

Cambourne to Cambridge Better Public Transport Project: Independent Audit

Statement of Assumptions and Constraints

The Greater Cambridge Partnership (GCP) has instigated an independent audit of the key assumptions and constraints underpinning the selection of the preferred route for the Cambourne to Cambridge Better Public Transport Project. The focus of the audit is on the assumptions and constraints that underpinned the analysis that led to the selection of the preferred route and the elimination of alternative options. The objective is to test the robustness of those assumptions and constraints and determine whether they remain appropriate in the context of the current strategic frameworks, the emerging Cambridgeshire Autonomous Metro (CAM) network and the East West Rail plans.

This first stage of the audit comprises the preparation of a statement on the assumptions and constraints. This statement will be published on the GCP web site and will form part of an invitation to representative groups to submit further written representations on the assumptions and constraints and their application throughout the process.

The assumptions and constraints are documented in the tables below. These are derived from the Outline Business Case for the scheme together with supporting materials prepared for the business case and other reports produced by the GCP and its partners. The information sources are referenced against each entry in the table.

Examination of these sources has revealed 51 individual assumptions and constraints which are grouped into 12 categories:

- A. Policy Context
- B. Scheme Objectives
- C. Project Deliverables
- D. Strategic Fit
- E. Connections to CAM and EWR
- F. C2C Options Selection
- G. Economic Case
- H. Financial Case
- I. Commercial Case
- J. Management Case
- K. Full Business Case

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○ L. Covid-19 Impacts

These categories expand upon the 5-case business model framework used in the outline business case including consideration of the wider context for the scheme.

Broadly, the constraints fall into two types: on the positive side, the strategic growth targets and ambitions of the GCP and the Cambridgeshire and Peterborough Combined Authority (CPCA) dictates the development of new public transport capacity to meet future travel demands; on the negative side, deploying this new infrastructure, like the C2C scheme, impacts on local communities and the environment with queries about the premise for the preferred option. The assumptions outline a scheme that can address both areas of concern and demonstrate through evidence the justification for the preferred option. At this stage, the objective is to produce a comprehensive list of assumptions and constraints without prejudice for stakeholders to review and comment on.

For comparison the assumptions are matched with the constraints (or vice versa). This 'mapping' is not always clear cut and there are overlaps and some matters that are more distinct. Nevertheless, this format helps to link the assumptions with the constraints to better understand the need for the intervention, the process of selecting the preferred option, evaluating its impacts, how it will be delivered, and interdependencies with the future CAM and EWR networks. No weighting is given to the categories or individual items. At this stage it is considered appropriate to present the assumptions and constraints in a neutral manner.

The continuing validity and appropriateness of the assumptions and constraints will be analysed in the second part of the audit.

Table A: Policy Context

Assumptions & Constraints Register			
A. Policy Context			
A.1	<p>Greater Cambridge Partnership: Created in 2014 to implement City Deal agreed with government to deliver growth aspirations in support of regional and national economic policies.</p>	<p>The C2C corridor has been identified by the GCP’s Executive Board as a priority project for development in the first five years of the GCP’s transport programme.</p> <p><i>Reference: Greater Cambridge City Deal. GCP 2014</i></p>	
A.2	<p>Local Plan policies for the strategic developments of sites along the C2C corridor require High Quality Public Transport (HQPT) to link new homes to employment and services in and around Cambridge.</p>	<p>Local Plans prepared by Cambridge City & South Cambridgeshire Councils: Confirm targets for housing and employment growth and allocate sites in West Cambourne, Bourn Airfield and other sites along the A428 corridor for development as well as at West Cambridge and North West Cambridge.</p> <p><i>Reference: Greater Cambridge Local Plan. Transport Evidence Report. Cambridgeshire County Council Transport Strategy and Funding Team, November 2020.</i></p>	<p><i>“Local Plan policies for the strategic developments of sites along the C2C corridor require High Quality Public Transport to link new homes to employment & services in & around Cambridge”</i></p> <p>The term “High Quality Public Transport” has been misused by the Greater Cambridge Partnership to mean a segregated and off-road scheme. This is not an accurate representation of HQPT, nor of what is required by the Local Plan.</p> <p>The Local Plan, Policy SS/7 (New Village at Bourn Airfield), para 8(a) only specifies a segregated bus link from Cambourne and Bourn Airfield. The rest of the busway is specified as follows:</p> <ul style="list-style-type: none"> ii. Any measures necessary to ensure that a bus journey between Caldecote / Highfields and the junction of the A428 and the A1303 is direct and unaffected by any congestion suffered by general traffic; iii. Provision of high quality bus priority

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				<p>measures or busway on or parallel to the A1303 between its junction with the A428 and Queens Road, Cambridge.</p> <p>Therefore non-segregated, less damaging options using existing infrastructure should have been thoroughly investigated, but have not been.</p> <p>The East West Rail link is a High Quality Rapid Public Transport service to the Cambridge Bio-Medical Campus, Central Cambridge and Cambridge Science Park via Cambridge North Station for residents of Cambourne, Cambourne West and Bourn Airfield, and thus (with quick and effective local bus services to the new Cambourne station) amply satisfies the Local Plan.</p> <p>The latest projected completion date is little different from the C2C busway (realistically 2028 at the earliest: EWR 2030), and so GCP must consider its implications on the business case for C2C before pressing ahead.</p>
A.3	Policy within the TSCSC requires a range of infrastructure interventions on the St Neots and C2C corridor as a key part of the integrated land use and transport strategy responding to levels of planned growth.	The Transport Strategy for Cambridge and South Cambridgeshire (TSCSC) was prepared in parallel with the development of the Local Plans and was agreed in March 2014. The strategy provides a plan to manage the rising population and increasing demand on the travel network by shifting people from cars to other means of travel including public transport, walking and cycling.		<p><i>"The Transport Strategy for Cambridge and South Cambridgeshire (TSCSC) was prepared in parallel with the development of the Local Plans and was agreed in March 2014"</i></p> <p>The Transport Strategy for Cambridge and South Cambridgeshire (TSCSC) was completed in 2014 and is now very dated. Since its publication, new developments in the A428 corridor from St Neots to Cambridge plus uncertainty about CAM, EWR and the Girton</p>

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		<i>Reference: Transport Strategy for Cambridge and South Cambridgeshire, March 2014</i>		Interchange all mean it is now not an adequate basis for planning in the region.
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<p>A.4</p>	<p>Cambridgeshire County Council are working with Greater Cambridge Shared Planning (GCSP) comprising Cambridge City and South Cambridgeshire, to provide a transport evidence base to support the preparation and examination of the Greater Cambridge Local Plan (GCLP) that runs to 2041.</p>	<p>Three growth level options being tested through the local plan are:</p> <ul style="list-style-type: none"> • Minimum – Standard Method homes-led • Medium – central scenario employment-led • Maximum – higher employment-led <p>The GCP City Deal constrained to deliver 44,000 jobs and 33,500 homes by 2031 and is consistent with the Minimum growth projection. Higher growth forecasts imply additional infrastructure and development sites beyond 2031.</p> <p>Reference: <i>Greater Cambridge Local Plan. Transport Evidence Report. Cambridgeshire County Council Transport Strategy and Funding Team, November 2020.</i></p>	
<p>A.5</p>	<p>The Cambridgeshire and Peterborough Combined Authority is responsible for transport infrastructure improvement and the Local Transport Plan. Drawing on the CPIER the goals of the CPLTP published in 2020 are to deliver a transport system that delivers economic growth and opportunities, provides an accessible transport system and protects and enhances the environment to tackle climate change together.</p>	<p>The CPCA established the Cambridgeshire and Peterborough Independent Economic Review (CPIER). The review provides a robust and independent assessment of the Cambridgeshire and Peterborough economy and the potential for growth. The CPIER confirmed the growth targets established in the City Deal and the need for a package of transport and other infrastructure projects to alleviate the growing pains of Greater Cambridge including HQPT scheme from Cambridge to Cambourne.</p> <p>Reference: <i>CPIER - Cambridgeshire and Peterborough Independent Economic Review, CPCA, September 2018</i></p>	<p><i>“The CPIER confirmed the growth targets established in the City Deal and the need for a package of transport and other infrastructure projects to alleviate the growing pains of Greater Cambridge including HQPT scheme from Cambridge to Cambourne”</i></p> <p>An HQPT scheme does not have to be an off-road busway, and should not be developed before, nor in isolation to, the proposals for much larger schemes (EWR and CAM Metro) are agreed.</p> <p>The East West Rail link will provide, by the end of the decade, the main High Quality Rapid Public Transport service from Cambourne to the Cambridge Bio-Medical Campus, Central Cambridge and Cambridge Science Park via Cambridge North Station. The question is therefore what other schemes would provide a package of complementary measures.</p>

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			<p>The LLF has consistently stated that an in-carriageway scheme, such as those contained in CambridgePPF's <i>Cambourne-Cambridge Strategy</i> (2021), can also be considered a HQPT scheme, and would provide the package of measures required, certainly in the short-medium term - possibly longer - whilst the wider strategic picture falls into place.</p> <p>https://www.cambridgeppf.org/Handlers/Download.ashx?IDMF=19b623a9-920d-425e-b8bd-41f2c95dc0fd (2021).</p> <p>[CambridgePPF is a member of the Local Liaison Forum [LLF], and their scheme is precisely the sort of intervention the LLF has been supporting for the past five years.]</p>
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<p>A.6</p>	<p>In April 2020 the CPCA published a draft Sub-Strategy to the Local Transport Plan specifically dealing with CAM. The route along the A1303/A428 from Cambridge City centre towards Cambourne, St Neots and Bedford has been highlighted as a strategic project to help make travel by foot, bicycle and public transport more attractive than private car journeys, alleviating congestion and supporting the region’s growth issues.</p>	<p>The C2C proposals have been assessed against the policies in the Sub-Strategy and it is concluded that the scheme is compliant, although further review of the eastern end of the scheme (City Access) has been undertaken and a review of the western end will be required once there is clarity with regards to proposals for EWR and a station in the Cambourne area.</p> <p>Reference: <i>Cambourne to Cambridge Better Public Transport Project, Report to GCP Executive Board, 10 December 2020</i></p>	<p><i>“The C2C proposals have been assessed against the policies in the Sub-Strategy and it is concluded that the scheme is compliant”</i></p> <p>This is highly misleading. The CPCA commissioned review in June 2020 by Jacobs identified 12 areas where CAM objectives were not met, and concluded GCP’s preferred C2C route was not compliant, and that further routes should be assessed. June 2020, Jacobs Review of C2C against CAM Objectives</p> <p>It is very concerning that in the documentation provided to the GCP Board in December 2020, CAM compliance of the C2C preferred option was assured based on the outdated, and much criticised, ARUP report of 2018.</p> <p>The LLF believes it premature to press ahead with C2C whilst its compliance with CAM is in question, but also believes new routes should be investigated, particularly via The Girton Interchange, which could provide greater benefit and compliance, and uses an existing transport corridor.</p> <p><i>“further review of the eastern end of the scheme (City Access) has been undertaken and a review of the western end will be required once there is clarity with regards to proposals for EWR and a station in the Cambourne area”</i></p> <p>The LLF considers it premature to press ahead with the C2C scheme when its connection with, and the alignment of, the multi-billion pound EWR scheme is still not decided, and potentially renders the busway obsolete. See EWR website www.eastwestrail.co.uk, and specifically the preferred option map: https://experience.arcgis.com/experience/b6c02aed5e6e49f09bdf423faffe888/?draft=true</p>
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			<p>A separate review should be undertaken after the details of the EWR scheme are confirmed, to determine what constitutes a complementary scheme.</p> <p>There are other possible ways of delivering LTP Sub-strategy policies that the LLF has consistently asked to be investigated, particularly in light of EWR developments, including:</p> <ul style="list-style-type: none"> - an alignment that uses existing A428 infrastructure and the Girton Interchange which would contain the impact within an existing transport corridor and also offer better location for a P&R, benefitting commuters from a wider area. - an in carriageway scheme (something akin to Cambridge PPF's <i>Cambourne-Cambridge Strategy</i> (2021)) which has a much better BCR, much lower environmental and social impacts, could be delivered much quicker than the preferred option, and is far more able to adapt to the realities of EWR and CAM as they emerge (see A.5). - the more effective route for cycling/walking would be to extend the Comberton Greenway because this would avoid the steep Madingley Hill, be more direct, serve more people and be more attractive and therefore attract greater modal shift.
<p>A.7</p>	<p>National Infrastructure Commission: The NIC has identified the Cambridge – Milton Keynes – Oxford arc as a national priority stating that its world-class research, innovation and technology can help the UK prosper in a changing global economy.</p>	<p>NIC has proposed the development of EWR. Integrating mass rapid transit with this scheme will enable effective first/last mile connectivity, in a way that enhances the value of these strategic infrastructure projects.</p> <p>Reference: <i>NIC Report, November 2020.</i></p>	<p><i>“NIC has proposed the development of EWR. Integrating mass rapid transit with this scheme will enable effective first/last mile connectivity, in a way that enhances the value of these strategic infrastructure projects”</i></p> <p>First mile: Integration of EWR with local rapid transport is logical. However, current preferred routes for both transport</p>

		<p>https://nic.org.uk/studies-reports/national-infrastructure-assessment/</p>	<p>schemes indicate that the services may in fact conflict with the potential for poor integration and replication of services. This constraint should be made clearer. EWR's station location should be the single most important determinant of the location of the mass rapid transit station. This should be listed as a constraint.</p> <p>It remains unclear how the C2C preferred connects with the railway at either Cambourne or Cambridge so offers no explicit solution to the first/last mile connectivity requirement.</p> <p>Last mile: The GCP preferred option does not provide good last-mile connectivity: major employment sites such as Biomedical Campus and Science Park will not be effectively served by it. To access the Biomedical Campus, passengers will be required to change at the University West Campus, travel north through the Campus to Madingley Road, double-back west on Madingley Road to the slip road to the M11 (jn13), travel down the M11 to jn 11, and take a slip road to the Biomedical Campus. To access the Science Park, passengers will again change buses in the University West Campus, travel north through the Campus to Madingley Road, cross said road and travel through the Eddington Campus and congested city streets to the Science Park. Neither of these routes will be attractive for commuters. Both sites will be far more effectively served by direct East West Rail services from Cambourne, and, in the case of the Science park, direct bus services from Cambourne to the Science Park via the A428. This is a very big constraint with the GCP preferred option, which affects reliability and journey times calculations, which needs to be assessed before further work on the scheme is undertaken.</p>
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			<p>Access the City Centre and CB1 is equally problematic. The GCP preferred option delivers buses to Grange Road, 1km from the city centre, and the last mile will be undertaken via congested, historic and narrow city streets. The OBC does not specify what the routes will be in and out of the city centre from Grange Road, and so have not been agreed with the bus operators. [In fact the main bus operator has stated in an LLF workshop in 2018 that routes from Grange Road present such great difficulties, the company would prefer to return north to Madingley Road and access the city via its current route of Northampton Street and Bridge Street.] This is a very big constraint with the GCP preferred option, which affects reliability and journey times calculations, which needs to be assessed before further work on the scheme is undertaken.</p> <p>An in-carriageway scheme (such as Cambridge PPF's <i>Cambourne-Cambridge Strategy</i> (2021)) provides better first/last mile connectivity and is far more able to adapt to the realities of East-West Rail and CAM Metro as they emerge (see A.5). https://www.cambridgeppf.org/Handlers/Download.ashx?IDMF=19b623a9-920d-425e-b8bd-41f2c95dc0fd (2021).</p>
A.8	Highways England. Dualling of A428 Black Cat to Caxton Gibbet included in RIS2 programme, 2020-2025. HE has no other major road schemes planned for the GCP area having recently completed the upgrade to the A14 and Girton interchange with the M11.	DCO submitted in February 2021 for this Nationally Significant Infrastructure Project connecting the A1 to the A14. Preparatory works are underway. Scheduled for completion by 2023-24? Reference: <i>Highways England. Route</i>	<p><i>"HE has no other major road schemes planned for the GCP area"</i></p> <p>A Girton Interchange upgrade to an all-ways interchange has been signalled as under consideration for the next RIS programme (2025-30). This was reported in the press and by Anthony Browne MP in February 2021. The assumptions should be changed to include this.</p>

		<p><i>Investment Strategy. Road projects in the Eastern Region.</i> https://highwaysengland.co.uk/our-work/east/#roadprojectform</p>	<p>This is significant for the C2C busway scheme because, when complete, a significant amount of vehicular traffic travelling east towards the M11 will no longer use Madingley Hill (A1303) reducing congestion on that stretch of road considerably. This fact, together with an effective on-road scheme (see A.5) and East-West Rail, could render the C2C off-road scheme unnecessary.</p> <p>As far as the CAM Metro is concerned, the opportunity to link into an upgraded Girton Interchange warrants thorough consideration. Use could be made of the existing A428 corridor, thus avoiding the landscape, ecological, heritage and social impacts of the preferred C2C alignment; a scheme could be developed in tandem with the upgrade, and a P & R located there.</p>
<p>A.9</p>	<p>East West Railway Company formed to create a new railway connection between Oxford and Cambridge. Consultation is anticipated on the preferred route alignment which includes stations at Cambourne and in the Sandy/St. Neots area.</p>	<p>The Bedford to Cambridge section is the third stage of the project and construction is not expected to start before 2025 with the train service beginning later this decade at the earliest.</p> <p>Reference: <i>Connecting Communities: The Preferred Route Option between Bedford and Cambridge Executive Summary. EWR, 2019</i></p>	<p><i>“The Bedford to Cambridge section is the third stage of the project and construction is not expected to start before 2025”</i></p> <p>The construction periods for EWR and the GCP routes forming the first phase of the Combined Authorities CAM project appear to be almost concurrent. Both are scheduled to start in 2024/25 and both are scheduled to complete by the end of the decade. Both of these constraints need additional explanation and clarification.</p> <p>In the EWR consultation, launched March 2021, the new alignments (1 & 9), described as emerging preferences, link to a Cambourne North station and follow the C2C alignment corridor to the Scotland Farm junction. It is therefore imperative that the implications of the two schemes are considered in tandem (patronage forecasts, interconnectivity etc.) to ensure that the package of measures that emerges is indeed complementary, not duplicatory.</p>

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			<p>The reluctance of GCP to consider the implications of EWR is in sharp contrast to the stated policy on the latter's website: 'It is quite common with a lot of infrastructure projects of this nature that funding is allocated in tranches to make sure the business case continues to be robust and stringent financial controls are in place'.</p> <p>www.eastwestrail.co.uk</p>
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Table B: Scheme Objectives

	Assumptions	Constraints	
	B. Scheme Objectives:		
B.1	<ul style="list-style-type: none"> • Achieve improved accessibility to support the economic growth of Greater Cambridge • Deliver a sustainable transport network/system that connects areas between Cambourne and Cambridge along the A428/A1303 • Contribute to enhanced quality of life by relieving congestion and improving air quality within the surrounding areas along the A428/A1303 and within Cambridge city centre 	<ul style="list-style-type: none"> • Existing car mode share and car ownership within the A428/A1303 corridor is high, and future growth is expected to generate additional demand for car use in this area. • Traffic data shows that AM peak hour traffic speeds are 75% slower than night time average speeds on the route between the Madingley Mulch Roundabout and M11 Junction. • Planned growth, between 2011 and 2031, along the A428/A1303 corridor eastbound car trips are forecast to increase by 14% in the AM Peak hour, 82% in the Inter-peak period and, 37% in the PM Peak period. Without intervention this could lead to a further deterioration in traffic speeds and reliability of journey times. • Travel to work data for key origins along the C2C corridor also illustrate the high level of car use along the route, with the car mode share for residents of Cambourne being particularly high (65%). • Residents of Cambourne and surrounding villages currently have limited options to use public transport due to the low level of service and current unreliability. • In the absence of substantial bus priority in the corridor, congestion and delays mean journeys of around 10 miles can take over an hour during peak times. Buses therefore offer no competitive advantage over private cars in terms of journey times and reliability. 	<p><i>“Deliver a sustainable transport network/system that connects areas between Cambourne and Cambridge along the A428/A1303”</i></p> <p>The East West Rail link will provide by the end of the decade the main High Quality Rapid Public Transport service from Cambourne to the Cambridge Bio-Medical Campus, Central Cambridge and Cambridge Science Park via Cambridge North Station. The question is therefore what other schemes would provide a package of complementary measures.</p> <p><i>“In the absence of substantial bus priority in the corridor, congestion and delays mean journeys of around 10 miles can take over an hour during peak times. Buses therefore offer no competitive advantage over private cars in terms of journey times”</i></p> <p>This ignores any benefits that will be provided by EWR, in particular access to the Biomedical Campus, CB1 and the Science Park.</p> <p>There is also a clear acceptance here that bus priority alternatives to a busway, provided they can demonstrate a significant competitive advantage over the private car, would be equally valid.</p> <p>The source of journey time unreliability for C2C bus services has been almost entirely the ~2 mile stretch from Madingley Mulch roundabout to the M11 overbridge at junction 13. Outside the morning peak (7-9 am), the existing Citi4 on-road service takes a reliable 20-25 minutes to get between Cambourne and Cambridge city centre. Therefore the only</p>

		<p>Reference : <i>C2C Outline Business Case, Strategic Case GCP January 2020.</i></p>	<p>intervention required is to by-pass morning peak hours traffic congestion on Madingley Hill.</p> <p><i>“Existing car mode share and car ownership within the A428/A1303 corridor is high, and future growth is expected to generate additional demand for car use in this area”</i></p> <p>Traffic forecasts pre-date the COVID pandemic and need to be revisited in the light of possible long-term changes in working patterns post-pandemic. Multiple surveys have suggested a substantial proportion of office-based workers would like to spend some days each week working from home (e.g. 79% of workers would like to work at home at least 1 day a week according to a VoxEU survey in March 2021). It therefore seems highly likely that the forecast rise in traffic due to population growth will be offset to some extent (possibly more than offset) by a reduction in work-related commuting.</p>
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<p>B.2</p>	<p>Supporting development through the busway corridor: The scheme is assumed to promote growth in the area and increase investment. It is designed to be the first in a series of steps to push forward growth.</p>	<p>Longer-term plans for the CAM network and EWR need to be taken into account.</p> <p>Reference: 'C2C Outline Business Case, Strategic Case GCP January 2020.</p>	<p><i>“Supporting development through the busway corridor: The scheme is assumed to promote growth in the area and increase investment. It is designed to be the first in a series of steps to push forward growth”</i></p> <p><i>“Longer-term plans for the CAM network and EWR need to be taken into account”</i></p> <p>The LLF has consistently argued that it is premature to build the busway until we know about CAM and EWR plans. In our view, City Deal (later GCP) should have gone for an upgrading of existing bus services with local changes to infrastructure (e.g., roundabouts) to give buses priority, while developing future plans for a C2C, if needed, in the context of CAM and EWR.</p> <p>The LLF does not believe the impact of EWR on the business case for C2C has been adequately assessed. It is not prudent to declare C2C 'complementary' without having done an full analysis of the impact.</p> <p>Neither does the LLF believe that C2C can be declared 'compatible' to the CAM network when we do not know what CAM will look like. Whilst these multi-billion pound pieces of infrastructure are being progressed the GCP could be putting in place a bus priority scheme, such as the CambridgePPF in-carriageway scheme: https://www.cambridgeppf.org/Handlers/Download.ashx?IDMF=19b623a9-920d-425e-b8bd-41f2c95dc0fd (2021).</p> <p>The LLF also notes that future work on the Girton Interchange would alleviate traffic on the A1303 Madingley Hill, and the increasingly likelihood of the upgrade of the Girton Interchange, and a potential future alignment of the CAM Metro via it, should be taken into consideration.</p>
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	<p>Support for the labour market: Through the wider effects of the scheme it is assumed that there will be an increase in accessibility to jobs, education and training. This has the potential to give easier access into both Cambourne and Cambridge and thereby expand the labour market.</p>	<p>Constraints in this are linked to ticketing and frequency of service. If this is an expensive service, then some may still be priced out. There is no information on ticketing and service schedules have yet to be confirmed.</p> <p>Reference: 'C2C Outline Business Case, Strategic Case GCP January 2020.</p>	<p><i>"If this is an expensive service, then some may still be priced out"</i></p> <p>The C2C service will be more expensive to run on segregated infrastructure because the maintenance and renewal costs will have to be born either by the operators or the local authority. These will either be passed onto commuters in the form of increased fares, or will result in reduced services on other routes to subsidise it. In carriageway services are not subject to these increased costs.</p>
<p>B.4</p>	<p>The scheme will create a congestion free, high quality public transport corridor: The OBC assumes that the scheme will be able to create this corridor as a segregated busway.</p>	<p>There are still several pinch points and interactions with general traffic that could create congestion and delay along the route.</p> <ul style="list-style-type: none"> • Scotland Farm P&R access • The section of the scheme which runs through Bourn Airfield must comply with the SPD for the site and complement the development Masterplan. • The section of the scheme which runs through West Cambridge must complement the development Masterplan. Consideration must be given to vibration and EMI impacts on sensitive receptors such as the Department of Materials Science and Metallurgy. <p>Reference: 'C2C Outline Business Case, Strategic Case GCP January 2020.</p>	<p><i>"The scheme will create a congestion free, high quality public transport corridor: The OBC assumes that the scheme will be able to create this corridor as a segregated busway."</i></p> <p>There are currently no proposals that would provide congestion free travel to any of the destinations identified as key to the scheme (apart from the West Cambridge site). The final segment of the route to Cambridge City Centre, the Cambridge Biomedical Campus and The Science Park will be on "congested" city roads or via the M11, minimising whatever benefit might be achieved by going for a congestion-free corridor up to that point. The fact that the 'final mile' of the journey is on highly congested, historic city streets has been omitted as a significant omitted constraint. (See A.7: last mile for full explanation.)</p> <p>For C2C, the "preferred" off-road route option ends in a location (West Cambridge campus and Grange Road) that is highly inefficient for the necessary return to the road network to complete the final segment of useful journeys. Journeys are not direct either; commuters will have to connect to additional bus services in the West Cambridge campus to access key employment destinations. This will</p>

			<p>add time to the journeys. These are both additional constraints.</p> <p>Timings for evening peak return journeys have been omitted from GCP reports. This is concerning since it has not been demonstrated that there are any routes returning to Grange Road to access the busway that would not interact with significant congestion. This is also an additional constraint.</p> <p>The routes are certainly not fully segregated; indeed the LLF estimates only c.50% is segregated.</p> <p><i>“There are still several pinch points and interactions with general traffic that could create congestion and delay along the route”</i></p> <ul style="list-style-type: none"> • Scotland Farm P&R access <p>Following the announcement by EWR that its preferred station location is to the north of Cambourne, the proposed Park and Ride facility at Scotland Farm should be reviewed and relocated to the EWR Station which should be the area transport hub.</p>
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<p>B.5</p>	<p>In the City Centre, GCP’s City Access project is proposing measures to reduce reliance on car travel and free up the city centre’s congested road space, to run better public transport services.</p> <ul style="list-style-type: none"> • The objectives of the City Access scheme complement the C2C project by seeking to improve conditions for sustainable transport within the City Centre, thereby benefitting users of the C2C scheme either through improved journey times for public transport or better connectivity to pedestrians and cyclists. • City Access will also complement C2C by providing an alternative to car journeys for trips from new developments served by the scheme. 	<p>Bus services across the city centre incur substantial delays due to traffic congestion and the layout of city streets. Significant reallocation of road space to active travel and buses alongside on-street parking management measures will be required to improve bus journey times.</p> <p>Reference: <i>Report to GCP Executive Board, 18 March 2021</i></p>	<p><i>“City Access will also complement C2C by providing an alternative to car journeys for trips from new developments served by the scheme”</i></p> <p>The business case for the C2C scheme assumes the delivery of a segregated transport scheme to the City Centre, The Biomedical Campus and The Science Park (not just to Grange Road). The business case is therefore reliant on the delivery of onward segregated (or at least uncongested) routes from the West Campus and Grange Road, but in the OBC, there are no concrete proposals for how this will be delivered, and absence of information regarding the return route. (See A.7 & B.4 for full explanation.)</p> <p>The constraint needs to be modified to reflect the fact that the last mile has not yet been adequately determined and cannot be until other projects are delivered. This degree of uncertainty casts big shadow on the credibility of the OBC.</p>
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<p>B.6</p>	<p>On 31st October 2018 the CPCA Board agreed that the C2C scheme should be progressed by the GCP as an essential first phase of developing proposals for the CAM. They accepted the independent review of alignment between the C2C scheme and the CPCA plans for a CAM, undertaken by consultants Arup and commissioned by the CPCA in 2018.</p>	<p>Arup has undertaken a high-level review of route options and concluded that:</p> <ul style="list-style-type: none"> • The process undertaken to date to determine the route is robust and the optimal solution for the corridor is confirmed; • The route is reclassified as a CAM route to serve the wider network, and not an independent guided busway corridor; • The vehicle operating along the A428 corridor will comply with the principles of the CAM; • The route will continue to be designed to align and integrate with the overarching CAM network, comprising one of the phases of the CAM network; and • Options for mitigating the impact of the scheme at West Fields and Coton will be incorporated into scheme design for the SOBC. <p><i>Reference: Cambridgeshire and Peterborough Combined Authority CAM Expert Advice A428 Report. Arup, October 2018</i></p>	<p><i>“The process undertaken to date to determine the route is robust and the optimal solution for the corridor is confirmed”</i></p> <p>The LLF had serious concerns about the 2018 ARUP report. Given the reclassification of the C2C route as a CAM route (i.e. part of a multi-billion pound project) a very cursory attempt was made to confirm it as the optimal solution; GCP officers were involved in the process and an FOI request also showed that the final report was heavily influenced by the Chief Executive of GCP in its final form. https://scams.moderngov.co.uk/documents/s108597/6c-Cambourne to Cambridge-Appendix 2.pdf</p> <p>The LLF has never considered the thin ARUP report robust enough to justify subsequent work to develop the preferred option. Becoming the first phase of the larger CAM project represented a significant change to the C2C project, and instead of this brief assessment to assess theoretical compliance, a fuller assessment should be made to identify an optimal alignment – but only when fundamental operational details about the CAM project emerge.</p> <p>The ARUP report has since been contradicted by the Jacobs in June 2020, commissioned by the CPCA, which demonstrated that the preferred C2C alignment did not meet 12 of the CAM sub-objectives or support the main CAM objectives. June 2020, Jacobs Review of C2C against CAM Objectives</p> <p>ARUP 2018 should not have been used by GCP as late as the Executive Board papers of December 2020 to justify compatibility with CAM, when it has been superseded by the contradictory Jacobs report of June 2020. There are too many unknowns about CAM at present to assume the compatibility of the GCP C2C route with CAM:</p>
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			<p>type and size of vehicles, tunnel specifications, tunnel portal locations (in particular in West Cambridge); guidance system(s); fire, safety and evacuation requirements. Can the vehicles cope with the 8 right-angled turns in the current alignment?</p> <p>Each one of the above has potential to make the C2C preferred alignment incompatible with CAM, so the LLF believes the C2C project should be paused until the more detail on CAM emerges.</p>
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Table C: Project Deliverables

	C. Project Deliverables:		
C.1	<p>The project is made up of three key elements:</p> <ul style="list-style-type: none"> • a public transport link between Cambourne and Cambridge, • a new Park and Ride facility off the A428/A1303 to supplement the existing Madingley Road Park and Ride, and • new cycling and walking facilities. 	<p>The C2C scheme will need to deliver on the following elements:</p> <ul style="list-style-type: none"> • A HQPT system using rapid transit technology on dedicated routes. • High frequency, reliable services delivering maximum connectivity. • Continued modal shift away from car usage to public transport. • Capacity provided for growth, supporting transit- oriented development. • State of the art environmental technology, with easily accessible, environmentally friendly, low emission vehicles such as electric/hybrids or similar. • A fully integrated solution, including ticketing and linkages with the wider public transport network to maximise travel opportunities. <p>Achieving these may be constrained by factors outside of the GCP's control.</p> <p>Reference: 'C2C Outline Business Case, Strategic Case GCP January 2020.</p>	<p><i>"The C2C scheme will need to deliver on the following elements:</i></p> <ul style="list-style-type: none"> • <i>High frequency, reliable services delivering maximum connectivity"</i> <p>Connectivity is only good between Cambourne/Bourn Airfield and the University West Campus. No other employment centre, secondary school, further education establishment, leisure or cultural centre is made more accessible by this busway, including the Cambridge City Centre, the Biomedical Campus and the Science Park.</p> <p>Commuters on the C2C are not taken directly to their employment destinations; they will have to wait for connections which will add time to the journey times.</p> <p>The Biomedical Campus and City Centre will be better served by the coming EWR train link, and the Science Park will continue to be served with faster journey times by new direct, 905 bus that uses A428 infrastructure from Cambourne.</p> <p>See A.7 (p.9) for fuller explanation.</p> <p><i>"A HQPT system using rapid transit technology on dedicated routes"</i></p> <p>There is no clear evidence that dedicated routes are necessary. The existing Citi4 service from Cambourne to Cambridge routinely covers the journey in 20 minutes off-peak, and reducing that by higher-speed vehicles is of limited added value. Bus lanes at pinch points on existing infrastructure would reduce the delay at rush hour, as the in-carriageway report by CambridgePPF demonstrates: https://www.cambridgeppf.org/Handlers/Download.ashx?IDMF=</p>

			<p>19b623a9-920d-425e-b8bd-41f2c95dc0fd (2021).</p> <p>Missing from this list of constraints is the requirement to be compatible with the merging CAM Metro and its Objectives and sub-objectives. As C2C's compatibility has been placed in doubt by the June 2020 Jacob's report, this uncertainty should be recorded here.</p> <p>June 2020, Jacobs Review of C2C against CAM Objectives</p>
C.2	<p>Scotland Farm site chosen as preferred location for Park & Ride site with a capacity for up to 2000 cars. It will also provide a travel hub with potential for cycle storage as well as waiting rooms/information point and retail outlet.</p>	<p>Scotland Farm is attractive location for commuters from areas to the west of Cambridge along the A428 corridor but less so for car users from the south exiting at jn. 13 of the M11. The success as a travel hub will depend on the number of car users and cyclists attracted to the site.</p> <ul style="list-style-type: none"> Any new Park & Ride service will need to be to a standard similar to that currently operating for Cambridge's Park & Ride services as set out in the current Access Agreement, which states that the 	<p><i>"Scotland Farm is attractive location for commuters from areas to the west of Cambridge along the A428 corridor"</i></p> <p>The location of a new Park and Ride site located at Scotland Farm should be reconsidered in the light of the announcement by EWR that its preferred location for a new station is to the north of Cambourne alongside the A428. This is the ideal location for a major transport hub at which all public transport services can be linked and accessed conveniently. Long distance passengers will be able to change from rail to local bus services at the same point.</p>

		<ul style="list-style-type: none"> • Bus Operator will operate the Park & Ride Bus Services in accordance with the established minimum requirements. • Provide appropriate traffic calming and management proposals to mitigate rat-running to Park & Ride sites. • The alternative P&R site at Madingley Road may be redeveloped for other use when the lease expires later this decade. <p>Reference: 'C2C Outline Business Case, Strategic Case GCP January 2020.</p>	
<p>C.3</p>	<p>Increase active travel through improved infrastructure for cycling and walking:</p> <ul style="list-style-type: none"> • Comberton Greenway will complement the C2C project as it develops improved pedestrian and cyclist routes with a segregated path continuing beyond the proposed bus route. • Madingley Road cycling improvements enabled by reallocation of road space that complements C2C scheme 	<p>The scheme must provide a segregated route for non-motorised users, as a minimum to include cyclists and walkers, but where appropriate equestrians, and to ensure that all pedestrian facilities are accessible for all. The existing cycling network between Cambourne and Cambridge has sections of segregated links of uneven quality but is discontinuous and does not in total provide a high-quality segregated route which would cater for the potential increased modal share of cyclists along the corridor. Madingley Road potential bus lane/priority measures reallocated to cycling infrastructure.</p> <p>Reference: 'C2C Outline Business Case, Strategic Case GCP January 2020.</p>	<p><i>"The scheme must provide a segregated route for non-motorised users, as a minimum to include cyclists and walkers, but where appropriate equestrians, and to ensure that all pedestrian facilities are accessible for all"</i></p> <p>A segregated route for non-motorised users is needed but it is not necessary for the C2C preferred option to deliver this segregated route adjacent to the busway. Indeed, the non-motorised route included in the C2C preferred option is not the best performing route for non-motorised users. The preferable route for non-motorised users is an extension of the Comberton Greenway using the Wimpole and Harcamlow Way, because this would avoid the steep Madingley Hill, be more direct, serve more people and trip generators and be more attractive (away from traffic, vehicles, noise and pollution) and would therefore attract greater modal shift (and thus better achieve policy objectives).</p> <p>The GCP created a policy for itself that its major infrastructure schemes should also include provision for non-motorised users, without questioning whether such provision</p>

			<p>was already provided by other routes or could be better delivered by other routes. In the case of C2C, no published material has been produced to show that the GCP has carried out any work to consider the best performing route for non-motorised users between Cambourne and Cambridge.</p> <p>The GCP tends to claim that a cycleway next to an on-road busway would be necessary because it would be impossible to stop local users riding bikes on the bus lane. On Madingley Hill there are very few local residents so this is not a valid argument in this location, and the Greenway link is planned through Coton c.100m to the south in any case.</p> <p>The non-motorised route is important in the development of the preferred option. By insisting (without any justification) that the non-motorised route should be adjacent to the bus route, this increased the width of the scheme and the land required for it, meaning that it was much more difficult to deliver the scheme adjacent to the road carriageway. This led to the consideration of an off-road route. Had the GCP considered the option of delivering the non-motorised route separately from the bus route, then the assessment would have been different.</p>

Table D: Strategic Fit

	D. Strategic Fit:		
D.1	<p>A substantial level of housing and employment development is planned, or is already under development, along the C2C corridor include Cambourne West, Bourn Airfield, West Cambridge and North West Cambridge (Eddington).</p>	<p>Based on current plans, both those within the current Local Plan or well established through planning applications or known to be emerging, there are around 11,700 additional houses planned and around 13,400 additional jobs along the C2C corridor. Around 50% of all housing planned (c. 6,000 houses) would be directly linked to Cambridge City centre and other key employment locations via the C2C project.</p> <p>Reference: 'C2C Outline Business Case, Strategic Case GCP January 2020.</p>	<p><i>“Based on current plans, both those within the current Local Plan or well established through planning applications or known to be emerging, there are around 11,700 additional houses planned and around 13,400 additional jobs along the C2C corridor”</i></p> <p>Whilst a large number of new homes along the route are planned, the Bourn Airfield development was recently considered by SCDC Planning Committee, where it emerged that the build-out rate is planned at 200 units per year, meaning that it won't be completed until 2038. At this rate nearly half the units could be constructed after East West Rail is running services.</p> <p>Bourn Airfield only has permission for 500 units until public transport improvements are in place, when the developer is required to revert to South Cambridgeshire District Council prior to the remaining 3000 homes being started. [Stated at South Cambridgeshire District Planning Committee, 19 February 2021.]</p> <p>Cambourne West will follow a similar trajectory and is unlikely to reach its full complement of housing until 2035. Eddington and West Cambridge developments are likely to use local public transport services which are already in place.</p> <p>This gives more than enough time to wait until the details of the multi-billion pound EWR and CAM schemes to emerge before deciding what constitutes a complementary bus scheme.</p> <p>In the meantime, the LLF has asked for a complementary in-carriageway bus scheme to be developed, of the type proposed by CPPF (see above), which would provide residents with immediate benefit (see B.2).</p>

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<p>D.2</p>	<p>The C2C project has been recognised in the Local Plans and local transport strategy as a key project to help address these infrastructure constraints on growth by linking Cambridge to growth areas to the west. The provision of a HQPT service supporting journeys to key employment sites presents a viable alternative to car use/purchase for residents in new developments.</p>	<p>Two significant new planned developments (Cambourne West and Bourn Airfield) are, in housing terms, judged to be fully dependent upon the C2C project given the clear policy position within the adopted Local Plan and as supported by Section 106 commitments and ongoing negotiations.</p> <p>Reference: 'C2C Outline Business Case, Strategic Case GCP January 2020.</p>	<p><i>"Two significant new planned developments (Cambourne West and Bourn Airfield) are, in housing terms, judged to be fully dependent upon the C2C project"</i></p> <p>This is not correct in two respects. First, the Cambourne West development proceeded, and the homes are now being sold, in spite of the delay in the C2C busway. Similarly, given planning consent has been granted for the development of Bourn Airfield, the developments are not "fully dependent" on the busway.</p> <p>Second, since the EWR link will impact patronage, and therefore the business case, of C2C, these developments are dependent on developing a package of complementary transport measures that serve the communities. To state these developments are fully dependent on C2C alone is misleading, as C2C may not happen as a result of the emergence of EWR with a station at Cambourne. The constraint should be updated to reflect this.</p>
<p>D.3</p>	<p>Supporting increased development density of the corridor: The assumption is that the added capacity of the scheme will support the densification in the areas easily accessible to the busway.</p>	<p>The growth depends on the scheme providing enough capacity to meet anticipated demands.</p> <p>Reference: 'C2C Outline Business Case, Strategic Case GCP January 2020.</p>	<p><i>"The assumption is that the added capacity of the scheme will support the densification in the areas easily accessible to the busway"</i></p> <p>Assuming the C2C transport vehicles have similar capacity to buses and operate at full capacity during the peak hours then those vehicles have the ability to move a maximum of 900 passengers per hour which is hopelessly inadequate for the stated 6000 homes which will require access to Cambridge and main employment areas. Trains from Cambourne Station have the capacity to transport up to 2500 passengers per hour.</p> <p>It is the EWR route that will support these new developments (not a busway that does the same thing, but far less effectively), and supported by a package of complementary bus measures.</p>

<p>D.4</p>	<p>The scheme offers further capacity and therefore underpins growth. Whilst there is a wealth of supporting evidence for this assertion, it is hard to establish how much effect on relieving the capacity this scheme will have and how much growth that this scheme in isolation will enable. The scheme is assumed to be the launch point for further connections and shift away from private vehicles.</p>	<p>Existing network cannot increase travel capacity much further. A major constraint is whether this scheme can successfully create the conditions for modal shift? Are other measures required to achieve the 30% modal shift targeted in the GCP transport strategy?</p> <p>Reference: 'C2C Outline Business Case, Strategic Case GCP January 2020.</p>	<p><i>"Existing network cannot increase travel capacity much further"</i></p> <p>Given there has been no attempt by GCP to provide an in-carriageway solution on this corridor, of the type long requested by the LLF, this statement is not sustainable.</p> <p>The greatest constraint on capacity and connections is the congested city centre, and a lack of coherent plan for how that will be overcome. This needs to be added into the constraint list (see A.7)</p>
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Table E: Connections to CAM and EWR

	E. Connections to CAM and EWR		
E.1	<p>The CAM project proposes an expansive metro network that seamlessly connects Cambridge City Centre, key rail stations (Cambridge, Cambridge North and the future Cambridge South), major City fringe employment sites and key 'satellite' growth areas, both within Cambridge and the wider region.</p>	<p>The GCP routes will form the first phase of the Combined Authority's CAM project. This scheme is still at the planning stage (SOBC) and the preferred alignment, scheme costs and appraisal has yet to be confirmed in an Outline Business Case. There is uncertainty regarding the timeline for CAM implementation; the SOBC indicated a construction period between 2024 - 2030 but the timeline for the preparation of the OBC has already slipped so this appears to be optimistic.</p> <p>Reference: <i>Cambridgeshire Autonomous Metro Strategic Outline Business Case, CPCA, February 2019</i></p>	<p><i>"The GCP routes will form the first phase of the Combined Authority's CAM project"</i></p> <p>The construction periods for EWR and the GCP routes forming the first phase of the Combined Authority's CAM project now appear to be almost concurrent. Both are scheduled to start in 2024/25 and both are scheduled to complete at the end of the decade.</p> <p>There is no realistic prospect of CAM being delivered before East-West Rail, given the relative statuses of the projects. This all needs additional explanation and clarification.</p> <p>C2C cannot reasonably be used as the first phase of CAM, given the level of uncertainty over what CAM will be and whether it will ever come into being: type and size of vehicles, tunnel specifications, tunnel portal locations (in particular in West Cambridge); frequency and speed of movements; guidance system(s); fire, safety and evacuation requirements. Can the vehicles cope with the 8 right-angled turns in the current alignment? Where is the CAM funding coming from?</p> <p>It is therefore not so much the timeline that is the constraint, but uncertainty over general compatibility parameters, which if not aligned, could result in large part of the C2C busway having to be supplemented and/or replaced soon after completion.</p>

<p>E.2</p>	<p>CAM SOBC assumes the portal connecting the city centre underground section to the C2C route will be in West Cambridge at the southern edge of the proposed development area. The CAM station will be at ground level in this vicinity.</p>	<p>Alternative route options for the CAM are still being explored. So far, these rule out any alignment going via the Girton Interchange. A northern route corridor option(s) has been proposed. These would follow an alignment to the north of the A1303 and American Cemetery and connecting to the north side of the A428 and proceeding to Scotland Farm P&R and then crossing over to Bourn Airfield development. An alternative option to extend the CAM tunnel to the west of the M11 on the northern side of A1303 has also been explored. A preliminary evaluation of these route options indicates that they would be higher cost alignments for the busway/CAM and would have environmental impacts on the American Cemetery, 800 Wood, Madingley village and White Pits Plantation, incur longer journey times compared to the preferred busway option and would not attract as many bus riders.</p> <p>Reference: <i>CAM Indicative Northern Route Corridor Options Map, CPCA, October 2020.</i></p>	<p><i>“Alternative route options for the CAM are still being explored”</i></p> <p>The LLF considers it a positive development that alternative alignments are being considered. Since the decision to amalgamate the C2C scheme with CAM in 2018, which changed the objectives of the scheme significantly, the only alternative to the preferred option has been a ‘dominimum’, on-road, non-segregated option, which does not meet the aspirations laid out in the Steer Davies Gleave Mass Transit Options Appraisal commissioned by the Combined Authority in January 2018. To this date, no viable alternative has ever been considered by the GCP.</p> <p>However, the main reason why alternative route options are being explored has been omitted. The constraint should include the findings of the CPCA commissioned report by Jacobs in June 2020 that the GCP preferred alignment did not meet 12 of the CAM objectives and sub-objectives (see above). This being the case, alternative routes should be examined.</p> <p><i>“So far, these rule out any alignment going via the Girton Interchange”</i></p> <p>This is misleading. Whilst it is true to state the CPCA has not looked at a route via the Girton Interchange, such an option has not been ruled out. Indeed it is likely to be more attractive now that Highways England has agreed to consider an upgrade in its next RIS programme (see A.8).</p> <p>The LLF has consistently asked for a route alignment to be developed that uses the existing infrastructure of the A428 and continues via The Girton Interchange, as an alternative to the current preferred option. It remains our belief that this is both possible, will deliver most benefit particularly now HE are seriously considering an upgrade to the GI.</p>
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			<p>GCP did agree to assess this and produced a technical note in May 2019.</p> <p>https://citydeal-live.storage.googleapis.com/upload/www.greatercambridge.org.uk/transport/transport-projects/C2C LLF Technical Note Northern Route 22-05-2019.pdf</p> <p>This report was considered wholly inadequate by the LLF as no attempt was made to identify a bus alignment, cost it or analyse its benefits or its futureproofing potential despite, Such as route would provide potential transport benefits in terms of greater patronage, modal shift, BCR and connectivity over the preferred option, plus, given it uses an existing transport corridor, it would have far lower environmental impacts.</p> <p>The LLF does not consider this technical report sufficiently robust to justify the rejection of an alternative via the Girton Interchange, and particularly not now it is looking likely for an upgrade.</p>
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<p>E.3</p>	<p>CAM: As a segregated route, the preferred option for the C2C is aligned with the CAM project, at least on the section between West Cambridge and Bourn Airfield. CAM connections through/around Cambourne will depend on the EWR station location. Connections to rest of the CAM network will be via a tunnel through the City Centre.</p>	<p>C2C travel hubs at Scotland Farm P&R site and in Cambourne may require the CAM to follow a different alignment to the C2C busway in these sections in order to access these facilities depending on the vehicle technology chosen.</p> <p>Reference: 'C2C Outline Business Case, Strategic Case GCP January 2020.</p>	<p><i>“As a segregated route, the preferred option for the C2C is aligned with the CAM project”</i></p> <p>This is incorrect. The Jacobs Report in June 2020 demonstrated that the preferred C2C alignment did not meet 12 of the CAM sub-objectives or support the main CAM objectives. There is much uncertainty on this point. June 2020, Jacobs Review of C2C against CAM Objectives</p> <p><i>“CAM connections through/around Cambourne will depend on the EWR station location”</i></p> <p>The current consultation on route alignment for the central section of EWR includes alignments that will clearly impact on all of the alternative route options being explored for the CAM. Until a decision has been reached on the final route alignment for EWR all comparative assessments for the alternative CAM routes are premature. The overriding constraint in determining the preferred route to Cambourne to Cambridge Better Public Transport Project is the final East West Rail route alignment and the Cambourne station location. To pretend otherwise is naive and negligent.</p> <p><i>“C2C travel hubs at Scotland Farm P&R site and in Cambourne may require the CAM to follow a different alignment to the C2C busway in these sections in order to access these facilities depending on the vehicle technology chosen”</i></p> <p>This suggests the C2C route is not CAM compatible, contrary to what is stated in B.6.</p> <p>Locating the EWR station north of Cambourne (and north of the A428) would make the GCLP site submission for</p>
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			<p>6000 new homes in North Cambourne an enormously attractive proposition. Locating a travel hub P&R in this new settlement would clearly make more sense than to pursue the Scotland Farm option. This constraint is out of date.</p>
<p>E.4</p>	<p>EWR: The C2C full business case will also need to include a sensitivity test to assess the impact of EWR Rail once there is clarity with regards to the proposals. It is unlikely that EWR will have an impact of the core business case for C2C given that it is unlikely that any EWR proposals will have achieved consent during the C2C assessment period.</p>	<p>EWR focuses substantially on longer term growth beyond the Local Plan period and not the immediate and worsening issues of congestion and lack of connectivity for expanding communities west of Cambridge. Once a preferred alignment has been agreed for EWR and confirmation of the location of a Cambourne station there will need to be a programme to ensure integration between EWR, C2C and the wider CAM network.</p> <p>Reference: 'C2C Outline Business Case, Strategic Case GCP January 2020.</p>	<p>Until 2018, the working assumption was that EWR would be aligned via Bassingbourn not Cambourne, and the C2C scheme developed on that assumption. Given this is now incorrect, the business case for C2C should be thoroughly re-examined as a result.</p> <p><i>“It is unlikely that EWR will have an impact of the core business case for C2C given that it is unlikely that any EWR proposals will have achieved consent during the C2C assessment period”</i></p> <p>The LLF profoundly disagrees with this statement. The timetable for delivery of both projects appear to run roughly in parallel. In any case, as is shown in D.1, the Bourn Airfield and Cambourne West developments are unlikely to reach completion until 2040, therefore why rush through C2C before clarity is gained on EWR and CAM?</p> <p>EWR will certainly impact the business case for C2C. A large number of potential public transport users in the C2C corridor will use EWR to meet their commuting needs from the late 2020s. C2C will be competing with a faster, probably more reliable and much more user-friendly heavy rail option for almost all its passengers (i.e. those to Biomedical Campus, CB1 and the Science Park) except those seeking to access the West Cambridge campus.</p>

			<p>The reluctance of GCP to consider the implications of EWR is in sharp contrast to the stated policy on the latter’s website: ‘It is quite common with a lot of infrastructure projects of this nature that funding is allocated in tranches to make sure the business case continues to be robust and stringent financial controls are in place’.</p> <p>www.eastwestrail.co.uk</p> <p><i>“Once a preferred alignment has been agreed for EWR and confirmation of the location of a Cambourne station there will need to be a programme to ensure integration between EWR, C2C and the wider CAM network”</i></p> <p>This strategy has consistently been brought into question by the LLF. EWR is a multi-billion pound scheme with far greater design constraints and much greater potential to move large numbers of people. It makes sense to wait until its alignment and station location is established before designing the C2C/ CAM scheme, and then develop them together in a manner that is complementary.</p>
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Table F: C2C Options Selection

	F. C2C Options Selection		
F.1	<p>Options Sifting: The scheme options were developed in two phases. In total 34 options were considered which were sifted through a multi-criteria assessment framework to derive 6 options (3 phase 1 & 3 phase 2) including the P&R site options. These were then combined into 5 options for both phases including a scheme comparator which was eventually selected as the preferred option. The optioneering process reviewed a wide range of options suggested by stakeholders and following consultation. The assessment criteria followed DfT appraisal guidelines and covered a broad range of issues from policy goodness-of-fit to local environmental impacts.</p>	<p>The MCAF criteria is a qualitative exercise that measures the performance of each option against a wide range of factors grouped into 6 themes. The option scoring is justified on the available evidence but by its nature is subjective. The results indicated that the best performing option was the segregated off- road option with Park & Ride at Scotland Farm but only by a small margin.</p> <p>The preferred option would create a new busway crossing designated green belt in West Fields, Coton Orchards and National Trust lands. Options following alignments for the CAM and EWR were not evaluated as these are not confirmed, nor are they committed schemes.</p> <p>Reference: C2C Outline Business Case, Options Appraisal Reports 1, 2 & 3, GCP January 2020.</p>	<p><i>“The scheme options were developed in two phases. In total 34 options were considered”</i></p> <p>In the initial sweep of 34 options, why was an alignment that used existing A428 infrastructure, via the Girton Interchange (the largest interchange in the East of England with a travel corridor to it already in place) with a P&R in its vicinity not ever considered? Given the sensitivity of the landscape through which the preferred alignment must pass, all reasonable alternatives have not been considered, as NPPF legislation demands. The existing A428 corridor should have been, and still needs to be, meaningfully assessed.</p> <p>Until 2018, the options sifting and optimisation process took no account of the strategic or operational exigencies of CAM. Indeed, when CAM compliance was stated as a requisite for the scheme (i.e. after OAR1-3), the available options were the preferred off-road route and two on-road alternatives which do not meet the SOBC requirements of CAM, and are therefore unviable. No review of alternative options has been made, despite the Jacob’s report of June 2020 raising concerns about CAM compliance.</p> <p>Only the preferred option has ever been worked up to a meaningful level. No other off-road option has been developed, nor has an optimised on-road alternative ever been assessed that could have allowed meaningful comparison.</p>

			<p><i>“The optioneering process reviewed a wide range of options suggested by stakeholders and following consultation”</i></p> <p>This is not true, and should be removed as an assumption. Neither an optimised on-road scheme, nor an alignment via Girton Interchange have received a meaningful review. Nor has a new option-sifting process been undertaken following amalgamation with CAM. As a result, widespread public opposition to this scheme is a considerable constraint.</p> <p><i>“The option scoring is justified on the available evidence but by its nature is subjective”</i></p> <p>In 2018, the LLF profoundly disagreed with GCP’s scoring in the MCAF process, considering it highly subjective and weighted towards a desired outcome. Moreover, although undertaken after CAM compliance became requirement of C2C (February 2018), it did not consider the longer term implications of this – particularly problematic as much of it is as yet unknown (type of vehicles, surface, frequency of service, infrastructure requirements, safety close to housing, ability to make sharp turns, portal location etc.) MCAF needs be reassessed in light of this.</p> <p>Similarly, MCAF needs to be reassessed in light of the emergence of EWR at Cambourne, as the infrastructure of C2C will either predetermine aspects of these larger projects, duplicate them, or become quickly redundant.</p> <p>Once these the parameters and implications of these two larger schemes are known, a new sifting process should take place to ensure the best possible complementary scheme emerges.</p>
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<p>F.2</p>	<p>Alternative alignments to avoid Coton and Hardwick were evaluated as part of the options development process. These were not found to be suitable and performed worse than the preferred option and no better than the other options assessed.</p>	<p><i>Alternative northern route options via Girton interchange are not deliverable within the time horizons for the project and not compatible with CAM route corridor options.</i></p> <p><i>Other northern route options to the north of the American Cemetery are constrained by environmentally sensitive areas and heritage assets. The Cambridge American Cemetery and the American Battle Monuments Commission is regarded as a unique national memorial which honours the American military personnel killed in the second world war. They would oppose any on-road or off-road scheme which impacted the setting of the cemetery including removing the verges along the A1303 and the uninterrupted views to the north.</i></p> <p><i>On-road options for bus lanes/bus tidal flows are also constrained by impact on SSSI and American Cemetery along the A1303 as well as impacts on properties along the route.</i></p> <p><i>Reference: C2C Outline Business Case, Options Appraisal Reports 1, 2 & 3, GCP January 2020. Madingley Road 'Quick-Win' Options Outline. Technical Note. Mott Macdonald. May 2019.</i></p>	<p><i>“Alternative alignments to avoid Coton and Hardwick were evaluated as part of the options development process. These were not found to be suitable and performed worse than the preferred option and no better than the other options assessed”</i></p> <p>The LLF has had many concerns about the process surrounding the assessment of alternatives, starting with the lack of a Girton Interchange option even in the 2013 option sifting (see F.1). However, the fact that the preferred option through Hardwick and Coton has not been assessed against any other optimised option, and only a 'do minimum' on-road alternative is of profound concern.</p> <p>Furthermore, following the decision to amalgamate the C2C scheme with CAM in 2018, which undoubtedly represented a major changing of the goalposts, the only alternative to the preferred option has been a 'do-minimum', on-road, non-segregated option, which is actually non-viable if one considers the aspirations laid out in <i>the Steer Davies Glebe Mass Transit Options Appraisal</i> commissioned by the Combined Authority, January 2018. No viable alternative has therefore <u>ever</u> been considered for CAM, therefore the LLF fundamentally disagrees that alternative alignments have been adequately evaluated.</p> <p><i>“On-road options for bus lanes/bus tidal flows are also constrained by impact on SSSI and American Cemetery along the A1303 as well as impacts on properties along the route</i></p> <p>This is not necessarily true. An on-road solution which would not impact the setting of the American Military cemetery is possible and has been detailed in the In-Carriageway report commissioned by Cambridge Past Present and Future, 2021</p> <p>https://www.cambridgeppf.org/Handlers/Download.ashx?IDMF=</p>
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			<p>19b623a9-920d-425e-b8bd-41f2c95dc0fd</p> <p>The problem is that GCP has made no effort to develop a scheme that might overcome the constraints presented by the American Cemetery and SSSI wood, despite stakeholders believing it possible and despite Historic England suggesting that mitigation measures should be further developed. The “Quick Win Options Outline” Technical Note, produced by GCP in May 2019, which claimed that only a short stretch of land take was viable, outbound, near the roundabout, is not credible. [This document has been previously supplied.]</p> <p>Both the Cambridge American Cemetery and SSSI are already flanked on their southern boundaries by an A road which is congested during morning peak hours. It is illogical to suppose that an appropriately designed in-carriageway bus scheme would worsen that, as was suggested in the 2018 MCAF Appraisal. In fact, any degree of modal shift from private cars to buses would only improve matters.</p> <p><i>“[The American Cemetery] would oppose any on-road or off-road scheme which impacted the setting of the cemetery”</i></p> <p>This is correct, but it is not true to assume therefore that the American Cemetery tacitly support the GCP preferred option, which is also of concern due to the urbanisation it brings in the vicinity the Scheduled Monument.</p> <p><i>“Alternative northern route options via Girton interchange are not deliverable within the time horizons for the project and not compatible with CAM route corridor options”</i></p> <p>This assumption/constraint has not been properly tested.</p>
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			<p>There is no evidence that delivery of a route via/near Girton Interchange would take longer than an off-road route via Coton or that it would be incompatible with CAM options, (which have not yet been clearly defined).</p> <p>The GCP Technical Report on the subject of May 2019 (previously provided) was wholly inadequate as it did not seriously consider an alignment, its cost or its benefits (see E.2) The lack of investigation of this potentially viable alternative should be added as a constraint.</p>
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Table G: Economic Case

	G. Economic Case		
G.1	<p>Options Appraisal: The preferred route from Cambourne to Grange Road has been analysed for its economic benefits and costs. Benefits were assessed at 3 levels following Transport Appraisal Guidelines: level 1 measures the transport user benefits to bus riders and decongestion benefits for car users; level 2 estimates the wider economic benefits assumed to accrue from the scheme from agglomeration; and level 3 estimates the wider economic benefits from land use changes at national and local level, including Gross Value Added through jobs created and the land value uplift from the scheme. These level 3 additionality benefits are what justify the scheme producing a BCR of 1.47 (increased to 3.48 with Greater Cambridge additionality benefits) compared with just 0.43 for the level 1 benefits and 0.48 for the adjusted level 2 benefits.</p>	<p>The scheme has been presented as creating 975 new jobs and increasing housing by around 6,000 which are dependent on the scheme. There is an increase in GVA of £102.8m per annum attributed to the scheme. Over a 30-year period this delivers a significant benefit of £676.1m plus £458m from land value uplift, giving a total benefit of £1.13bn. What constrains this assumption is that if the scheme does not support the housing and jobs growth as expected then there is a danger of reduced economic growth.</p> <p>Reference: <i>C2C Outline Business Case, Economic Case GCP January 2020.</i></p>	<p><i>“These level 3 additionality benefits are what justify the scheme producing a BCR of 1.47 (increased to 3.48 with Greater Cambridge additionality benefits) compared with just 0.43 for the level 1 benefits and 0.48 for the adjusted level 2 benefits”</i></p> <p>The level I and 2 benefits show this scheme to offer very poor value for money (less than BCR = 1). GCP has focused on the off-rad benefits being better than those of a (non-optimised) on-road alternative. Whereas the fact is that all the alternatives developed offered very poor value for money.</p> <p>The level 2 and level 3 benefits appear to lack any reasonable evidence base. The underlying argument seems to be that a faster and more reliable bus service would drive/support housing and jobs growth. However, EWR will deliver far greater transport benefits, absorbing the large bulk of any WEBs. Any residual WEBs for an off-road scheme will be negligible.</p> <p><i>“There is an increase in GVA of £102.8m per annum attributed to the scheme”</i></p> <p>This is untrue. It is based on a false premise, that “44% of the jobs supported by the C2C project can be considered net additional at a UK level.”</p> <p>The OBC makes two unsubstantiated claims, that:</p> <ol style="list-style-type: none"> 1. the entire risk of job relocation abroad falls on the delivery of the C2C busway;

			<p>2. existing jobs being at risk is equivalent to new jobs being “net additional at a UK level”.</p> <p>Both claims are misleading, the first as it discounts not only other transport schemes, such as East West Rail, but also national government policies, such as post-Brexit trade agreements or tax treatment of R&D expenditure and venture capital.</p> <p>The second claim as a job is only net-additional at a UK level if it is filled by someone who immigrates into the UK <i>and that post would not otherwise be filled</i>. Otherwise, only a fraction of the GVA associated with the job (SEN* page 85, Table 14) may be counted towards the Wider Economic Impacts.</p> <p>*SEN = Outline Business Case Appendix J: Strategic Economic Narrative & Economic Impacts Report, Mott MacDonald, 17 January 2020</p>
G.2	<p>Segregated busway: Comparison of wider economic impact assessment of the off-road (preferred option) and the on-road option estimates that the on-road option has a slightly positive BCR when local WEI are included whereas the off-road option has a much higher BCR.</p>	<p>The traffic growth generated by the developments along the corridor would increase congestion and impact on the journey times and reliability of an on-road scheme along the A1303 even with bus priority measures such as bus lanes or a tidal bus way.</p> <p>Reference: <i>C2C Outline Business Case, Economic Case GCP January 2020.</i> <i>'C2C Outline Business Case, Options Appraisal Reports 1, 2 & 3, GCP January 2020.</i></p>	<p><i>“Comparison of wider economic impact assessment of the off-road (preferred option) and the on-road option estimates that the on-road option has a slightly positive BCR when local WEI are included whereas the off-road option has a much higher BCR”</i></p> <p>As noted in G.1, all the GCP schemes to date offer very poor value for money, which makes comparisons between them relative only.</p> <p>It should also be noted that GCP have never compared the preferred option to an alternative off-road route in any meaningful way, nor have designed, assessed and compared an optimised on-road alternative. Comparisons are being made with a ‘do minimum’ on-road alternative only.</p> <p>Yet there is in fact no reason why a well-designed on-road scheme on the A1303 should not perform equivalently to an off-road scheme, especially considering that it is much</p>

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			more efficient for the on-road scheme to access both the M11 (for Biomedical Campus journeys) and the City Centre. Even if a small time saving is achieved by off-road running parallel to the A1303, it would be dissipated when the route returns to the congested road network in the city centre.
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<p>G.3</p>	<p>Journey Times, Reliability and Ridership: The traffic modelling for the preferred option estimates a 167% increase in bus ridership when the scheme opens and 233% by 2036 when all the housing and employment in the corridor is assumed to be built. This amount of mode shifting, mainly from private car, is predicated on the C2C delivering significant journey time savings to users from Cambourne, Bourn village and the Scotland Farm P&R. For instance, C2C passengers from Cambourne to Cambridge city centre are predicted to have 23 minutes lower journey time in the morning peak hour compared to a do minimum scenario. Alternative on-road options do not offer anywhere near this journey time saving or reliability.</p>	<p>Despite the forecast increase in bus ridership, there will still be a lot of traffic generated by the developments in the corridor so traffic congestion will remain a problem. The predicted mode shift only increases the bus mode share east of the Scotland Farm P&R site from 4% to 6% of travel demand. Off peak C2C journey times are slightly longer due to the diversion from the busway to the Scotland Farm P&R site.</p> <p>Reference: 'C2C Outline Business Case, Economic Case GCP January 2020.</p>	<p><i>"Alternative on-road options do not offer anywhere near this journey time saving or reliability"</i></p> <p>This is untrue, as the report Cambourne to Cambridge: In-Highway Proposals for High Quality Public Transport Scheme, produced for CPPF, demonstrates. https://www.cambridgeppf.org/Handlers/Download.ashx?IDMF=19b623a9-920d-425e-b8bd-41f2c95dc0fd</p> <p>GCP itself published in its 2017 consultation materials that the journey time from Cambourne to Cambridge City Centre would be (to the nearest minute) 22-34 mins on an off-road route compared to 25-35 mins on an on-road route. This was revised in the GCP's 2019 consultation materials to 32-39 minutes for off-road and 35-42 minutes for on-road. These are clearly not materially different.</p> <p>Reliability has not been properly estimated for any C2C route option, but data provided by GCP (see Fig 4 of the Outline Business Case) show that other bus lanes around Cambridge have very high journey time reliability, e.g., the bus lane between Ditton Walk and Napier St on the A1134 is <u>more</u> reliable than the Cambs Guided Busway between St Ives and Histon, despite its interaction with normal road traffic.</p>
<p>G.4</p>	<p>Sensitivity Tests: A series of sensitivity test were performed to assess the robustness of the scheme against varying levels of growth. This supports the economic case for the scheme in that where costs may increase the VfM of the scheme remain</p>	<p>The scheme is judged to have medium VfM but is sensitive to changes in land value uplift and GVA generated by additional jobs. If these are less than expected, then the VfM would be poor.</p> <p>Reference: 'C2C Outline Business Case,</p>	<p><i>"The scheme is judged to have medium VfM"</i></p> <p>This is incorrect and the true figure is low. This is because the GVA has been miscalculated (see G.1).</p> <p>These sensitivity tests do not differentiate between off-road and on-road options and are not a valid basis for decision-making. Since journey times and reliability are not</p>

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	unchanged, and that if a greater level of growth does materialise then the VfM of the scheme will increase.	<i>Economic Case GCP January 2020.</i>	materially worse and capacity is equivalent and sufficient, the VfM of an on-road scheme will always be superior to that of an off-road scheme, whatever the level of growth.
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<p>G.5</p>	<p>Environmental Impact: Overall it is assumed that environmental factors are very limited in terms of the schemes impact on the proposed route. Noise, Air quality and emissions are all very limited. It is assumed they will have minor benefits or be neutral. Similarly, for the landscape impact it is neutral for the proposed route. There is a slightly higher impact on biodiversity, however there are mitigation opportunities for the scheme to reduce impact.</p>	<p>The scheme must achieve a 20% net biodiversity gain. The segregated busway alignment has been designed to minimise the impacts on the environment. Nevertheless, it will require mitigation measures to lessen its impact on the landscape especially where it crosses the green belt and National Trust land. There is also the limitation that if the targets for modal shift are not reached then there will be reduced benefit to the environmental factors such as emissions and air quality.</p> <p>Reference: 'C2C Outline Business Case, Economic Case GCP January 2020.</p>	<p><i>“Overall it is assumed that environmental factors are very limited in terms of the schemes impact on the proposed route”</i></p> <p>Given the construction of the busway and associated loss of trees at Hardwick, 100+ houses will now be faced with eight lanes of continuous traffic in front of their houses, four of the lanes raised in places (the A428) with lorries travelling by. How can this impact be assessed as ‘very limited’? It is also true that GCP either did not recognise the impact on Hardwick village until the summer of 2019, or deliberately produced misleading plans.</p> <p><i>“Similarly, for the landscape impact it is neutral for the proposed route”</i></p> <p>An off-road scheme has to cross large sections of open Green Belt countryside protected by National Trust covenants. How can that impact be reasonably ‘neutral’ when it will fundamentally change its character? This has been challenged by the National Trust and should not be considered an assumption until independent assessment has taken place. GCP have always acknowledged that the environmental impact of an off-road scheme is one of its weaknesses, but simply ‘a price worth paying’.</p> <p>The LLF has consistently raised concerns about the representation of environmental issues in GCP reports, including submissions from Historic England, Natural England and the National Trust. Indeed an FOI raised in 2018 revealed GCP employees were unhappy with how reports from those organisations were represented in GCP literature.</p>
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			<p>The mitigation hierarchy is to first avoid negative impact before considering mitigation. It is self-evident that a scheme that uses an existing highway must have less environmental impact than a completely new roadway and should be considered as the first option.</p> <p>The decision on the route alignment of East-West Rail will have implications for the impact assessment of the C2C scheme. This is because there would be a planning requirement to consider the cumulative impacts on the landscape of both East West Rail and the C2C preferred route. Without knowing the preferred route alignment of East West Rail, it is not possible to understand the cumulative impact of both schemes. It is therefore premature to consider the EIA of the C2C preferred route, which should at least wait until East West Rail has confirmed its preferred option for the section between Cambourne and Cambridge.</p>
<p>G.6</p>	<p>Green Belt: Whilst it is always preferable to avoid any impacts on the Green Belt, in the case of C2C, impact is inevitable. The National Planning Policy Framework establishes that “certain other forms of development are also not inappropriate in the Green Belt provided they preserve its openness and do not conflict with the purposes of including land within it. These include local transport infrastructure which can demonstrate a requirement for a Green Belt location.”</p>		<p><i>“Whilst it is always preferable to avoid any impacts on the Green Belt, in the case of C2C, impact is inevitable”</i></p> <p>It is correct that the GCP’s preferred option inevitably damages the green belt, but it is not true that all options would inevitably do so. Suitable alternative, particularly those using existing transport corridors, have not been adequately assessed. This is a major constraint given all reasonable alternatives are expected to be explored as part of compliance to NPPF legislation.</p> <p>Optimised schemes using existing infrastructure were either never examined (i.e. along the A428 to the Girton Interchange), or abandoned by the GCP in order to be CAM compliant and before any decision had been made regarding the route of East-West Rail (A1303). In light of the arrival of East-West Rail at Cambourne and serious doubts about the deliverability of CAM, the decision to abandon in</p>

			<p>carriageway schemes should be reviewed, because these would avoid impact on the Green Belt.</p> <p><i>“The National Planning Policy Framework establishes that “certain other forms of development are also not inappropriate in the Green Belt provided they preserve its openness and do not conflict with the purposes of including land within it”</i></p> <p>The NPPF states that if a development is in conflict with the purpose of including land in the Green Belt then the development is inappropriate unless very special circumstances can be shown. An LDA report of August 2017 revealed significant issues with the preferred route alignment, and that parts of the route (e.g. near the Rifle Range) are in conflict with Green Belt purposes. <i>Green Belt Issues Report; Appendix 2 & 3 of Appendix U of the OBC, January 2020.</i></p> <p>Indeed, GCP is assuming (in the Strutt & Parker report of 2019) that it can avoid a requirement for very special circumstances by appealing to the example of the Europa Oil case. This case applied to a <u>temporary</u> use of Green Belt land for mining exploration. In the latest reports, GCP are abandoning any claim that ‘very special circumstances’ apply. This requires further assessment. <i>Green Belt Assessment Report; Appendix U for the OBC, January 2020.</i></p> <p>This scheme is in conflict, in parts, with Green Belt purposes but contrary to the explicit wording of NPPF, GCP are assuming that they can avoid a requirement to demonstrate ‘very special circumstances’. This should be made clear and explicit in the assumptions and constraints.</p>
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<p>G.7</p>	<p>Mitigation measures will be firmed up following the Environmental Impact Statement and in consultation with local landowners and the communities affected.</p>	<p>There are specific concerns about the impact on the Green Belt, West Fields, the Orchards near Coton as well as the alignment close to Coton conservation area, and the busway section between St. Neots Road and the A428 at Hardwick.</p> <ul style="list-style-type: none"> • Coton • Land parcels owned by Cambridge Past, Present and Future, which are protected by National Trust Covenants. • Fitting within available space in areas where the alignment passes relatively close to properties. For example, along some parts of the St Neots Road. Where necessary noise barriers will need to be explored as an option to ensure that traffic noise experienced by residents reduces. • Minimising the impact on the Coton Orchard and a City Wildlife Site, to the west and east of the M11 respectively which are bisected by the alignment for the preferred option. <p>Reference: <i>C2C: Report to GCP Executive Board, 10 December 2020</i></p>	<p><i>“There are specific concerns about the impact on the Green Belt, West Fields, the Orchards near Coton as well as the alignment close to Coton conservation area, and the busway section between St. Neots Road and the A428 at Hardwick”</i></p> <p>Impact on all of these environmental receptors should have been avoided, and can still be avoided, by looking at viable alternatives, such as using the existing infrastructure of the A428 and A1303. In light of East West Rail decisions, this option should be re-considered because it conforms with the mitigation hierarchy of avoiding impact before considering mitigation.</p> <p>With such a sensitive landscape being considered, mitigation options should have been considered at a far earlier stage – i.e. initial optioneering – because that may have changed the outcome of the assessment.</p>
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<p>G.8</p>	<p>Social Impact: Overall the scheme is assumed to benefit a range of social areas. Reduced accidents due to lower private vehicle use. Providing access to services, which are affordable is also assumed. Creating a more secure and easy to use bus service will attract a broader cohort of users.</p>	<p>Cost and accessibility is an issue for people on low incomes. High fares will reduce demand. The transport scheme needs to be financially sustainable and too many services with low patronage will drive costs up threatening service levels which in turn could reduce demand.</p> <p>Reference: 'C2C Outline Business Case, Economic Case GCP January 2020.</p>	<p><i>“Overall the scheme is assumed to benefit a range of social areas”</i></p> <p>There is already a rapid and efficient off-peak bus service between Cambourne and Cambridge (Citi4), so C2C will not materially add benefits on that route other than to commuters during the morning peak. This can be solved by an in-carriageway scheme.</p> <p>High speed bus services 905 and 906 have recently been introduced to provide services between Cambourne and the Cambridge Science Park and Bio-Medical Campus.</p> <p>So none of these benefits is dependent on building a busway. Improving the quality, affordability and integration of bus services will provide social benefit to people over a much wider area than a single busway can.</p>
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Table H: Financial Case

	H. Financial Case		
H.1	<p>The current estimated capital cost of the off-road option is £160.5m, of which £37.7m is anticipated from Section 106 contributions from other third parties such as the developers of the Bourn Airfield site and West Cambridge.</p>	<p>The estimated developer contributions are dependent upon ongoing assessments and negotiations and so are indicative at this stage. However, it is currently anticipated that between 20% and 25% of the scheme costs can be attributed to development and contributions secured accordingly. Any lower contributions would increase the financial risk of the scheme to the GCP.</p> <p>Reference: <i>C2C Outline Business Case, Financial Case GCP January 2020.</i></p>	<p><i>“The current estimated capital cost of the off-road option is £160.5m, of which £37.7m is anticipated from Section 106 contributions from other third parties such as the developers of the Bourn Airfield site and West Cambridge”</i></p> <p>The estimated cost is likely to increase significantly from the original estimate, particularly given land costs and renewables have not been included. The true figure is likely to be nearer £200 million.</p> <p>The in-carriageway proposal by Cambridge PPF, by contrast, which would serve the area well until the completion of the Girton Interchange upgrade and the commissioning of East West Rail is possible for a sum of perhaps c.£10 million. This must be properly evaluated.</p> <p>Given the expected s106 contributions, the large majority of net costs on the off-road scheme attach to the 2 miles or so between Madingley Mulch roundabout and West Cambridge campus. The costs associated with a scheme that used existing highway infrastructure would be far smaller.</p>

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<p>H.2</p>	<p>The estimated high-level scheme costs at this stage of the project's development are based on a range of assumptions and exclusions, which are detailed within OBC Appendix Q. These will be revisited and updated in the Full Business Case stage.</p>	<p>The financial case does not include Optimism Bias (currently 44%), which is used within the economic appraisal, but does include a risk allowance of 25%.</p> <p>Reference: <i>C2C Outline Business Case, Financial Case GCP January 2020.</i></p>	<p>See H.1</p>
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Table I: Commercial Case

	I. Commercial Case		
I.1	In the SOBC it was concluded that the commercial factors related to the delivery did not significantly differentiate between the options.	As part of the current stage of scheme development and the OBC, a design and build procurement has been selected as the preferred procurement strategy. However, this is subject to further review as part of the next stage of work in developing the scheme and informing the Full Business Case Reference: <i>C2C Outline Business Case, Commercial Case GCP January 2020.</i>	
I.2	The design and build model will provide GCP with more opportunity to drive value for money and more opportunity to transfer delay risk and interface risks to the contractor.	Adopting a design and build approach puts the responsibility for design, including integration, with the contractor and it would be the responsibility of GCP to define its requirements. Reference: <i>C2C Outline Business Case, Commercial Case GCP January 2020.</i>	
I.3	The operation of the current bus services along the C2C corridor is largely on a commercial basis. With regard to the new HQPT services which are expected to operate along the C2C infrastructure, it is not the intention of GCP to be directly involved in their procurement and control as that is not within GCP's powers.	The potential public transport operating models currently available for the C2C project have been identified and the following issues and key questions considered: <ul style="list-style-type: none"> ● Available operating models for providing services; ● Appetite in the market to engage with those models; ● Impact and influence on fares and patronage; ● Risks; and, ● Commercial implications of objectives for clean high- quality transport such as high frequency services operated by high quality electric vehicles. 	<p><i>"The operation of the current bus services along the C2C corridor is largely on a commercial basis"</i></p> <p>Expensive, new infrastructure such as a busway is likely to require significant operator payments, which would need to be recouped via fares. This would be even more difficult given competition from EWR within a few years after initiation of C2C. It would also run counter to the project objectives of affordable public transport, necessary to drive optimal modal shift.</p>

	<p>The proposed Bus Network Strategy is based around three direct express services as follows:</p> <ul style="list-style-type: none"> ● Cambourne to Cambridge City Centre at 10- minute interval service (6 buses per hour) ● Cambourne to Biomedical Campus at 30-minute interval service (2 buses per hour) ● A428 Park and Ride site to Biomedical Campus at 30-minute interval service (2 buses per hour during peak periods) <p>In addition, passengers from Cambourne to Cambridge corridor services would also be able to interchange with the Universal service at West Cambridge which would serve Cambridge North Station and the Cambridge Science Park.</p> <ul style="list-style-type: none"> ● Biomedical Campus to Eddington at 15- minute interval service (4 buses per hour) ● Biomedical Campus to Cambridge North Station & Cambridge Science Park 30-minute interval service (2 buses per hour) 	<p>The routes and schedule are based on anticipated demand and are proposed routes only and have not been agreed with the existing route operators.</p> <ul style="list-style-type: none"> • Any new Park & Ride service will need to be to a standard similar to that currently operating for Cambridge’s Park & Ride services in accordance with the established minimum requirements. • Communities along the corridor are served by the Citi 4 Bus Service, amongst others. This is a stopping service which could provide a feeder for the busway. Whilst the decision as to future Bus Services lies with bus operators, the provision of the Busway should not prevent the provision of existing services. • All buses are now required to be accessible for all including wheelchair users. • The scheme must be capable of eventual upgrade to form part of the CAM network. <p>Reference: <i>C2C Outline Business Case, Commercial Case GCP January 2020.</i></p>	<p><i>“Cambourne to Biomedical Campus at 30-minute interval service (2 buses per hour)”</i></p> <p>How attractive is this going to be when you can take a train and arrive in a fraction of the time? EWR will have a severe impact on patronage levels.</p> <p><i>“In addition, passengers from Cambourne to Cambridge corridor services would also be able to interchange with the Universal service at West Cambridge which would serve Cambridge North Station and the Cambridge Science Park”</i></p> <p>How attractive will it be for workers at the Cambridge Science Park and other business parks in north-east Cambridge to interchange in West Cambridge with a service that runs twice per hour? It is going to be much slower than the new 905 bus from Cambourne to the Science park via the A428 and A14.</p> <p><i>“The scheme must be capable of eventual upgrade to form part of the CAM network”</i></p> <p>Given the extreme uncertainty regarding the CAM network, it is impossible to guarantee that any scheme must be capable of upgrade to form part of it. An expensive C2C scheme constructed at this stage would only serve to constrain the larger, more important CAM, should it ever come to pass.</p>
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<p>I.4</p>	<p>The Local Transport Authority (LTA) that has the relevant powers is the Cambridgeshire & Peterborough Combined Authority (CPCA).</p>	<p>The CPCA Mayor’s recently commissioned Strategic Bus Review concluded that further work was required including procurement and completion of a business case to assess different delivery model options. Following completion of this latter piece of work, the CPCA Mayor is expected to make a decision on the future preferred option for delivering bus services in early 2021.</p> <p>Reference: <i>Strategic Bus Review Report, CPCA 2020</i></p>	<p><i>“Following completion of this latter piece of work, the CPCA Mayor is expected to make a decision on the future preferred option for delivering bus services in early 2021”</i></p> <p>Further work on the Mayor’s Strategic Bus Review is likely to be delayed owing to the lack of current information of bus usage following the Government’s recommendation to avoid public transport during the pandemic. A Task and Finish Group established by the Combined Authority Scrutiny and Overview Committee has been similarly postponed and will now not report until later this year. However, this is an important juncture in strategic decision making and any further work on the C2C busway should be postponed until this report is published.</p>
<p>I.5</p>	<p>There are several options for the Busway maintenance which will be reviewed further at FBC.</p>	<p>The busway maintenance option decided upon will depend to an extent on the arrangement used for the Operation of the bus service, which is yet to be determined, as noted above.</p> <p>Reference: <i>C2C Outline Business Case, Commercial Case GCP January 2020.</i></p>	<p><i>“There are several options for the Busway maintenance which will be reviewed further at FBC”</i></p> <p>Maintenance has proved to be a major, recurring and expensive problem for the existing Cambridgeshire Guided Busway, and clarity on these costs should be made available before FBC.</p>

Table J: Management Case

	Assumptions	Constraints	
	J. Management Case		
J.1	<p>The management case also identifies the key risks and mitigations for the project. The management case does not differentiate in terms of the options under consideration.</p>	<p>The success and financial viability of the C2C project will be dependent on several factors. Scheme design and delivery will therefore need to consider the following dependencies outlined in the OBC:</p> <ul style="list-style-type: none"> • Delivery of housing and employment sites allocated within the South Cambridgeshire Local Plan • Emerging CPCA Policy specified in the Local Transport Plan. Also need to consider Cambridgeshire Transport Delivery Plan (TDP) for transport capital schemes on the local network to be delivered on a three year time frame and the Transport Investment Plan (TIP) that includes the C2C scheme, developed alongside the TDP to identify schemes to support growth • Monitor how development of CAM progresses as the C2C project aims to deliver the first phase of infrastructure for the larger CAM network • City Access Strategy which aims to improve congestion on routes into the City Centre which will be key to reducing the journey times for buses and therefore making the Park & Ride attractive and successful • Oxford-Cambridge Arc. Both the Expressway and EW Railway will impact on the C2C route and whilst the scheme is not dependent directly upon these proposals, they may have a significant influence 	<p><i>“The success and financial viability of the C2C project will be dependent on several factors”</i></p> <p>True. The rate of development of new homes is a crucial factor in determining public transport requirements, with a build out rates of around 200 homes per annum for both Cambourne West and Bourn Airfield. This is at a pace which allows time for more clarity to develop on the upgrade to Girton Interchange, East West Rail with a station at Cambourne, and an optimal alignment for a CAM metro system to emerge.</p> <p>In the meantime, an on-road service (e.g. see CPPF scheme above) with appropriate traffic management will provide both a short, and possibly long, term solution for passengers to West and Central Cambridge whilst the new express bus services to the Biomedical Campus and the Science Park (509 & 510) can provide a similar service whilst the bigger schemes fall into place.</p> <p>The City Access Strategy is also crucial, and until clarity emerges on how the buses will negotiate the most congested part of the route, the overall transport benefits, potential modal shift success and financial viability of the scheme remains in question.</p>

		<ul style="list-style-type: none"> Emerging Technologies. The final specification of C2C will be driven by technology advances and the range of solutions available at the procurement stage. <p>Reference: <i>C2C Outline Business Case, Management Case GCP January 2020.</i></p>	
<p>J.2</p>	<p>The Management Case reviews the process of public consultation and engagement. A communication plan sets out how this process is managed, identifying key stakeholders and how engagement is managed including the facilitation of a project specific Local Liaison Forum.</p>	<p>Public and stakeholder consultation is essential to ensure that the various aspirations of the general public and key stakeholders are taken into account throughout development and delivery of the project and to manage the communication and flow of information relating to the project.</p> <p>Reference: <i>C2C Outline Business Case, Management Case GCP January 2020.</i></p>	<p><i>“Public and stakeholder consultation is essential to ensure that the various aspirations of the general public and key stakeholders are taken into account throughout development and delivery of the project ...”</i></p> <p>Public consultation has so far failed to take any meaningful account of the general public and most key stakeholders. The starting premise of an off-road busway similar to that between St Ives and Histon has remained the preferred option throughout the process, despite repeated indications from a wide range of stakeholders that it is unpopular, and the public consider there are better alternatives.</p> <p>The LLF has expressed concerns that the responses to public consultations, and specifically the public support for options that use existing infrastructure have been presented in a misleading manner in phase 1 consultation in OAR2 Executive Summary. 58% of the public preferred on-road options, but this figure was omitted. Had the true extent of public support for on-road options been reported, this may have meant the on-road alternative was optimised, which it never was.</p> <p>Also following this consultation, consultee responses that were non-supportive of the scheme were not circulated as other were – including that of the LLF (dated March 2019). This may have had an effect on decisions, as the LLF comprises one representative from all parish councils along the route, plus all county, district and city councillors along the affected corridor,</p>

			<p>and it was highly critical of the scheme; asked for the on-road option to be optimised, and that an alternative option via the Girton Interchange be considered. Similarly a letter from the National Trust (dated February 2020) was not circulated to GCP Board members before their meeting of June 2020.</p> <p>Other consultee responses, such as those for Natural England and Historic England, were misrepresented in subsequent GCP literature, and a FOI request has revealed that GCP employees were unhappy with the manner in which these responses were represented.</p> <p>No public consultation on the scheme has not been undertaken since it was required to be CAM compliant, nor since the announcement of EWR and its station at Cambourne. The public should be given an opportunity to comment on the scheme in light of these very major developments.</p> <p>The LLF does not consider GCP to have conducted the consultation process in a correct and open manner, and the high level of public opposition to the scheme itself, and process irregularities, present risk of Judicial Review, delay and rejection.</p>
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Table K: Full Business Case

	Assumptions	Constraints	
	K. Full Business Case		
K.1	The Full Business Case will develop the detailed design for the preferred scheme and update the appraisal for the economic case. Consultation and engagement with stakeholders and partners will continue through this stage. The risk register will identify outstanding issues that need remedial actions or mitigation measures.	Additional information for the financial, commercial and management cases will be provided together with recommendations on the necessary actions to proceed with the scheme. Reference: <i>The Green Book: appraisal and evaluation in Central Government. HM Treasury 2020.</i>	<i>“The Full Business Case will develop the detailed design for the preferred scheme and update the appraisal for the economic case</i> The Full Business Case must be completely re-evaluated following the emerging developments of both East West Rail, Highways England announcement of an upgrade to the Girton Interchange as this will have substantial effect upon traffic travelling from A428 to the M11 and will significantly reduce journey times along that road.
K.2	Prepare an application for statutory consent anticipated in 2021 with a determination period estimated of around 18 months – completed in 2023.	Authority to construct the scheme is likely to come from a Transport and Works Act Order which would be determined by the Secretary of State for Transport. This process is likely to include a Public Inquiry directed by an independent Inspector Reference: <i>C2C: Report to GCP Executive Board, 10 December 2020</i>	
K.3	Prepare Environmental Impact Assessment and Environmental Statement	Work to be undertaken will include Environmental Impact Assessment as well as Transport Assessment, Road Safety Audit etc. This will draw on further work to be done on scheme design including mitigation measures and further stakeholder engagement. Reference: <i>C2C: Report to GCP Executive Board, 10 December 2020</i>	<i>“Prepare Environmental Impact Assessment and Environmental Statement”</i> The Environmental Impact Assessment must be far more objective than the Multi Criteria Assessment Formula in order to be accepted by local communities. Before undertaking an EIA, GCP must consider whether reasonable alternatives using existing infrastructure have been considered in order to justify the impact on the Green Belt. The LLF does not believe this to be the case.

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K.4	Seek authority to construct project in 2023 depending on statutory powers process	<p>Following the completion of the statutory permissions stage, the GCP Board will be presented with the Final Business Case for approval. This will trigger the construction of the project.</p> <p>Reference: <i>C2C: Report to GCP Executive Board, 10 December 2020</i></p>	<p><i>“Seek authority to construct project in 2023 depending on statutory powers process”</i></p> <p>Construction is highly unlikely to start in 2023 as the project will be faced with considerable, and growing, opposition which could lead ultimately to time consuming and expensive legal action.</p>
K.5	Opening of the scheme to operational services in 2025	<p>Bus services schedule and routes will be determined in discussion with operators. Phasing in of services in response to planned growth and ridership demand</p> <p>Reference: <i>C2C: Report to GCP Executive Board, 10 December 2020</i></p>	<p>See above. This is unlikely.</p>

Table L: Covid-19 Impacts

	L. Covid-19 Impacts		
L.1	<p>The implications of the global pandemic remain unknown. While there has been a short-term impact on the use of public transport, the longer-term impact is uncertain. The C2C scheme is consistent with the government’s agenda for innovative public transport solutions and mode switching from private car use in support of climate change goals and net-zero carbon by 2050. So, the prospects for the scheme are considered good in the long-term.</p>	<p>This matter will remain under review. Scheme appraisal will be revisited at Full Business Case stage with sensitivity tests of varying levels of demand and wider economic impacts.</p> <p>Reference: <i>Transport use during the covid pandemic. Transport use by mode: Great Britain, since 1st March 2020. Department for Transport.</i> https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic</p>	<p><i>“The implications of the global pandemic remain unknown”</i></p> <p>Given the extreme uncertainty around commuting habits post-pandemic, it would be deeply irresponsible to press ahead with a £200m scheme which might not be required. The entire justification for the C2C scheme hinges around congestion on the A1303 which may not be present given possible changes in commuting habits, provision of a heavy rail solution, possible upgrade to the Girton Interchange and other changes possible over the next 5-20 years. The existing Citi4 service offers a 20-25 minute off-peak journey time between Cambourne and Cambridge, operating at 90%+ reliability. In the absence of peak hours congestion on Madingley hill, that service would be reliable round the clock. Upgrade to the vehicles, ticketing, etc, could all be done without the need for costly new infrastructure.</p>