Department for Transport

Zero Emission Bus Regional Areas (ZEBRA) 2

Application Form

Applications to the Fund will be assessed against the criteria set out here and in the guidance document.

You must also complete and return a Greener Bus Tool (separate document)

Proposals must be received no later than
4pm on 15 December 2023.
You will receive confirmation that we have received your proposal within 5 working days.

An electronic copy only of the bid including any supporting material should be submitted to BUSES@dft.gov.uk

Enquiries about the Fund may be directed to BUSES@dft.gov.uk
Please include "**ZEBRA 2**" in the subject line for the email.

Section 1

Applicant information

This section is not scored.

Bidding authority

Gloucestershire County Council

Bid Manager

Name and position of the official with overall responsibility for delivering the proposed bid.

First name

Last name

Position

Integrated Transport Unit Manager

Contact telephone number

Email address

Postal address

Shire Hall,

Westgate Street,

Gloucester

Gloucestershire

Postcode GL1 2TG

Website address for published application

https://www.gloucestershire.gov.uk/transport/gloucestershire-bus-strategy/

Section 2 –
Key requirements

LTAs will need to meet a number of key requirements to be able to receive funding. **This section is not scored.**

The Department reserves the right to reject any application which does not meet all these key requirements.

Please select Yes or No.

2.1 Can you confirm you have an Enhanced Partnership in place or are following the statutory process to decide whether to implement a franchising scheme?

(●) Yes ( ) No

2.2 Can you confirm that all vehicles will meet the enhanced accessibility standards set out in the scheme guidance?

(●) Yes ( ) No

Please name the annex(es) which provide quotes from zero emission bus manufacturer(s).

Annexe 7, Annexe 8, Annexe 9

2.3 Can you confirm that you have letters of support from the bus operator(s) as per the below?

- LTAs must provide letters of support from the bus operator(s) who will be operating the zero emission buses, with signatures from the national CEO and local area MD, committing to investing in the buses and operating them in the area for a minimum of 5 years. The national CEO or equivalent should be empowered to commit the bus operator to operating the buses and providing any required funding for the proposed scheme. LTAs do not need to provide letters of support for all operators in the area, only the operators who will be operating the zero emission buses.
- If LTAs intend to award a contract to operate the bus service where the zero emission buses will be used, they must provide evidence that bus operators will submit bids to operate the bus service. This should take the form of letters from bus operators expressing their interest in seeking to bid to operate the bus service.

(●) Yes ( ) No

2.4 Please name the annex(es) which provide letters of support from the bus operator(s).

Annexe 1

2.5 Can you confirm that all ZEB funding monies administered will take account of subsidy control obligations, this applies to any onward award of ZEBRA monies to third party organisations. Can you confirm that you have received legal advice?

(●) Yes ( ) No

Please name the annex containing legal advice that has been obtained.

Annexe 2

2.6 In the case of proposals seeking funding for their battery electric proposals, can you confirm the proposal achieves a minimum low value for money using the Department's updated Greener Bus Tool?

If this has not been met the Department reserves the right to not assess the rest of the application.

(●) Yes ( ) No

2.7 In the case of proposal for hydrogen fuel cell buses should provide evidence of costs of hydrogen fuel. In line with other funding for hydrogen transport, proposals for hydrogen fuel cell buses will need to demonstrate that by March 2025 the buses will use hydrogen sourced with either Renewable Transport Fuels Obligation (RTFO) support or hydrogen that meets the UK's draft Low Carbon Hydrogen Standard (LCHS).

( ) Yes ( ) No

Please name the annex containing a provisional offtake contract, budget estimate, letter or email from a hydrogen fuel supplier.

Section 3 – **Rural eligibility**

3.1	If you are seeking to apply for the funding that has been initially earmarked for ZEBs in rural areas you will need to demonstrate how you meet the rural definition of ZEBRA 2. Introduce ZEBs in a rural area explain in **no more than 300 words** how the area meets the definition of rural area set out in the guidance. LTAs not seeking to apply for this funding to not need to complete this section. **This section is not scored and will be pass/fail.**

Gloucestershire is a predominantly rural county with two larger settlements (Cheltenham and Gloucester) at its centre, surrounded by rural and semi-rural areas and market towns. Gloucestershire's ZEBRA 2 bid aims to provide high quality, carbon free bus connectivity from these rural areas and market towns into the two larger settlements as well as improving connectivity between them. In particular, this application for ZEBRA 2 funding, is aimed at Zero Emission Buses (ZEBs) operating on services that:

1. Provide connectivity from Tewkesbury and Cotswold Districts (both classified as rural) into Cheltenham and Gloucester;

2. Link Cheltenham and Gloucester via rural districts;

3. Provide access within rural areas and also to the main centres for people in rural area’s;

4. Support the modernisation and electrification of the vehicle fleet of Gloucestershire’s two largest bus operators as well as one local charity (starting with one minibus) providing a Gloucestershire County Council supported, timetabled, service in the Forest of Dean (also classified as rural).

Referring to the 2011 Rural Urban Classification 2011 Lookup Tables for Local Authority Areas Sheet LAD21 the above listed three districts are classified as rural. Gloucestershire, as an upper tier authority, therefore, meets the eligibility criteria for applying for funding for ZEBs for rural areas.

A number of ZEBs would be allocated to routes within Gloucestershire’s predominantly urban areas, where these fulfil strategic objectives that are of exceptional importance to Gloucestershire, such as to improve air quality in Air Quality Management Areas (AQMAs) and to serve key workers.

Alongside this bid, we have provided a map illustrating the proposed ZEB bus route and the predominantly rural nature of the areas they serve.

Section 4 – **Bid description**

4.1 Please complete the following fields with key information about your bid. This information should match the information that is included in the Greener Bus Tool. We suggest that section 6 is completed at the end of completing your application to ensure numbers reflect the final figures. **This section is not scored.**

Total grant amount	£6,021,679 (£6,049,768 LDAR)
Local transport authority funding	£1,005,000 (£1,009,015 LDAR)
Other public sector funding	£0 (£56,438 LDAR)
Bus operator funding	£22,476,823
Other private funding	£0
Vehicle grant amount	£4,738,707 (£4,759,033 LDAR)
Infrastructure grant amount	£1,282,972 (£1,290,735 LDAR)
Total number of buses	57 (58 LDAR)
Total capital cost	£29,271,044 (£29,357,549LDAR
Vehicle capital cost	£25,731,838 (£25,808,343 LDA)
Infrastructure capital cost	£3,539,206 (£3,549,206 LDAR)

4.2 In **no more than 750 words** applicants should provide information on the project area. This should include a list of the bus routes where the ZEBs will operate and set out the location of the bus depot and/or other locations where supporting infrastructure will be located. **This section is not scored.**

GCC's bid is primarily focused on Gloucestershire's two largest bus operators, Stagecoach, and Pulhams Coaches (part of the Go-Ahead group). However, a small local charity (Lydney Dial a Ride & Community Transport - LDAR) also expressed an interest. LDAR provide demand responsive as well as scheduled bus services and GCC is keen to support them, as the transition to electric vehicles would be beyond their financial means without support. LDAR financial figures are presented in brackets in 4.1 above please also note that above figures in 4.1 include risk.

The routes included in this bid were selected because of their strategic fit with Gloucestershire's emerging express-bus network, their alignment with wider programmes to enhance bus services, the need to decarbonise routes in areas with poor air quality, and also, to demonstrate Gloucestershire's commitment to ongoing investment in its rural bus network and addressing inclusion and transport poverty. The supporting infrastructure will see two bus depots of Gloucestershire's largest bus operator, Stagecoach, equipped to cater for ZEBs, as well as the only bus deport of Gloucestershire's second largest operator and that of a small local charity. The services

where ZEBs are proposed to be used, should funding be granted, are listed, and briefly described below.

Stagecoach

Routes 94 and 94x serve Gloucester and Cheltenham and offer an opportunity to electrify one of Gloucestershire's busiest bus routes, providing high visibility on a corridor identified in Gloucestershire's Local Transport Plan (LTP), Bus Service Improvement Plan (BSIP) and in the emerging express-bus study.

Routes 41, 42, and 43 (linking Tewkesbury to Cheltenham) as well as route 71 (linking Tewkesbury to Gloucester) are also recognised in the LTP, BSIP, and the emerging express-bus corridor study. These services provide high quality regular bus services for the proposed expansion of Gloucestershire's rural DRT service to link into. In addition, routes 41, 42, and 43 will benefit from investment in bus priority as part of the M5 J10 scheme and developer funding, making this a real opportunity to create a flagship express-bus corridor for Gloucestershire.

Route T, links Bishop Cleeve and Tewkesbury, complements the 41 and 71, and would complete the EV conversion of Stagecoach's Tewkesbury network.

Routes 1 and 2 serve Gloucester and run through an Air Quality Management Area, providing significant opportunities to improve the health of Gloucestershire residents.

As part of the bid, Stagecoach will also invest in electric bus charging infrastructure in their Cheltenham and Gloucester bus depots, thus preparing the ground for further investment in electric buses in the future. Buses from these depots operate in the Forest of Dean, Gloucester, Cheltenham, Tewkesbury and the Cotswolds.

Pulhams

Route 99, linking Cheltenham General Hospital to Gloucester Royal Hospital via Arle Court. This route provides significant benefits for NHS workers as well as Gloucestershire residents needing to access hospital services. It aligns with Gloucestershire's LTP and BSIP and links to one of GCC's major investment projects and flagship Interchange Hub, at Arle Court.

Routes P, Q, and L provide local services within Cheltenham, which has long suffered from poor air quality.

Route 801, links Moreton-in-Marsh to Stow-on-the-Wold, Bourton-on-the-Water and Cheltenham. This is one of the most rural routes proposed and would see investment in one of our emerging express-bus corridors, which we plan to enhance using BSIP+ funding, and provide links to the Gloucestershire "Robin" service in the north Cotswolds and to rail services at Moreton-in-Marsh station.

Routes 802 and 855 are rural services linking Bourton-on-the-Water to Upper Rissington and Cirencester.

As part of the bid, Pulhams will also invest in electric bus charging infrastructure in their Bourton-on-the-Water bus depot where all of their Gloucestershire services are based.

LDAR

LDAR is a third sector operator who run in Gloucestershire. It is considering investing in one or two electric minibuses on the timetabled route 777 serving Lydney to Coleford. As with the 801, these are truly rural bus routes that would benefit a significant congestion hotspot and AQMA.

However, due to their size, type of operation and small amount of grant funding sought, it was not possible to include LDAR in the greener bus tool assessment. Therefore, in the below scheme description, the financial figures include the grant amount for Stagecoach and Pulhams with the grant amount including the LDAR funding asked for in brackets behind.

Section 5 –
Assessment Criterion 1 – Strategic Case

5.1 Applicants should set out in **no more than 1,000 words** how they meet the case for change part of the strategic case as set out in the guidance.

GCC's ULEV Strategy (2021) commits to partnering with public transport operators to identify funding opportunities to convert bus fleets to ULEVs. In line with this strategy, GCC officers contacted all bus operators in Gloucestershire to explore their interest in applying for ZEBRA 2 funding. Stagecoach, Pulham's and LDAR (who operate a timetabled service) all expressed an interest in and commitment to working with GCC to deliver ZEB's in Gloucestershire. The services where ZEB's are proposed to be used were agreed between the bus operators and the County Council based on the following considerations:

1. Enhancing rural access

2. Alignment with other investment programmes

3. Impact on air quality - i.e. routes that pass through AQMA's

4. Route length and frequency – to maximise potential carbon reductions.

5. Passenger capacity and demand

6. Addressing inclusion and transport poverty

Gloucestershire's ambition to become an exemplar for decarbonising transport in a largely rural county has been clearly expressed in its LTP (Policies PD 0.1 and PD 1.1) (ltp-policy-document-final-v132-2.pdf (gloucestershire.gov.uk)) , BSIP (https://www.gloucestershire.gov.uk/transport/gloucestershire-bus-strategy/) and most recently a statement of joint intent signed by GCC and the six district authorities (see 5.4). Gloucestershire's BSIP explicitly aims "to make all public transport vehicles and therefore public transport services carbon neutral by 2035". Investing in ZEBs on rural bus corridors will target journeys with longer trips distances and higher carbon emissions, setting a clear signal of Gloucestershire's intention to invest in the attractiveness of its rural bus services, thus encouraging mode shift onto the bus.

Gloucestershire's BSIP seeks to create a network of express-bus services, where bus priority interventions and increased investment in bus infrastructure will be focused. GCC is currently undertaking a study to identify this network for inclusion in its next BSIP due for publication in April 2024. Decarbonisation and investment in the express-bus network are also key targets in Gloucestershire's Enhanced Partnership: gloucestershire-county-council-enhanced-partnership.pdf. Priority was therefore given to routes serving rural communities on higher frequency bus corridors and on corridors in the emerging express-bus network.

These principles were combined with operational considerations and other strategic considerations, such as benefits to local AQMAs, social inclusion and accessibility as well as planned bus priority investment. For example, the corridor between Tewkesbury and Cheltenham will see significant investment in bus priority, including bus lanes, funded by adjacent development and as part of a larger transport improvement scheme. In addition, a budget of £2.6m pounds of GCC funding has been identified for bus priority measure with investment in the express-bus network being prioritised.

The operators have used their previous experience of ZEB technologies to determine the most appropriate proposal and concluded that Battery Electric Vehicles (BEVs) are the preferred option for the chosen areas. This is in line with the short/medium term strategy of both, Pulhams and Stagecoach to roll out BEVs with predominantly overnight charging.

Both operators have more than 5 years' experience in operating BEVs and found these to be most cost-effective and straightforward to deploy from an infrastructure perspective (when compared to hydrogen or opportunity charged EV vehicles). In addition, the supply chain for BEVs has reached a point of maturity significantly ahead of other zero emission technologies.

At a national level, Stagecoach has developed a sustainability roadmap identified power capacity at each of its 122 depots, making the Gloucestershire bid part also of its longer-term strategy.

While hydrogen may ultimately prove a good solution for longer distance routes, at present, challenges on hydrogen supply availability, and HSE approval of depot facilities means this technology was not favoured by the bus operators. Go-Ahead (of which Pulhams is part of), for example, are trialling this technology elsewhere and are not planning further roll outs of this technology until the challenges at the trial site have been overcome. Similarly, Stagecoach have found that Hydrogen does not currently have a strong case as it requires three times the level of electricity to produce the equivalent kwh for EV. They also voiced concerns about the lack of Hydrogen fuel production in the UK and the significant increase in hydrogen fuel cost (800% in last 12 months - spot price from £6pkg to £51pkg).

Careful consideration has also been given to current demand, potential for growth, route length, location and frequency and the maximum speed required for each route. Operators have modelled the use of BEVs on the routes proposed and have identified a way of making these work without excessive impact on scheduling efficiency. In Pulhams case, including a peak school service has helped to minimise the need for additional "charging spares" to compensate for range limitations.

Both operators have specified single and double deck vehicles to account for patronage numbers. Pulhams expect that patronage on the 99 and 801will increase further due to the development of Arle Court Transport Hub, changes to NHS staff parking policies and a planned increase in frequency and improvements to service marketing / publicity.

Pulham's have specified the larger battery packs for all vehicles to maximise available range, as due to the rural location of their depot. For infrastructure, 150kw DC chargers have been specified as Pulham's consider this to be the standard for the electric bus

market. A 1MVA connection has been specified at their depot to allow all buses to charge simultaneously at 66kw per hour.

LDAR are a third sector provider who operate demand responsive and registered bus services. LDAR are one of the more proactive and innovative third sector provider and last year partnered with GCC on the rural mobility fund. They are keen to begin their journey toward zero emissions with one electric minibus and overnight charging units of 7.5kw.

5.2 Applicants should set out in **no more than 500 words** how the proposal meets the community benefit with regard to employment and training criteria set out in the guidance.

Pulhams and Stagecoach are both major employers in Gloucestershire, with Pulhams employing over 130 employees and Stagecoach over 491 across the county. While Stagecoach is Gloucestershire's largest bus operator, Pulhams business has grown strongly over the past decade, with the fleet having increased from 33 vehicles in 2011 to 103 vehicles today, operating a wide range of services in a rural part of the county.

Both operators see the ZEBRA 2 funding as an opportunity to ensure job security or even create new jobs. ZEBRA 2 would enable Stagecoach to continue to offer employment opportunities in engineering, cleaning, driving, control, management, and back-office roles. Stagecoach estimates that as part of this project they can employ a further 3 engineering apprentices across the two sites. Stagecoach seeks to remove barriers to employment through offering free bus travel to employees and their families, providing training from the very start, and providing entry level jobs on the engineering apprenticeship or trade up schemes. Stagecoach aims for an inclusive and accessible workplace training demonstrated by its gold membership of the 5% Club for 2023/24. Stagecoach do not use zero hours contracts, do not have any fire and rehire practices, and pay the national living wage to all staff.

Pulhams train their own drivers and maintain their own vehicles, using their in-house team of 11 vehicle mechanics, including 3 apprentices programmes. ZEBRA2 funding would support the investment of an estimated £4.4m into Pulhams Coaches by Go-Ahead group, which would safeguard existing jobs and support the continued creation of new jobs at Pulhams as the business continues to grow. LDAR recruit exclusively from their local area and maintain a focus on those coming from non-transport backgrounds. The additional electric vehicle will ensure retention of drivers to cover the rural bus route.

Zebra2 funding will provide the opportunity for operators to upskill their employees and to provide 'greener jobs' modernising the perception of the industry and attracting and retaining people from younger social demographics. Stagecoach has already seen the impact of this elsewhere in the country and as part of its plan for a future of EV’s all of Stagecoaches engineering apprentices are now trained to qualify as Mech/Elec Engineers.

ZEBRA funding would allow Pulhams to upskill all engineers to "master technician" level in the electric vehicles. Pulhams have experience of doing this in Oxford, where they put all engineers through a L3 and L4 auto electrician course, followed by training at the vehicle factory to learn how to maintain the vehicles. As a result, Pulhams staff will be able to perform their own warranty work on the vehicles, allowing the business to be more resourceful, reducing reliance on external contractors – and enhancing the skill set of Gloucestershire’s workforce.

LDAR’s recruitment and retention process includes driver training such as Minibus Awareness Training Assessment, First Aid and Fire as standard and other training opportunities. The Forest of Dean is an area that historically suffers from a lack of employment opportunities. LDAR maintain an emphasis on the health and wellbeing of their employees.

5.3	Applicants should set out in **no more than 500 words** how the proposal meets the community benefit with regard to the supply chain criteria set out in the guidance.

Gloucestershire's ZEBRA 2 bid will consider community benefits as part of the procurement process for vehicles and infrastructure, with Pulhams in particular, showing clear commitment to sustainable procurement. The Go-Ahead group, of which Pulhams Coaches is part, was the first company in the transport sector to commit to sustainable procurement, with the 2019 publication of its Sustainable Procurement Charter (https://www.go-ahead.com/sustainability/case-studies/sustainable-procurement-charter). Designed to align with the United Nation's Sustainable Development Goals, the charter mandates that the suppliers Pulhams work with are required to meet standards of sustainability, diversity, and inclusion. They also have a target regarding the proportion of their purchases made from local SME suppliers, in the areas where they operate. Pulhams vehicle tender will include quality scoring related to the proportion of vehicle parts sourced from UK manufacturers, and their infrastructure tender will include quality scoring relating to the use of local contractors to perform civil and electrical works in the depot.

All three bus operators participating in this bid are committed to demonstrating community benefits by supporting local supply chains and working with local businesses. Pulhams use a number of local suppliers, for example Alsigns Commercials in Broadway who they use for repainting and liverying of the vehicle fleet.

LDAR has strong links with the local supply chain, and a suitable garage has been identified within a seven-mile radius of its depot that could maintain the ZEBRA 2 vehicle and provide all the servicing and inspections needed. There are also local tyre suppliers and other ancillary services that LDAR would use, adding benefit to the local economy and automotive industry. LDAR has a policy to work with as many local suppliers as possible, ensuring that expenditure stays within the local economy. This policy includes LDAR's recruitment of accountants and contractors for office building maintenance.

Stagecoach chose local partners to provide goods and services where possible, including but not limited to:

• Electrical Solutions (Gloucestershire) for electrical works
• Mitchells (Gloucester) for heating & air con works
• Stroud Alarms - CCTV and other security provision
• TPS Gate & Doors (Lydney) - gates, garage doors & barriers
• Mental Health training at Sanctus Training Ltd Quedgeley, Gloucestershire
• University of Gloucestershire – management training courses
• Gloucestershire County Council – disability confident employer accreditation
• County Signs – bus vinyls
• Photography

In addition, Stagecoach employ over 490 people who are mainly based within close proximity to their depots at Cheltenham, Gloucester, Stroud and Coleford. Employing local people enables Stagecoach to indirectly contribute to the local supply chain for their needs.

5.4	Applicants should set out in **no more than 500 words** how the proposal meets the wider decarbonisation benefits criteria set out in the guidance.

Gloucestershire County Council declared a climate emergency in 2019 and in January 2023, GCC and the six district authorities signed a joint statement recognising the need for an 80% emissions reduction by 2030, and Net Zero by 2050. The statement specifically mentions the county's rural character and the specific challenges this brings. (Gloucestershire's councils unite for Net Zero transport | UK100). Evidence shows higher carbon emissions from transport per person in rural areas, primarily due to longer average trip distances. Gloucestershire's ZEBRA 2 funding application therefore targets bus routes for electrification, where carbon emission savings are greatest.

Stagecoach is proposing to replace 42 diesel buses with ZEBs which equates to just over 20% of their Gloucestershire vehicle fleet. This will remove 22 tonnes of NOx emissions and 43,224 tonnes of carbon emissions over the appraisal period. Pulhams are proposing to replace 10 double and 5 single decker buses with ZEBs in Gloucestershire. This equates to approximately 50 % of their local bus fleet in Gloucestershire and will remove 8 tonnes of NOx emissions and 15,845 tonnes of carbon emissions over the appraisal period.

Stagecoach is proposing to invest in 13 chargers at the Cheltenham depot providing capacity for 26 ZEBs. The Gloucester depot will see an investment in 8 chargers for a capacity of 16 ZEBs and Pulhams are proposing to invest in 16 chargers at the Bourton depot providing capacity for 29 (maximum) ZEBs. This would leave spare capacity for an additional 14 ZEBS that could operate from this depot without additional infrastructure. Once the charging infrastructure is installed at their depot, they would also be able to provide top-up charging services for visiting tourist coaches, to help make coach tourism to the Cotswolds more sustainable.

The unsurprisingly small NOx and carbon emission savings generated by the one minibus LDAR is proposing to purchase are outweighed by the wider community benefits and expected future expansion potential. The charging infrastructure for the LDAR minibus will be installed at the GCC owned Lydney bus station, thus providing a publicly owned asset for the future. It is proposed to purchase 2 x 7.5kw chargers which will provide a backup unit and allow for the charging of an additional vehicle when required.

The diesel vehicles displaced by the Pulhams ZEBs will be cascaded within Gloucestershire and the Stagecoach ZEBs to operations elsewhere in the UK with a view of replacing the oldest vehicles across Gloucestershire and the UK, providing additional positive impacts on air quality and CO2 emission reductions in Gloucestershire and other areas of the UK.

The bid proposal not only aligns with existing policies but also propels Gloucestershire into a future of profound decarbonisation for its bus fleets. The secured funding will serve as the catalyst for essential ULEV charging infrastructure at strategic bus depots in Gloucester and Cheltenham, and within more rural areas such as Bourton-on-the-Water, and Lydney. This targeted infrastructure deployment offers operators a pivotal opportunity to advance the decarbonisation agenda for their bus fleets in these key areas.

5.5 LTAs must comply with the public sector equality duty (PSED – Section 149 Equality Act 2010). PSED consideration helps to ensure that people who share characteristics defined as "protected" by the Act will benefit from the scheme. The PSED also requires authorities to identify any likely negative impacts and to actively seek to remove or reduce these as far as possible.

We expect LTAs to consult with relevant stakeholders who represent people from the protected characteristic groups. Guidance on the PSED is available from the Local Government Association.

LTAs should set out in **no more than 1,000 words** how their proposal will meet the expectations of the Equality Act.

Equality Impact Assessments (EqIA) are part of the routine governance processes applied by GCC. The ZEBRA 2 funding application is therefore supported by repeatedly updated EqIAs at key gateway points, including in 2022, when GCC cabinet approved Gloucestershire's Enhanced Partnership (EP). As part of the BSIP process, GCC also undertook an inclusive consultation process that actively involved transport operators and the broader public, which is analysed regarding the protected characteristics groups below.

GCC officers will seek Cabinet approval again, following any Government funding award, to seek permission to enter into a funding agreement with the bus operators. A full EqIA including proposed monitoring activities will be produced as part of this process.

A summary of the Equality impacts identified so far can be given as follows:

Age:

Gloucestershire has a higher proportion of people aged 65+ than the rest of England. 8.2% of BSIP consultation response were made by people under the age of 18 though 21.8% of residents were aged under 19 in the same year. This demonstrates the need for better engagement with young people, which GCC will pick up through the EP and Gloucestershire Bus Board.

Disability:

24% of respondents to our BSIP survey reported having a disability, long-term illness, or health condition. This compares to 16.8% of Gloucestershire residents in the same year and indicates an increased interest in bus services amongst this group. The most common impairment type reported by disabled people in the UK was 'mobility' (46%).

Race and Ethnicity:

2.8% of responses to our BSIP survey were from an ethnic minority background (excluding white minorities), compared to 6.9% of the population in Gloucestershire in the same year. This indicated a need for better engagement with ethnic minority background groups. Gloucester had the highest proportion of people from ethnic minority backgrounds and Barton and Tredworth ward in Gloucester was the most ethnically diverse ward with 47.4% of its population from ethnic minority backgrounds (excluding white minorities), and 14.5% from another white background other than the white English, Welsh, Scottish, Northern Irish or British ethnic group.

Sex:

65.7% of respondents to our BSIP survey identified as female and only 28.5% as male, compare to the overall population where males make up 48.9% of the population and females 51.1%. This indicates an increased response rate to our consultation on bus services amongst women.

Gender reassignment:

1.3% of respondents to our BSIP survey did not identify with the same gender as their sex registered at birth, compared to 0,4% of the Gloucestershire population. Nationally, two in five trans people had experienced a hate crime or incident in the past 12 months.

Marriage and civil partnership:

Around 48% of Gloucestershire's residents aged 16+ are married, this is higher than the national figure. The proportions of the population who are divorced, or widowed also exceed the national figures while the proportions of people who are single, or separated are below the national figures.

Pregnancy and maternity:

Accessible environments can be assessed in terms of their 'friendliness' towards pregnant and nursing mothers and parents/guardians with young children.

Religion and/or belief:

45% of respondent to our BSIP survey stated that they do not have a religion, roughly in line with the 41.4% of the Gloucestershire population less people identifying as Christian responded, 37.8% compared to 49.2% in the population. Other religions were also underrepresented, indicating a need to improve communication with religious groups.

Sexual orientation:

11.1% of respondents to our BSIP survey described their sexual orientation as being in one of the LGBT+ categories, significantly above the 2.8% across the Gloucestershire population. The 2017 government National LGBT Survey reported that more than 2 in 5 respondents said they had been victim of verbal abuse or physical violence during the preceding year.

<u>Potential positive equality impacts across all protected groups:</u>

Gloucestershire County Council Population Profile 2023 (equality-profile-2023.pdf (gloucestershire.gov.uk)) concludes that a common theme relating to many of the nine protected characteristics is the increased likelihood of being a victim of crime, with race related hate crime being the most reported strand of hate crime in Gloucestershire, by a large margin. Investment in high quality, accessible vehicles, combined with additional infrastructure investment, e.g. in interchange hubs along the express bus corridors, as suggested in Gloucestershire's LTP and BSIP will increase the actual and perceived personal safety of protected characteristics groups.

The proposed investment in Gloucestershire bus services will particularly benefit the 17% of Gloucestershire households without access to a car. Certain groups, such as older and younger people and people with a disability, are more likely to fall within this category.

Accessible transport promotes social inclusion by enabling disabled individuals and people of all ages to participate more fully in community activities, social events, and employment opportunities.

People whose disability affects their mobility will particularly benefit from the high standards of accessibility requirements in the ZEB vehicle specification. ZEBs are also often quieter than traditional buses, minimising noise pollution. This is advantageous for individuals with sensory sensitivities, such as those with autism or hearing impairments.

Our ZEBRA 2 bid proposes the electrification of routes serving the Barton Street AQMA, thus benefiting air quality in the most ethnically diverse ward in Gloucestershire. In addition, improvements to air quality are particularly beneficial to the younger and older generations. Poor air quality is known to hinder lung development of younger people and increase respiratory illnesses in older people.

The replacement of diesel buses with ZEBs is unlikely to have negative impacts on any of the protected characteristics groups.

Monitoring

The following metrics of relevance to the above will be included in the ZEBRA 2 monitoring:

• The number of elderly and disabled concessionary passenger journeys on local bus services.
• Overall levels of accessibility by bus (including the areas served by the proposed ZEB routes) are monitored as part of Gloucestershire's LTP annual progress report.
• ZEB accessibility standards are a key requirement of this bid and will be monitored through the due diligence processes outlined.
• AQMA data is monitored as part of Gloucestershire's annual LTP monitoring report.

Section 5 – Assessment Criterion 1 – Strategic Case ZEBRA 2 Application form

5.6 LTAs seeking funding for a hydrogen fuel cell bus proposal that is poor VfM will need to demonstrate their proposal is innovative to receive funding. LTAs should set out in **no more than 1,000 words** how their proposals for hydrogen fuel cell buses will provide learning to the Department and wider government that will not be obtained from existing hydrogen fuel cell bus projects.

Proposals for hydrogen fuel cell buses that are a minimum of low VfM do not need to complete this section.

NOT APPLICABLE

Section 6 –
Assessment Criterion 2 – Value for Money

Section 6 of the application form and Greener Bus Tool will be used to assess Value for Money. This represents the 'Economic case' of the Five Case Model.

6.1	Please state the proposed VfM category of the proposal e.g 'low' and the central BCR informing this e.g. '1.25'. The proposed value for money category for the investment proposal should reflect the central BCR, non-monetised impacts and risks and uncertainties. If the proposed VfM category has been uplifted from that implied by the central BCR, provide robust justification for this in **no more than 150 words**. **This should be a summary of the information provided in 6.3 and 6.4.** The completed version of the Greener Bus Tool with the central BCR output should be provided alongside the submission along with evidence of key assumptions e.g. annual vehicle distance, estimated risk contingency amount.

GCC's bid is of "High" value for money (VfM), based on a BCR (as per GBT) of 3.05. Despite Gloucestershire's rural nature, our bus services connect into highly congested urban environments and congested rural/intra urban routes, justifying a high fuel/energy consumption scenario. Sensitivity testing can prove that even with a medium fuel/energy consumption scenario, VfM remains high, based on a BCR of 1.73 and the multiple non-monetized impacts evidenced in section 6.3. In realty we would expect VfM to be towards the higher end between the 3.05 and 1.73 BCR figures.

As outlined above, LDAR figures are not included in this VfM and BCR calculation and table 4.1 includes figures for Stagecoach and Pulhams with LDAR figures added in brackets behind. LDAR alone reaches a BCR of above 1. However, there is strong merit to use this as a trial project to support bus fleet electrification for small operators.

6.2 Please outline in **no more than 500 words** evidence informing assumptions related to:

- the estimated annual vehicle distance,
- the fuel/electricity consumption scenario chosen,
- annual infrastructure maintenance costs (if an annual maintenance cost is stated in the tool),
- electricity/hydrogen costs if local evidence is used
- battery replacement costs (if the suggested values in the GBT guidance are not used) and
- a quantified risk assessment (if conducted).

If the evidence is not in a suitable format, please summarise it here and signpost where supplementary evidence has been provided i.e. in a spreadsheet or e-mail as an annex. Further detail is available in the GBT guidance on the level of detail required for input assumptions.

Annual vehicle kilometres for buses were first assessed on a route-by-route basis, and subsequently, an average was derived for the GBT. The determination of annual vehicle kilometres involved two distinct methods…
1. Operator-Provided Data:
Operators supplied annual kilometres driven per route and Peak Vehicle Requirement (PVR) values. In such cases, we assumed that the annual kilometres per bus equated to the ratio of total kilometres and the PVR.

2. Alternative Calculation:
For routes lacking operator-provided annual kilometres, calculations were based on frequency data and route maps from DataCutter (utilizing TNDS - Traveline Data) and speed data from the Department for Transport's Analyse Bus Data. Using these sources, annual kilometres were computed for each route. The total buses per route were determined by referencing the number of registered vehicles under each route on "BusTimes.org," which relies on the Bus Open Data Service (bus-data.dft.gov.uk/avl/). The annual kilometres per bus was the ratio of the computed annual kilometres and the total bus registered for route in "Bustimes.org".

A comprehensive breakdown of the computation of annual kilometres per bus for each bus route is provided in the Annex.

The fuel/electricity consumption scenario chosen was "medium" for the following three reasons:

1. The BID includes urban, rural, and mixed services that vary in their intensity. Rural routes can travel at higher average speeds, while urban routes travel along congested streets in journeys that involved more intersections and bus stops leading to more inefficient uses of fuel. Due to the different typologies of routes proposed, GBT had to account for this wide range of more efficient and less efficient routes.

2. There are three operators participating in the BID with a wide range of fleet of different ages. The fuel efficiency of the fleet varies. Pulhams has a total fleet of 35 buses (3 are Euro III, 1 is Euro IV, 10 are Euro V, and 21 are Euro VI) with an average fleet age of 8.5

years. Lydney Dial a ride has a fleet of 13 buses (6 are Euro IV, 5 are Euro V and 2 are Euro VI) with an average fleet of 13 years.

3.The fleets are composed of single decker and double decker buses that also have a different range of fuel efficiencies associated to the vehicle's weights

The QRA for Pulhams and LDAR assumes a 7% increase in the capital costs of both buses and infrastructure. This is considered robust as it is higher than general inflation and the time period between quotes and placing orders will be less than one year.

6.3	Discussion of any significant impacts of the scheme which have not been estimated by the tool (non-monetised impacts) should be outlined in **no more than 500 words**. If any significant non-monetised benefits have been identified, the scale of the change needed to reach a higher VfM category should be determined, by calculating the required % increase and absolute increase in present value benefits (PVB).

A number of non-monetized impacts have been identified:

1. The adoption of zero emission busses in replacement of Diesel buses will reduce emissions of pollutants (particulate matter, nitrogen oxide) that place a significant burden in the health and wellbeing of GCC's population, particularly those living in dense communities near key bus corridors. Even though the GBT considers these reductions, there is a spatial local benefit associated which is not considered since these bus routes travel through Air Quality Management Areas (AQMAs).

2. The bus routes proposed for this project travel through 4 of the 7 AQMAs located in GCC – 2 AQMAs are located in Gloucester (Routes 1,2 travel through these AQMAs), 1 in Cheltenham (routes 41, 42 and 43 travel through this AQMA) and 1 in Lydney (service 777 intersects the AQMA in Lydney). Therefore, the scheme will bring a small but positive benefit towards the goal of addressing air pollution in these key locations.

Training opportunities for drivers and maintenance staff in operating and maintaining high-voltage traction systems. These learning opportunities will contribute to the formation of a skilled workforce that is needed to fill the gap of drivers and technicians as EV adoption accelerates.

The transition to electric buses will contribute with journey quality impacts such as those listed in TAG Unit A4.1. The scheme will contribute to the sub-factor "environment" by reducing noise and better motor vehicle condition. The reduction in noise levels from migrating from Diesel buses to electric buses will not only bring benefits to users but also to the general population that lives and works near busy transit corridors. The scheme will also contribute to the sub-factor "facilities" by introducing newer buses with features such as screen announcements, USB chargers and high-quality interior. Of the current Pulham's 35 buses, only 5 have USB chargers and next stop announcements. The addition of 15 electric buses to their fleet will have a significant impact in the overall journey experience of bus users.

TAG Unit A4.1 also notes that journey quality factors may be an important influence on travel choices. Improving bus quality is a key part of Gloucestershire's transport strategy which along with wider measures such as the proposed bus priority, BSIP + service enhancements and wider EP work programme seeks to encourage bus use. Replacement of Pulhams older vehicles in particular will contribute to this.

A number of benefits have also been identified for groups with protected characteristics which have been outlined in the EQIA.

The proposal has a VfM category of “High” with a BCR of 1.96. This BCR value was obtained by relying exclusively on the Greener Bus Tool and has not been uplifted despite the multiple non-monetized impacts such as those listed above.
To reach a higher VfM category the BCR would have to have a value of 4 and reach the next category of “Very High”, would require a valuation of additional benefits to enable an of £ 14,581,002 (105%) in present value benefits (PVB) – a 105% increase.

6.4	Discussion of any significant risks and uncertainties that might influence a scheme's VfM, with appropriate sensitivity tests to show the impact risks/uncertainties would have on the scheme BCR should be outlined in **no more than 500 words**. Completed GBTs with sensitivity tests should also be provided, with the file name clearly indicating which sensitivity test has been conducted. Refer to the GBT guidance for a suggested list of sensitivities.

Please note that monetised risks are included in the summary table in 4.1 for both grant funding and operator contributions.

There are multiple risks that can affect the BCR such as:
• Cost of the vehicles increases (e.g. Vehicle cost quotes expire)
• Cost of the supporting infrastructure costs increase
• The number of annual kilometres end up being less than expected due to changes in operation patterns. • Battery replacement cost increases

The results of these sensitivity tests demonstrate the potential impact of some of these risks:

If the cost of buses increases by 10% this will result in a lower BCR of 2.48. However, 10% lower costs would see the BCR increase to 3.72.

If vehicle annual KM have a 10% lower value this will result in a lower BCR of 2.55. However, a 10% increase would result in a BCR of 3.55.

If the supporting infrastructure costs increases by 10% this will lead to a BCR of 2.95. However, a 10% reduction would result in a BCR of 3.15.

If battery replacement costs increase by 10%, this decreases the BCR to 3.03. However, a 10% reduction would result in a BCR of 3.06.

As it can be seen, the risk associated to the vehicle cost has the highest impact in the BCR.

In addition, uncertainties about assumptions associated with the following inputs selected for the GBT can also affect the BCR:

The fuel/energy consumption scenario selected for the scheme which was “high”. A low scenario would reduce the BCR to 1.38, a medium scenario would decrease it to 1.73.

The Diesel resource cost value selected of “Central” A low scenario would reduce the BCR to 1.95, a high scenario would increase it to 4.44.

The electricity resource cost value was selected as “Central”. A high scenario would reduce the BCR to 3.40, a low scenario would increase it to 2.40.

The carbon value was also selected as central. A low scenario would reduce the BCR to 1.24, a high scenario would increase it to 4.85.

These uncertainties have been considered and sensitivity tests were performed to evaluate their impact. These are included in the Annex and are saved in the file with the following name: Annexe 13 – Combined GBT

Section 7 –
Assessment Criterion 3 – Grant funding per bus

The grant funding per bus criterion will form part of the financial case of the Five Case Model. LTAs must complete the grant funding per bus calculator spreadsheet which will be used to calculate a grant funding per bus score.

Download Grant Funding Per Bus Calculator Spreadsheet

Section 8 –
Assessment Criterion 4 – Deliverability

The Deliverability criterion draws together relevant aspects of the Finance, Commercial and Management Cases in the Five Case Model.

8.1 Finance Case

Together with grant funding per bus section 8.1 of deliverability will form the finance case of the Five Case Model.

8.1.1 LTAs should set out clearly in **no more than 1,000 words** all the sources of funding for their proposal, which should match the information included in the Greener Bus Tool. For all funding sources, except grant funding from the Government, LTAs should set out a short summary detailing the source of the funding and what approvals (e.g. investment or credit committees) are required to access the funding.

8.1.1
The GCC total funding contribution of £1,005,000 (£1,009,015 including LDAR) has been pre-approved by GCC Cabinet. Gloucestershire's Medium Term Financial Strategy, approved by County Council 15th February 2023 (2023/24 to 2026/27) has earmarked funding for "Bus electrification" in the financial year 2024/25 on pages 126 & 129. Microsoft Word - FINAL APPROVED MTFS document February 23 Council (gloucestershire.gov.uk). £1,500,000 is currently held in reserve and will be released in the event of a successful funding application. GCC officers will, however, need to seek Cabinet approval again, in the event of a successful bid, to seek permission to enter into a funding agreement with bus operators and to fulfil its role as accountable body for both the DfT as well as the GCC funding contribution.

The £55,351 contribution made by Forest of Dean District Council is part of a Rural England Prosperity Fund (REPF) programme which is aimed at electric vehicle bus transport to support access to local shops, services, and training/employment locations. The total REPF funding allocation for this project is £157,111. In July 20023, Forest of Dean District Council Cabinet delegated authority to the Regeneration Manager in consultation with the Cabinet Member for Economy & the Forest of Dean District Council S151 officer. No further formal Cabinet or Council approval is required for individual project expenditure. A briefing note was prepared to ensure Cabinet are sighted on the

ZEBRA 2 proposal prior to the GCC bid submission and can be made available on request.

In their letter of support, Stagecoach confirmed that, in the event that the funding application is accepted, and that Stagecoach is the recipient of the level of grant sought, it will agree to the following, subject to overall affordability and Board approval:

i. Contribute up to £17,833,399.59+VAT to the Project on the understanding that the vehicles and supporting fixed assets required would become the property of Stagecoach held on its balance sheet.

ii. Retain these 42 electric vehicles running within the principles of the agreement within the jurisdiction of the Local Transport Authority for a minimum of 5 years from date of delivery.

iii. Bear all costs for maintenance and upkeep of the vehicles and assets, including mid-life battery replacements if required.

Pulham's £4,512,413 funding contribution will be provided by the GoAhead group head office and the funds have already been allocated in the budget for this, as confirmed in the appended letter of support. If successful, Pulhams would need to complete the necessary procurement activities, and complete a capital expenditure request in their internal approval system once they have identified the successful tenderers for the vehicles and infrastructure parts of the tender. Once the capex is approved, they would then be able to raise the POs for the vehicles and infrastructure work.

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8.1.2	LTAs seeking to use finance other than from a bus operator(s) (e.g. private, UKIB, other) should set out in **no more than 1,000 words** the finance, what further steps would be needed to secure that finance on confirmation of any grant award from the scheme, and what other alternative sources would it seek to utilise if the external finance was subsequently not available.
	NOT APPLICABLE

8.1.3	**Subsidy control** LTAs should set out in **no more than 1,000 words** a summary of the legal advice that they have received on how they will comply with subsidy control rules. LTAs must attach the full legal advice as a labelled annex.

GCC has received legal advice on compliance with subsidy control. This advice was provided on the basis of considering the potential impact of GCC's arrangements on enterprises other than those involved in those arrangements.

The advice acknowledged the purpose of the Zebra Fund and the details of availability under Zebra 2. It also noted how this is consistent with strategies of GCC. It noted that GCC gave all bus operators in Gloucestershire the opportunity to work with GCC in developing proposals for the use of a subsidy.

The advice identified that the support that will be provided to bus operators through GCC's arrangements is within the definition of "subsidy" in the Subsidy Control Act 2022.

The advice confirmed that it would be reasonable for GCC to conclude that the services provided by bus operators that would be supported by the Zebra funding would be services of public economic interest. The services are being provided for the benefit of the public and the bus operators involved in the arrangements would not be in a position to invest in zero emission funding without support from external funding. In order to provide a subsidy to a service of public economic interest enterprise, GCC will need to ensure that the subsidy is limited to the amount necessary to deliver the services of public economic interest. The legal advice took the view that GCC will be able to meet these requirements by entering into and implementing the recipients of the subsidies.

The advice noted the thresholds applicable for the provision of Minimal Financial Assistance and Services of Public Economic Interest Assistance to be exempt from most of the requirements of the Subsidy Control Act 2022. On the basis of information provided by GCC about the proposed amounts of funding, the advice concluded that, subject to confirmation of other Minimal Financial Assistance and Services of Public Economic Interest Assistance received, the support proposed for one of the proposed recipients would be within the scope of the thresholds. The advice informed GCC of the requirements that would need to be observed for reliance on these exemptions.

The advice analysed the proposed arrangements against the subsidy control principles in the Subsidy Control Act 2022 and against Principles A and B of the Energy and Environment Principles, which were considered to be the principles relevant to the proposed arrangements. The analysis recognised that the proposed arrangements were consistent with the principles. There was a market failure which the Zebra fund would address. The intensity of the subsidy has been limited by the proportion of costs which can be funded under Zebra 2. Consideration of the baseline no-subsidy scenario identified that in the absence of the subsidy the policy objectives pursued by GCC would not be achieved. The identification of routes and arrangements for inclusion in the application for Zebra funding was intended to ensure that GCC's proposed arrangements for the use of funding would be limited to what is necessary to best meet the policy objectives. GCC had also identified metrics to be used for monitoring the impacts of those arrangements.

In respect of relevant Energy and Environment Principles, it was recognised that the funding would be used to support arrangements designed to reduce carbon emissions and improve air quality in areas with poor air quality. It would therefore incentivise the beneficiary in increasing the level of environmental protection and there would be no pollution from which GCC could alleviate a beneficiary from liability.

The advice informed GCC that in providing subsidies there would be ongoing obligations to comply with.

8.2 Commercial Case

Section 8.2 of the deliverability criterion will form the Commercial Case of the Five Case Model.

8.2.1 LTAs should set out in **no more than 1,000 words** how they will comply with the requirements on procurement set out in the guidance.

All vehicles procured as part of this ZEBRA 2 application will be owned by the respective bus operators. Similarly, the infrastructure supporting the introduction of ZEBs will be owned by the bus operators, with the exception of LDAR where GCC owns the premises at Lydney bus station that are used by LDAR. Pulhams have indicated that as with previous ZEBRA projects, it is likely that following vehicle purchase Pulhams would look to sell the batteries to a third party such as Zenobe who would take on battery warranty commitments and provide a managed service for the batteries, including extended warranty cover. It is also possible that Pulhams would look to sell and buy back the charging infrastructure via a HP agreement, as in some cases this can be bundled with an operation & maintenance contract which effectively gives extended warranty cover over the charging equipment.

The funding agreement between GCC and the bus operators will ensure that all bus operators will carry out their procurement of vehicles and supporting depot infrastructure through competitive processes completed following grant award. Both, Stagecoach and Pulhams, will be procuring as part of a national bus operator which will allow them to maximise value and bring their experience of previously procuring and running ZEBS to ensure the procurement process can deliver both compliant and ‘fit for purpose’ specifications within the timescale required.

Both, Stagecoach and Pulhams, have provided two quotes for the single and double decker buses they intended to deploy, and for comparable diesel buses. Due to the limited supply chain for third sector type vehicles LDAR has sought quotes from GM Coachwork and Minibus Options. A key consideration in the selection of a suitable vehicle will be the ability to maintain the vehicle locally to ensure that LDAR commitment to work with local Gloucestershire businesses is met.

Stagecoach and Pulhams have also undertaken early market engagement to ensure the two quotes submitted provide the best value for money and best meet the ZEBRA 2 specifications and requirements. Stagecoach engaged the following six suppliers: Alexander Dennis (ADL), Wright Bus, Volvo GB, Switch Mobility, Mellor Coachcraft, and Yutong. Pulhams engaged Alexander Dennis (ADL), Wrightbus, Volvo Bus GB, BYD, Yutong, Evobus UK. Both operators requested a formal reply to the written specifications which were in line with the requirements of Zebra 2. This ensures manufacturers confirm compliance, also demonstrates all are tendering for the same specification. For Stagecoach, the replies had to be in the format of Stagecoach’s Supplier Tender Specification Sheets, and the responses had to contain all the information listed. Compatible chassis/bodies mean that the supplier has built on that platform previously. The use of supplier specification sheets would not be accepted by Stagecoach unless the relevant information had been extracted and entered onto the Stagecoach Specification Sheet.

Quotes were also received, and are appended to the bid submission, by Stagecoach and Pulhams for the associated infrastructure costs. Stagecoach complete infrastructure works using their own resources with a limited pool of contractors to ensure they achieve best value.
Stagecoach has experience of many previous EV introduction projects and has built up a team of multiple supply partners, who are approached to tender for every project. For the purposes of Zebra 2 stagecoach has used its specialist team to estimate the connection costs for both site and vehicle requirements based on that experience. Stagecoach has engaged with their EV charger suppliers (ABB and SWARCO) to supply quotes to satisfy the Department for Transport (DfT) requirement on the Zebra application form.

Pulhams submitted a connection request for their Bourton depot to the local DNO who provided an offer and budget costs. They also engaged with two contractors who have been used by the wider Go-Ahead group to perform zero emission depot conversions, Zenobe and EO Charging. Both of these supplied initial quotes based on a high-level specification provided by Pulhams, initial desktop-based depot survey activities and their experience working with the Go-Ahead group across other depot sites.

The infrastructure at the LDAR depot will be provided via an existing GCC contract with Connected Kerb who are already contracted to provide chargers to the Arle Court Transport Hub, all GCC locations for EV fleet conversion and on street public charging across the county. This will ensure good value for money due the competitive tender process and the volume being procured. As Connected Kerb is unable to share the costs in their cost schedule as part of this bid, GCC will underwrite the risk of cost increases as per the appended e-mail from the SRO. In addition to the above, all of Stagecoaches suppliers have been through their rigorous procurement due diligence which ensure compliance with and /or reviews of…

• Public Liability Insurance

• Employers Liability Insurance

• Professional Indemnity insurance

• Data security

• Operational Security

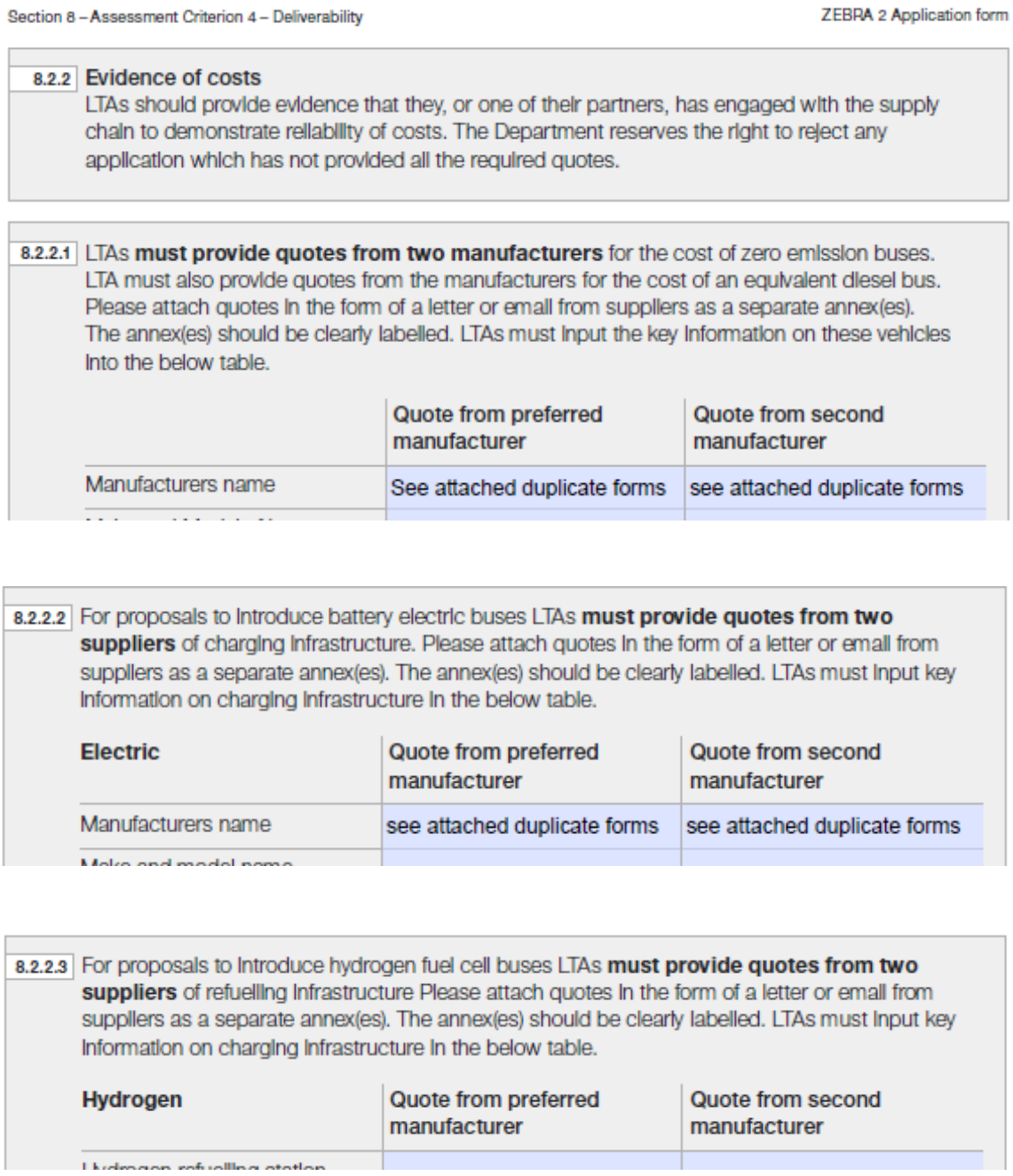
• On site compliance- Health and Safety Policies, Risk Assessments and Method Statements (RAMS), Evidence of competencies and licences stipulated in RAMS. COSHH Assessments for hazardous substances for use.

• Evidence of the certificate of conformity and maintenance for any plant and lifting equipment used in line with the requirements outlined within the LOLER and PUWER regulations.

• Stagecoaches SUSTAINABILITY & CORPORATE SOCIAL RESPONSIBILITY policies which address-Apprenticeships, Environmental Policy, ISO 14001 Accreditation, or other recognised Environmental Management System e.g. EMAS. Environmental Improvement Programme, energy, and water minimisation processes, ensure that all waste is disposed of in a responsible manner. Environmental schemes to improve conditions in the local community? If yes, please provide details of the schemes.

• Company structure and operations, background checks or due diligence on any other entities, individuals or third parties that are or may be engaged, on Stagecoach's behalf.

• Code of Conduct, or policy, which includes zero tolerance of bribery and compliance with the Modern Slavery Act.



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8.2.2 **Evidence of costs**
LTAs should provide evidence that they, or one of their partners, has engaged with the supply chain to demonstrate reliability of costs. The Department reserves the right to reject any application which has not provided all the required quotes.

8.2.2.1 LTAs **must provide quotes from two manufacturers** for the cost of zero emission buses. LTA must also provide quotes from the manufacturers for the cost of an equivalent diesel bus. Please attach quotes in the form of a letter or email from suppliers as a separate annex(es). The annex(es) should be clearly labelled. LTAs must input the key information on these vehicles into the below table.

	Quote from preferred manufacturer	Quote from second manufacturer
Manufacturers name	See attached duplicate forms	see attached duplicate forms

8.2.2.2 For proposals to introduce battery electric buses LTAs **must provide quotes from two suppliers** of charging infrastructure. Please attach quotes in the form of a letter or email from suppliers as a separate annex(es). The annex(es) should be clearly labelled. LTAs must input key information on charging infrastructure in the below table.

Electric	Quote from preferred manufacturer	Quote from second manufacturer
Manufacturers name	see attached duplicate forms	see attached duplicate forms

8.2.2.3 For proposals to introduce hydrogen fuel cell buses LTAs **must provide quotes from two suppliers** of refuelling infrastructure Please attach quotes in the form of a letter or email from suppliers as a separate annex(es). The annex(es) should be clearly labelled. LTAs must input key information on charging infrastructure in the below table.

Hydrogen	Quote from preferred manufacturer	Quote from second manufacturer

8.2.2.3: NA

8.2.2.4 In **no more than 750 words** LTAs should explain how the quotes they have obtained for vehicles and infrastructure have been informed by the vehicle and infrastructure specifications they intend to introduce.

Gloucestershire discussed with the bus operators interested in bidding for ZEBRA 2 funding the specific requirements for ZEB vehicles in Gloucestershire. This included the largely rural context the vehicles will be expected to operate in as well as previous experiences gained by the bus operators.

Both, Stagecoach and Pulhams recommended battery electric vehicles for the routes selected in Gloucestershire. This was based on their experience with battery electric vehicles elsewhere in the UK and one of the operators also has experience of operating hydrogen buses which highlighted to them that there remain a number of challenges in relation to hydrogen supply quantity, and H&S regulations regarding liquid hydrogen storage at depot sites. It was therefore recommended to GCC to wait until these issues are better resolved before considering a larger investment in this technology. Stagecoach is proposing to operate a fleet of 42 vehicles from two centrally located bus depots. Given the routes described above, Stagecoach have confirmed that 25 single deck and 17 double deck models are most appropriate for the routes proposed. Stagecoach then engaged with its suppliers to request a formal reply to specifications which were in line with the requirements of Zebra 2. For zebra electric vehicles, documentation was provided to support manufacturers claims regarding battery degradation, vehicle range and Kw/h calculations using the attached EV range sheet. This could be assessed against the route requirements.

Pulhams have specified 5 x single deck vehicles (for use on services L, P/Q, 855, 802) and 10 x double deck vehicles (for use on services 99, 801 and local home to school routes). The double deck vehicles have been specified due to high existing passenger loadings on the 99 and 801, and expectations these will increase due to the development of Arle Court Transport Hub and changes to NHS staff parking policies (99 service) and a planned increase in frequency and improvements to service marketing / publicity (service 801).

Pulhams have specified the larger battery packs for all vehicles to maximise available range, as due to the rural location of its depot they incur significant mileage due to the dead mileage required for positioning movements. For infrastructure, 150kw DC chargers have been specified as Pulhams believe this to now be the standard for the electric bus market. A 1MVA electricity supply would be connected to the depot as per the attached connection request quotation and drawings. This will allow all buses to charge simultaneously at 66kw per hour. It is proposed to install 1 x transformer, 1 x LV panel and 15 x 150kw DC charge points in the depot to connect to this supply. It is proposed that the DC charge points would be located along the Northern perimeter wall of the depot to keep costs under control. The depot is a freehold site and so there are no landlord related consents required, and from Pulham's previous experience of installing similar infrastructure at their Oxford depot, no planning consents are required as this would be able to be completed under permitted development.

LDAR looked specifically at EV due to the lack of hydrogen fuelling locally, they have sought quotes for 2 vehicle convertors who specialise in the provision of vehicles to the third sector. LDAR are looking to purchase a minibus which is best suited for the type of operation and route suggested.

8.2.2.5 Please provide evidence of the cost of the grid connection. This should take the form of a connection offer, budget estimate, letter or email from the Distribution Network Operator or Independent Connection Provider. If a grid connection is not needed, please explain in **no more than 750 words** why.

Grid connection costs are in Annexe 7 and Annexe 8

8.2.2.6 Proposals for battery electric buses that are not using the GBT costs for electricity should explain why and provide evidence of the cost of the electricity. Evidence should take the form of a letter or email from suppliers as a separate annex(es). This annex(es) should be clearly labelled.

8.2.2.7 Proposals for hydrogen fuel cell buses should provide evidence of costs of hydrogen fuel. Proposals for hydrogen fuel cell buses must either be sourced with Renewable Transport Fuels Obligation (RTFO) support or hydrogen that meets the UK's draft low carbon hydrogen standard. Proposals for hydrogen fuel cell buses, must provide evidence of costs of hydrogen fuel. This evidence should take the form of a provisional offtake contract, budget estimate, letter, or email from a hydrogen fuel supplier. Please attach this as a separate annex(es). This annex(es) should be clearly labelled.

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8.2.2.8 LTAs that are proposing to use private finance to support their proposal they will need to provide a letter of support from the private financier. Please attach quotes in the form of a letter or email from suppliers as a separate annex(es). This annex(es) should be clearly labelled. LTAs will also need to set out in **no more than 1,000 words** what further steps would be needed to secure that finance on confirmation of any grant award scheme, and what other alternative sources would it seek to utilise if the external finance was subsequently not available.

NOT APPLICABLE

8.3 Management Case

8.3.1 Governance

In **no more than 1,000 words** please provide reassurance that they and their partners have the capacity to deliver the project as set out in the guidance.

GCC will work with Stagecoach, Pulhams and LDAR to transition towards the zero-emission bus fleet outlined in this bid. GCC will be responsible for administering the ZEBRA 2 grant with the bus operators owning and operating the vehicles and batteries, as well as providing the charging infrastructure at their company owned depots (with the exception of LDAR). GCC has a proven track record of managing DfT funds and delivering bus improvement schemes. Both, Stagecoach and Pulhams have successfully implemented ZEBRA 1 funded ZEBs in Oxfordshire and other places across the UK. The strategic oversight of the project will lie with Gloucestershire's Bus Board, as outlined in Gloucestershire's EP. Beneath that, each organisation will have distinct roles and responsibilities, as outlined below:

Gloucestershire Bus Board:
This Board brings together GCC, Stagecoach as Gloucestershire's largest bus operator and Pulhams, representing Gloucestershire's smaller bus operators. It is envisaged that LDAR will be invited to the Board meetings as observer and will meet in advance of each meeting with Pulhams to ensure its interests are represented. The Gloucestershire Bus Board will receive updates on project progress and facilitates decision making at a joint Council and Operator perspective.

GCC Governance:
ZEBRA 2 funding will be managed in accordance with the Council's Code of Corporate Governance (Code of corporate governance | Gloucestershire County Council). GCC is experienced in delivering projects of this type with teams such as the Integrated Transport Unit, transport planning, finance, strategic procurement, and communications frequently working together to deliver projects.

- GCC Senior Responsible Owner (SRO): Jason Humm, Director of Transport and Highways
- GCC ZEBRA 2 Project Manager: Tom Main, Integrated Transport Manager responsible for regular updates to both the GCC internal LTP Management Board and the Gloucestershire Bus Board.
- GCC finance lead and S151: Paul Blacker, Finance Director. Day to day financial oversight will be managed by the GCC accountable body working group including the project manager and finance representatives.

The project officer will report project progress to the SRO through the LTP Management Board.

Stagecoach Governance:
Stagecoach will manage the delivery using a well-formed governance process it uses for its internal and external facing projects such as Franchising delivery. The project will be led by the business supported by business change project management resource which is already in place. The structure will be as follows:

- Stagecoach West Managing Director- XX is Stagecoach West's Managing Director and has ultimate responsibility for the project.
- Stagecoach Delivery Lead - XX will lead the delivery of the ZEBRA 2 project on behalf of Stagecoach on a day-to-day basis.
- Stagecoach Vehicle Delivery Lead - XX will own the relationship with the vehicle manufacturer, final approval of specification and will manage updates to and from manufacturer.
- Stagecoach Infrastructure Delivery Lead - XX will lead the procurement and installation of the chargers and DNO connection. This team will be supported by Stagecoach's specialist procurement and legal support who will be responsible for drafting and reviewing contracts.

The overall risk for delivery is considered low as Stagecoach has previous experience of both delivering infrastructure and EV vehicles into its fleet.

To ensure the successful delivery of the project regular reviews and reporting will be in place and controls to manage risks, issues and change management. A monthly report will be prepared which will show the following:
• Progress against planned delivery
• Progress against budget
• Issues
• Risks
• Changes

Stagecoach has comprehensive and established financial controls in place. Capital and project spend has set governance, documentation and specific delegated authority which is restricted to directors and senior managers of the business. This is strictly controlled and upheld by the Capital Accountant. Capital accounts are reconciled monthly, spend is tracked against budget/forecast and project, with supporting Management reporting sent to senior business and finance leadership. Monthly reporting is reviewed by the Financial Controller and presented to the delivery board, where actions and mitigations will be taken against any variances. There is separation of duties throughout the finance function from accounts payable, accounts receivable, capital accounting, subsidy accounting, management accounting, and financial accounting.

<u>Pulhams Governance:</u>
Pulhams is experienced in the delivery of ZEB vehicles and infrastructure, following the project to roll out 104 electric buses and associated charging infrastructure at sister company Oxford Bus Company which was funded by ZEBRA 1. The wider Go-Ahead group is one of the largest operators of electric buses in the UK, with over 600 such vehicles now in operation in London, Oxford, Salisbury and Newcastle. They will build on this experience and governance structures for the delivery of this bid. Pulhams roles and responsibilities are as follows:

- XX, Managing Director - overall project sponsor, responsible for legal contracts, liaison with GCC and DfT, and co-ordination of workstreams.
- XX led the project for the delivery of the 104 electric buses to Oxford in ZEBRA 1, with these buses having begun to enter service from November 2023.
- XX, Service Delivery Director - responsible for vehicle and infrastructure tender management, engineering training. Paul has worked extensively on the Oxford

ZEBRA project and has over 25 years experience of working with vehicle manufacturers and managing engineering teams.

- XX, Head of Commercial - responsible for calculating electric friendly bus schedules / driver duties. Glenn has been fully trained on the use of new generation bus scheduling tools and has recently been using these to convert Oxford Bus Company schedules to electric friendly in this way, with the first of these rolling out from October 2023.
- XX, Area Director Pulhams - responsible for depot infrastructure build management and associated Health & Safety, plus driver training. Alex has 12 years' experience in the bus industry and was previously involved in the roll out of electric buses to the Salisbury Park & Ride during his time with sister company Go South Coast.
- XX, Group Procurement Director - responsible for group procurement team, who will support with the Smartsource tender projects, presentations, and scoring (with support from Managing Director, Paul, and Alex). Jeremy and his team have many years experience in running tender projects for electric vehicles and infrastructure, and played a key role on the Oxford ZEBRA project in ensuring that maximum value for money was achieved from the scheme.
- XX, Finance Director - responsible for capital expenditure submissions / business cases, plus financing agreements related to battery / infrastructure management. Neil is a Qualified Accountant with more than 10 years post-qualification experience and has experience of supporting the Oxford ZEBRA 1 project in this capacity.
- XX, Group Solicitor - responsible for supporting on legal agreements as required. Richard worked on the grant agreement for ZEBRA 1 with Oxfordshire County Council, as well as on the NEC3 construction contracts needed for the infrastructure build works, and the various financing and purchasing related agreements associated with that project.
- XX, Financial Controller - responsible for grant claim process with GCC. Sam is a Qualified Accountant and has experience of supporting the Oxford ZEBRA 1 project in this capacity.

<u>LDAR Governance:</u>
Responsibility for the implementation of the ZEBRA 2 project, including managing the relationship with the vehicle manufacturer, procurement and contract management will sit with XX, the Charitie's manager. GCC's Integrated Transport Unit will lead on the installation of the charging infrastructure.

- Zebra Project Manager: XX (Manager and Director) ,
- Main point of contact for Zebra project: XX
- Board of Trustees: Zebra project to be added to agenda of bimonthly meetings, addressing ensuring charitable status and long term strategy.
- Board Chair: XX
- Transport manager: XX (day to day vehicle management)

<u>Communications and Stakeholder Engagement Strategy</u>

GCC and bus operators will work through the Gloucestershire Bus Board to develop a joint Communications Plan and Marketing Strategy, building on previous joint working on communication.

8.3.2 Allocating grant funding

LTAs should set out in **no more than 500 words** how they will allocate grant funding to their bus operator(s) partners. LTAs can attach draft funding agreements with bus operators as an annex.

Gloucestershire County Council (GCC) is experienced in receiving Government funding to deliver third party projects delivered by the private sector. In its role as the accountable body for the GFirst LEP GCC was responsible for £120m of Growth funds split across circa 20 projects. As part of the Assurance Framework required by central government, we have had a funding agreement and claims process set up and running for the last 6 years of which has been audited both externally and internally and we have a good track record of strong governance and managing funds and ensuring they are spent on the intended purposes and deliver value for money.

It will be the same finance team who will be dealing with the funding agreements and claim forms for the ZEBRA funding so we can give assurances that we have experienced finance, legal and project officers who manage project funding in the role of Accountable Body. The financial team is supported by the accountable body officer group which includes the Transport Planning Team Leader and will include the Integrated Transport Manager, as per the governance structure set out in section 8.31.

There will be a funding agreement between GCC and the bus operators which will outline the terms and conditions of the funding including the detail of expenditure required, and what the funds can be used for making them eligible and what checks and audits will be carried out to ensure delivery of the works and the claims submitted. Any payment of Grant Funding will require the submission of an invoice/claim form supported by evidence to satisfy GCC that the expenditure claimed has been properly incurred in relation to the project and in accordance with the requirements of the funding agreement and the funding conditions. The funding agreement will include delivery milestones and claim dates over the life of the project and a claim form stipulating what format the data will be required in. We will ensure all points highlighted in the ZEBRA tips for funding agreements will be covered.

Funding will be allocated on the same basis as it is allocated from ZEBRA to GCC – therefore if in advance with specific requirements then this will also be passed on to the bus operators. As part of the funding agreement there will be claim dates which will be triggered by specific milestones such as purchasing the bus, or charger installation etc. when they can drawdown the funds. Drawdown is by way of a claim form detailing all invoiced spend and then GCC will select a few lines to sample and request further evidence to ensure the funds have been defrayed and then we pay the claim.

Draft funding agreement attached at Appendix 10.

8.3.3 Project plan

LTAs should provide a project plan. This should be set out in **no more than 1,500 words**. A project plan in formats like gannt charts and tables, can also be provided as a separate annex(es). These must be provided in an excel format.

GCC has worked collaboratively with the bus operators to develop a deliverable ZEBRA 2 bid. The proposed programme for delivery integrates the bus operator's programmes for procurement with governance and legal requirements with the need to effectively mitigate programme and cost risks. During the bid process we established a programme of regular contact with the bus operators to maintain progress. If our bid is successful, we would continue regular monitoring and liaison to track and monitor progress both during the procurement and implementation of the ZEBs and also during operation. We would also develop the risk assessment to ensure all significant project risks (e.g. programme, cost, legal) are assigned and pro-actively managed by the risk owner.

The Bus Board, as noted in the section on governance, will ensure that the programme delivery for all elements and associated risks are proactively tracked and managed at its quarterly meetings.

A Gantt chart is attached in Annexe 11 which describes the overall programme. Further details are provided below.

Early Critical Path Elements

There are a number of early critical path items which will require immediate action following any grant award to mitigate the risk of cost escalation and programme delay. The finalisation of the draft funding agreements and Memorandum of Understanding (MOU) with DFT are the first of these. This legal stage is anticipated to take up to a month and will be progressed prior to grant award with the aim of completing soon after grant award by taking a report to GCC's April Cabinet, to confirm the terms of payment from GCC to the bus operators and also agreement to the MOU.

The two main bus operators both recognise that obtaining the DNO connection is also a critical path item for all the depots. Immediately after the award of grant, action would be taken by them to confirm connection requests and progress the detailed technical work required to finalise costs and delivery timescales. Pulhams already have a site-specific quote for their depot and will immediately take steps to confirm this and ensure it is programmed in. Stagecoach will build on the work undertaken by their consultant to date and immediately progress obtaining firm quotes and programme.

For Lydney it has already been confirmed that the current connection to their depot site (owned by GCC) is adequate for the proposed charging infrastructure.

Programme

Both Stagecoach and Pulhams have engaged with the market and undergone procurement exercises as part of the ZEBRA 2 bidding process. A key programme risk is the impact on the programme of a delay in the manufacturing and delivery process for the ZEB's, in particular with the increased demand for ZEB's generated by the ZEBRA 2 funding. However, both operators are confident, as a result of their discussions with manufacturers, that the timescales presented here are appropriately robust and take account of the likely increased demand for ZEB's as a result of the ZEBRA 2 funding.

Following their tendering process Stagecoach will be ready to place orders for the ZEB's following the completion of the funding agreements and have identified that manufacture will commence in January 2025. Pulham's have further procurement steps to take but intend to place orders by August 2024 with manufacture commencing in November 2024.

Stagecoach anticipates that all their buses for Gloucestershire will be ordered in one batch and are programmed to be delivered at a rate of 5 per week commencing at the beginning of November 2025. Vehicles can come into service during this delivery window provided that drivers have been familiarised/trained as the infrastructure is programmed to be in place.

Pulhams anticipate vehicles being delivered from the beginning of September 25 and entering service from mid-September 2025 onwards with all vehicles in service by 31 October 2025.

Based on their experience of installing charging infrastructure at other depots, it is not anticipated by either operator that planning permission will be required for works at any of the depots. However, Stagecoach wishes to retain this element within their programme until the detailed design for the depot works is complete.
Key dates are set out below for all the operators:

Stagecoach Key Dates
• 18 March 24 to 31 March 25 Funding Release window
• 18 March 24 to 29 March 24 (Friday) - 23/24 Funding Released to LTAs
• 18 March 24 to 09 July 26 - Implementation
• 18 March 24 to 07 June 24 - Legal onboarding & planning permission (if required)
• 29 March 24 - Vehicle ordering
• 01 April 24 to 13 Sept 24 - Planning Permission Window as required
• 01 April 24 - Grid Connection ordering
• 01 April 24 - Infrastructure ordering.
• 31 Jan 25 to 06 Nov 25 - Vehicle Manufacturing
• 25 March 25 to 31 March 25 - 24/25 Funding Released to LTAs
• 01 Aug 25 to 7 Nov 25 - Infrastructure build inc. grid connection
• 24 Oct 25 to 07 Nov 25 - Depot Engineer Training
• 07 Nov 25 to 04 Dec 25 - Driver vehicle familiarisation
• 07 Nov 25 to 04 Dec 25 - Vehicle Delivery
• Dec 25 – Vehicles commence service

Pulhams Key Dates
• 2 April 2024 - funding award confirmed
• 2 April 2024 - make updated connection request to local DSO for Pulhams Bourton depot
• 2 April 2024 - meet with procurement team; begin production of bus & infrastructure tender
• 1 May 2024 - grant agreement signed with Gloucestershire CC
• 1 May 2024 - tenders for vehicles and infrastructure live on SmartSource portal
• 15 May 2024 - expected connection request and budget cost received from DSO for Bourton. Expected offer valid to 14 August 2024.
• 30 May 2024 - tender submission deadline on SmartSource
• 7 June 2024 - completion of tender scoring & shortlisting of tenderers for presentation.
• 21 June 2024 - tender presentations completed
• 28 June 2024 - BAFO submissions received from selected tenderers

• 5 July 2024 - preferred tenderers selected. Capital expenditure request written up and submitted for board approval.
• 8 July 2024 - successful and unsuccessful tenderers notified of tender outcomes. Kick off meeting arranged with successful suppliers to finalise legals for orders to be placed.
• 26 July 2024 - expected board approval received for capital expenditure request. Connection request formally accepted with DSO.
• 30 August 2024 - legals finalised for vehicle and infrastructure order and PO's raised.
• 31 October 2024 - vehicle specifications finalised
• 1 April 2025 - client side infrastructure works begin at the depot
• 25 July 2025 - expected depot electrical connection works completed by DSO
• 4 August 2025 - driver and engineer training begin, using demonstrator vehicle
• 4 August 2025 - electric friendly operating schedules completed
• 29 August 2025 - expected depot infrastructure works completed and chargers energised
• 1 September 2025 - vehicle deliveries begin
• 30 September 2025 - driver and engineer training completed
• 31 October 2025 - all vehicles delivered and ready for service
• Nov 25 – vehicles commence service

Lydney Key Dates
• April 2024 to October 2024 : Bus procurement
• May 2024 to October 2024: Infrastructure procurement
• September 2024 to March 2025: Infrastructure delivery
• September 2024 to March 2025: Electrical supply procurement
• September 2024 to September 2025: Bus manufacture & delivery
• April 2024 to November 2025: Electrical supply delivery/optimisation
• October 2025: Driver Training
• November 2025: Service launch

8.3.4 Risk Management

LTAs should set out in **no more than 1,000 words** your top five risks and the actions they will take to mitigate these risks.

Please note that monetised risks are included in the summary table in 4.1 for both grant funding and operator contributions.

The top 5 risks in the project are as follows:

1. ZEB costs increase between bid submission and procurement

An increase in ZEB costs could have a significant cost impact and all parties have taken steps to mitigate this and ensure the likelihood of it occurring and therefore the risk it will impact ZEB delivery is low.

To mitigate this risk all bus operators have used recent procurement exercises to ensure prices for ZEBs within the bid are robust. Stagecoach has engaged with the market and obtained vehicle quotes which don't expire until 31/3/25, which is after their order would be placed, should the ZEBRA 2 funding bid be successful. Stagecoach is also content that no contingency should be added to the bid to allow for any potential increase in bus costs. A letter confirming this is included in Annexe 6. A QRA has been used to value the likely impact of costs increase as a result of inflation for Pulhams and LDAR and ensure it is built into the bid. To mitigate the risk both Pulhams and LDAR propose to move quickly to procurement following grant award to minimise any cost impact. This will be supported by GCC who will seek to complete funding agreements for approval at the April Cabinet to enable bus procurement to progress as quickly as possible within the programme.

2. Delay securing a grid connection.

A delay in securing a grid connection could have a significant programme impact and all operators have taken steps to mitigate this and ensure that the likelihood of it occurring is low and therefore the risk of it delaying ZEB delivery is low.

Pulhams have mitigated this risk in two ways. Firstly, by obtaining a budget quote for the required connection to their depot at Bourton (see Annexe 8). If successful in the ZEBRA 2 bid, this would be the first item placed on order, while running the vehicle and infrastructure tenders to ensure that timelines were clarified early. Secondly, because this connection would be procured very early in the programme this ensures there is a significant allowance within the programme for the grid connection to be made resulting in a low risk of delay to the ZEB roll out.

Stagecoach have mitigated this risk firstly by appointing 'Green Jam' to undertake a national study looking at the costs and risks of electrification at all their depots, for the purposes of ZEBRA 2, (refer to Annexe 7). Secondly by ensuring that the commencement of procurement of the connections for both depots is commenced immediately after the grant of funding.

As noted elsewhere there is sufficient capacity at the LDAR depot to cater for the demand of one minibus ZEB so no new connection is needed.

3. Vehicle lead times are longer than assumed leading to delivery delays

This could have a significant impact on the programme and all parties have taken steps to mitigate this, in the context of increased vehicle demand as a result of ZEBRA and ensure that the likelihood of it occurring and delaying ZEB delivery is low.

Stagecoach has mitigated this by firstly engaging with the market, in the context of ZEBRA, to inform their programme and allowing c4 month buffer in the programme to order vehicles and still meet the planned delivery timescales. Secondly, Stagecoach proposes to order their ZEBS as soon as possible after award of funding to fix the delivery schedule. This will be supported by GCC taking the funding agreements to the earliest possible Cabinet in April immediately after the funding award.

Pulhams has also recently engaged with the market to fully understand both costs and likely delivery timescales. Pulhams are proposing to undertake a further procurement process post award to finalise costs and the delivery profile.

LDAR has mitigated this risk by engaging with the market to understand delivery timescales which is factored into the programme. The impact of the ZEBRA programme is unlikely to have the same scale of impact on minibus demand.

4. Costs Increases for Charging Infrastructure.

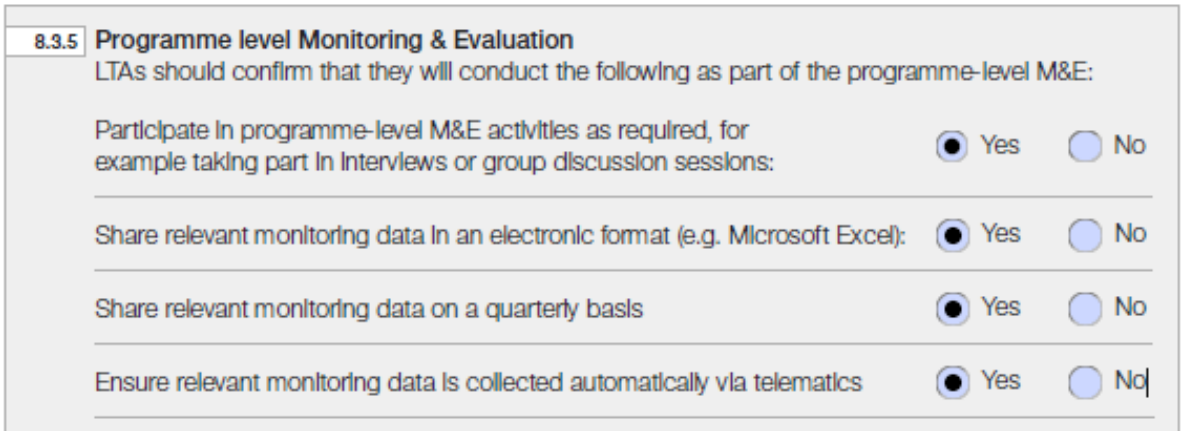
An increase in charging infrastructure costs could have a significant cost impact and all parties have taken steps to mitigate this and ensure the likelihood of it occurring and therefore the risk it will impact ZEB delivery is low.

To mitigate this the bus operators have used recent procurement exercises to ensure prices within the bid are robust. A QRA has been used to value the likely impact of costs increase for Pulhams and LDAR to ensure it is built into the bid. Pulhams and Lydney DaR have also programmed procurement of charging infrastructure early in their programmes to mitigate this risk.
Stagecoach has engaged with the market and obtained quotes for charging infrastructure. Stagecoach is mitigating the risk of costs increases by placing orders for charging infrastructure early in the programme. Stagecoach is fully mitigating the impact of costs increases to the wider project by carrying this risk and not requiring a contingency to be included in the bid for this element.

5. Delays in Installation of Charging Infrastructure

Any delay in the installation of charging infrastructure could have a significant programme impact and all parties have taken steps to mitigate this and ensure the likelihood of it occurring and therefore the risk it will impact ZEB delivery is low.

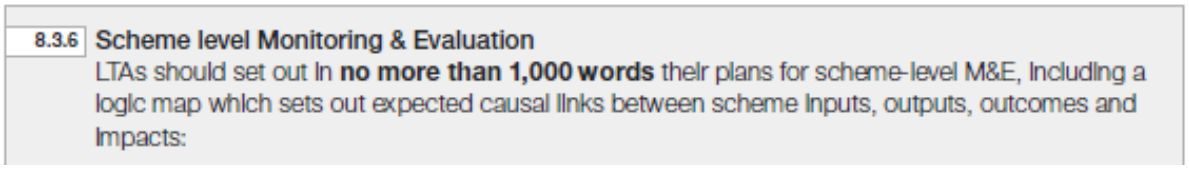
All operators have engaged with the market during the ZEBRA 2 bid stage to understand both costs and installation timescales for charging infrastructure. To mitigate the risks of delay to installation of charging infrastructure all operators are proposing to place orders for the installation of charging infrastructure early in the programme. All operators have also taken steps during the ZEBRA 2 bid process to understand the nature and scale of physical works required to their depots and the operational implications of installing charging infrastructure, which will also reduce the likelihood of delays in installation.



8.3.5 Programme level Monitoring & Evaluation

LTAs should confirm that they will conduct the following as part of the programme-level M&E:

Participate in programme-level M&E activities as required, for example taking part in interviews or group discussion sessions:	● Yes	○ No
Share relevant monitoring data in an electronic format (e.g. Microsoft Excel):	● Yes	○ No
Share relevant monitoring data on a quarterly basis	● Yes	○ No
Ensure relevant monitoring data is collected automatically via telematics	● Yes	○ No



8.3.6 Scheme level Monitoring & Evaluation

LTAs should set out in **no more than 1,000 words** their plans for scheme-level M&E, including a logic map which sets out expected causal links between scheme inputs, outputs, outcomes and impacts:

GCC and Gloucestershire's ZEBRA 2 bus operating companies are committed to monitor and evaluate the full impact of the ZEBRA 2 investment in Gloucestershire and to comply fully with the DfT requirements on monitoring and evaluation. To ensure the effective implementation of the project, the bus operators and GCC will agree on a set of reports to provide operational data to the DfT and the Gloucestershire Bus Board on a quarterly basis. In addition, a comprehensive monitoring reports will be produced at the beginning of the project which will be updated at one-year and three-year milestones post-implementation to ensure the full outcomes and impacts are captured.

The exact monitoring arrangements are still to be agreed with the DfT and all parties, however, the following indicates Gloucestershire's proposal for quarterly reporting and the more comprehensive monitoring report:
1. Project implementation: how is the implementation of the project progressing, compared to what was set out in the bid?)

2. Quarterly reporting will include data on the number of ZEBs purchased/in operation, number (and capacity) of charging facilities introduced and the charging methodology (such as depot overnight, en-route charging, and AC or DC charging). It will also include financial monitoring data such as the actual purchase cost per ZEB compared to the purchase cost per equivalent ICE bus, and the cost of electric fuelling infrastructure (upfront cost) (£).

3. Operational performance (what are impacts on operational performance of the bus services included in this bid? How has the project influenced the operational efficiency of bus services, specifically in terms of punctuality and reliability?)
Bus operators will gather comprehensive range data, encompassing detailed information on vehicle speed and mileage for each specific route. Quarterly reporting will include average operational cost (including maintenance and infrastructure) per ZEB (£ per month), average operational cost (including maintenance and infrastructure) per ICE (£ per month).
The comprehensive monitoring report will use BODS and internal data sources to assess the long-term impacts on punctuality and reliability.

4. Technological performance (how are the new ZEBS and batteries performing? What insights have been gained from monitoring the health and performance of EV batteries, and how have challenges, if any, related to charging efficiency been addressed? - Are there visible patterns or trends in range data that provide insights into daily operations?)
Bus operators will monitor the battery state of charge (SOC) of each EV vehicle as it provides a real-time understanding of how much energy is stored. This data will be used to optimise charging schedules ensuring that buses operate within the desired SOC range. In addition, the charging efficiency will be monitored to identify charge times and any heat generated or charging losses to ensure optimal energy utilisation during charging, particularly during a range of operating conditions.

Bus operators will assess any long-term trends in the operational data of the quarterly reports, including an assessment of the longer-term EV battery performance, to monitor the technological performance in the comprehensive monitoring report.

5. Environmental Impact (How are the metrics influencing air quality and carbon emissions performing? What measurable improvements, if any, have been observed in air quality and carbon emissions since the project's implementation?)
Bus operators will report on the number, and type of internal combustion engine (ICE) buses replaced, the average daily ZEB mileage, the average daily ZEB energy consumption, average daily diesel mileage and fuel consumption for each route (baseline/comparator data), average ZEB well-to-wheel greenhouse gas emissions, average battery state of charge before/after charging, and time of day ZEB charged and electricity tariff (including electricity generation source).

The comprehensive monitoring report will assess the longer-term Environmental impacts, analysing AQMA monitoring date (undertaken by the district council) and the Gloucestershire wide air quality and carbon emission data is collected in GCC's annual LTP monitoring report.

6. User Experience (How have passenger perceptions evolved post-implementation, highlighting improvements or challenges in user satisfaction, comfort, and overall experience?)
GCC will work with bus operators to determine the best way to gather this information. In addition, GCC will use National Highways and Transport (NHT) public satisfaction surveys to report on this indicator in the comprehensive monitoring report.

7. Community Impact (How has the project positively or negatively impacted the local communities served by the public transportation system, and are there specific community insights that should inform future developments?)

The bus operators will report data on training activities. In addition, wider impacts on the community will be monitored through the data gathering exercises outlined above. In addition, GCC will collaborate with its district councils (Gloucester, Cheltenham, Stroud, Tewkesbury, Cotswold, and the Forest of Dean) to gather supplementary insights where possible to strengthen analysis of the project.

For the comprehensive monitoring report, GCC will look at the overall passenger numbers, including the number of elderly and disabled concessionary passenger journeys on local bus services. Overall levels of accessibility by bus (including the areas served by the proposed ZEB routes) are monitored as part of Gloucestershire's LTP annual progress report.

8. Unexpected Outcomes (Have there been any unexpected positive or negative outcomes that were not initially anticipated, and how have these outcomes influenced the overall success and adaptation strategies of the project?)
GCC and the bus operators will discuss whether there have been any unexpected outcomes as part of the comprehensive monitoring report.
Regular assessments of project monitoring and evaluation will be integral agenda items at the Gloucestershire Bus Board meetings. The project's monitoring and evaluation framework is guided by a comprehensive logic map, portraying the connections between scheme inputs, outputs, outcomes, and impacts, as shown at Annexe 12.

END