

# Technical Note

<b>Project:</b>	Cambridge Biomedical Campus (CBC) Transport Needs Review		
<b>Subject:</b>	Study Refresh		
<b>Author:</b>	Atkins Transport Planning		
<b>Date:</b>	24/06/2022	<b>Project No.:</b>	5212275
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## Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1.0	First draft	JB/PD	AB	GJ	SA	24/03/22
2.0	Draft for Stakeholder Comment	JB/PD	AB	SA	SA	08/04/22
3.0	Update to reflect stakeholder comments	AB	LB	SA	SA	06/05/22
4.0	Update to reflect client comments	AB	JB	SA	SA	27/05/22
5.0	Final Version Updated to reflect client comments	AB	JB	SA	SA	24/06/22

## Client signoff

<b>Client</b>	Greater Cambridge Partnership
<b>Project</b>	Cambridge Biomedical Campus (CBC) Transport Needs Review
<b>Project No.</b>	5212275
<b>Client signature / date</b>	

# Executive Summary

**Purpose:** To undertake a high-level review of the 2018 Cambridge Biomedical Campus (CBC) Transport Needs Review and conduct a prioritisation exercise of the Potential Interventions it identified to improve access to the Campus by sustainable modes and reduce reliance on the private vehicle. The aim of this is to make clear recommendations for the next steps to be taken to progress the delivery of appropriate interventions to support the sustainable growth of the CBC.

**Methodology:**

- A high-level review of the previous study to assess the extent to which previous assumptions have changed and the magnitude to which they are likely to change the outcomes of the original study;
- A review of the previous list of Potential Interventions to understand their current status; and
- Prioritisation of those Potential Interventions not yet progressed or implemented.

**Review outcomes:** There have been a number of changes over the last four years that could impact access to CBC but they are not considered significant enough to alter the outcomes of the original study. There have, however, been some larger changes that would impact the outcomes, the first being more certainty over the implementation of a number of schemes, including Cambridge South Station and GCP schemes, and the second being the withdrawal of the Cambridge Autonomous Metro scheme. These changes are predicted to lead to an overall deficit, of around 4,600 trips by 2031, when compared to the highway trip reduction target. As a result, ongoing work on Cambridge South Station and the Greater Cambridge Partnership's (GCP) Cambridge South East Transport Study (CSETS) are critical in ensuring that highway trips are minimised, however more is still required to overcome the deficit.

**Prioritisation:** The 47 Potential Interventions, identified by the original Transport Needs Review alongside already planned schemes, to help improve access to the Campus by sustainable modes and reduce highway trips, have been reviewed, grouped into delivery packages and prioritised. The packages expected to have the greatest impact on reducing the number of highway trips to CBC are:

- Extension of the On-street Parking Controls in the area surrounding the Campus (GCP lead in collaboration with Cambridgeshire County Council, and close engagement with CBC about timing);
- Cycle Strategy for those travelling to and from the Campus, which brings together interventions aimed at encouraging more trips by bike (CBC lead);
- Service Directly from Milton, Newmarket and Madingley Park and Rides to Serve CBC (GCP lead in collaboration with Cambridgeshire and Peterborough Combined Authority and Cambridgeshire County Council); and
- Parking Strategy, which brings together interventions on Campus aimed at rationalising and improving parking provision (CBC lead).

**Conclusion:** The extension of on-street parking controls and the parking strategy have the potential to displace significant numbers of vehicles from CBC and the surrounding area but this can only happen if there are alternative access arrangements to enable CBC to continue to provide the services it does. It is therefore crucial that planned schemes are kept to programme where possible, and approved in a timely manner, to ensure that highway growth is not able to increase unchecked and sustainable travel behaviours are instilled from the outset of new developments opening on Campus. Scheme phasing is also important when considering construction impacts, which could temporarily impact on access to the Campus and the effective access by certain modes. Therefore, careful phasing to avoid significant construction impacts is necessary to manage impacts on access.

It is crucial that enough Park and Ride capacity and direct services from Park and Rides (also prioritised highly) to CBC are provided to accommodate highway trips sustainably as part of the GCP corridor schemes, including CSETS and the West of Cambridge Package. Therefore, timely delivery of the GCP schemes, the priority interventions and the already planned schemes, including Cambridge South Station, is paramount to maintain access to CBC and encourage trips by sustainable modes.

# 1. Introduction

## 1.1. Project context

The Greater Cambridge Partnership (GCP) has requested that Atkins, via their role on the Cambridge and Peterborough Joint Professional Services Framework (JPSF), provides services to support the next phases of delivery for the Cambridge Biomedical Campus (CBC).

In 2018, Atkins carried out a Transport Needs Review which aimed to understand the current and future challenges faced. It found that the anticipated growth of the site could not be accommodated either by the on-site parking provision or on the highway network. It considered options to increase the uptake of sustainable modes, contributing to the easing of local congestion and aligning the site's future growth with the local and national sustainable growth policies.

The overall findings of the 2018 work showed that Planned Schemes, including the CGP corridor schemes and Cambridge South Station, could have a significant impact on the level of highway demand to CBC until 2031, bringing total highway demand to below 2017 levels. Measures to support the station and manage demand were also critical to reducing highway demand<sup>1</sup>.

Atkins have been asked to undertake a high-level review of the 2018 Transport Needs Review and conduct a prioritisation exercise of the Potential Interventions it identified to improve access to the Campus by sustainable modes and reduce reliance on the private vehicle. The aim of this is to make clear recommendations for the next steps to be taken to progress the delivery of appropriate interventions to support the sustainable growth of the CBC.

This Technical Note should be read alongside the Cambridge Biomedical Campus Transport Needs Review Part 3 Report (Atkins, 20 December 2018).

## 1.2. Our approach

This report is subdivided into three sections as follows:

1. Section 2 includes a high-level review of the previous study. This section assesses the extent to which previous assumptions on travel demand and supply have changed and the magnitude to which they are likely to change the outcomes of the original study.
2. Section 3 reviews the previous list of Potential Interventions to understand their current status.
3. Section 4 outlines the prioritisation of those Potential Interventions not yet progressed or implemented.

Stakeholder meetings have informed the inputs and outcomes of this review. A series of meetings were held with CBC, University of Cambridge and Cambridgeshire County Council to inform the study. Information provided at these meetings informed the high-level review of previous study assumptions, as well as the review of the progress made on the Potential Interventions identified in the previous study.

Outcomes of the study refresh were also reported to stakeholders in follow up meetings.

## 1.3. Cambridge Biomedical Campus overview

CBC is home to a growing international healthcare community and is world leading in medical science, research, education, and patient care. The Campus is a major destination and generator of travel demand with around 17,250 staff on-site and 14,500 patients and visitors each day (2018). The Campus also has ambitions to grow further, to 2031 and beyond, which will only further increase travel demand and put more pressure on an already constrained transport network.

The CBC site location is shown in Figure 1-1. A summary of existing and future transport demand and supply is presented in the Cambridge Biomedical Campus Transport Needs Review Part 1 Report (October, 2018).

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<sup>1</sup> Atkins (20 December 2018) Cambridge Biomedical Campus Transport Needs Review, Part 3 Report. (page 11)

Figure 1-1 – Cambridge Biomedical Campus site location map



## 2. How has the predicted demand for trips and supply to CBC changed?

This section presents the high-level review of the previous study assumptions to determine whether changes have occurred over the last four years that would be likely have a material impact on the forecast levels of highway trips to/from the Campus. Based on those changes, the forecasts are updated.

### 2.1. Review of previous study assumptions

Assumptions regarding existing and future transport demand and supply were made within the 2018 study.

A review of these assumptions showed that over the last four years, there have been a variety of changes, some of which are considered insignificant, others significant and others related to the Covid-19 pandemic.

There have a number of changes that are not considered significant enough to alter the overall outcomes of the study. For example,:

- Bus fare promotions have been made available to NHS staff (up to 15% discounted fares on Stagecoach buses);
- Some Electric Vehicle charging points have been installed on Campus;
- New / changed bus services have been implemented including:
  - The X5 diverted to Cambridge via Cambourne every 30 minutes, renumbered as 905 service;
  - New X3 Whippet service which provides an hourly Addenbrooke's from Huntingdon, Godmanchester, Papworth and Cambourne; and

- Plans for the Oxford-Cambridge Expressway have been withdrawn.

Discussions were held within the stakeholder meetings regarding the ongoing impact of Covid-19 on the transport demand to the Campus and whether the impacts of Covid-19 would materially impact the study assumptions. Overall, Cambridge University Hospitals have not seen a significant change to demand (in February 2022), especially now services are opening back up to the public. Traffic surveys have continued annually during the pandemic and have shown trends likely to be as a result of Covid-19 restrictions, for example, car sharing has increased. This is likely to be as a result of visitor restrictions in place, that meant that more patients were being dropped off for appointments, and advice to limit the use of public transport which meant that there was an increase in the number of staff being dropped off on Campus. At the time of writing, NHS staff are still advised to work from home where they can and stakeholder estimates suggest this is between 5% and 10% of staff. The 2018 study assumed that Travel Plan measures implemented by Cambridge University Hospitals (CUH) at the Campus could enable 10% of Administration and Clerical staff to work from home. Therefore, it is considered that the assumption made within the 2018 study is representative of the current situation and this has been reflected in the revised outcomes presented in section 2.2.

The assumptions review identified a number of larger scale changes which are considered to have a more material impact on the outcomes of the original study. Table 2-1 sets out the assumption, changes that have occurred since the 2018 study and how these have been reflected to update the outcomes.

**Table 2-1 - Changes to study assumptions**

2018 assumption	Change since 2018	How change has been reflected in study refresh	Impact on study outcomes
Cambridge Autonomous Metro to be operational by mid-late 2020's.	Cambridge Autonomous Metro scheme withdrawn.	Impact of Cambridge Autonomous Metro removed. GCP schemes (Cambridge South East Transport Scheme (CSETS), West of Cambridge Package and Cambourne to Cambridge) that had their impacts included within the Cambridge Autonomous Metro impacts are now extended to 2031.	Increase in highway demand due to trip transfer from Cambridge Autonomous Metro back to highway, with the exception of trips that would continue to use the GCP corridor schemes.
Implementation dates for GCP schemes	More certainty over dates for completion. For example, CSETS and Cambourne to Cambridge in 2026.	Timeline amended and phasing graph (Table 2-3) updated to reflect increased date certainty.	No effect on the 2031 impacts. Change in phasing means more certainty over when benefits will be realised.
All Greenway schemes to become operational in 2031 except for Linton Greenway (2020).	All Greenways to be operational by 2025.	Timeline amended and phasing graph (Table 2-3) updated to reflect increased date certainty.	No effect on the 2031 impacts. Change in phasing means benefits will be realised earlier, in 2025.
Royal Papworth Hospital Shuttle to be operational in 2019.	Royal Papworth Hospital Shuttle (H service) no longer operational but some connectivity has been replaced with the X3.	The impacts of the Papworth Shuttle have been removed as direct connectivity between Papworth and CBC has been removed.	No effect on the 2031 impacts, however there are more highway trips expected up to 2024 prior to the implementation of the Cambourne to Cambridge scheme.



2018 assumption	Change since 2018	How change has been reflected in study refresh	Impact on study outcomes
Chisholm Trail Phase 1 to be operational in 2023.	Chisholm Trail Phase 1 operational in 2022.	Impacts of the Chisholm Trail Phase 1 have been brought forwards to 2022.	No effect on the 2031 impacts. A reduction in highway trips accessing CBC each day is seen in 2022.
Implementation year of the on-street parking schemes is 2021.	Implementation of on-street parking schemes have been delayed.	Impacts of the on-street parking schemes have been pushed back to start in 2024.	No effect on the 2031 impacts. Fewer vehicles are assumed to relocate onto Campus, as a result of the on-street restrictions, each day from 2021 to 2024.
Cambridge South Station expected to open in 2023.	More certainty over the opening year of Cambridge South Station - 2025.	Benefits of the Station on highway demand realised in 2025.	No effect on the 2031 impacts. Parking demand at CBC from 2023 to 2025 is increased.

## 2.2. Impact of changes to assumptions on trips to CBC

Table 2-1 shows that changes to planned transport supply projects over the last four years have the potential to change the amount and timing of the mode shift from highway to sustainable modes. These changes are quantified in Table 2-2 in daily person trips and compared with the findings of the previous study.

**Table 2-2 - Summary of impact of planned schemes, Cambridge South Station and Potential Interventions**

Scheme	Reduction of highway trips in 2031		
	2018 study <sup>2</sup>	2022 refresh	Difference
Planned Schemes (Includes GCP Schemes)	3,720	4,212	+492
Cambridge South Station – Maximum Potential	6,623 (746 for basic demand and 5,877 additional for maximum demand)	6,623 (746 for basic demand and 5,877 additional for maximum demand)	0
Other Potential Interventions <sup>3</sup>	2,428	2,428	0
Cambridge Autonomous Metro – Maximum Potential	17,142	0	-17,142
<b>Total</b>	<b>29,913</b>	<b>13,083</b>	<b>-16,830</b>

<sup>2</sup> Atkins (20 December 2018) Cambridge Biomedical Campus Transport Needs Review, Part 3 Report. (Table 10)

<sup>3</sup> 'Other' Interventions include the Potential Interventions identified as part of the 2018 Study.

Table 2-2 shows that the withdrawal of the Cambridge Autonomous Metro project has the potential to have a significant impact on the number of highway trips accessing CBC in 2031, with 16,830 more trips predicted than in the previous study. The additional 492 highway trips removed as part of the planned schemes is as a result of transfer of some trips from the Cambridge Autonomous Metro to GCP corridor schemes, including CSETS.

Figure 2-1 shows how the impacts of this change, presented in Table 2-2, align with the number of trips generated by CBC up to 2031 and the targets for highway trip reductions in 2031. The target for 2031 is for the highway demand to be at the same level as in 2017 (28,500 daily person trips) with the stretch target being a 10%-15% reduction in highway trips from 2011 levels (22,250 – 21,000 daily person trips).

**Figure 2-1 - Impact of schemes and interventions on highway trips to CBC<sup>4</sup>**

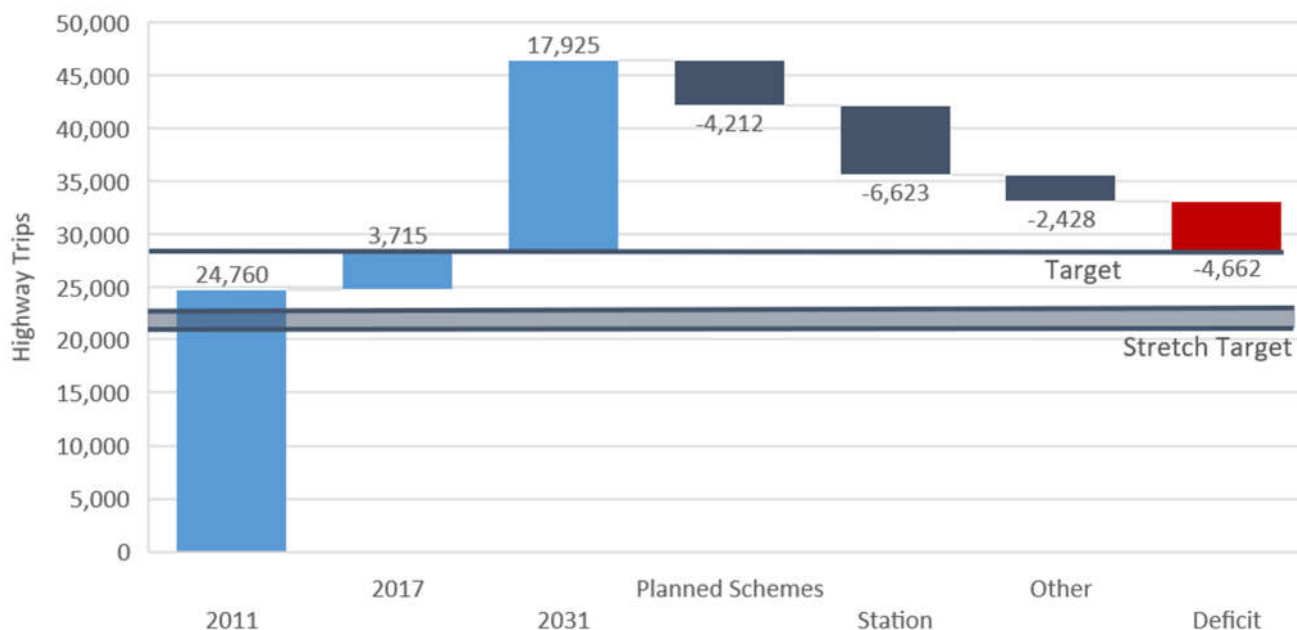


Figure 2-1 shows that the target is not met, with a deficit of 4,662 trips in 2031. The main reason why the planned schemes are no longer meeting the target, or stretch target, in 2031 is due to the plans for the Cambridge Autonomous Metro being withdrawn. Now these trips are included back in the highway demand to the CBC, with the exception of demand attributed to GCP corridor schemes which do help reduce the deficit by a further 492 trips. Cumulatively the other planned schemes do not remove nearly as many of these highway trips away from CBC without the Cambridge Autonomous Metro.

Table 2-3 shows the current scheme timeline which incorporates the changes in timescales since the previous study.

<sup>4</sup> 'Other' Interventions include the Potential Interventions identified as part of the 2018 Study.

**Table 2-3 - Updated scheme phasing timeline**

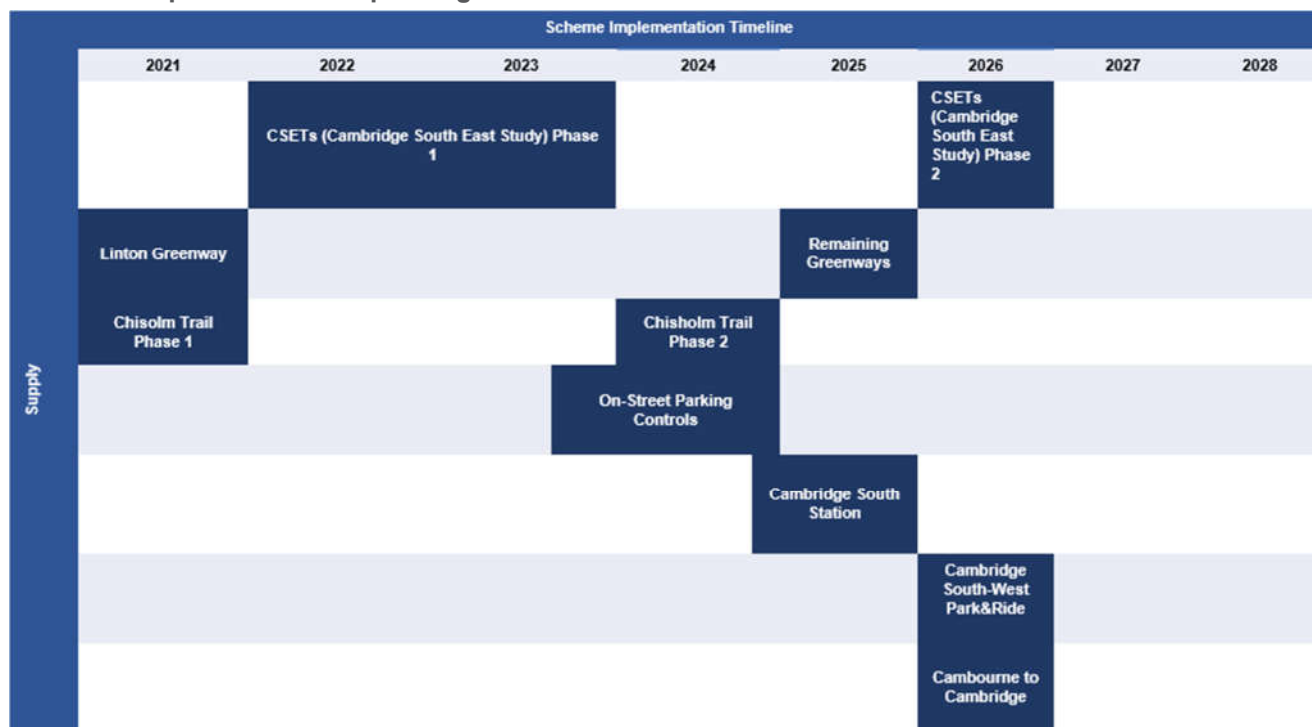
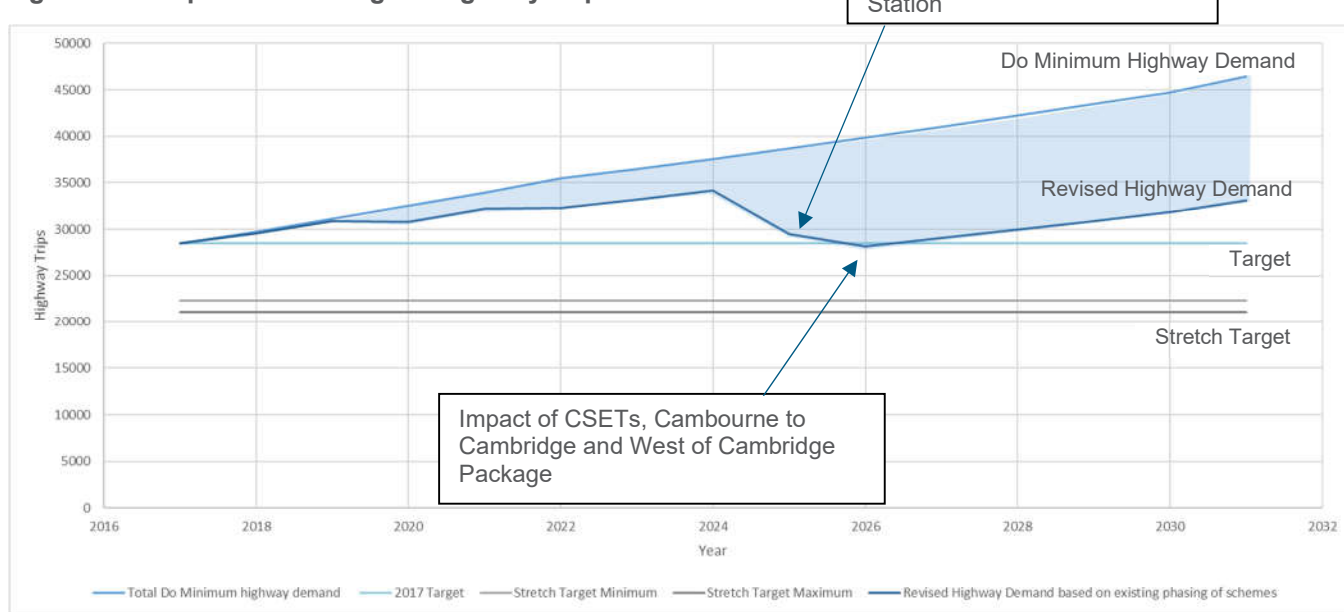


Figure 2-2 shows the impact of the changes to the phasing of schemes on the ability for CBC to meet highway trip reduction targets on an annual basis between 2017 and 2031.

**Figure 2-2 - Impact of Phasing on Highway Trips to CBC**



The phasing graph shows the same end point as Figure 2-1 with the deficit of 4,662 in 2031 to meet the target. However, this graph shows the importance of the implementation of already planned schemes and their phasing. The impacts of schemes implemented between 2018 and 2025, including Linton Greenway, Trumpington Park and Ride Expansion and CSETs Phase 1, allows the highway demand to be kept fairly steady until 2025, when Cambridge South Station is scheduled to open, followed in 2026 by CSETs Phase 2, Cambourne to Cambridge and the West of Cambridge Package. The impact of delaying the opening of Cambridge South Station to 2025 and the GCP schemes to 2026 is shown in Figure 2-2. Previously, when the station was planned to be delivered in 2023, the target was being met in 2023 but pushing the opening back two years has kept the highway demand higher and above the target line even with the implementation of the



station, due to ongoing growth. The target is now not met until 2026, however background growth means that the target is now only met for one year. It is crucial that planned schemes are kept to programme where possible, and approved in a timely manner, to ensure that highway growth is not able to increase unchecked and sustainable travel behaviours are instilled from the outset of new developments opening on Campus. Scheme phasing is also important when considering construction impacts, which could temporarily impact on access to the Campus and the effective access by certain modes. Therefore, careful phasing to avoid significant construction impacts is necessary to manage impacts on access.

To support planned schemes, a number of further interventions should be progressed to further encourage sustainable travel but also to restrict access to, or parking on, the Campus by private vehicles. Section 3 explores these further.

### 3. Review of the previous list of Potential Interventions for consideration

The 2018 study identified 47 Potential Interventions aimed at improving access to CBC and reducing the mode share of private vehicles accessing the Campus. These Potential Interventions are in addition to the already planned schemes, including CSETS and Cambridge South Station, and are considered to complement them. This section presents a review of the Potential Interventions to identify their current status in terms of progression and then prioritises those yet to be progressed to recommend priority measures for further development and implementation.

Appendix A includes a table showing the 47 Potential Interventions and noting the current position of each. Review of the Potential Interventions identified a number that have already been completed, are in progress or that are no longer considered relevant or appropriate to the study. Table 3-1 details these interventions.

**Table 3-1 - Potential Interventions completed, in progress or not taken forward**

Ref	Potential Intervention	Description	Current Status
3	Subsidised Ticketing for Staff	A contribution toward bus tickets provided to staff.	In development at CUH and Papworth. The University of Cambridge offer reduced cost on the Universal service for staff and students. Not currently aware of any schemes by other Partners.
4	Free Bus Pass for New / Relocated Staff	New / relocated staff to receive free bus passes that cover the first month of their employment in order to instil positive travel habits from the outset.	Stagecoach offers 15% discount for all NHS staff. Not currently aware of any schemes by other Partners.
11	Royston to Cambridge bus service redirected to CBC	Rerouting of the Stagecoach 26 (now 915) service from Royston to Cambridge to call at CBC. Could involve routing via the Cambridgeshire Guided Busway or via Addenbrooke's Road and Long Road.	This connection between Royston and Cambridge via CBC is being considered as part of the GCP's Making Connections Project.
12	Bus Service from Papworth Everard and Cambourne	Providing a temporary bus service from / to Papworth Everard / Cambourne in advance of the West of Cambridge Package.	Whippet Coaches - X2 service as an addition to X3 which runs from Papworth Everard / Cambourne to CBC.
15	Bus Priority at Signals in Vicinity of CBC	Allow buses an extended green phase at traffic signals in the vicinity of the CBC site.	It is considered that there are no more improvements possible on the network around CBC.

Ref	Potential Intervention	Description	Current Status
18	Expanding Parking Capacity at Existing Park and Rides to Accommodate Growth	Provide additional parking capacity at Trumpington and Babraham Road Park and Ride sites, as well as at a new Cambridge South West Park and Ride to help manage demand for travel to the CBC site. Table 6 indicates a requirement for approximately 1,500 spaces for CBC users only.	Additional parking at Trumpington provided and additional spaces at Babraham will be provided in 2022. Plans for the CSETS and West of Cambridge Package include additional Park and Ride spaces to the south of the City.
19	Direct Bus Service from a New Cambridge South West Park and Ride to CBC	Provide a direct bus service from a new Cambridge South West Park and Ride to CBC without calling at Trumpington Park and Ride, to encourage use of Cambridge South West Park and Ride.	GCP to re-submit plans in Feb 2022 - new Park and Ride site with public transport routes to Cambridge and CBC.
22	Park and Ride Capacity to the East	Provision of a Park and Ride and Park and Cycle to accommodate demand from the east. This could come in the form of the Park and Ride associated with the Cambridge South East Transport study depending on exact location, which could provide some eastern Park and Ride Capacity.	GCP plans are progressing for a Park and Ride associated with CSETS.
25	Priority Access for Buses to/from Cambridge South West Park and Ride	Bus priority measures into the new Park and Ride site, segregated from other Road users.	GCP to re-submit plans in Feb 2022 - new Park and Ride site with public transport routes to Cambridge and CBC (Bus priority measures dependent on proposals).
26	Effective Access for Vehicles to/from South West Park and Ride	Explore potential for Park and Ride lane or segregated access from M11 Junction 11 for the proposed new Park and Ride. Real-time information about space availability at Trumpington Park and Ride and a new Cambridge South West Park and Ride, as well as journey time to Trumpington Park and Ride, could help manage demand.	GCP to re-submit plans in Feb 2022 - new Park and Ride site with public transport routes to Cambridge and CBC (Bus priority measures dependant on proposals).
36	Greenways Project Implementation and Connection with CBC	Creation of a link between the Fulbourn Greenway and CBC for those travelling from the east, routing via High Street, Queen Edith's Way, Nightingale Avenue and Red Cross Lane.	The greenways project is currently on track to be delivered. Linton Greenway has been completed in 2021. Sawston and Melbourn Greenway are on track to be completed in 2025.
37	Audit of Pedestrian and Cycle Routes and Connectivity Requirements within CBC	Audit of pedestrian and cycle wayfinding and infrastructure.	Undertaken by Partners at CBC in Autumn 2021. There is now a new wayfinding implementation plan in place.
39	Monitoring the Cycle Demand on an Annual Basis	Annual monitoring of cycle parking capacity and condition, as well as an audit on cycle infrastructure and connections across the site.	Undertaken by Partners at CBC on an annual basis.

Ref	Potential Intervention	Description	Current Status
47	Encourage Home-Working	Encourage and enable employees to work from home if possible.	This intervention is now part of the flexible working routine dictated by the COVID 19 pandemic and is expected to continue.

Those Potential Interventions included within Table 3-1 have not been taken forward as part of this study as they have been implemented or are in development. All remaining Potential Interventions (33) have been taken forward to grouping and prioritisation, presented in section 4.

## 4. Prioritisation of Potential Interventions

This section covers the methodology and outcomes of the grouping and prioritisation of the remaining 33 Potential Interventions. The aim of this process is to categorise the interventions to progress according to their effectiveness in making the local transport conditions more efficient and sustainable. Interventions included within this section are not committed and some would require significant feasibility work to understand their deliverability prior to implementation.

### 4.1. Grouping

Potential Interventions have been grouped in packages based on those that are likely to be delivered together, at the same time by the same delivery body. Some interventions are considered standalone in that they would likely be implemented independently of other interventions. Table 4-1 sets out the packages and standalone interventions. A description of the individual interventions is included in Appendix B.

**Table 4-1 – Potential Intervention Packages**

Package / Intervention	Delivery Body	Interventions (Intervention Reference Number)
<b>Packages (individual Potential Intervention reference number in brackets)</b>		
Cycle Strategy	CBC	Bring cycle parking expansion forward (29) Segregated cycle routes on Campus (38)
Parking Strategy	CBC	Allocated spaces at Park and Ride for CBC staff (23) Further restrictions on car access (27) Restrictions on car park growth (30) Needs based prioritisation of parking allocation (31)
Bus Strategy	CBC	CBC Bus Strategy (1) Bus Hub / Interchange at the West of CBC (6) Reconfiguration of Addenbrooke's Bus Station (7) Safer Routes to Bus Stops (10)

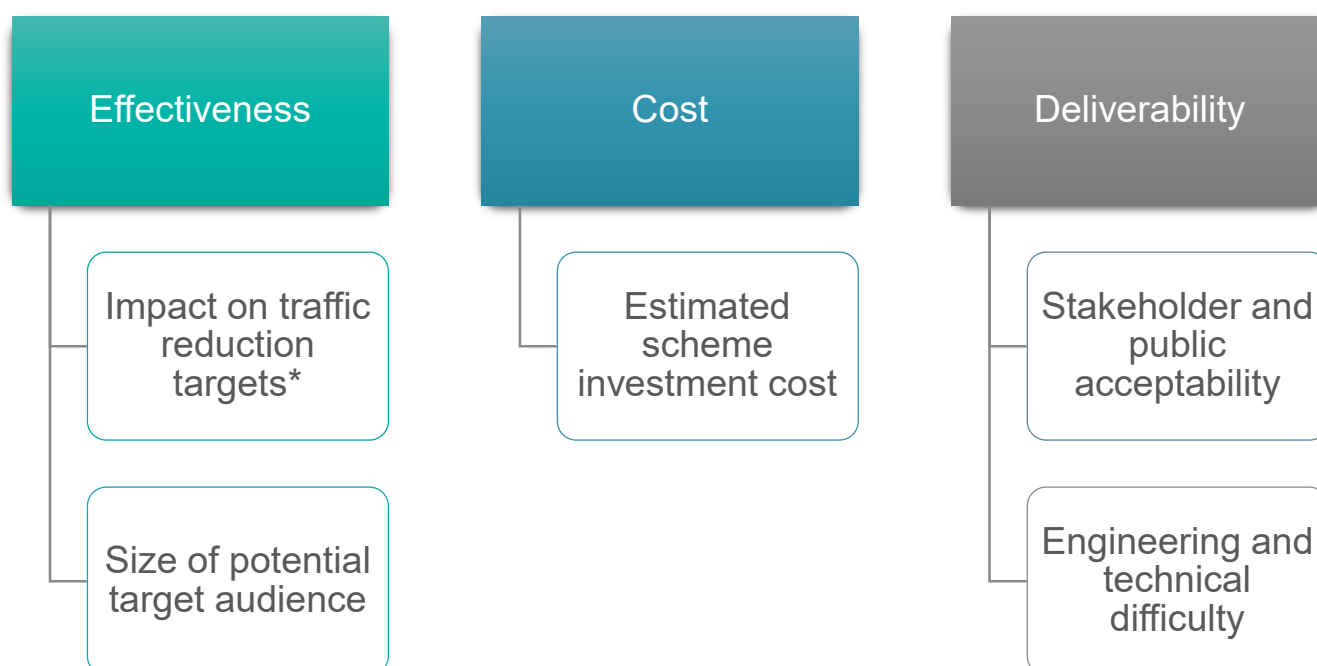
Package / Intervention	Delivery Body	Interventions (Intervention Reference Number)
Travel Planning	CBC	Season ticket loans for staff (2) Demand Responsive Bus Service Around CBC Campus (17) Extend Existing Patient Courtesy Bus to Babraham Park and Ride (20) Review Staggering Shift Patterns of Workers (32) Review Potential to Change Visiting Hours (33) Restrict Non-Essential Deliveries During Peak Hours (34) Consolidation of Non-Urgent / Time Sensitive Deliveries (40) Integrated Online Journey Planning Tool (41) Personalised Travel Planning for Staff (and visitors if requested) (42) Car Sharing Initiatives (43) Staff Car Share Database (44) Pool Cars/Car Club (45) Travel Advice Centre (46)
<b>Standalone Interventions</b>		
Extension of the On-street Parking Controls	GCP	Intervention 28
Service Directly from Milton, Newmarket and Madingley Park and Rides to Serve CBC	GCP	Intervention 21
Central Spine Road for Buses	CBC	Intervention 16
Permitted Right Turn for Buses and Cycles from Adrian Way	GCP	Intervention 8 (Right turn for cycles already being progressed by GCP)
Additional Bus Priority on Addenbrooke's Road	GCP	Intervention 13
Inter-Operator Ticketing	CPCA	Intervention 5
Local Active Travel Connections to the West	GCP	Intervention 35
Bus service pattern Review to accommodate Off-Peak Working Hours	CPCA	Intervention 9
Enhanced Cambridgeshire Guided Busway Capacity	GCP	Intervention 14

Package / Intervention	Delivery Body	Interventions (Intervention Reference Number)
Bus (or Autonomous Pods) to/from CBC/ Park and Rides Before and After Main Park and Ride Service Ends	GCP	Intervention 24

## 4.2. Prioritisation

Each package or intervention presented in Table 4-1 has been prioritised based on the criteria presented in Figure 4-1.

**Figure 4-1 - Prioritisation criteria**



\* This parameter also captures impacts on air quality and climate change from highway trips.

A description for each parameter in Figure 4-1 is presented below.

- **Impact on traffic reduction targets:** the number of vehicle trips that would be abstracted as a result of the intervention.
- **Target Audience:** the total target audience whose modes of travel are impacted by the intervention.
- **Cost:** related to the monetary cost of the infrastructure/servicing of the intervention and the associated maintenance.
- **Stakeholder / Public Acceptability:** associated with the extent to which each intervention will be accepted and well received by local stakeholders and the public.
- **Technical Delivery:** associated with the levels of approval required and the complexity of delivery for each intervention. This could include land ownership, environmental issues or other constraints. The parameter also assesses any eventual impacts on other road users (especially public transport, but also considering private motor vehicles).

Interventions were scored against each parameter on a scale of 1 to 3. The scoring mechanisms are set out further in Appendix B. The results of the prioritisation are shown in Table 4-2.

Measures have also been prioritised within each package to help identify a priority for implementation when looking at individual packages. Appendix D shows the full prioritisation results for each individual intervention within the Packages as well as the stand-alone interventions. This means that interventions can be prioritised



when taking Packages forward, for example, when focussing on Travel Planning, which contains 13 interventions as well as those already being taken forward by CBC Partners.

**Table 4-2 – Prioritisation results**

Package / Intervention	Score
Extension of the On-street Parking Controls	12
Cycle Strategy	12
Service Directly from Milton, Newmarket and Madingley Park and Rides to Serve CBC <sup>5</sup>	12
Parking Strategy	11.8
Central Spine Road for Buses <sup>6</sup>	11
Permitted Right Turn for Buses and Cycles from Adrian Way	11
Travel planning	10.8
Bus strategy	10.5
Additional Bus Priority on Addenbrooke's Road	10
Inter-Operator Ticketing	10
Local Connections to the West	10
Bus service pattern Review to Accommodate Off-Peak Working Hours	9
Enhanced Cambridgeshire Guided Busway Capacity	8
Bus (or Autonomous Pods) to/from CBC/ Park and Rides Before and After Main Park and Ride Service Ends.	6

Table 4-2 shows that the extension of the on-street parking controls, cycle strategy and direct services from Park and Ride sites to CBC score highest against the prioritisation criteria.

The Part 1 Report<sup>7</sup> showed that a significant amount of non-residential parking occurred on the streets surrounding CBC during the daytime. Staff interviews undertaken in 2017 suggested that approximately 22% of staff park on-street around CBC<sup>8</sup>. Those staff who currently park on-street represent a large challenge to reducing the number of highway trips attributed to the Campus. With the introduction of on-street parking controls, these staff must be accommodated elsewhere, including Park and Ride sites, or by other modes. This shows the importance of providing enough Park and Ride capacity and direct services from Park and Rides (also prioritised highly) to CBC to accommodate this displaced demand as part of the GCP corridor schemes, including CSETS and the West of Cambridge Package.

Cycling already represents a relatively high mode share of trips to CBC (33% for staff<sup>9</sup>), but existing challenges of access, wayfinding, security and parking mean that there is potential for this number to be much greater.

The Parking Strategy also performs well against the prioritisation criteria. This is due to the potential it has for restricting access to the Campus by car to only those with specific needs. As with the on-street parking controls, to enable CBC to implement these restrictions it is imperative that viable travel alternatives are available. Again, this shows the importance of providing Park and Ride capacity and direct services as part of the GCP future bus network.

Lower scoring Packages/Interventions include enhanced Cambridgeshire Guided Busway capacity and buses to/from Park and Ride sites outside of operational hours. Enhancing Cambridgeshire Guided Busway capacity

<sup>5</sup> Implementation of this Potential Intervention would include feasibility work alongside ongoing GCP bus network changes.

<sup>6</sup> Engagement with stakeholders at CBC has identified that this intervention is not deliverable until beyond 2031 as part of wider site Masterplanning. However this has been included in the prioritised inventions as it can be planned alongside other projects prior to 2031.

<sup>7</sup> Atkins (October 2018) Cambridge Biomedical Campus Transport Needs Review, Part 1 Report.

<sup>8</sup> Atkins (October 2018) Cambridge Biomedical Campus Transport Needs Review, Part 1 Report. (5.6.2)

<sup>9</sup> Atkins (October 2018) Cambridge Biomedical Campus Transport Needs Review, Part 1 Report. (Figure 5-8)

near Trumpington would benefit existing users of the busway but would be unlikely to encourage mode shift. Providing off-peak access to Park and Ride sites would benefit those staff working early, late or night shift patterns, but it is also likely that these staff would continue to be eligible for parking on Campus. Also, as they are not accessing the Campus at highway network peak times, their trips have little impact on the peak period congestion.

## 5. Summary

The Greater Cambridge Partnership (GCP) have requested that Atkins provides services to support the next phases of delivery for the Cambridge Biomedical Campus (CBC) following on from previous study work in 2018 where Atkins carried out a Transport Needs Review. The 2018 study aimed to understand the current and future challenges faced. It found that the anticipated growth of the site could not be accommodated either by the on-site parking provision or on the highway network. It considered options to increase the uptake of sustainable modes, contributing to the easing of local congestion and aligning the site's future growth with the local and national sustainable growth policies.

The overall findings of the 2018 work showed that Planned Schemes, including the CGP corridor schemes, and Cambridge South Station could have a significant impact on the level of highway demand to CBC, bringing total highway demand to below 2017 levels (target). Measures to support the station and manage demand were also critical to reducing highway demand<sup>10</sup>.

### 5.1. How has the predicted demand for trips and supply to CBC changed?

The 2022 study has undertaken a high-level review of the previous study to assess the extent to which previous assumptions on travel demand and supply have changed and the magnitude to which they are likely to change the outcomes of the original study. There have been a number of changes over the last four years that could impact access to CBC but they are not considered significant enough to alter the outcomes of the original study. There have, however, been some larger changes that would impact the outcomes, the first being more certainty over the implementation of a number of schemes, including Cambridge South Station and GCP schemes, and the second being the withdrawal of the Cambridge Autonomous Metro scheme. The withdrawal of the Cambridge Autonomous Metro is predicted to lead to an additional 16,830 highway trips in 2031, compared to the predictions in the 2018 study. When compared to the target to reduce highway demand to 2017 levels by 2031 this leaves a deficit of 4,662 highway trips to reach the target.

In the intermediate period between 2022 and 2031, the delay to planned schemes means that the highway demand remains above 2017 levels until 2026, when CSETS, Cambourne to Cambridge and the West of Cambridge Package are due to open. As a result of the delay, highway demand then rises above 2017 levels from 2026 onwards due to background growth. This shows that phasing of schemes, keeping to programme and ensuring that schemes are approved in a timely manner, is crucial.

### 5.2. Review and prioritisation of Potential Interventions

The 2022 study has also reviewed and prioritised the 47 Potential Interventions identified within the 2018 study to help improve access to the Campus by sustainable modes and reduce highway trips. 14 of the 47 Potential Interventions have been completed or are already being progressed by study Partners. The remaining 33 Potential Interventions were grouped to align those that could be delivered together as part of the same package, by the same delivery body. The Packages, and remaining standalone Interventions that would be implemented individually, were prioritised based on criteria assessing their effectiveness, cost and deliverability. Packages/Interventions scoring highest were:

- Extension of the On-street Parking Controls in the area surrounding the campus (GCP lead in collaboration with Cambridgeshire County Council, and close engagement with CBC about timing);
- Cycle Strategy for those travelling to and from the Campus, which brings together interventions aimed at encouraging more trips by bike (CBC lead);

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<sup>10</sup> Atkins (20 December 2018) Cambridge Biomedical Campus Transport Needs Review, Part 3 Report. (page 11)

- Service Directly from Milton, Newmarket and Madingley Park and Rides to Serve CBC (GCP lead in collaboration with Cambridgeshire and Peterborough Combined Authority and Cambridgeshire County Council); and
- Parking Strategy, which brings together interventions on Campus aimed at rationalising and improving parking provision (CBC lead).

These Packages/Interventions scored highest against the prioritisation criteria and are expected to have the greatest impact on reducing the number of highway trips to CBC. However, it is important to recognise that the extension of on-street parking controls and the parking strategy have the potential to displace significant numbers of vehicles from CBC and the surrounding area but this can only happen if there are alternative access arrangements to enable CBC to continue to provide the services it does. It is therefore crucial that planned schemes are kept to programme where possible, and approved in a timely manner, to ensure that highway growth is not able to increase unchecked and sustainable travel behaviours are instilled from the outset of new developments opening on Campus. Scheme phasing is also important when considering construction impacts, which could temporarily impact on access to the Campus and the effective access by certain modes. Therefore, careful phasing to avoid significant construction impacts is necessary to manage impacts on access.

It is crucial that enough Park and Ride capacity and direct services from Park and Rides (also prioritised highly) to CBC are provided to accommodate highway trips sustainably as part of the GCP corridor schemes, including CSETS and the West of Cambridge Package. Therefore, timely delivery of the GCP schemes, the priority interventions and the already planned schemes, including Cambridge South Station, is paramount to maintain access to CBC and encourage trips by sustainable modes.

# Appendix A. Potential Interventions

## A.1. Current Status of Planned Interventions

Ref	Potential Intervention	Description	Current Status of the intervention
1	CBC Bus Strategy	A coordinated bus strategy for CBC developed by all stakeholders and bus operators.	Intervention not yet progressed.
2	Season Ticket Loans for Staff	Providing a loan to employees to buy bus season tickets.	CUH have initiative already set up for rail.
3	Subsidised Ticketing for Staff	A contribution toward bus tickets provided to staff.	Other Partners investigated corporate ticketing options. Stagecoach currently offers 15% discount on tickets for staff.
4	Free Bus Pass for New / Relocated Staff	New / relocated staff to receive free bus passes that cover the first month of their employment in order to instil positive travel habits from the outset.	CUH funded H bus – the service used to run before the pandemic hit. This Intervention was particularly relevant prior to the relocation of Royal Papworth Hospital and AstraZeneca.
5	Inter-Operator Ticketing	Ability to buy tickets that are useable on all bus services. A detailed description of the potential application of Inter-Operator Ticketing can be found in Appendix B.	Intervention not yet progressed.
6	Bus Hub / Interchange at the West of CBC	A bus interchange located to the west of the site to be served by CGB buses, buses accessing the site via Addenbrooke's Road and Robinson Way.	This intervention is being implemented alongside the bus strategy. CSET includes changes on Francis Crick Avenue targeting busway stops and normal bus stops.
7	Reconfiguration of Addenbrooke's Bus Station	An opportunity to expand and rework the existing Addenbrooke's Bus Station, potentially by using the Car Park H land to the north of the existing site or Car Park A adjacent to the existing site.	Intervention not yet progressed.

Ref	Potential Intervention	Description	Current Status of the intervention
8	Permitted Right Turn for Buses and Cycles from Adrian Way	Allow all movements for buses and cycles at the Adrian Way junction with Long Road to enable different routing patterns.	Junction still left turn only from Adrian Way. GCP are progressing a study looking at enabling cycles to turn right here, not buses.
9	Bus service pattern Review to Accommodate Off-Peak Working Hours	Engagement with bus operators to provide off-peak hour services for employees of CBC whose shift pattern includes late or early working.	This intervention will be included as part of CBC Bus Strategy.
10	Safer Routes to Bus Stops	Based on the outcomes of the pedestrian audit recommended in Part 1, provide suitable lighting and visibility at, and on routes to, bus stops.	Site safety report done and refreshed. The intervention is being implemented: this includes changes to site safety progressing – (i.e. ped crossings etc.)
11	Royston to Cambridge bus service redirected to CBC	Rerouting of the Stagecoach 26 service from Royston to Cambridge to call at CBC. Could involve routing via the CGB or via Addenbrooke's Road and Long Road.	Cambridge to Royston service now Stagecoach 915 and does not currently route through CBC.  Making Connections - New bus corridor could feature a bus every 10 mins from Royston to Cambridge via CBC with a new travel hub proposed at Foxton railway station.
12	Bus Service from Papworth Everard and Cambourne	Providing a temporary bus service from / to Papworth Everard / Cambourne in advance of the West of Cambridge Package.	Whippet Coaches - X2 service as an addition to X3 which runs from Papworth Everard/Cambourne to CBC.
13	Additional Bus Priority on Addenbrooke's Road	Provide bus priority on Addenbrooke's Road, to provide segregated access to CBC.	The intervention has been investigated by GCP but not taken further at this stage.
14	Enhanced CGB Capacity	Provide increased capacity on the CGB to the east of Trumpington Park and Ride, which currently has a single track of approximately 700m.	Intervention not yet progressed.
15	Bus Priority at Signals in Vicinity of CBC	Allow buses an extended green phase at traffic signals in the vicinity of the CBC site.	It is considered that there are no more improvements possible on the network around CBC.



Ref	Potential Intervention	Description	Current Status of the intervention
16	Central Spine Road for Buses	Provision of a bus-only route through the centre of the Campus.	The Masterplanning phases which include this intervention is currently ongoing.
17	Demand Responsive Bus Service Around CBC Campus	Demand responsive bus service, which could be in the form of autonomous pods, around the CBC site. To be developed in accordance with CBC Bus Strategy.	Courtesy bus being replaced (2 buses) from 2023 – electric (CUH only).
18	Expanding Parking Capacity at Existing Park and Rides to Accommodate Growth	Provide additional parking capacity at Trumpington and Babraham Road Park and Ride sites, as well as at a new Cambridge South West Park and Ride to help manage demand for travel to the CBC site. Table 6 indicates a requirement for approximately 1,500 spaces for CBC users only.	150 spaces proposed to be added to Babraham Park and Ride (GCP). Plans to expand Trumpington PR (+274 spaces) approved in 2018 (C/5001/18/CC) and built out. Cambridge south west P&R (Hauxton) is favoured over expanding Trumpington further. Foxton Travel Hub - ~100 car parking and ~200 cycle parking
19	Direct Bus Service from a New Cambridge Southwest Park and Ride to CBC	Provide a direct bus service from a new Cambridge Southwest Park and Ride to CBC without calling at Trumpington Park and Ride, to encourage use of Cambridge South West Park and Ride.	GCP to re-submit plans to in February 2022 – these include new Park and Ride site with PT routes to Cambridge and CBC.
20	Extend Existing Patient Courtesy Bus to Babraham Park and Ride	Extension of the existing Patient Courtesy Bus to Babraham Park and Ride, to encourage use of this site by patients who would otherwise drive to CBC.	Extension hasn't happened yet. The shuttle would be caught in traffic. There is currently only one bus service from Babraham Road Park and Ride to Addenbrooke's Hospital main bus stop. This is a 15-min walk to Royal Papworth Hospital.
21	Service Directly from Milton, Newmarket and Madingley Park and Rides to Serve CBC[1]	Provide a direct bus service from other Park and Ride sites around the City to CBC.	Currently, there are no services that connect CBC with Milton or Newmarket Park and Ride.  Universal U service (Whippet Coaches) has a stop at Madingley Road Park and Ride.

Ref	Potential Intervention	Description	Current Status of the intervention
22	Park and Ride Capacity to the East	Provision of a Park and Ride and Park and Cycle to accommodate demand from the east. This could come in the form of the Park and Ride associated with the Cambridge South East Transport Study depending on exact location, which could provide some eastern Park and Ride Capacity.	Park and Ride provision to the east being progressed by CSETS.
23	Allocated Spaces at Park and Ride for CBC Staff	Allocated spaces for CBC staff and visitors at Park and Ride sites to encourage use by providing convenient and dedicated spaces to lessen the requirement for CBC staff to search for a space.	No dedicated spaces currently available. Intervention not yet progressed.
24	Bus (or Autonomous Pods) to/from CBC/ Park and Rides Before and After Main Park and Ride Service Ends.	Engagement with bus operators to provide services to/from Park and Ride sites before and after the core City Centre service has finished, to accommodate early/late shift working. This could consist of a dedicated service (e.g. use of the patient shuttle bus when it is not in use) or an extension of existing services.	Intervention not yet progressed.
25	Priority Access for Buses to/from Cambridge South West Park and Ride	Bus priority measures into the new Park and Ride site, segregated from other Road users.	GCP to re-submit plans to in Feb 2022 - new Park and Ride site with public transport routes to Cambridge and CBC (Bus priority measures dependant on proposals).
26	Effective Access for Vehicles to/from South West Park and Ride	Explore potential for Park and Ride Lane or segregated access from M11 Junction 11 for the proposed new Park and Ride. Real-time information about space availability at Trumpington Park and Ride and a new Cambridge South West Park and Ride, as well as journey time to Trumpington Park and Ride, could help manage demand.	As above.

Ref	Potential Intervention	Description	Current Status of the intervention
27	Further restrictions on Car Access	Restrictions on the majority of vehicles entering the Campus, with exceptions for emergency vehicles, A&E and Rosie emergency access, blue badge holders, staff access required due to limited alternative options and specific site needs, servicing (off-peak), buses, taxis and perhaps some car sharers.	Intervention not yet progressed.
28	Extension of the On-street Parking Controls	Extension of the on-street parking controls to streets surrounding CBC, focussing on the short-term management of on-street parking impacts and aligning the implementation of any further controls with the phasing of potential interventions over the medium to long term.	Some have been done – on Red Cross Lane and Knightingale Avenue. Covid restrictions on roads were kept in place during the pandemic. GCP looking at wider restrictions.
29	Bring Cycle Parking Expansion Forward	Implement planned cycle parking sooner than predicted to accommodate demand and encourage further use. This could also include provision and parking for hire or pool cycles and provision for charging electric cycles.	Intervention in progress.
30	Restrictions on Car Park Growth	Restrict the level of car park growth on-site. Consider whether those car parks planned/approved will be beneficial to the overall transport picture.	Dependent on other sustainable routes coming forward. AstraZeneca capacity less than what is permitted. Any additional parking considered to be temporary. Reintroduced car park eligibility from summer 2021 following Covid-19 restrictions.
31	Needs Based Prioritisation of Parking Allocation	Allocation of parking on-site based on a hierarchy of need with priority given (as now) to patients and visitors followed by staff on a basis of need.	In place at CBC but could be continually reviewed in line with needs and other sustainable routes coming forward.
32	Review Staggering Shift Patterns of Workers	Varying the start and finish times of staff to stagger arrival and departure to CBC.	The shifts spread on variety of different patterns. Changes 07:30 -08:00 (largest change).

Ref	Potential Intervention	Description	Current Status of the intervention
33	Review Potential to Change Visiting Hours	Changing or staggering visiting hours so that the peak arrival and departure times do not coincide with the network peak hours.	Intervention not yet progressed. Visiting is currently restricted due to Covid-19 measures.
34	Restrict Non-Essential Deliveries During Peak Hours	Restrict all non-essential deliveries to arrive at CBC outside of the peak hours.	Intervention not yet progressed.
35	Local Connections to the West	Review and improvement of connections for pedestrians and cyclists to the west of the Campus via Alpha Terrace and Anstey Way towards Grantchester.	Intervention not yet progressed.
36	Greenways Project Implementation and Connection with CBC	Creation of a link between the Fulbourn Greenway and CBC for those travelling from the east, routing via High Street, Queen Edith's Way, Nightingale Avenue and Red Cross Lane.	Linton Greenway completed. Sawston and Melbourn greenway in progress. Remaining greenways to be completed by 2031.
37	Audit of Pedestrian and Cycle Routes and Connectivity Requirements within CBC	Audit of pedestrian and cycle wayfinding and infrastructure.	The intervention is part of site safety report which has been completed.
38	Segregated Cycle Routes On-site	Where possible, cycle routes should be segregated from traffic and pedestrians.	No change but plans around CP6/CPH AECOM – designs from CP6 up main drive
39	Monitoring the Cycle Demand on an Annual Basis	Annual monitoring of cycle parking capacity and condition, as well as an audit on cycle infrastructure and connections across the site.	Monthly cycle count (CUH) ongoing– in spaces and out of space and included in annual traffic count.
40	Consolidation of Non-Urgent / Time Sensitive Deliveries	Consolidation of deliveries at an off-site centre (perhaps at a Park and Ride site) to limit the number of delivery vehicles accessing the CBC site, and increase the use of off-peak hours for the final delivery leg to site.	Intervention not yet progressed.

Ref	Potential Intervention	Description	Current Status of the intervention
41	Integrated Online Journey Planning Tool	Creation of an online travel portal on CBC and CUH websites for use by staff, patients and visitors.	Intervention not yet progressed
42	Personalised Travel Planning for Staff (and visitors if requested)	Personalised journey planning for site occupants / staff. Those that register for a personal travel plan could receive a free bus ticket or equivalent.	This option is available for staff working at Abcam and Royal Papworth Hospital. Not rolled out further at this stage.
43	Car Sharing Initiatives	Car sharing initiatives including guaranteed ride home (whereby car sharers are provided with a return journey in an emergency or unforeseen circumstance), dedicated or priority parking spaces and discounts on parking.	CUH is a member of Liftshare. Partners registered with another organisation. There is space for more coordination of car sharing opportunities (shared spaces).
44	Staff Car Share Database	Dedicated CBC Staff Car Share Database that is coordinated between all Campus Stakeholders. Each organisation currently offers their own closed system, which limits the effectiveness of the scheme.	As above.
45	Pool Cars/Car Club	A car club or pool cars for use by staff travelling for work or as a guaranteed ride home.	CUH has pool cars University has car club cars No central arrangement for CBC.
46	Travel Advice Centre	Creation of a Travel Advice Centre at CBC for staff and visitors. To provide marketing information, timetables, advice etc.	Intervention not yet progressed.
47	Encourage Home-Working	Encourage and enable employees to work from home if possible.	Covid-19 restrictions have enabled this intervention sooner than expected. Work from home guidelines still in place for CUH, with varying guidelines for other Partners.



## Appendix B. Scheme Descriptions

**Table 5-1 – Potential Intervention Descriptions**

Potential Intervention	Description
CBC Bus Strategy (1)	A coordinated bus strategy for CBC developed by all stakeholders and bus operators.
Season ticket loans for staff (2)	Providing a loan to employees to buy bus season tickets.
Bus Hub / Interchange at the West of CBC (6)	A bus interchange located to the west of the site to be served by CGB buses, buses accessing the site via Addenbrooke's Road and Robinson Way.
Reconfiguration of Addenbrooke's Bus Station (7)	An opportunity to expand and rework the existing Addenbrooke's Bus Station, potentially by using the Car Park H land to the north of the existing site or Car Park A adjacent to the existing site.
Safer Routes to Bus Stops (10)	Based on the outcomes of the Wayfinding Audit, provide suitable lighting and visibility at, and on routes to, bus stops.
Demand Responsive Bus Service Around CBC Campus (17)	Demand responsive bus service, which could be in the form of autonomous pods, around the CBC site. To be developed in accordance with CBC Bus Strategy.
Extend Existing Patient Courtesy Bus to Babraham Park and Ride (20)	Extension of the existing Patient Courtesy Bus to Babraham Park and Ride, to encourage use of this site by patients who would otherwise drive to CBC.
Allocated spaces at Park and Ride for CBC staff (23)	Allocated spaces for CBC staff and visitors at Park and Ride sites to encourage use by providing convenient and dedicated spaces to lessen the requirement for CBC staff to search for a space.
Further restrictions on car access (27)	Restrictions on the majority of vehicles entering the Campus, with exceptions for emergency vehicles, A&E and Rosie emergency access, blue badge holders, staff access required due to limited alternative options and specific site needs, servicing (off-peak), buses, taxis and perhaps some car sharers.
Bring cycle parking expansion forward (29)	Implement planned cycle parking sooner than predicted to accommodate demand and encourage further use. This could also include provision and parking for hire or pool cycles and provision for charging electric cycles.
Restrictions on car park growth (30)	Restrict the level of car park growth on-site. Consider whether those car parks planned/approved will be beneficial to the overall transport picture.

Potential Intervention	Description
Needs based prioritisation of parking allocation (31)	Allocation of parking on-site based on a hierarchy of need with priority given (as now) to patients and visitors followed by staff on a basis of need.
Review Staggering Shift Patterns of Workers (32)	Varying the start and finish times of staff to stagger arrival and departure to CBC.
Review Potential to Change Visiting Hours (33)	Changing or staggering visiting hours so that the peak arrival and departure times do not coincide with the network peak hours.
Restrict Non-Essential Deliveries During Peak Hours (34)	Restrict all non-essential deliveries to arrive at CBC outside of the peak hours
Segregated cycle routes on Campus (38)	Where possible, cycle routes should be segregated from traffic and pedestrians.
Consolidation of Non-Urgent / Time Sensitive Deliveries (40)	Consolidation of deliveries at an off-site centre (perhaps at a Park and Ride site) to limit the number of delivery vehicles accessing the CBC site, and increase the use of off-peak hours for the final delivery leg to site.
Integrated Online Journey Planning Tool (41)	Creation of an online travel portal on CBC and CUH websites for use by staff, patients and visitors.
Personalised Travel Planning for Staff (and visitors if requested) (42)	Personalised journey planning for site occupants / staff. Those that register for a personal travel plan could receive a free bus ticket or equivalent.
Car Sharing Initiatives (43)	Car sharing initiatives including guaranteed ride home (whereby car sharers are provided with a return journey in an emergency or unforeseen circumstance), dedicated or priority parking spaces and discounts on parking.
Staff Car Share Database (44)	Dedicated CBC Staff Car Share Database that is coordinated between all Campus Stakeholders. Each organisation currently offers their own closed system, which limits the effectiveness of the scheme.
Pool Cars/Car Club (45)	A car club or pool cars for use by staff travelling for work or as a guaranteed ride home.
Travel Advice Centre (46)	Creation of a Travel Advice Centre at CBC for staff and visitors. To provide marketing information, timetables, advice etc.

## Appendix C. Scoring Metrics

**Table 5-2 – Metrics for scoring interventions and packages against parameter**

Effectiveness		Value for Money	Deliverability	
Impact on traffic reduction targets	Target Audience	Cost of the intervention	Stakeholders/ Public Acceptability	Technical Delivery
<b>1, 2, 3</b> As a percentage of the overall range of vehicle trips abstracted where 100% scores 3 and 0% scores 1.	<b>1, 2, 3</b> As a percentage of the overall range of vehicle trips abstracted where 100% scores 3 and 0% scores 1.	1 - High	1 - Significant potential concerns from stakeholders and public	1 – Significant challenges and constraints (e.g., need to acquire land or rights)
		2 - Medium	2 - Moderate support, or neutral view, from stakeholders and public	2 – Some challenges and constraints (e.g., significant works within highway, trade-offs potentially required)
		3 - Low	3 - Significant support from stakeholders and public	3 – Few, if any, challenges and constraints (e.g. minor works within highway)

## Appendix D. Prioritisation

**Table 5-3 - Prioritisation Results**

Package / Intervention	Ref.	Intervention	Effectiveness		Value for Money	Deliverability		Overall total score
			Impact on traffic reduction	Target Audience	Cost	Stakeholder/Public Acceptability	Technical Delivery	
Extension of the On-street Parking Controls	28		2	2	3	2	3	12
Cycle Strategy	29	Bring cycle expansion forward	2	2	2	3	3	12
	38	Segregated cycle routes on Campus	2	3	2	3	2	12
Service Directly from Milton, Newmarket and Madingley Park and Rides to Serve CBC	21		2	2	2	3	3	12
Parking Strategy	30	Restrictions on car park growth	3	3	3	1	3	13
	31	Needs based prioritisation of parking allocation	1	1	3	3	3	12
	23	Allocated spaces at Park and Ride for CBC staff	1	1	3	3	3	11
	27	Further restrictions on car access	2	1	3	2	3	11
Central Spine Road for Buses	16		2	2	2	3	2	11

Package / Intervention	Ref.	Intervention	Effectiveness		Value for Money	Deliverability		Overall total score
			Impact on traffic reduction	Target Audience	Cost	Stakeholder/Public Acceptability	Technical Delivery	
Permitted Right Turn for Buses and Cycles from Adrian Way	8		1	2	3	2	3	11
Travel planning	34	Restrict Non-Essential Deliveries During Peak Hours	2	3	3	3	3	13
	33	Review Potential to Change Visiting Hours	2	3	3	3	3	13
	2	Season ticket loans for staff	2	2	3	3	3	13
	43	Car Sharing Initiatives	1	2	3	3	3	12
	32	Review Staggering Shift Patterns of Workers	2	1	3	3	3	12
	44	Staff Car Share Database	1	2	3	2	3	12
	40	Consolidation of Non-Urgent / Time Sensitive Deliveries	2	1	3	2	3	10
	45	Pool Cars/Car Club	1	1	3	2	3	11
	42	Personalised Travel Planning for Staff (and visitors if requested)	2	2	1	3	3	11
	17	Demand Responsive Bus Service Around CBC Campus	2	1	3	2	3	11
	41	Integrated Online Journey Planning Tool	1	1	2	3	3	10
	46	Travel Advice Centre	1	2	2	2	2	9
20	Extend Existing Patient Courtesy Bus to Babraham Park and Ride	1	1	1	2	2	7	
Bus strategy	6	Bus Hub / Interchange at the West of CBC	2	2	2	3	3	12



Package / Intervention	Ref.	Intervention	Effectiveness		Value for Money	Deliverability		Overall total score
			Impact on traffic reduction	Target Audience	Cost	Stakeholder/Public Acceptability	Technical Delivery	
	7	Reconfiguration of Addenbrooke's Bus Station	2	2	2	3	2	11
	1	CBC Bus Strategy	3	2	2	2	1	10
	10	Safer Routes to Bus Stops	1	1	2	3	2	9
Additional Bus Priority on Addenbrooke's Road	13		2	2	2	2	2	10
Inter-Operator Ticketing	5		1	1	3	2	3	10
Local Connections to the West	35		2	2	2	2	2	10
Bus service pattern Review to Accommodate Off-Peak Working Hours	9		1	2	1	2	3	9

Package / Intervention	Ref.	Intervention	Effectiveness		Value for Money	Deliverability		Overall total score
			Impact on traffic reduction	Target Audience	Cost	Stakeholder/Public Acceptability	Technical Delivery	
Enhanced Cambridgeshire Guided Busway Capacity	14		1	1	2	1	3	8
Bus (or Autonomous Pods) to/from CBC/ Park and Rides Before and After Main Park and Ride Service Ends	24		1	1	1	2	1	6