
14.0	Phase 3 "Slow Street" (East/West between CSET and Confluence)		
	2040		
0.1	Enabling Works		
0.2	Multi-Phase/ Site Wide Works & Works Risk Allowances		
1.0	MSCP 4 in phase 4 land		
2.0	Babraham Road pedestrian/cycle connection		
3.0	Last Mile Servicing facility		
	2050		
0.1	Enabling Works		
0.2	Multi-Phase/ Site Wide Works & Works Risk Allowances		
1.0	High Street Streetscape Completed		
2.0	Secondary Mobility Hubs		

NB: all figures above rounded UP to nearest £10,000.





#### **Summary & Next Steps**

#### Summary

This report sits alongside the Allies and Morrison Emerging Spatial Framework which makes the case for the future growth of CBC as part of the Greater Cambridge Local Plan process. The Emerging Spatial Framework is largely consistent with work undertaken by Hawkins Brown in 2022. The Transport Strategy therefore also reflects the strategy proposed in the 2022 report but has refined and further developed much of the previous thinking.

Significant assessment of the transport networks in and around CBC have previously been undertaken. The most significant of these studies is the CBC Transport Needs Study undertaken by Atkins in 2018 and refreshed in 2022. This study found that the CBC is set to benefit from significant and transformational investments between now and 2031.

However, despite these investments helping to make CBC the most connected part of Greater Cambridge, the withdrawal of the Cambridge Autonomous Metro (CAM) has meant that as reported by the 2022 Refresh, CBC is forecast not to achieve the target daily highway trip targets proposed by the Greater Cambridge Partnership. These targets are broadly commensurate with other ambitions that the GCP has committed to helping to achieve in the area and are consistent with daily traffic flows in 2017. The breach of these targets is because of committed growth to 2031 and does not therefore account for additional growth set out in this report and which would be realised as a result of improvements to the existing campus and critically the addition of the expansion land to the south of the campus.

This report has therefore considered what further measures and interventions are needed to unlock further growth at the campus and help to support more sustainable travel patterns across the area. The impact of these schemes in combinations with commitments to work to the principles of a Trip Budget and managed through car parking supply has been forecast to be sufficient to reduce vehicular trip making (**Appendix A**) to a level that is in line with what has been suggested as an appropriate early Trip Budget.

#### **Next Steps**

As part of Greater Cambridge Local Plan process, CCC have already undertaken modelling of 8,000 additional jobs at CBC over and above the 2041 Baseline which has 23,615 jobs at CBC. This includes committed growth at the campus and the already allocated Phase 3 land. In total therefore, 31,615 jobs have been tested.

However, the Emerging Spatial Framework makes the case for at total of 39,963 jobs to be located at CBC by 2050 or as part of the full build out. Additionally, there are measures and connections in this report that have not yet been modelled to assess their suitability in helping to mitigate the impacts of the growth. Our work to date has indicated that this level of additional demand could be mitigated but this is predicated on spreadsheet tools rather than a WebTag compliant transport model.

Therefore, it is proposed that further modelling runs are undertaken using CCC's CSRM model to assess the impact of the growth in combination with the additional mitigation and measures proposed in this report and the December 2022 KMC the 'Movement & Transport Strategy'.

Commitments have been made throughout this report of working to the controls of a Trip Budget. As a destination, car parking controls can provide the necessary confidence and control that this is adhered to but to maintain the appropriate levels of services and accessibility for the campus, the further measures put forward through this report require further refinement and development with public bodies. Going forward the Trip Budget will need to be refined through modelling and alongside this further and more detailed work, the car parking strategy can again be used provide confidence over delivery and adherence.



## **Appendices**

**Appendix A:** Demand Forecasts