Response to Request for Feedback on Proposed Changes to Bus Routes Along the B1102 Corridor

Paper Prepared For:
Public Transport Services
CPCA

26th February 2024

Executive Summary

The A to B1102 Group have been asked to comment on proposals to improve bus services through the B1102 corridor and provided with document “Option Reference 8 and 9 – Map”.

In this document, we present our preferred option, a plan which is based on evidence drawn from our work with the communities we serve over the last three years and data drawn from our travel survey which ran from October to December 2023, comprising 891 responses.

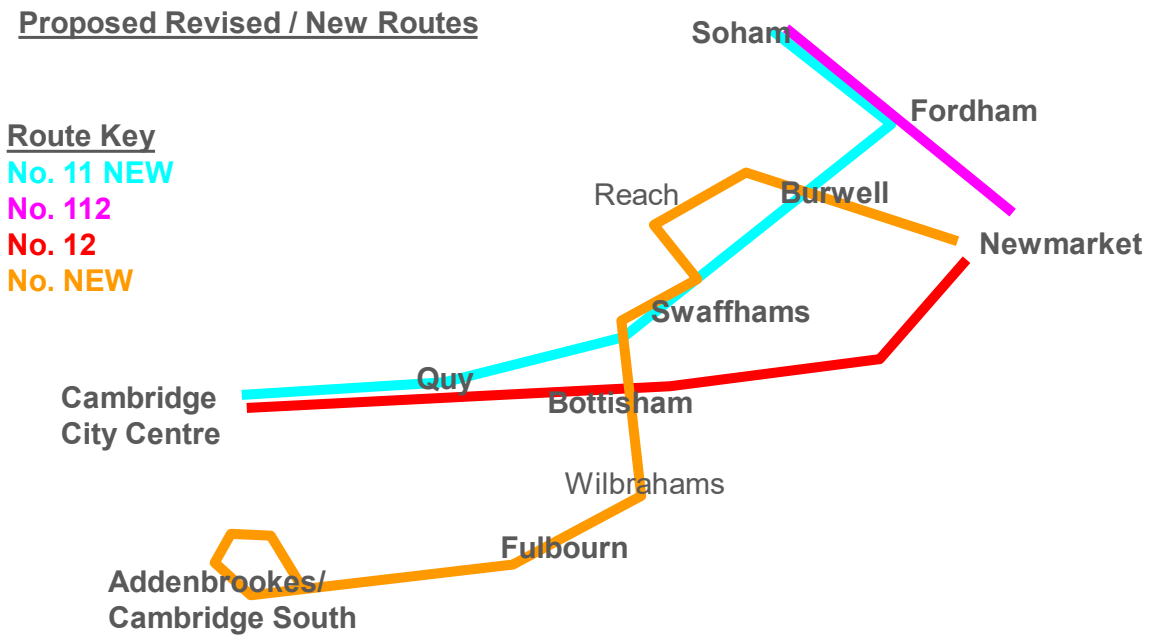
As will be seen, the plan enables the delivery of a Phase 1 of a Fast Bus Concept running from Soham Rail Station to Drummer Street Bus Station and a new service / route from Newmarket via Burwell running to the South East of Cambridge to Addenbrookes, Long Road Sixth Form College and the new Cambridge South Rail Station.

Such a solution delivers a set of key public transport priorities both for our communities, but also one that will benefit the region and City of Cambridge, reducing the number of private car journeys into the city and facilitating a game-changing improvement in access to Further Education for students. The solution also makes a significant contribution to a new network of interconnecting services facilitating modal shift from private car to bus to rail to active travel.

The A to B1102 Group brings together the communities of Fordham, Burwell, Reach, Swaffham Prior, Swaffham Bulbeck, Lode & Longmeadow, Bottisham, Stow-cum-Quy, Great & Little Wilbraham and Six Mile Bottom. We are a voluntary group supported by grants from the Parish Councils we serve. All the work which has contributed to this report and proposals has been done by volunteers, some with specialist knowledge in the fields of public transport, property, planning and land economy.

Proposed Revised / New Routes: Overview

See document AtoB1102 Revised Bus Routes 20240224 pdf.



New No11 Service

The existing No 11 Service has been reconfigured to create a Fast (reduced number of stops and direct) Bus service from Soham Rail Station through Soham centre to Fordham and then along the B1102 direct and into Cambridge. This service has a number of interchange points to interact with the No "New" Service (see below), enabling passengers from Exning / Newmarket, Burwell village, Reach, Swaffham Prior, Swaffham Bulbeck and Lode / Longmeadow to interchange with the Fast Bus AND to enable passengers from Soham and Fordham to interchange with the No "New" Service for transport to Fulbourn, Addenbrookes, the FE Colleges and Cambridge South Station.

The route also facilitates the establishment of a Park & Ride Interchange at Fordham on the B1102 / A142 Junction to facilitate modal shift from car to bus to enable drivers, significant numbers of whom use the B1102 as a "rat run" to get from March, Chatteris, Ely / Mildenhall and the area beyond to access Cambridge.

Phase 2 / 3 of our Fast Bus concept would see additional Park & Ride / Active Travel interchange sites in Burwell, Swaffham Prior and Lode to further facilitate modal shift and active travel solutions. The viability of this new service is not predicated on these later phases, nor the establishment of a Park & Ride site at Fordham.

No. "NEW" Service

The "New" service takes the first leg of the existing No 11 route from Newmarket to Burwell via Exning, both as a 'feeder' for the Fast Bus and to enable Exning passengers to access Cambridge South. After interchanging at Burwell Post Office, it takes the existing No 11 route around Toyse Lane / North Street Burwell and then comes towards Cambridge on the B1102 through Burwell and off to Reach. From Reach, through Swaffham Prior (interchange with fast service), it goes through Swaffham Bulbeck and

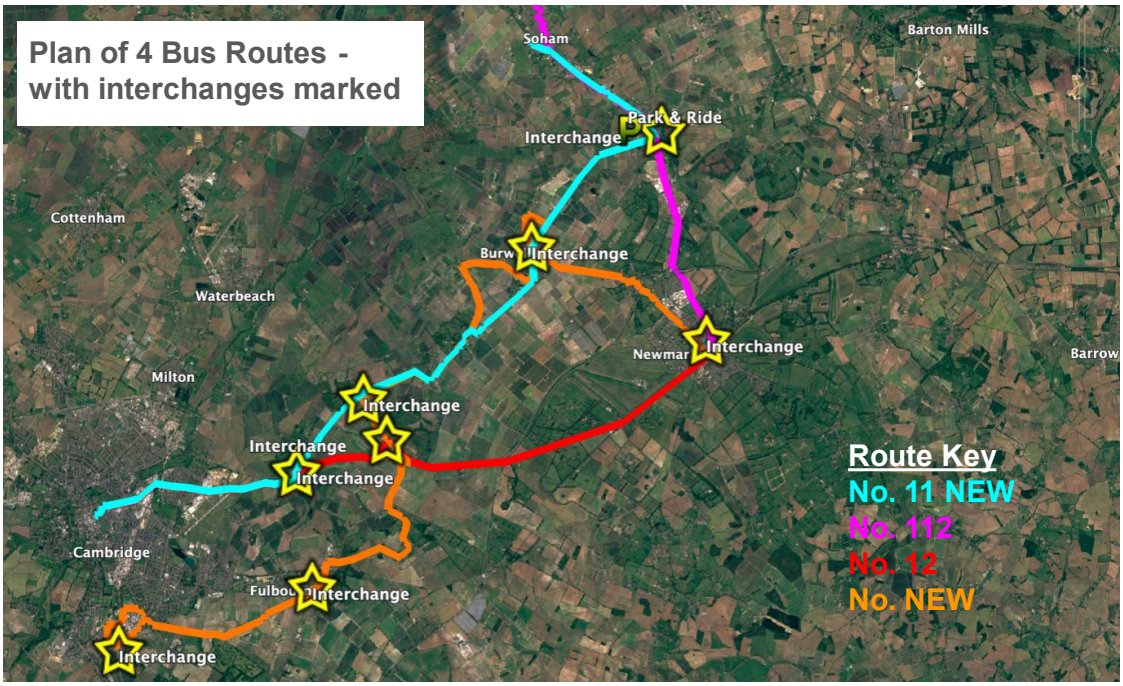
on to the Lode Crossroads along the B1102 to again interchange with the fast bus. Then through Bottisham via Bottisham Village College, along High Street to the A1303 where it interchanges with the No 12 service. Thereafter the service goes through the villages of Little and Great Wilbraham, then enters Fulbourn for an interchange point with the No 1 Service, before going along Shelford Road and down Worts Causeway to access Addenbrookes and the Biomedical Campus. The service then loops around Addenbrookes, stopping at the new Cambridge South Station before coming back past Long Road Sixth Form College and makes its return.

This service will not only meet the needs of FE students from our area, but also offer a direct service to the Addenbrookes / Biomedical Campus and, when completed, offer a direct service to Cambridge South Rail Station and thus the rail network. It could also provide transport for students of Bottisham Village College who currently provided with dedicated tax payer funded schools transport. As is discussed below, Cambridge North Station currently offers a significant and well used interchange point for our communities by car. This bus route will offer a cost effective public transport alternative, even more so when the Cambridge – Oxford line is built.

No. 12 and No. 112 Services

These services remain unaltered, but we would encourage the operators to work to streamline the timetable to facilitate interchange with the new services.

Plan of Bus Routes with Interchanges Marked



See AtoB1102 Revised Bus Routes 2024 pdf for copies of all images provided.

Evidence & Justification for Proposed Revised / New Routes

New No. 11 Service

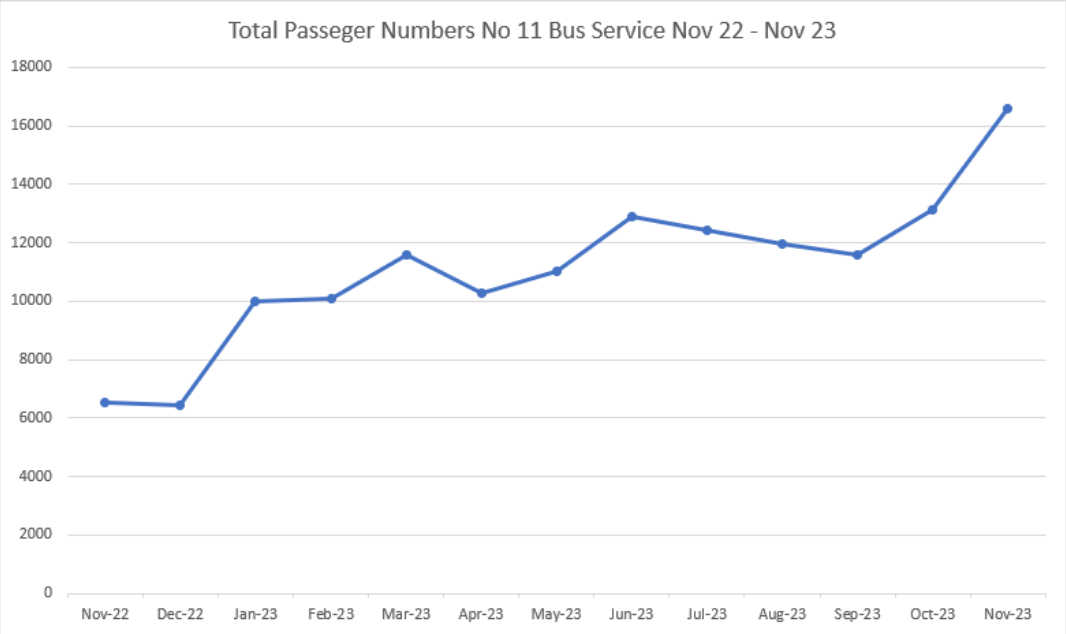
Whilst we appreciate there will be contractual issues to be overcome in changing the existing No11 route, there are compelling reasons to make such a change, reasons which our evidence suggests, will create an attractive, well patronised commercial service which is highly likely to have the potential to become a commercial, rather than subsidised route in the medium to longer term.

Direct Service

40% of respondents to our survey (rising to 57% specifically amongst those in education) identified a fast service along the B1102 as something that would encourage them to use the bus more frequently. Making this service direct and "feeding it" at interchanges with a stopping service (the No "New" Service) achieves this. The existing No 11 service is a bizarre mix of direct and indirect transport. There exists a fast and direct service between Newmarket and Cambridge via the No 12 service, so there is no logic to taking the No 11 to get from Newmarket to Cambridge. The existing No 11 therefore acts as an inter-village connection service primarily, yet also attempts to meet the need for travel to Cambridge. Currently, it meets neither requirement well; the new approach irons out these inconsistencies.

Around half of the journeys made by survey residents were into Cambridge. However, just 44% of trips into the city from our area are to Cambridge City Centre, this represents 37% of journeys weighted by frequency, the only Cambridge final destination served by buses (see section 2.2 of the survey analysis report, below)

Our group has received multiple pieces of feedback from our communities that even the small changes made to the No11 Service when Stephensons took on the service, removing the Bottisham / Quy diversion has encouraged people to use the service. The improvement in passenger numbers (see graph) below, demonstrate this:



From data provided by Stephensons.

Our survey further supports these conclusions. As section 3.1 of the survey report, below, explains, when our respondents were asked about barriers to using public transport, the responses emphasise that the most important barriers related to service quality, specifically speed of travel.

The most frequently cited barriers were that the current bus service did not allow the respondent to get to their destination within a reasonable time frame (cited by 55% of respondents); that the service does not run when the respondent wished to travel (52%); that the service was not sufficiently frequent[1] (50%); and that the current bus service did not allow the respondent to get to their desired destination.

These were the major barriers for all age groups. Journey time was a major issue for the under-eighteens with 63% of those responding citing it as a barrier. They also noted concerns about service reliability and cost with over a third of under-18s stating that travel by bus was too expensive (this did not seem to be a concern for other age groups). ***Taken together, these responses suggest that those surveyed felt that the existing bus service did not meet their needs in terms of travel time, frequency or destination.***

New House Building

Soham, Fordham and Burwell are all villages with significant new house building programmes either completed or currently in development:

- Burwell will add 300 new houses in the Exning Road development currently under construction, in addition to the ~300 houses already built since 2001.

- Fordham has completed (or will soon complete) ~150 new houses.

- The Soham master plan of 2001 projected over 2000 new houses by 2040, 1100 of those being completed by 2025. Permission for 210 new houses was granted in November 2023 and an application for 575 additional houses for Soham Eastern Gateway has been recently submitted. The 2001 master plan projects the population of Soham to increase from 9,710 in 2001 – 2009 to 16,220 2026 and beyond.

These developments and others planned continue to transform demand for a direct service from these towns / villages into Cambridge and the need to reduce the reliance on private cars if we are to achieve and maintain a sustainable travel network into and around Cambridge.

Facilitating Modal Shift – Car to Bus & Active Travel

As noted in the Executive Summary above, a key challenge for the B1102 communities is the use of the B1102 as a "rat run" to avoid the A142 / A14 junction at rush-hour. The A142 experiences significant volumes of traffic destined for Cambridge which use this route given congestion on the A10 between Ely and Cambridge. As a result, the B1102 funnels commuters from a wide geographical area including Ely, March, Mildenhall, Chatteris. This effect is projected to increase with the new housing developments along the A142 at Newmarket and the associated traffic lights which will be commissioned in the Spring of 2024 (constraining the A142 / A14 junction still further, we predict).

[1] The responses were linked to confidence in using the service: with one bus an hour, a cancellation or long delayed running can make the bus infeasible for most users.

There is therefore a compelling case to facilitate modal shift between car and bus well away from Cambridge and an ideal first location is the A142 / B1102 junction at Fordham. Our group, with its membership including Fordham Parish Council is exploring the potential to establish a Park & Ride site which would enable car drivers to park, transfer to the bus network for either direct travel to Drummer Street (and destinations between) or travel to Addenbrookes / Cambridge South Station (and destinations between).

This would offer significant additional patronage for the new service and significantly reduce congestion along the B1102 villages and in particular Stow-cum-Quy and Newmarket Road. Given the Marleigh Development, Cambridge East plans and the current problems with congestion (not least impacting bus services), we believe such an option is a game changer and a necessity.

Facilitating Modal Shift – Bus to Rail

Currently, our assessment is that the new Soham Rail Station is poorly served by public transport interconnections. Our survey confirmed that at present, usage is not even statistically significant. Beginning and ending the new No11 bus route at the station will provide a major strategic boost to its viability, enabling people from all our communities to access Ely and stations to the Midlands and East Anglia. Another step-change in creating an integrated transport network.

Reduced Stops / Straightened Route

As the maps provided indicate, by providing a direct route along the majority of the B1102, journey times will be significantly improved. The current routing of the No11 around Toyse Lane, Burwell, Reach & Swaffham Prior and, for a significant proportion of the services, into and out of Lode, all form disincentives for people to use the service.

The logic of a direct service with well timetabled interchanges with a “around the villages” service (which the “New” Service comprises in its first stage (from Newmarket to Lode Crossroads) is compelling. We achieve the best of both worlds, especially with the proactive adoption of real-time interchange passenger information and facilitation by the on-board drivers of the services.

Lode Village Access

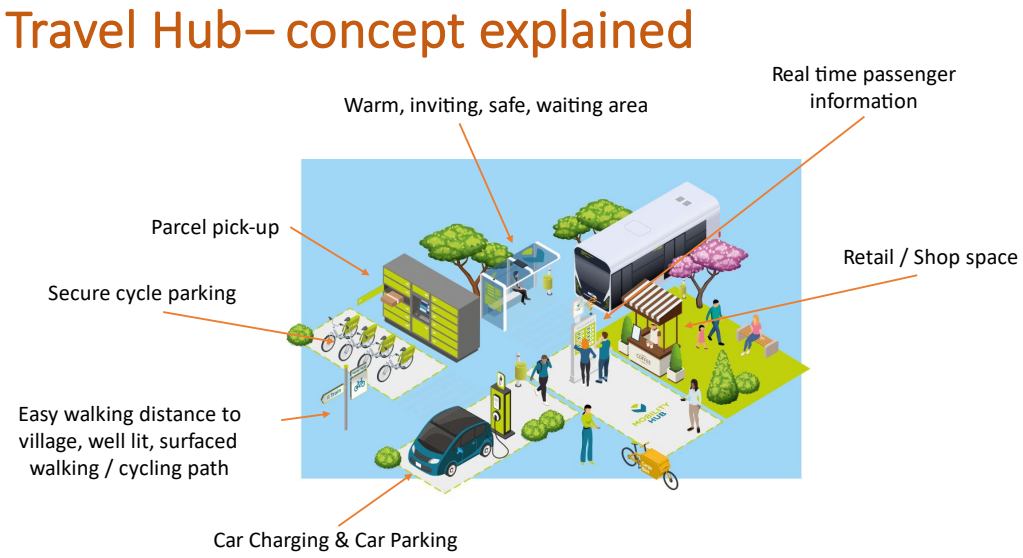
The No11 bus currently serves Lode village centre, with some of the services serving Lode, others missing Lode and instead, serving Reach. The new service will not serve Reach and we advise consideration is given to serving Lode Village Centre on certain services, but not all services. In particular, rush hour services should avoid Lode Centre given the typical delays due to congestion at Stow-cum-Quy & Newmarket Road.

Future Phases of the Fast Bus Concept

The A to B1102 Group is exploring the development / building of additional Park & Ride interchanges at Burwell, Swaffham Prior and Lode. A funding model for these developments is yet to be explored, but the concepts have been welcomed by the Parish Councils of all the villages concerned.

Our vision for these hubs is captured in the graphic below. We have had initial discussion with Yo Higton, Active Travel lead at the CPCA who shared our vision for development Active Travel infrastructure within our communities, creating commercial / retail space as well as facilitating modal shift away from Cambridge.

We believe the commercial viability of the new No11 route is not predicated on these later envisioned stages.



No. "New" Service

The delivery of this service solves a number of key challenges our communities currently experience when using public transport, challenges which are also barriers to others choosing public transport, and which currently, lead to people adopting the car (learning to drive) because there is no viable alternative, thus further increasing road usage / pressure.

Accessing Cambridge South / South East

Our survey indicates that the area served by this proposed new service accounts for 27% of the trips people in our communities make (Hills Road, Long Road, Addenbrookes and the bio-medical campus).

Accessing Further Education

One of the most important transport issues for our communities is the access of further education, namely, Hills Road, Long Road, CRC and the Oakes. Our survey identifies that over 60% of journeys for further education are taken by bus, even though, journey times are currently often in excess of two hours in each direction for many of our students. Section 3.3 of the survey report, below, provides detailed analysis of our survey findings, including free-text comments, a selection of which include the following:

- *Buses do not run in Lode until 10am, meaning I have to walk to the Main Rd in order to get to college in the morning and walk home in the dark due to the irregular buses when I cannot be picked up;*
- *There are buses but they do not run at the times or frequency for me to use them so I have to rely on lifts;*
- *I would like to get the bus to and from sixth form college but can't rely on the 7:30am bus getting into town on time for a 9am start so a parent has to take me by car. Coming home it*

takes two hours because the buses are only hourly - if I finish at 16:00 the first bus I can get is 17:15 and I get home at 18:00;

Providing a direct service is a vital priority and this new service provides just that, using a route which will be less susceptible to peak hours traffic congestion.

Future of Access to Rail Travel

With the CB1 development in central Cambridge and the completion of Cambridge North Station, 67% of rail commuters from our area, currently use Cambridge North Station to access the rail network. There is no public transport solution from our area to Cambridge North and the necessity to use the A14 means there are no obvious, commercially attractive route options for operators to develop one. The current availability of parking at Cambridge North Station also invites car travel.

Looking ahead, we envisage this situation will change significantly. The proposed Cambridge North East development (plan for 5,000 homes) on what is currently the Anglian Water Sewage Works site is likely to constrain car access to Cambridge North Station – it is proposed to become a "low traffic" neighbourhood.

The building of Cambridge South Station opens up a new destination for commuters, one which, particularly once the Oxford – Cambridge line is completed, will offer multiple interchange options for onward train travel.

We therefore have identified an opportunity for establishing this direct bus link to Cambridge South Station which, we believe, will be key for commuters going forward.

Bus Service for Bottisham (including GP Practice), The Wilbrahams

Bottisham and The Wilbrahams are currently poorly served in terms of direct bus routes. Bottisham was negatively impacted by the re-routed No 11 Stephensons service, a change which prevented patients of the Bottisham Medical Practice accessing the surgery – including patients from Reach, Swaffham Prior, Swaffham Bulbeck and Lode / Longmeadow. The new route re-establishes the old accessibility, upgraded with an interconnection with the Fast Bus, the No 12 bus and onward travel to Fulbourn and the Addenbrookes / Biomedical Campus.

The service will be transformational for The Wilbrahams area, which is currently served by one, extremely infrequent, bus route. The roads in this area are poorly configured for active travel, leaving only the car as a realistic option for transport for communities and are used as a commuter "rat run" by drivers seeking to access the South of the city.

Our survey has identified demand for the reinstatement of services through Bottisham, which once fully analysed, we will share with the CPCA.

Supplementing / Replacing Schools Transport to Bottisham Village College

The route from Burwell through Reach, Swaffham Prior, Swaffham Bulbeck and Lode is currently used by school bus services taking students to Bottisham Village College. Whilst we are aware these services are funded by the DFE, we believe there is potential to consider using the No "New" service as an alternative, thus offering a further funding stream for the new service. At the very least, students engaging in out-of-hours / extra curricular activities will be able to use the service to travel to and from the College. The College also welcomes students from outside its catchment area, so this service

will be able to offer students a reliable way of getting to college from South / East Cambridge and Soham.

Interchanges beyond Bottisham

The proposed route offers interchange points at Fulbourn for the No 1 bus (accessing Cherry Hinton, the ARM Campus & Fulbourn Hospital Campus) and then an interchange at Addenrbookes for services along Hills Road. This will enable students to achieve a fast transfer to Hills Road Sixth Form College without extending the passenger journey by both distance and time given traffic volumes in this area of the city.

Bus Vehicle Considerations

Our working assumption is that the No "New" service will experience peak demand at peak commuter times. Outside these times, it is likely that passenger demand will be less and the service would therefore benefit from a smaller bus vehicle. Once the proposals for this service are confirmed, we propose to run additional spot surveys to provide additional data on likely demand during off-peak hours. This is particularly important given the fact that once the service is a service-of-choice for commuters travelling to London and onto the wider rail network, evening and late services will be necessary to sustain to deliver the full value of the route.

Real Time Passenger Interchange Information

A key factor in the successful rollout of this new network will be the availability of real-time passenger information regarding interconnection services. This is the future of integrated travel and can be achieved through raising passenger awareness of smart-phone applications currently available, information displayed at interchanges and drivers offering passenger information on-bus. We believe this has to be promoted by the CPCA and made a requirement of operators. Given the opportunities in this proposal to facilitate modal shift, information could also be projected on road-side screens (they are already installed at numerous locations) to promote bus services along the B1102.

AtoB1102 Travel Survey 2023: Preliminary Results

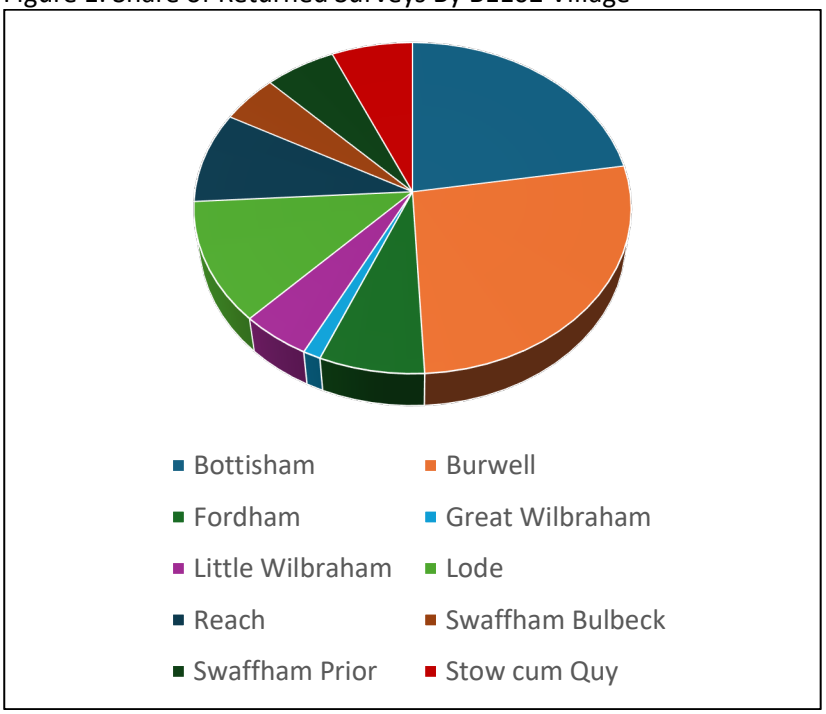
In this section, we share preliminary results of our travel survey, results which have been prepared to inform the discussion above.

1. Introduction

The A to B1102 Local Transport Group organized a travel survey in late 2023, to help the group better understand the travel needs of people living along and around the B1102 route from Fordham to Stow-cum-Quy including Bottisham and Little and Great Wilbraham. It is hoped to use the data from the survey to inform improvements in public and private transport in the area and the development of more sustainable modes of transport. The survey asked people to identify their most frequent journeys, their mode of travel, to indicate journeys they felt unable to make, to indicate what improvements they felt could be made to public transport and to identify obstacles to changing from private car to more sustainable forms of travel.

The survey was available both online and via paper forms and was publicised via the Group's website and Facebook page, via Parish websites and village Facebook pages and by direct distribution to key locations within the villages. In total, 891 surveys were returned, a large number for such informal voluntary surveys. Given the nature of the survey, it is not possible to give a definitive response rate nor to assess the extent to which it is a fully representative sample but, in the core villages along the B1102, the returned forms represent around one in nine of the households recorded in the 2021 Census. In terms of location, there is good coverage of all the villages bar, perhaps, Fordham, who were unrepresented on the Group until relatively late in the survey process. Some of the smaller parishes had higher response rates, which is beneficial in allowing us to examine results by village. Figure one shows the distribution of returns by core B1102 villages.

Figure 1: Share of Returned Surveys By B1102 Village



Figures 2 and 3, below, show the age distribution and employment status of respondents. These show a broad range of ages and employment types. Over a quarter of the sample were aged over 65: a group often under-sampled in surveys primarily distributed digitally. The age distribution is broadly representative of the area's age profile as measured in the 2021 Census[2]. It is possible that the survey has under-sampled non-pensioners who are not economically active, although we would note that the claimant count for both East and South Cambridgeshire is below 2%[3]. We have also received a good proportion of responses from under-18s and those in full-time education, which is important given the specific travel needs of the post-16 school population in the area, who have to travel considerable distances to reach educational establishments.

Figure 2: Age Distribution of Respondents

Under 18	151	16.9%
18-24	34	3.8%
25-44	164	18.4%
45-64	291	32.7%
65+	235	26.4%
Prefer not to say / Blank	16	1.8%

Figure 3: Employment Status of Respondents

In full time education	168	18.9%
In employment - full time	292	32.8%
In employment - part time	133	14.9%
Seeking employment	2	0.2%
Carer - children or adults	17	1.9%
Retired	231	25.9%
Other (please specify)	28	3.1%
Prefer not to say / Blank	20	2.2%

In summary, the survey generated a large number of responses from a wide range of individuals, broadly in line with the demographic structure of the survey area. In what follows, section two presents analysis of the most common journeys made by respondents to the survey, detailing the reason for travel, the mode of transport, trip frequency and target destination. This enables us to provide a picture of the movement patterns in and from the B1102 corridor. Section three examines bus usage, barriers to travel by public transport and the improvements that those surveyed felt might encourage them to switch from car to bus or other more sustainable routes. The findings suggest that a service more responsive to the specific needs of the area could see a substantial switch to more sustainable forms of transport. Finally, we summarise and conclude.

2. Analysis of Journeys Made.

The survey gave respondents the opportunity to provide information on their most frequent journeys made. For up to four trips, they could provide information on the destination, the mode of transport, trip frequency, whether or not the trip was in peak hours and the reason for the journey. A high proportion of the sample submitted information although some entries were incomplete and the

[2] For example. for the core villages the Census records 36% of the population aged 15 or over in the 45-64 age bands and 30% as aged over 65, within the error margins of our sample (source: ONS / Cambridgeshire County Council).

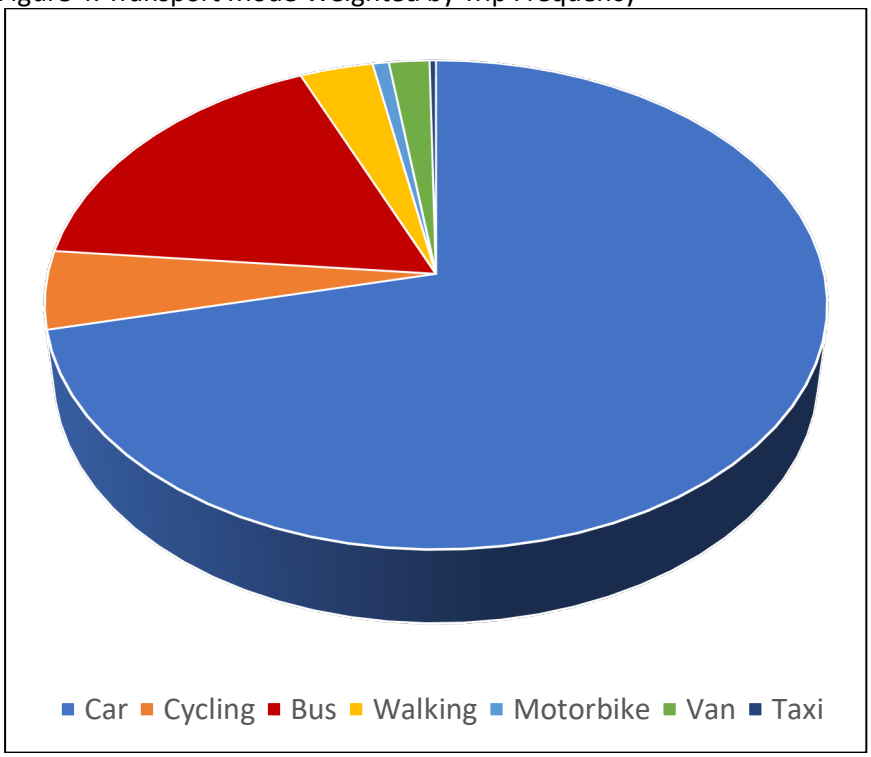
[3] Source: Office for National Statistics, local labour market reviews, online, accessed Feb 2023.

number of observations fell with the journey ranking (this, there were over 700 entries for the most frequent journey but this fell to a little over 500 for the 4th most frequent). After data cleaning, in total, we were able to obtain near complete information for over 2,000 journey observations. Where there was sufficient information on starting point and destination, the entries were geocoded to allow spatial analysis. Frequency responses were coded to number of trips per week, with missing data set to the average frequency for that rank of journey adjusted upwards for work and education journeys.

2.1 Characterising Journeys

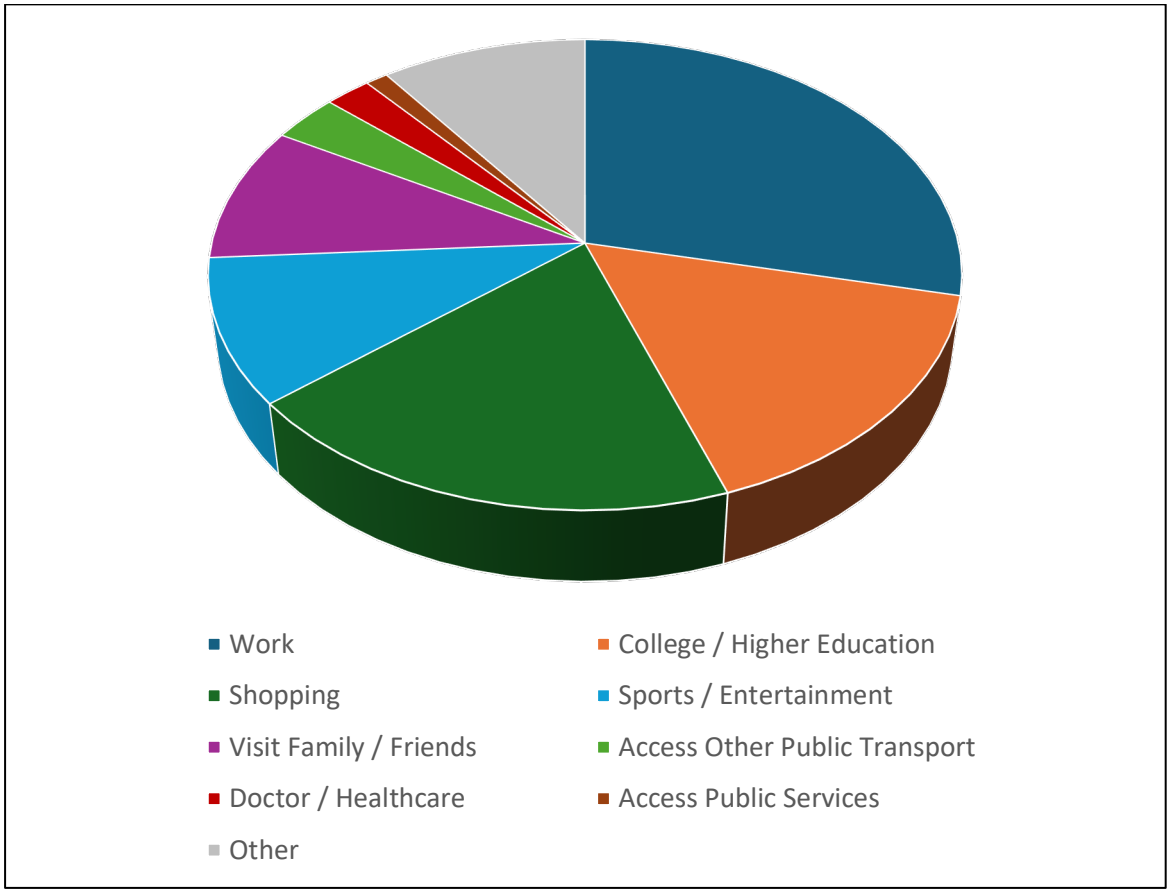
Before examining the spatial patterns revealed by the data, we begin by providing some descriptive statistics. The most striking feature from the data is the dominance of the motor car in trips from the area. On an unweighted basis, three quarters of all trips are by car, dominating all other transport modes (of the other categories, only bus travel, at 14%, reaching double figures. Weighted by journey frequency, the bus share increases to 17% but car travel still dominates at 71% (see Figure 4).

Figure 4: Transport Mode Weighted by Trip Frequency



While prior expectations were that travel to work or education would dominate journeys, the responses, weighted by frequency, totalled to less than half of all trips, with shopping ranking second behind work but ahead of education. In part, this might reflect the high proportion of over-65s in the sample (and in the study area); it might also result from the increase in hybrid working and working (and studying) from home that reduces the aggregate number of journeys to workplace, college or school. 10% of journeys are to visit family and friends and a further 10% for leisure (sport and entertainment) purposes.

Figure 5: Journey Purpose Weighted by Trip Frequency



We additionally asked those surveyed which train stations they used (or would use), with 62% of the sample answering. Respondents could select up to three stations. Cambridge dominates the responses. The most frequent station was Cambridge North (selected by 67% of respondents), followed by Cambridge Central (67%) and Ely (36%) with smaller proportions selecting Newmarket (21%), and fewer still selecting Soham, Dullingham or Waterbeach (where the response may have been boosted by a suggestion of a cycle route from Lode). We would note that the current bus services do not go directly to *any* of these stations and that there is no easy public transport route to Cambridge North, the most frequently used station. Free-format comments suggest that many of the users of Newmarket station are those in full-time education from the villages further up the B1102, using it as an alternative to the bus journey to school/college in Cambridge, seen as unreliable and too time consuming[4].

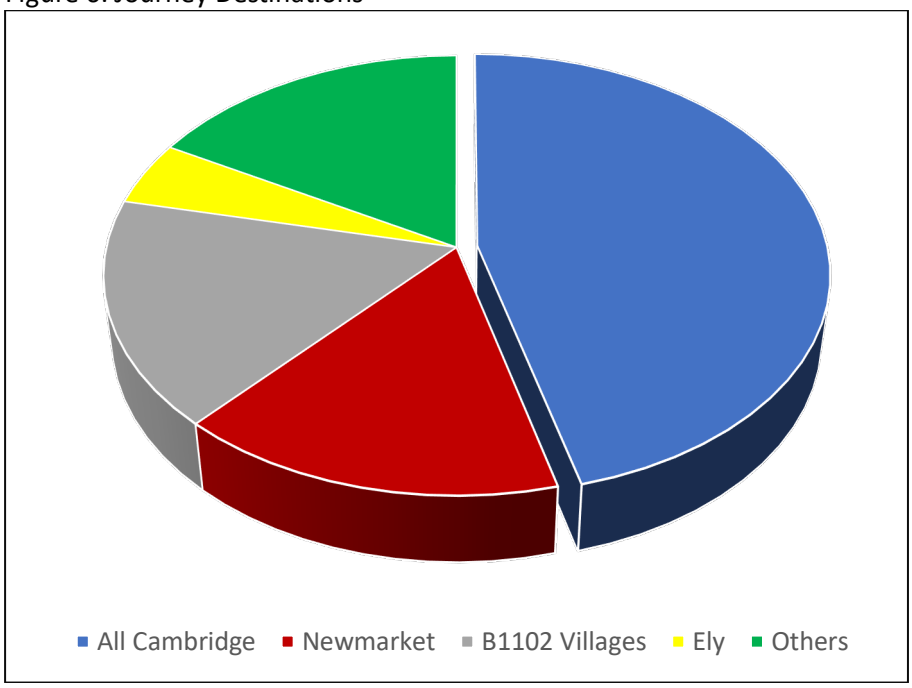
2.2 Frequent Trips: Destinations

The majority of respondents to the survey answering the frequent journeys questions included a trip destination (either as a location or a postcode) and these have been geocoded. The analysis here is preliminary but is based on just over 2,000 trips[5]. As noted above, we are able to weight these by trip frequency[6]. In this initial report, we focus on journeys into Cambridge – defined as the wards in Cambridge city plus the contiguous areas to the North up to the A14 and to the East from Cherry Hinton. Journeys into the city account for 46% of all the trips reported. We note, though, that 16% of

[4] Those same comments suggest that there is a very unfavourable view of the reliability of the rail service too.
[5] After data cleaning, we have 2,093 trip records, 961 of which have destinations in Cambridge.
[6] As above, where there is missing data, we use the mean value for the trip ranking as a proxy, adjusting for commuting for work or education as appropriate.

trips were to Newmarket and 17% of trips were to other villages along the B1102 corridor, with around 5% of trips going to Ely (recall that we do not have a large Fordham sample, however). Other smaller clusters include journeys to Fulbourn, Bury St Edmunds, Soham, Milton and Histon & Impington. Factoring in trip frequency, Cambridge's importance would be still greater.

Figure 6: Journey Destinations



Focussing on the Cambridge journeys, we have examined clusters of destinations within the city. The first ranked destination is the city centre, broadly defined. However, this only accounts for 44% of trips and 37% of journeys weighted by frequency, emphasising the diversity of destinations that the survey respondents target. Other important clusters include Hills Road (14%) and Long Road (8%); Addenbrookes and the bio-medical campus (5%); Cherry Hinton including ARM and other business locations (6%), the Science Park, St John's and CRC (4%). Taken together, these clusters contain more destinations weighted by journey than journeys into the city centre. Analysis of the unweighted trips indicate that, as expected, Addenbrookes becomes more significant (that is, many respondents visit the hospital and/or the bio-medical campus, but with a lower frequency). The importance of the Long Road and Hills Road clusters may well reflect journeys for post-16 education: we examine this further below. These named destinations only account for three-quarters of the frequency-weighted journeys and other smaller clusters are evident, including the two train stations, the University's Cambridge West site and (as a break of journey point) the Newmarket Road park & ride (we have no information on onward journeys from there, nor from the stations).

Figure 7: Weighted Journeys into Cambridge: Destinations.

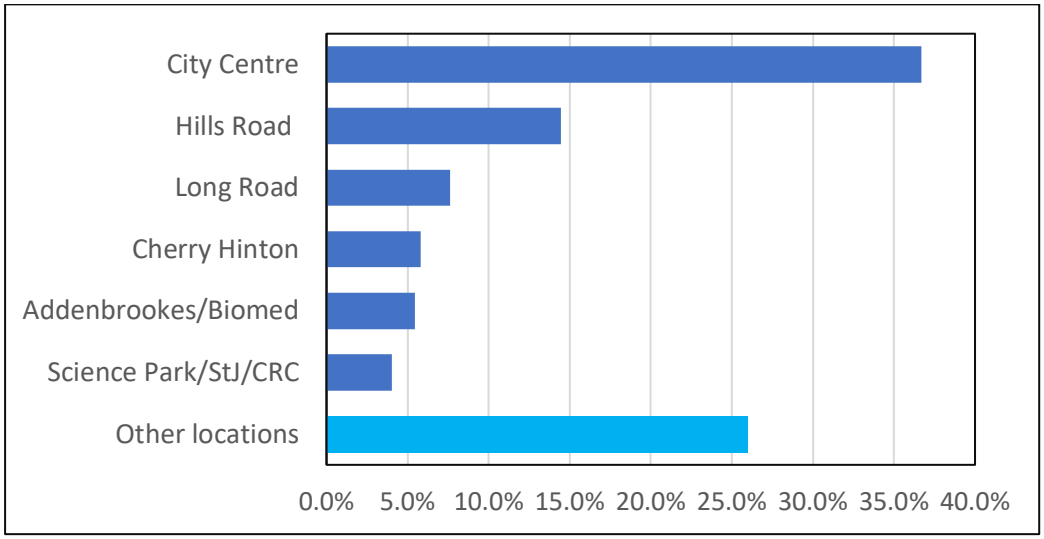
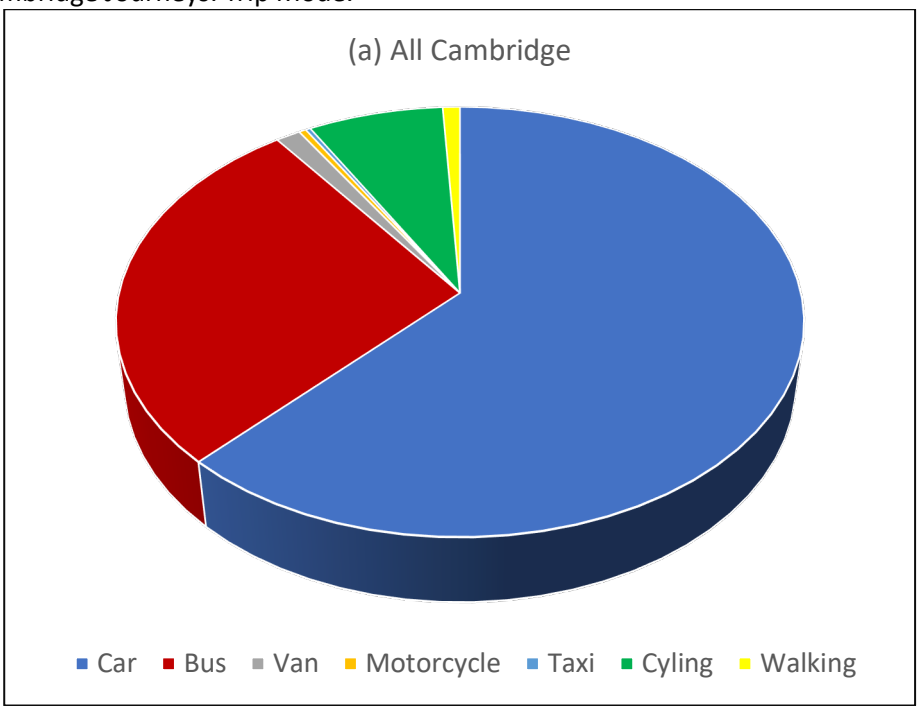
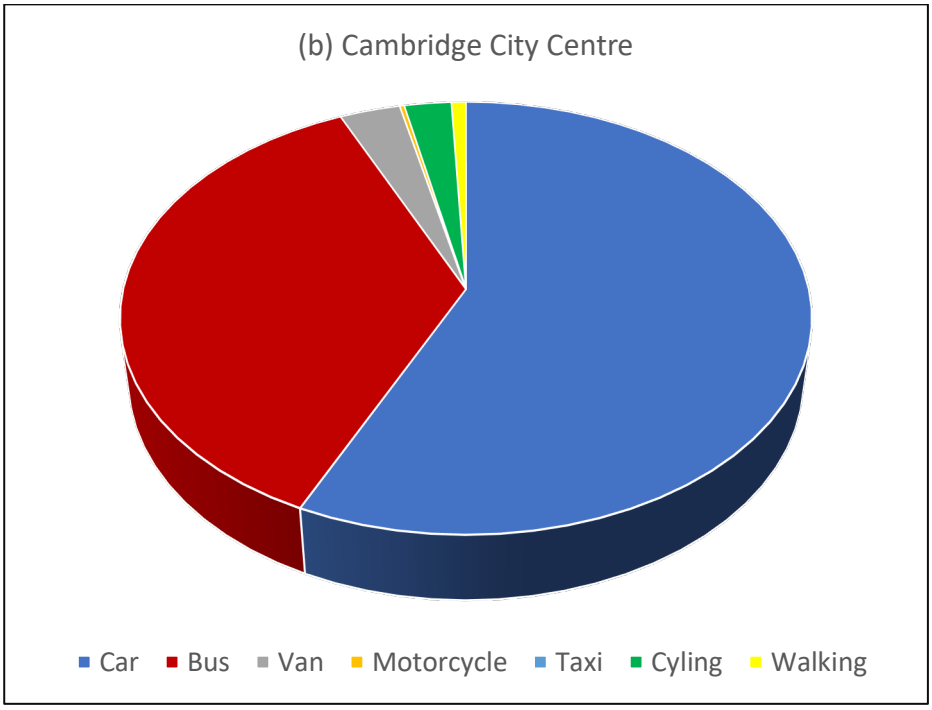


Figure 8 sets out the transport mode for the weighted journeys: Panel A shows the distribution for all Cambridge journeys and Panel B shows the distribution for journeys to Cambridge city centre. Once again, the dominance of car travel is clear, taking a 62% share of all Cambridge journeys and a 57% share of city centre journeys despite the known issues of congestion and cost. Bus travel becomes more significant for city centre journeys (36% compared to 27%) – this is to be expected given that Drummer Street is the route terminal and many of the other locations are not served directly, as discussed further below. Of those completing the data, 66% of journeys were reported to be in peak hours, reflecting journeys for work and education. The unweighted trip data shows a narrow majority (53%) of trips are off-peak, indicative that the survey respondents come into the city for other, less frequent, activities such as shopping, leisure and other service and amenity uses.

Figure 8: Cambridge Journeys: Trip Mode.





3.3 Those in Full-Time Education

Given the Hills Road and Long Road clusters and the presence of the sixth form colleges there, we separately analysed travel mode for those locations for respondents in full time education (around 100 trips). Hills Road sixth form college is over 2km from the Drummer Street bus station, albeit with a bus service between the two (often subject to congestion at the Lensfield junction and by the station), while Long Road is further still and there is no direct bus service from the B1102 villages. Nonetheless, 60% of journeys are taken by bus, despite the time involved. 27% travel by car including 35% of the journeys to Long Road. Given the distances, relatively few cycle (or walk), around 13% of those going to Hills Road, although given relatively small sample sizes this should be treated with some caution. It was also evident from comments that another route taken by some was into Newmarket (generally by car), then a train journey into Cambridge. The journey time and the lack of connection was a recurrent feature in the free-form responses to the survey. To give a flavour of these concerns we report a selection of (the printable) responses:

- *Buses do not run in Lode until 10am, meaning I have to walk to the Main Rd in order to get to college in the morning and walk home in the dark due to the irregular buses when I cannot be picked up;*
- *There are buses but they do not run at the times or frequency for me to use them so I have to rely on lifts;*
- *I would like to get the bus to and from sixth form college but can't rely on the 7:30am bus getting into town on time for a 9am start so a parent has to take me by car. Coming home it takes 2 hours because the buses are only hourly - if I finish at 16:00 the first bus I can get is 17:15 and I get home at 18:00;*
- *The bus I currently use doesn't stop at my destination, so I either have a 30 minute walk or have to pay an extra £2 for a return ticket for a crowded bus that would take about 20 minutes at peak time (from my bus stop to my college). At the end of my day, neither walking or getting the bus from my college to my bus stop will get my there in time for the hourly bus home so I normally have to wait at least 45 minutes until the next bus. Although the bus journey takes*

about 20 minutes (+ an extra 20/30 minutes getting another bus/walking), 3/5 days a week I don't get back until 2 hours after I finish college.

- *To get to Long Road takes getting on for two hours some days and can cost up to £8 return, it is cheaper to get a lift in if possible;*
- *I have to get the 6:40 bus every morning as 7:20 the bus is constantly unreliable and can often not get me to Cambridge in time for classes at 9 causing me to be late regularly. Also there are large gaps in times and the buses sometimes don't run late enough into the evenings causing me to have to get picked up by car;*
- *Services to Cambridge aren't frequent enough. They are unreliable which means I can take over 2hrs to get to college. The services are also not integrated with Cambridge city transport so would need two different bus passes which makes it very*
- *I DO use the bus, but if I am to get to my college for a 9am start, I must catch the 6:40am bus. I'm tired before I get there. Then, it takes me two buses and almost two hours to get home again. It's not a good way to study.*

These responses are broadly representative of the comments made by respondents in full-time education, and it is clear that many of them are forced to spend hours travelling (and are also restricted in terms of extra-curricular activity if reliant on public transport). Grouping the responses by theme, 27% complained about the very long journey times, 23% appealed for a direct service to Hills Road or Long Road to reduce journey time and cost, a tenth noted that they were forced to rely on lifts and 8% complained about the costs of multi-stage trips. Other frequent themes were the infrequency and unreliability of public transport options.

The survey additionally asked respondents what other regular (local) journeys they would take but were unable to do so due to lack of transport. At this stage, we have only carried out preliminary analysis of the responses. The sample provides usable information on 316 possible trips. Strikingly, the vast majority of those desired journeys are by bus (84% of trips, 87% of trips weighted by frequency). Around half the desired journeys are into Cambridge and these journeys are absolutely also dominated by bus travel (90% by trip, 93% weighted by frequency). Aside from more direct journeys to target destinations (including those already highlighted for education purposes), the free-form text comments indicate that a strong component of this was the need for public transport later into the evening and at weekends. The desired Cambridge locations are diverse, with around a third into the centre, with other clusters at Hills Road/Long Road, the Bio-Medical Cluster and the two Cambridge stations[7].

3. Bus Usage, Bus Improvements and Switching to More Sustainable Travel Modes

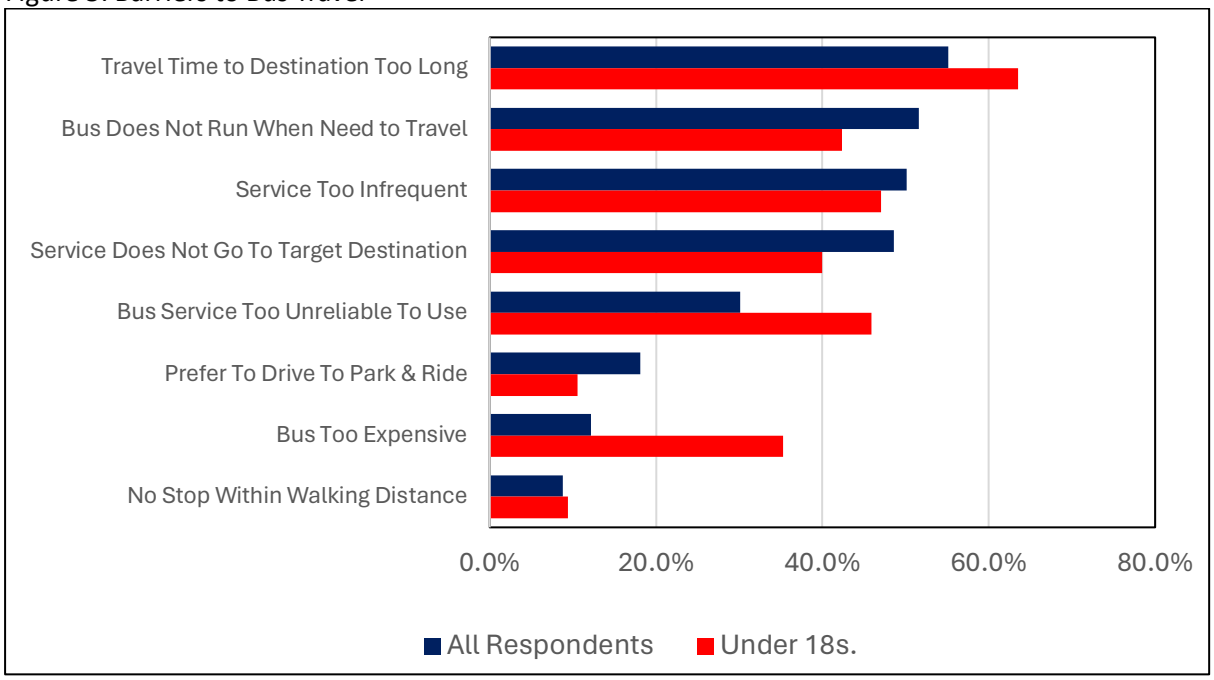
The survey asked respondents a number of questions about public transport and for those using cars (as noted above, over 70% of trips identified in the survey were by private car), what might encourage them to switch to more environmentally friendly formats. The responses identify both barriers to bus travel and possible improvements that might alter respondents' mode choice. The question format consisted of a series of structured responses (derived from pilot work on the survey and prior research) and the ability to add free form comments.

3.1 Barriers to Bus Usage

[7] This also suggests that with the opening of Cambridge South, that there is substantial potential for a southern route serving Addenbrookes, Long Road and the new station.

First, we asked respondents what were the most significant barriers that prevent them from using the bus for all or some of their journeys. Around 70% of respondents completed this question (the response rate was broadly constant across age categories, but lower for the under-18s, who presumably are more dependent on available public transport. The responses emphasise that the most important barriers related to service quality. The most frequently cited barriers were that the current bus service did not allow the respondent to get to their destination within a reasonable time frame (cited by 55% of respondents); that the service does not run when the respondent wished to travel (52%); that the service was not sufficiently frequent[8] (50%); and that the current bus service did not allow the respondent to get to their desired destination. These were the major barriers for all age groups. Journey time was a major issue for the under-eighteens with 63% of those responding citing it as a barrier. They also noted concerns about service reliability and cost with over a third of under-18s stating that travel by bus was too expensive (this did not seem to be a concern for other age groups). Taken together, these responses suggest that those surveyed felt that the existing bus service did not meet their needs in terms of travel time, frequency or destination.

Figure 5: Barriers to Bus Travel



The free form text comments confirm and amplify these results. Many speak to the absence of a service to the destination required and/or at the time needed. Some of the representative comments include:

- *There are no bus services to any train stations which is madness.*
- *I would like not to have to go into Cambridge then out again when there is a more direct route to Addenbrooke's.*
- *I would love to be able to go to work with public transportation, but it's impossible to get to the Science Park from Burwell.*
- *I currently have to get the bus at 7 which then gets stuck in traffic for sometimes up to 30 mins, I then have to walk for 35 mins to school, I am often late and the journey should not take this long.*

[8] The responses were linked to confidence in using the service: with one bus an hour, a cancellation or long delayed running can make the bus infeasible for most users.

- *I volunteer in Cambridge on weekday evenings (7:30-10pm) but the buses do not run after 6pm so I cannot go into town or get home on the bus.*
- *It would be great if the buses ran in the evening and on Sunday so I could get to work and meet friends without needing my parents to take and collect me by car.*
- *I would prefer to commute to work by bus, however the infrequency makes this difficult. I often have to work later than normal 9 - 5 office hours (finishing after 8pm or later)*
- *If there were a regular reliable bus service, including into the evenings, we would use it. We could also reduce to one car from two, in a two-person household.*
- *Without a bus from Lode to Bottisham I cannot get to the shop or the doctors. It is a long walk.*

All these responses eloquently suggest that individuals would be prepared to switch to public from private transport, reducing the dominance of the car as transit mode if the service provided reached target destinations sufficiently quickly and at the times needed. The current, very restricted service, with a single central destination and limited operating hours does not meet the needs of the B1102 communities and hampers the switch to more sustainable forms of transport.

3.2 Bus Improvements

Next, respondents were asked which improvements might encourage them to use the bus more frequently. As with the travel barriers question, the survey provided a list of potential improvements and the opportunity to provide free-form text. The improvements drew from the work of the A to B1102 Group, discussions with parishes, from local authority travel consultations and from other schemes. Around two thirds of our sample completed this question, just over 600 responses.

For the whole sample, the most frequently cited improvement was for services to be extended into the evening (58% of respondents, rising to 65% in the 25-64 year old age band). Other frequently cited improvements included provision of real time departure information at bus stops (47%); an interchange to enable travel to other Cambridge locations[9] (46%); a Sunday service (42%) and a fast service along the B1102 from Fordham into Cambridge (40%). As with the bus barriers question, the under-18s had somewhat different priorities with 57% supporting the fast bus concept but only a third selecting extension of services into the evening. Responses across other age categories were broadly consistent although only a quarter of the over-65s selected the fast bus choice but 36% supporting a local minibus service linking villages and going to shops and surgeries. Fewer younger adults chose this option.

The free-form text comments amplify the structured data on constraints and improvements. Our initial analysis suggests that by far the most commonly cited issue was the availability of buses – that they did not run in the evenings or on Sundays and that they were too infrequent: nearly a third of the comments made reflected this issue. The second ranked issue was journey time: a sense that the time taken to reach target destinations was too long to make a bus journey feasible or was having negative impacts on the traveller. A number of the comments related to the absence of (reasonable) public transport links to mainline stations and the lack of connections between communities in the B1102 corridor: a particular issue being the ability to access medical facilities, shops and other amenities located in the larger communities from the smaller villages. More generally, the comments suggested that concerns about safety were limiting the use of more sustainable transport forms, notably cycling: a number of respondents talked about safety issues travelling from village to village.

[9] The question gave South to the bio-medical campus, North to the Science Park as examples.

Finally, we asked those who currently used a private car or van for the majority of their frequent journeys what would encourage or cause them to change their mode of transport. Again, around two thirds of our sample completed this question. By far the most frequently selected response was "more frequent bus service" (selected by 66% of respondents), followed by provision of a bus route that replicated the car journey (54%) – the answer included the phrase "as fast as possible (albeit with stops)". No other choice was selected by a majority of those responding, the next highest being "better connections/interchange" picked by 38% of the sample. There was some support for a better and safer footpath/cycle path, although not amongst the younger age categories[10]. The responses here suggest that, in the absence of a proven, frequent and reliable service, it will be hard to persuade travellers in the B1102 corridor to use public transport, although these responses are clearly influenced by the existing service provision and its perceived inadequacies.

4. Summary and Conclusions

The A To B1102 travel survey generated nearly 900 usable responses, with very good coverage of the communities along the B1102 corridor, the sample being broadly representative both of the spatial distribution and the demographic profile of the area. The data allows us to provide a clear view of the pattern of travel within and from the B1102 villages and the constraints and problems faced by residents in the area. The analysis presented here is preliminary but demonstrates the constraints hampering use of public transport and the potential for a switch towards more sustainable transport forms if the service provision were more sensitive to the needs of the local population.

Based on analysis of more than 2,000 frequent trips made by the respondents, it is evident that car travel dominates all other transport modes: weighted by travel frequency, some 70% of journeys are by car. Travel is for a wide range of purposes with, as expected, work, education and shopping being the most frequent reasons. 50% of journeys are into the city of Cambridge, with other less dominant clusters including Ely and Newmarket. There is also evidence of significant inter-village travel to access local services and amenities (in particular doctors' surgeries) in the larger communities.

For travel into Cambridge, only 44% of trips and 37% of journeys weighted by frequency are into the city centre (the only destination served by buses). The results show a wide range of destinations, with important clusters found in Hills Road and Long Road, Addenbrookes and the bio-medical campus and the Science Park/Cambridge North. None of these are directly served by a bus route: public transport journeys would involve multiple stages. This provides a substantial explanation for the dominance of car-based journeys, as emphasised in many of the comments made in free-form text.

We identify a specific issue for students aged 16-18 in the area, many of whom travel into Cambridge to access the sixth form colleges at Long Road, Hills Road, CRC and the Oakes. None of these have a direct bus service, entailing lengthy and costly multi-stage public transport journeys (or travel by car); further, the early final bus times back from Cambridge curtail extra-curricular activity and socialising. The dissatisfaction of these students was very evident from the comments provided in the survey.

We asked about obstacles to travel by bus. Once again, the answers are consistent with the journey information: the services were seen as taking too long, not going to desired locations, and not running where needed (with cost an additional factor for those in full-time education). There was also a sense that the service frequency and reliability was a constraint (an hourly service creates significant issues

[10] There is some sense from the responses and free format text that improved safety might increase cycling *within* the B1102 corridor, but not see an increase in cycle commuting. Even from Quy, the city centre is some 8km away, closer to 20km from the centre of Burwell.

if a bus is cancelled). Our question on transport improvements and switching to more sustainable travel modes mirrored this, focussing on routing, speed of journey and extended operating hours. We also have preliminary analysis of desired journeys – the great majority of which were into Cambridge: direct to colleges for those in education but also into the city to access amenities and services but at times when the bus service currently does not operate (evenings and Sundays in particular).

This initial analysis suggests that while car travel dominates travel in the B1102 corridor, there is considerable potential for greater use of more sustainable transport forms – but only if the bus services provided were more sensitive and responsive to the needs of the B1102 communities in terms of the range of target destinations, travel time, operating hours and frequency/reliability. Although some comments indicated a determination to continue to rely on the car, a considerable proportion of those responding indicated that they would switch if the public transport service provided supported that.