Zero Emission Bus Regional Areas (ZEBRA) 2 Application

Section 1: Applicant information

Bidding Authority: West Sussex County Council

Email address: transporthub@westsussex.gov.uk

Website address for published application:

https://www.westsussex.gov.uk/about-the-council/policies-and-reports/roads-and-travel-policy-and-reports/bus-service-improvement-plan/

Section 2: Key requirements

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

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

Yes

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

Annex D Bus Manufacturers, Infrastructure Budget Estimate and Hydrogen Supplier (REDACTED)

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

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

Annex A Letters of Support from Bus Operators (REDACTED)

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

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

Annex B Legal Advice on Subsidy Control (REDACTED)

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.

N/A

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

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

Annex D Bus Manufacturers, Infrastructure Budget Estimate and Hydrogen Supplier (REDACTED)

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.

West Sussex County Council, which has not received ZEBRA funding before, is an 'Urban with significant rural' upper tier authority. This bid meets the rural definition of ZEBRA 2 as follows: Horsham (West Sussex) is classified as Largely Rural, with 60.5% of its population living in rural and rural related areas.

As an extensive network of bus services (as set out in 4.2), the following districts in neighbouring upper tier authorities are also served by the routes included in this bid:

Tandridge and Mole Valley in Surrey are both Urban with Significant Rural

Lewes in East Sussex is Urban with Significant Rural, while Wealden in East Sussex is Predominantly Rural

Tunbridge Wells in Kent is Urban with Significant Rural.

This means that overall, every route included in this bid serves at least one district which meets the rural definition of ZEBRA 2 in an upper tier authority, with almost half of the routes and number of buses serving more than one district which meets the rural definition of ZEBRA 2 in an upper tier authority.

Bus services do of course enable residents of rural areas to access amenities in urban areas and so the following districts and unitary authority are also covered by the network included in the bid:

Mid Sussex, Crawley and Worthing in West Sussex

Reigate & Banstead, Epsom & Ewell and Guildford in Surrey

Brighton & Hove.

For clarity, the routes included in this bid do not serve any districts in East Sussex and Kent which do not meet the rural definition of ZEBRA 2.

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	£10,077,913.50
Local transport authority funding	£1,932,804.50
Other public sector funding	£0
Bus operator funding	£11,581,968
Other private funding	REDACTED
Vehicle grant amount	REDACTED
Infrastructure grant amount	REDACTED
Total number of buses	43
Total capital cost	REDACTED
Vehicle capital cost	REDACTED
Infrastructure capital cost	REDACTED

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.

The area served by this innovative bid for a major expansion of the number of hydrogen-fuelled zero-emission buses operated by Metrobus is large – covering from Caterham (inside the M25) to Brighton (on the south coast) and extending across the rural south-east from Guildford (to the west of WSCC) to Tunbridge Wells (to the east of WSCC). This area enhances inter-urban connections for the residents of no fewer than 5 LTAs and 12 constituent district councils.

The operating territory is extensive, varied and challenging – key trip generators of Crawley, Brighton and Gatwick Airport are major sources of bus patronage and also high demand areas for other transport modes, whether nearby or further afield, and across local authority areas. Accordingly, this bid has been developed through engagement with all of the LTAs, as well as Gatwick Airport.

The bus routes are as follows, with the number of buses on each shown in brackets:

21: Dorking – Crawley (2)

22: Crawley – Guildford (2)

23: Crawley – Faygate – Horsham – Southwater – Ashington – Washington – Findon – Worthing (4)

61: Horsham – North Heath and 93: Dorking – Beare Green – Kingsfold – Warnham – Horsham (4 across routes 61 and 93)

200: Horsham – Faygate – Gatwick (5)

270: East Grinstead – Forest Row – Danehill – Horstead Keynes – Haywards Heath – Burgess Hill – Hassocks – Clayton – Brighton (4)

271: Crawley – Handcross – Staplefield – Cuckfield – Wivelsfield - Pycombe – Brighton (3)

272: Crawley – Copthorne – Crawley Down – Ardingly – Haywards Heath – Burgess Hill – Brighton (3)

273: Crawley – Bolney – Hickstead – Sayers Common – Albourne – Hurstpierpoint – Brighton (3)

281: Lingfield – Dormansland – Crawley Down – Copthorne – Crawley (4)

291: Crawley – Copthorne – East Grinstead – Colemans Hatch – Withyham – Groombridge – Tunbridge Wells (4)

400: Caterham – Godstone – Bletchingly – East Grinstead (5)

Most of these bus routes connect to/from Crawley in West Sussex (21, 22, 23, 200, 271 272, 273, 281, 291). Route 400 runs through Crawley and route 200 runs around the outskirts. All buses will operate in the east of West Sussex with only 2 of the 13 routes not also going into 1 or more of the neighbouring LTAs of Surrey, East Sussex, Brighton and Kent.

Services 21 and 22 are contracted local bus services to Surrey County Council and letters from bus operators expressing their interest in seeking to bid to operate the bus services when they are retendered in 2024 are included in Annex A (REDACTED).

The 22, 200, and 400 services are particularly important in the context of this bid in providing direct connectivity to Gatwick Airport, a funding partner for ZEBRA 2, with a notable mention of route 200 which features 24 hours per day operation, 7 days per week, reflecting airport operations.

Route 23, operating within Horsham, is noteworthy as approximately 80% of the route is within this rural district, and offers a connection across West Sussex into both Crawley (in the north) and Worthing (on the south coast). A further important aspect of this cross-county connection is that these two districts are each home to a major hospital, providing more medical services than Horsham Community Hospital.

Route 61 solely serves Horsham town centre, therefore is essential for local links to amenities and services including schools and supermarkets and is operated efficiently (inter-worked) with Route 93, which links Horsham to Dorking.

Routes 270, 271, 272, and 273 are important routes providing inter-urban connections across West Sussex offering a direct route for residents in the north of the county to get to the largest single conurbation in the area, Brighton. Brighton is a popular destination for leisure and employment and in doing so routes 271 and 272 travel through Lewes while route 270 serves Wealden, districts in East Sussex.

These routes all operate from Metrobus' Crawley depot, which provides 24/7, 365 days per year operational and maintenance support coverage for the fleet.

As hydrogen is considered by Metrobus to be the nearest equivalent zero-emission bus fuel to diesel in terms of vehicle range, operating span and performance, the fleet funded through ZEBRA 2 will be hydrogen fuel cell

vehicles and able to be re-fuelled at the existing Crawley depot, where refuelling infrastructure has already been installed, as the procurement of 43 new ZEBs will be in addition to the 54 hydrogen ZEBs which will be in service by the time of those funded by ZEBRA 2. The depot is located off Gatwick Road, at Wheatstone Close, on an industrial estate in the north Crawley, between the town centre and Gatwick Airport. Metrobus owns its own depot and no other location will have infrastructure installed as part of this project.

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.

Tackling climate change is a cross-cutting theme of West Sussex County Council's corporate plan for 2021-2025: Our Council Plan. As part of that, the West Sussex Transport Plan pursues the vision, objectives, and strategic priorities for improving the transport network which includes decarbonising the transport system while protecting the local environment. Supporting this bid with its own financial resources for decarbonisation is a tangible demonstration of WSCC's delivery plan for its Climate Change Strategy by enabling the decarbonisation of commercial transport.

As soon as ZEBRA 2 was announced, WSCC intensified its working with local bus operators on the possibilities of introducing zero-emission buses, with a particular reference to bus routes serving rural districts. As a result of those discussions, as well as close liaison with neighbouring and other regional local transport authorities, the commercial and technical position of operators of significant scale in West Sussex made it clear that a bid which further developed a depot which already has zero-emission bus infrastructure and which belongs to an operator which has the resources to invest would be the most deliverable within ZEBRA 2's timescales. Furthermore, services of operators with limited presence in West Sussex do not meet the requirements of the DfT's ZEBRA 2 guidance in full and so following engagement with all operators, Metrobus emerged as the only feasible candidate.

This bid with Metrobus is a further development of the Expression of Interest submitted under ZEBRA 1 (which was unsuccessful at that time); the corridor between Crawley and Gatwick Airport is 1 of the 2 key bus corridors in the county and Metrobus' Crawley depot is less than a mile from the Air Quality Management Area (AQMA) along Crawley Avenue and around the Hazelwick roundabout and so decarbonising a further 30% of their local bus fleet through ZEBRA 2 will have a meaningful beneficial impact on the local environment. Further, advice from UK Power Networks indicates that the electricity grid in the local area is particularly constrained and so they could not guarantee a connection for an EV charging option in line with ZEBRA 2 timescales.

Gatwick Airport Limited (GAL) is a partner to this bid as its approach to sustainability is well aligned with WSCC's own approach and the airport operations are critically dependent on sustainable access. GAL's own

sustainability policy – "Our Second Decade of Change to 2030" – sets a goal to achieve net zero for GAL's Scope 1 and 2 greenhouse gas emissions by 2030, alongside a goal to increase airport passenger and staff usage of public transport and zero and ultra-low emission journey modes to 60% by 2030 through working with transport partners. This GAL goal is directly aligned with 3 of the United Nations Sustainable Development Goals (Goal 9. Resilient Infrastructure; Goal 11. Sustainable Cities and Communities; Goal 13. Climate Action), providing a clear fit with strategic relevant international policy, befitting of the international nature of the airport.

The BSIP infrastructure programme has a focus on Crawley, with the journey time benefits being delivered through WSCC's capital programme – e.g. western section of The Boulevard, a key section of highway for all major bus routes in the town centre. Bus priority and infrastructure schemes delivered by Crawley Borough Council through the Crawley Growth Programme, are aligned with this investment, not only providing a cleaner and smoother service but one which is more reliable and attractive compared to other modes. Other BSIP-funded measures – such as the '16 to 20 Bus Saver', which reduces the cost of bus travel for young people – will also apply to all routes within this funding application.

In developing the final version of the bid, WSCC and its partners considered the possibility of a larger and smaller number of routes and buses to be included. The package of 43 buses is optimal for the following key considerations:

- The hydrogen refuelling infrastructure (see below) already exists and therefore a smaller number of buses would not affect the deliverability of the package
- The number of buses will bring cost efficiencies for the supply of hydrogen across the fleet
- Due to the rural nature of the services, and the current viable frequencies, vehicles operate on more than one service in a day and therefore whole routes can be converted efficiently under this number of vehicles.

Metrobus, part of the Go-Ahead Group, have already set a science-based target of decarbonising its bus fleet by 2035 and becoming a net zero business by 2045. The buses to be introduced under ZEBRA 2 will further expand the existing hydrogen bus fleet of Metrobus operating in West Sussex and Surrey. To deliver the first batches of 54 hydrogen-fuelled buses in their Crawley depot, Metrobus have already established a liquid hydrogen fuelling station, which was the first in Europe. The fuelling station was built by Air Products, the world's largest hydrogen supplier, and this infrastructure was built to support a full depot conversion and as a result no further expansion is required to refuel additional hydrogen buses.

Liquid hydrogen is a recommended solution when it comes to large fleet decarbonisation and in respect of buses for these routes has been chosen because it has a range which is comparable to the existing diesel fleet, and so is well suited to the types of routes operated without introducing inefficiencies in the operation by requiring re-fuelling during the day. The permanent re-fuelling

infrastructure in the Crawley depot is the largest of its kind in the UK, capable of providing 1,600kg of liquid hydrogen per day. This means the fuelling station can deliver 250kg per hour over 10 hours making it the largest in Europe and the largest outside of China. This capacity would allow the entire Crawley based fleet to operate using hydrogen, with the depot having a total capacity of just over 140 vehicles.

It is also important to note that the hydrogen from the chosen supplier is already Renewable Transport Fuels Obligation (RTFO) compliant and this green RTFO compliant hydrogen is already being used at Crawley depot by Metrobus.

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.

To encourage more interest in STEM (science, technology, engineering, and mathematics) careers Metrobus have undertaken a range of activities including demonstrating a hydrogen bus at a recent STEM event in Crawley. Metrobus attend local colleges as guest speakers to help drum up interest in Zero Emissions engineering as a potential career opportunity.

Metrobus have an extensive number of work experience placements across local schools and colleges. With engagement and experience of zero-emission vehicles, these placements will be encouraged to explore a potential career in low or zero emission vehicles. Whilst Metrobus already employ apprentices and aim to retain them, Metrobus will also recruit an additional apprentice on this project specifically. There will be potential for further apprentices to follow as part of the depot's conversion from diesel to zero emission vehicles. All new apprentices follow a 'Mechelec' course which is tailored to include zero emission options and alternative fuels based on a joint mechanical and electrical skills base. Metrobus' existing multi-skilled team will be an integral part of supporting new work experience placements, apprentices, and employees with learning about the hydrogen buses within our fleet.

Metrobus currently have 325 drivers at the Crawley depot, along with 12 supervisors. All of the existing Engineering team are being upskilled with training not just from the OEM (original equipment manufacturer) but from training bodies that train specifically in high voltage applications. In partnership with existing hydrogen bus manufacturer Wrightbus, Metrobus created and carried out a hydrogen-specific driver training course for drivers on the Fastway service which has already received hydrogen buses. The first part is the theory behind the hydrogen bus (1.5hrs) what the bus features are and any warning lights that may arise. The second part of the training is type-training (1hr) taking in the guideway system of Crawley. So far 46 drivers and 11 supervisors have been trained as they are either on the Fastway rota or carry out Fastway duties when required.

Evidence of the FTE (Full time employment) opportunities and the retention and retraining of staff is recorded by Metrobus in the form of the training hours per person. Metrobus is pleased to record that they rarely have anyone leave the

team because the staff feel engaged in new technologies and a part of the transition to zero emissions.

Metrobus' Head of Engineering sits as a board member on Clean Growth UK and works closely with the University of Brighton, where graduates and post-graduates can be given opportunities to engage in our Zero Emission future. This also works along SMEs (Small and Medium enterprises) that could potentially become beneficiaries of our ambition through the services that they offer. This transition is also aligned with Chichester College Group (who run Crawley College) who are leading the development and implementation of a multi-strand curriculum for the teaching of alternative energy sources and resources, with a focus on hydrogen technology. The local development of these green skills will be further enhanced by a successful bid.

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.

The preferred vehicle supplier for this proposal is Wrightbus, the only manufacturer offering all buses needed. Wrightbus is also the only British-owned UK bus manufacturer, maximising return on government investment at the national level, with a focus on high levels of local content supporting the wider UK bus supply chain.

Placing orders with domestic bus manufacturers can maximise local and national community benefits, such as:

Over the last 2 decades, Wrightbus has worked closely with Queens University Belfast to develop the next generation of buses and zero-emission technology. Much of this work has enabled the acceleration of the design and production of the Hydroliner and Electroliner product range. The studies done by them take a range of factors into account, including:

- Velocity Profile
- Route topography
- Number of bus stops
- Traffic conditions
- Acceleration & braking
- Weather conditions

These are used to simulate potential performance with testing conditions that include the identification of:

- Vehicle power demands
- Energy and fuel consumption rate
- Range and remaining energy capacity

In Metrobus' determination to be bold and transformative, 54 hydrogen buses have already been procured from Wrightbus for local bus routes operating from Crawley depot.

Wrightbus also offers unlimited training for Metrobus staff including maintenance teams, drivers and supporting staff throughout the warranty period of the new hydrogen buses. An additional Master Technician (Full-time and apprentice) for the Crawley depot will be locally recruited to carry out maintenance and repair on vehicles, with the apprentice gaining an accredited Institute of the Motor Industry Level 4 qualification.

Ordering from Wrightbus will lead to investment back into the UK economy and local communities. It is estimated that the UK bus manufacturing industry supports almost 10,000 jobs in the wider supply chain extending across the country. 47% of parts for their Hydroliner product are sourced from British suppliers (75% when including EU suppliers). A forecast spend of £290m to UK suppliers will help employment in the supply chain and the UK economy.

Air Products' European HQ is in Surrey employing over 400 people in the region and around 1,500 people nationwide; this highly skilled team works on world scale projects in the UK and across the globe. Air Products proudly promotes STEM activities with local schools and communities and have been doing for many years. Air Products have partnered with SATRO, an educational charity focusing on STEM, construction, and employability in the region. Air Products have sponsored their problem-solving challenge for many years and are committed to continue doing so.

Air Products' STEM subjects are at the heart of innovative solutions and through its STEM strategy they help to inspire the next generation of scientists and engineers. Their educational outreach programmes help students to identify and choose career opportunities that are right for them. Their STEM strategy has 4 pillars, focusing on students at different times in their education, their employees, and the community. Air Products have 17 programmes, take part in over 500 different events and activities, and annually engage with approximately 80,000 students.

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.

This project supports Metrobus' ambition of decarbonising their fleet and reducing their carbon footprint by 75% by 2035 as 70% of the Crawley depot would be zero-emission and result in the least carbon efficient buses in the depot (Euro IV) being removed in 2026.

The permanent re-fuelling infrastructure already in the depot, which was the first in Europe and the only one in the UK, can store 1,600kg of liquid hydrogen and could support the entire fleet of just over 140 vehicles. Air Products are the only company in the UK that has had their product audited by an independent body as renewable "well to wheel''. This Certification will be applied to every source used for Crawley depot and is a contractual obligation in the hydrogen supply agreement between Air Products and Metrobus. Air Products is developing a £1.2bn green hydrogen production facility in Immingham, Lincolnshire, which will reduce 580,000 tonnes of GHG emissions per year at full capacity.

In terms of wider emissions from transport, several Air Quality Management Areas (AQMAs) are relevant to the project; including in Crawley, Horley and on the way to and in Brighton. Given the existing fleet used on these routes is largely Euro IV, the conversion to zero-emission will be a meaningful contribution to improving air quality within West Sussex and surrounding areas.

With this project resulting in over 80% of Gatwick Airport's bus services being zero-emission, it also supports the strong interchange links between different sustainable modes. At the Gatwick South Terminal bus stops passengers can easily reach the newly redeveloped Gatwick Airport Station, enabling interchange with rail services for onward connectivity. The stops are also adjacent to National Cycle Route 21 and the section at Gatwick is the subject of a project to identify improvements to encourage more walking and cycling by airport staff and other users.

The decarbonisation transition of this project is further aligned with Gatwick Airport itself, who earlier this year accelerated its commitment to be net zero for its own Scope 1 and 2 carbon emissions by 2030, 10 years ahead of its previous commitment. This means that Gatwick Airport Limited (GAL) will reduce its greenhouse gas emissions as far as possible and will remove any residual emissions. To achieve this, GAL has committed to investing over £250 million in various initiatives to reduce its emissions, including: transitioning to an electric vehicle fleet; adopting low-carbon alternatives to gas boilers and refrigerants; and improving energy efficiency throughout its operations. Alongside this, GAL has a goal to increase airport passenger and staff usage of public transport and zero and ultra-low emission journey modes to 60% by 2030 through working with transport partners. Initial discussions have taken place to consider how the hydrogen facility for local public buses in Metrobus' depot could support Gatwick Airport's transition of its own vehicle fleets and those of its third parties and the decarbonisation of airport ground operations. In the event of a successful bid, these will be developed further through a feasibility study.

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.

West Sussex County Council are leading this bid for new ZEBs with the aim of decarbonising and removing bus emissions on rural transport routes. The proposal is to replace diesel buses with Hydrogen zero emission buses.

The proposal does not have any requirement or plan for route, timetable or frequency changes. This means that the consideration of the Public Sector Equality Duty is focussed on the changes to the buses themselves, not the services themselves or access to work, health, shopping or leisure opportunities.

The Equality Act 2010 requires public authorities to seek to:

- eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under the Act;
- advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it; and
- foster good relations between persons who share a relevant protected characteristic and those who do not share it.

To meet this duty the Council analyses the potential impact of proposed policies, strategies and action plans across all of the protected groups so as to enable the Council to have due regard to the equality duty through an awareness of that impact.

The characteristics protected by the equality duty are:

- Age
- Disability
- Gender reassignment
- Marriage and civil partnership
- Pregnancy and maternity
- Race (including, ethnic origin, nationality)
- Religion or belief (including lack of belief)
- Sex/Gender
- Sexual orientation

The impact of new hydrogen buses has been initially assessed with regard to the nine protected characteristics by:

- considering how each group may be affected by potential new Hydrogen buses as opposed to older diesel buses
- contacting representative groups asking to gauge support for the potential scheme and if they can identify any potential negative impact of travelling on a Hydrogen bus as opposed to an older diesel bus

Consideration of any negative impact

The Council has carefully and individually considered, for each of the nine characteristics, how new ZEBs could have a negative impact upon customers or residents. It is not considered that the proposals will have any negative effects upon people sharing these characteristics.

The Council has engaged with over 100 groups that represent people with protected characteristics via the Council's public engagement web tool. We have had 17 feedback responses as a result of this engagement, all of whom said that they would support the introduction of new cleaner buses scheme. There have

been no negative effects on people with protected characteristics that have been identified as a result of this engagement.

Positive impacts which may offset any negative impacts

Whilst there have been no negative impacts identified as a result of the scheme, there have been a number of positive impacts identified. The new Hydrogen buses will meet the criteria of the ZEBRA 2 fund in terms of accessibility and specification.

- The floors of the buses will be made from 'dementia friendly' materials, which is likely to benefit older people.
- Whilst the current buses are wheelchair accessible and have visual and audio announcement the additional space for wheelchair/pushchairs will particularly benefit two groups with protected characteristics: disability, and pregnancy and maternity.
- The cleaner air as a result of the new buses was identified in the engagement as benefitting and potentially reducing disability, due to reduced air pollution e.g. respiratory conditions.

Helping to eliminate discrimination, harassment and victimisation

The new hydrogen ZEBs will prioritise inclusion as a result of their enhanced specification and as such will help eliminate discrimination harassment and victimisation by allowing a wider section of the population, including those with protected characteristics, to travel more comfortably.

How the proposal helps to advance equality of opportunity between people who share a protected characteristic and those who do not

The new buses are equally available to all passengers which will make it more likely that people with protected characteristics are able to feel comfortable to travel. Metrobus have a well-established training programme that supports their drivers in their role, as they are usually the first – and very often, only – point of contact with the operator.

No changes have been proposed as a result of this assessment. That is because no negative impacts of a potential scheme have been identified, with only positive impacts through the engagement exercise.

When the ZEBRA 2 funding has been awarded and allocated, depending on the details of the award, the Council can confirm the proposals with residents along the routes. Further wider public engagement can be undertaken at that stage with a focus on users and potential users of the routes involved.

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.

The Value for Money (VfM) of this proposal, as represented by Benefit Cost Ratio (BCR) calculated by DfT's Greener Bus Tool for ZEBRA 2 is: 1.08. This is the 'Low' category, reflecting typically greater differential cost of FCEBs compared to battery electric buses.

Although this is not 'Poor', WSCC believes this bid is also innovative and offers a unique and highly valuable opportunity to showcase hydrogen as a viable transport fuel for decarbonising bus and other heavy vehicle fleets, with the potential to kickstart a hydrogen economy in the south east of England and beyond.

The proposal is innovative for the following reasons:

The UK's first hydrogen bus deployment in a rural area: Hydrogen bus fleets introduced in the UK to date have been entirely focussed on urban areas: the first FCEBs were introduced in London, followed by Aberdeen, Birmingham, Belfast and most recently, Liverpool. These schemes have also focussed on only one or two routes, given the modest fleet sizes introduced. By contrast, this proposal to introduce 43 FCEBs across 13 bus routes with three different vehicle types would be a UK first and is unparalleled in its scale and ambition, covering a large area with a mix of local, rural, interurban and intensive 24/7 airport bus routes. The project partners believe this proposal is a unique opportunity to prove the viability of hydrogen for bus fleet decarbonisation at scale in a varied operating environment.

Hydrogen supply and refuelling already in place and future-proofed for enlarged fleet, with fuel prices locked in for the lifetime of the project: Another aspect that makes this scheme unique relative to other FCEB deployments in the UK to date is that the necessary fuel supply and refuelling facilities are already in place, with a contract securing commercially competitive fuel prices for the lifetime of the fleet's operation. Some FCEB deployments in the UK and Europe to date have encountered difficulties securing the necessary volumes of hydrogen and access to reliable refuelling facilities, in some cases having no control over the fuel price being paid and being fully exposed to market volatilities. Metrobus, through their contract with Air Products and the refuelling facilities in place at their Crawley depot, will have a unique advantage compared to other FCEB schemes in the UK in having control and influence over the fuel supply, without being exposed to third party suppliers and refuelling facilities outside of any contractual relationship.

FCEB fleet already in place, providing an opportunity to showcase the UK's first 'hydrogen bus town' and scale up to a 'ZEB region': The proposal builds on the existing fleet of 20 FCEBs, introduced in June 2023 and increasing to 54 over the next 18 months, with the existing fleet operating successfully to date. The enlarged fleet, operating the bus network originating in Crawley, would provide a unique opportunity to demonstrate a 'hydrogen bus town' concept, with the vast majority of services operated by FCEBs and the majority of the Crawley depot fleet becoming hydrogen powered. This scheme would represent the first FCEB

deployment at scale outside of a city region in the UK, acting as an exemplar of how other counties and towns may decarbonise their bus fleets in the future.

Significant match public and private sector investment in addition to the mandatory bus operator investment: As demonstrated in the Finance Case, Gatwick Airport, a major local employer and trip generator for all surface transport modes in West Sussex, is contributing REDACTED towards the total project cost. In addition, West Sussex County Council, Surrey County Council and Kent County Council are also making funding contributions to the scheme. This combination of public and private sector investment from a number of organisations makes this proposal innovative in its funding approach, as well as demonstrating the confidence that the partners have in hydrogen bus technology.

A genuine partnership approach between the public and private sectors, sharing risk and improving deliverability: The project funding partners comprise of the bus operator, three local transport authorities and Gatwick Airport, which we believe makes this proposal unique in comparison to existing FCEB deployments in the UK which have been mostly local authority-led. The funding commitments made by all partners allows for risk to be shared and also improves the chances of successful delivery, by ensuring that all partners are financially invested in the scheme. Air Products, while not contributing any capital directly towards this application, is also a crucial partner and is sharing risk through the fuel supply contract already entered into with Metrobus.

These aspects make this proposal innovative compared to other FCEB deployments in the UK to date and therefore offset the low BCR and VfM categorisation.

Additionally, the project partners believe that the proposal provides a unique opportunity to offer learnings to Government and the bus industry on the following:

- Real-world performance of hydrogen bus fleets in rural settings, so far untested in the UK.
- Demonstrating the technical and commercial viability of decarbonising rural and interurban bus networks with hydrogen, which are widely regarded as more challenging for battery electric buses.
- Improve understanding of the dependencies between fuel supply, storage, dispensing and contractual pricing in making uptake of hydrogen in large commercial fleets (buses and other vehicles) attractive.
- Hydrogen and the skills agenda, demonstrating the requirements for a large number of staff to be upskilled on the maintenance, servicing and operation of hydrogen powered vehicles.

In summary, this proposal represents a UK first, not just for the bus sector, but for the road transport sector as a whole, by providing what would be the first national demonstration of hydrogen fleet deployment at scale, with significant private sector investment and with ongoing operation on a commercial basis. This proposal is unparalleled in its breadth and scale in the bus sector,

incorporating a mix of bus types and routes outside of a city region and providing a showcase of hydrogen as a solution to bus decarbonisation across the UK and therefore fully aligned with the aims and criteria of ZEBRA 2.

Section 6: Assessment Criterion 2 – Value for Money

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.

The Value for Money (VfM) category of this proposal is 'Low'; this is informed by the central Benefit Cost Ratio (BCR) calculated by the DfT's Greener Bus Tool for ZEBRA 2: 1.08.

The proposed VfM category has not been uplifted from that implied by the central BCR.

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.

The inputs to the GBT have been developed from technical analysis by Metrobus and WSCC. These reflect relevant background sources, including the vehicle and infrastructure specifications, existing knowledge of hydrogen fuel cell vehicle technology, ZEBRA 2 guidance and the Greener Bus Tool's in-built values. The main assumptions are as follows:

- Estimated annual vehicle distance: this is based on average annual kilometres travelled data from the operator's internal management

systems. Across the 13 selected routes, there is a combined estimated annual vehicle distance of REDACTED miles, which converted into kilometres equates to REDACTED km (multiplied by 1.60934). The weighted average by route was used to account for the variation in annual vehicle distances per bus depending on the service, in line with ZEBRA 2 guidance.

- Infrastructure budget estimate derived by Metrobus' local and corporate experts involved in the depot conversion works already developed for Crawley depot. This budget estimate is included in Annex D (REDACTED).
- Hydrogen fuel costs are based on GBT rate. During the preparation of this bid, a number of iterations were made using Metrobus' existing deal with Air Products, however over the life of the appraisal we consider that the results are more reasonably assessed by using the GBT's values. It is however not entirely clear whether the Greener Bus Tool includes any assumption about a balance between liquid and gaseous hydrogen, which makes a significant difference for the transportation impact ('trailer delivery') as in its liquid phase at atmospheric pressure, hydrogen is about 853 times denser than its gaseous form at atmospheric pressure. It is also not clear whether the inputs in cells U28 to AA29 fully calculate through the Tool and update the results if the values are changed. For the avoidance of doubt, the hydrogen which Air Products is contracted to supply to Metrobus is green hydrogen and therefore has been entered as 100% for 'Electrolysis Renewable Electricity'.
- Non-Electric fuel costs assumed within the GBT parameters.
- Vehicle and infrastructure maintenance costs assumed within the GBT parameters.
- Battery replacement costs, according to the vehicle size, based on GBT rate.
- Carbon, NOx and PM financial values assumed at GBT rate.
- Fuel and electricity consumption figures kept at GBT rate.
- Fuel/Energy consumption selection scenario reflecting advice on Government website and the characteristics of the routes included in the proposal. The routes serve a mixture of conurbations and types of operating area. Considering the existing fuel economy range and traffic conditions of the locations served, the 'medium' scenario has been used for the central BCR.

As the relevant costs come from direct experience of the existing hydrogen fleet (manufactured by the preferred supplier for the ZEBRA 2 fleet and fuelled by hydrogen from the contract supplier), WSCC and Metrobus have a high degree of confidence in the values used in the GBT.

While a quantified risk assessment (QRA) has been undertaken, WSCC and Metrobus consider that using this in the GBT would not result in significantly lower values and so the default Optimism Bias value of 20% has been used.

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).

The theory of change and logic map identify the outcomes and impacts expected to be generated by the scheme. As many of the benefits are captured in the GBT, there is no increase in the present value of benefits. However, the non-monetised impacts which are not captured in the GBT include:

Mode shift from marketing enabled by the increased presence of zero-emission buses across multiple bus routes, with consequential benefits in further decarbonisation and air quality improvements, accident reduction, decongestion and reduced parking pressure in towns across the project area.

Additional expenditure in town centres: increased spending in towns is anticipated as a result of greater patronage attracted by the introduction of the new zero emission bus fleet. The significant improvement in the quality of bus services is expected to attract more users, including those making trips for the first time, drawn by the appeal of the new fleet.

Long-term impacts in facilitating investment in West Sussex: hydrogen buses are used to increase the attractiveness of the bus network, growing patronage and playing a part in delivering the four priorities for WSCC; Keeping people safe from vulnerable situations, Encouraging a sustainable and prosperous economy, Helping people and communities to fulfil their potential and Making the best use of resources, all of which are underpinned by a cross-cutting theme of tackling climate change.

Enhanced skills levels in the local area: the increased number of hydrogen buses will create extra avenues for local workers to enhance their skills in maintenance and engineering. These acquired skills will prove highly transferable, particularly in the realm of 'clean energy' initiatives within the local area and the broader region. An example being the hydrogen-related skills that will be needed in the planned major green hydrogen facility planned in the Port of Shoreham and the pioneering world’s first hydrogen-powered crematorium in Worthing.

Enhanced and appealing bus services provided by the new fleet will contribute to improved connectivity among communities across the county. The introduction of a fleet of state-of-the-art hydrogen-powered buses is poised to further change perceptions of transportation, offering residents in less urban areas an attractive mode of accessing diverse opportunities and activities. This long-term initiative will play a pivotal role in alleviating deprivation, particularly as hydrogen bus services become increasingly important element of local regeneration efforts.

Based on the ‘switching values’ approach described in DfT’s Value for Money Framework, the VfM category derived from the GBT will change if these additional non-monetised impacts are taken into consideration. As an example, if the monetised benefits in the GBT were to be adjusted upwards by 40%, the VfM category will switch from Low to Medium.

This demonstrates that as well as the 'standard' benefits calculated within the GBT, the new fleet operating in West Sussex will generate a range of wider impacts that will boost the overall rationale for intervention and even more importantly, will align with several Government objectives, especially those related to 'levelling up' and rebalancing the economy in this region of the UK.

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.

Using the GBT and based on the guidance for use of the GBT, a number of sensitivities have been calculated during the preparation of this bid to understand the impact of certain key risks. These include the sensitivities suggested by DfT in the ZEBRA 2 guidance. The sensitivity tests used were:

Sensitivity 1A and 1B: Changes to estimated ZEB vehicle mileage – a summary of the impact of changing the mileage by +/- 10%;

Sensitivity test 2A and 2B: Changes to battery replacement costs – a summary of the impact of changing the costs by +/- 10%;

Sensitivity 3A and 3B: Changes to Carbon rating – a summary of the impact of changing the Real non-traded Carbon value to low and high;

Sensitivity 4A and 4B: Changes to alternative fuel/energy consumption scenarios – a summary of the impact of changing the scenario to low and medium (central case in the GBT tool assumed high fuel/energy consumption);

Sensitivity 5A and 5B: Changes to operating costs (Diesel resource cost changed for scenarios, but there is no way to change the operating costs of hydrogen, so default value is used) – a summary of the impact of changing the scenario to low and high.

Given that the Central Case BCR is 1.08, the impact of these sensitivities on the BCR is as follows:

Sensitivity 1A: kilometres increased by 10%: BCR = 1.19;

Sensitivity 1B: kilometres decreased by 10%: BCR = 0.96;

Sensitivity 2A: battery replacement costs increased by 10%: BCR = 1.07

Sensitivity 2B: battery replacement costs decreased by 10%: BCR = 1.08

Sensitivity 3A: low carbon value: BCR = 0.49;

Sensitivity 3B: high carbon value: BCR = 1.67;

Sensitivity 4A: low fuel/energy consumption scenario: BCR = 0.72;

Sensitivity 4B: high fuel/energy consumption scenario: BCR = 1.83;

Sensitivity 5A: low operating cost scenario: BCR = 0.73;

Sensitivity 5B: high operating cost scenario: BCR = 1.52.

Other sensitivities that have been applied, and the rationale for each are as follows:

Sensitivity 6A: hydrogen bus cost increased by 10%: BCR = 0.92.

Sensitivity 6B: hydrogen bus cost decreased by 10%: BCR =1.29.

Sensitivity 7A: diesel bus cost increased by 10%: BCR = 1.18.

Sensitivity 7B: diesel bus cost decreased by 10%: BCR = 0.99.

Section 7: Assessment Criterion 3 – Grant funding per bus

Separate attachment REDACTED

Section 8: Assessment Criterion 4 – Deliverability

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.

Total ZEBRA 2 funding requested: £10,077,913.50

West Sussex County Council: REDACTED from Section 106 agreements and its Climate Change Capital Fund

Surrey County Council: REDACTED from its Surrey Ultra-Low and Zero Emission Scheme

Kent County Council: REDACTED from its public transport development budget

Metrobus: £11,581,968.00

Gatwick Airport: REDACTED

Overall project value of REDACTED.

West Sussex County Council: Section 106 agreements and its Climate Change Capital Fund

As the lead LTA, WSCC will contribute the largest amount of the local authorities involved in this project. Support for the bid has already been confirmed at all levels in the council from the officers in the Transport Co-ordination Group (responsible for Public Transport, including the Enhanced Partnership and Bus Service Improvement Plan delivery), senior management and Director level, and

the relevant Cabinet Members. Therefore, no further approval is required to access the funding.

WSCC has explored all avenues of potential funding and will contribute REDACTED from existing S106 agreements, which have identified 'transport' contributions along the line of the routes which can validly be applied to this project. The balance will come from WSCC's Climate Change Capital Fund.

Surrey County Council: Surrey Ultra-Low and Zero Emission Scheme

The LTA's funding for decarbonisation was agreed by its Cabinet in November 2020 which gave delegated authority to officers to use it in partnership with scheduled bus operators and the DRT sector. This was to ensure the timely and effective spend, by identifying opportunities with operators to fund schemes as well as using as matched funding so that the Council's contribution can go further and support more schemes than if funded solely by SCC.

As such, the delegated authority, means there are no political approvals process requirements ahead of submitting this bid, during the bid assessment or once the ZEBRA 2 decision is made. Therefore, as soon as required, SCC are in a position to progress with the grant funding process and the operators can place orders e.g. with the preferred bus manufacturer.

Kent County Council: public transport development budget

The LTA's funding will be drawn from its own internal funding. The amount is within the delegated authority of the Head of Public Transport, and as such no further approvals are required to access the funding.

Metrobus

Metrobus is working to implement a step-change in the bus services included in the bid by investing in 43 new buses, which in most cases are the first fleet of new vehicles for the routes in the past 10 years. As these routes serve less intensive passenger demand than other routes operated from the Crawley depot, they have normally been operated by cascaded mid-life vehicles from other routes. By using ZEBRA 2 as a catalyst for the transition to a zero-emission future, Metrobus is investing more than REDACTED in the diesel-equivalent cost which it would not otherwise have invested in these routes. By contrast, the value of the 8 new vehicles which have been deployed to 2 of the routes in the past 10 years only amounts to REDACTED and it is this transformational vehicle investment which provides the appropriate confidence for the other public and private sector bid partners to contribute the balancing REDACTED of the difference in the cost of the vehicles. Metrobus is also investing the REDACTED cost of the infrastructure (workshop modifications), at a value of REDACTED.

Metrobus is privately held and wholly owned by Go-Ahead Group Ltd, which is in turn owned by Gerrard Investment Bidco Ltd, a subsidiary of a consortium consisting of Kinetic Holding Co Pty Ltd and Globalvia Inversiones SAU. Kinetic is a bus operator in Australia and New Zealand, while Globalvia is a Madrid-based transport infrastructure firm.

With good access to capital and economies of scale coming from being a large bus-owning group in the UK, Go-Ahead Group Ltd procures framework agreements for capital assets including vehicles and site infrastructure to be accessed by its local subsidiaries.

Prior to making this application, Go-Ahead Group Ltd approved the necessary funding for this scheme which is reflected in the accompanying letters of support from the local Managing Director of Metrobus and the national Chief Executive of Go-Ahead. This followed a robust selection and shortlisting process within Go-Ahead Group to obtain approval on the schemes to be applied for under ZEBRA 2 and to confirm commitment to provide the requisite capital investment.

In the event of a successful application, Metrobus will progress the necessary fleet and infrastructure procurement with its preferred suppliers, taking into account the legal advice from WSCC included in 8.1.3. As the extent of ZEBRA 2 awards is currently unknown, there will be a necessary, second and final approval of the actual release of the capital from Go-Ahead Group having due regard to the final confirmed order quantities and any resulting changes to outturn costs as a result of adjustments to any volume discounts by suppliers. Similarly, any resulting unit cost increases or other unforeseen cost escalations between the point of application and grant award will be managed by Metrobus.

Gatwick Airport Limited (GAL)

Gatwick Airport is the UK’s second largest airport and a vital piece of national infrastructure. As part of the planning permission for the airport’s operation, a legally-binding agreement with West Sussex County Council under Section 106 of the Town and Country Planning Act 1990 and other powers requires the company to set aside funds to be spent on initiatives that promote, in accordance with the Airport Surface Access Strategy, the use of transport by modes other than the private car. Known as the 'Sustainable Transport Fund', the funding is overseen internally by the ‘Decade of Change Steering Group’, which has already signed off the amount, with the eventual spending of funds carried out under delegated authority to Jonathan Pollard, Chief Commercial Officer, who will be the GAL signatory to the agreement to be made with WSCC regarding ZEBRA 2, as evidenced in 8.2.2.8 of the Application Form and Annex H (REDACTED). Therefore, no further approval is required to access the funding.

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.

As set out in 8.1.1, the following are the sources of finance and amounts of funding not coming from the bus operator Metrobus which will be required to deliver the project included in this application:

West Sussex County Council: REDACTED

Surrey County Council: REDACTED

Kent County Council: REDACTED

Gatwick Airport: REDACTED

The steps for these sources, and the alternatives are as follows:

West Sussex County Council

As set out in 8.1.1, the approval to spend an existing budget only requires internal steps to be completed and as such is very low risk to the project as the decision-making of the Council will support this process, with the spend on decarbonising transport already fully aligned with approved Council policies and the legal and procurement advice received as part of the bid preparation means that the spending is already confirmed to be following appropriate processes.

Surrey County Council

As set out in 8.1.1, the approval to spend an existing budget only requires steps to be completed within that local transport authority, which is itself in the process of submitting a bid for ZEBRA 2 funding. Other than private sector funding from bus operators, Surrey County Council is not proposing to use any other private finance sources to support ZEBRA 2 bids. As such, the non-availability of this funding is considered to be low risk to the project as the decision-making of that local authority will support the ZEBRA 2 process, with the spend on decarbonising transport understood to be already fully aligned with approved policies and the legal and procurement advice known to have been received as part of that authority's bid preparation.

The process has been agreed that Surrey County Council will pay its contribution to WSCC (as the lead LTA), who will then pay the funding to Metrobus, in line with the Grant Funding Agreement. As the joint local authority when WSCC submitted its expression of interest for ZEBRA 1 in the Crawley and surrounding area, and as a member of the West Sussex Enhanced Partnership Forum, it has been agreed between the partners that no further formalisation of the process is required to access the funding.

In the event that all or part of this funding was not available, and no other suitable funding could be identified within the timescale on similar terms, the ultimate backstop would be that WSCC would agree with Metrobus to scale back the project, by reducing the number of routes converted to zero emission buses which operate in Surrey.

Kent County Council

As set out in 8.1.1, the approval to spend an existing budget only requires steps to be completed within that local transport authority. Given the level of funding, the non-availability of this funding is considered to be very low risk to the project as the decision-making is within the level of delegated authority to officers, with the spend on decarbonising transport understood to be already fully aligned with approved policies. The process has been agreed that Kent County Council will pay its contribution to WSCC (as the lead LTA), who will then pay the funding to Metrobus, in line with the Grant Funding Agreement.

In the event that all or part of this funding was not available, and no other suitable funding could be identified within the timescale on similar terms, the ultimate backstop would be that WSCC would find the sum from its reserves in order to avoid destabilising the funding to the operator, as the amount cannot directly be saved by scaling back the project, even if only by 1 bus.

Gatwick Airport

As set out in 8.1.1, the internal governance has been completed and so approval to spend an existing fund which GAL is legally required to use on providing alternatives to travel by private car has already been obtained. Furthermore, this approach has been endorsed by the stakeholder Transport Forum Steering Group. As such, the non-availability of this funding is considered to be low risk to the project as the decision-making has already been made as part of providing the letter of support included in Annex H (REDACTED). Nevertheless, as set out in that letter, a specific agreement will be made with WSCC regarding ZEBRA 2, as evidenced in 8.2.2.8 of the Application Form and Annex H (REDACTED), e.g. to confirm the distribution of payments, reflecting that the process has been agreed that GAL will pay its contribution to WSCC (as the lead LTA), who will then pay the funding to Metrobus, in line with the Grant Funding Agreement. Further assurance regarding commitment to support the project is evidenced by Gatwick Airport being a member of the West Sussex Enhanced Partnership Forum, as represented through the Coast to Capital Local Enterprise Partnership (LEP), which regards Gatwick Airport as the most important asset in the area of the LEP.

In the event that all or part of this funding was not available, and no other suitable funding could be identified within the timescale on similar terms, the ultimate backstop would be that WSCC would agree with Metrobus to scale back the project, by reducing the number of routes converted to zero emission buses which provide connectivity to Gatwick Airport.

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.

Full legal advice: Annex B (REDACTED).

REDACTED

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.

Through the development of this submission process, the preferred delivery model has been developed and agreed between WSCC and Metrobus. The commercial principles have been structured to help ensure the following key commercial objectives:

- Public sector affordability and acceptability – the preferred delivery option must be affordable and comply with WSCC's legal advice for ZEBRA 2.
- Alignment with 'Net Zero' objectives: the commercial principles will be in line with WSCC's 2021-2025 plan to reduce carbon associated with road transport.
- Appropriate risk transfer – the preferred delivery option should transfer appropriate levels of risk 8between the public and private sector partners to those best placed to manage those risks.
- Meeting the wider objectives – the preferred delivery option should provide a project that supports the strategic aims of WSCC and DfT.
- Commercial viability – the preferred delivery option should be commercially viable for Metrobus taking into account that the routes serve some rural areas, where passenger demand is less intensive than on other routes operated from Crawley depot.

WSCC and Metrobus believe that these objectives are satisfied in this proposal.

Preferred Procurement Route

WSCC considered the following options to inform the preferred procurement route. The different options with their advantages and disadvantages are given in summary below:

Option 1: No intervention: leave to market to provide zero emission buses

Advantages: No additional public expenditure on buses, infrastructure, or maintenance centres; No financial risk for WSCC as leaving the procurement of ZEBs to the free market; Least complex option for WSCC with no planning required; More freedom for operators and they will have control over their own fleet and procurement strategy.

Disadvantages: Although Metrobus already has 54 hydrogen fuelled buses, none of them were procured without public sector capital funding. Leaving the market to procure their own ZEBs has not proved to be a viable option in West Sussex; Without additional funding WSCC's wider transport decarbonisation objectives would be more difficult to achieve.

Option 2: WSCC acquire and own buses to lease to operator

Advantages: WSCC can decide what areas will benefit from the new ZEBs by stipulating what services they are allocated to; greater control over specification and design of the vehicles; Help fleet decarbonisation for SME operators by removing high capital investment barrier; ability for WSCC as a public body to drawn down capital; speed up transition to a zero-emission fleet and progress towards objectives of the plan to reduce carbon emissions.

Disadvantages: Complex project for WSCC to deliver which is not in the business of buying buses; Significant risks to WSCC as they own and are responsible for the fleet; requires a willing bus operator to lease the buses from WSCC for their full operational life to avoid the situation of stranded assets; commercial

considerations to tap into volume discounts and economies of scale that larger bus operators can secure from manufacturers.

Option 3: WSCC lease buses and sub-lease to operator

Advantages: Lower risk compared to ownership as buses can be returned to the leasing company if no longer required; No large up-front capital investment required.

Disadvantages: Requirement for significant ongoing revenue budget to meet lease payments; likely a more expensive option overall compared to ownership; bus operators may be unable or unwilling to sub-lease buses from WSCC and prefer to own their buses.

Option 4: WSCC enters into a Grant Funding Agreement with bus operator for them to acquire the buses (Preferred option)

Advantages: Proven delivery model given previous government funding rounds; low risk and no ongoing financial commitment for WSCC; no up-front capital required from WSCC to enter into a GFA (although WSCC and others have chosen to provide capital for this project). This is considered to be the fastest and most efficient way to achieve bus fleet decarbonisation in West Sussex, particularly when supported by WSCC and other funding partners' additional financial contribution to the scheme.

Disadvantages: Requires ongoing monitoring to ensure terms of Grant Funding Agreement are complied with; legally more complex compared to leasing or ownership given Subsidy Control implications.

Procurement Strategy

Metrobus will procure and own all the assets including the buses and depot workshop modifications. While, as a private company, Metrobus is not a contracting authority and Regulation 13 of the Public Contracts Regulations 2015 will not be engaged, that does not mean that the procurement will take place without reference to public sector procurement, particularly as the funding package involves multiple public sector partners. WSCC and Go-Ahead have their own procurement procedures that have mutually included and aligned requirements. Most notably, the Go-Ahead Procurement Policy, dated June 2023, specifically references ZEBRA funding as a Third-Party Funded Scheme and highlights how alignment should be achieved. This includes the specific requirement to demonstrate the achievement of value for money, which its Procurement Policy outlines as being based on a competitive supplier engagement and shortlisting process to arrive at the preferred supplier. This process is not limited to price and relevant content exists in the section on Suppliers' ethical performance, which is broadly aligned with WSCC e.g. in respect of modern slavery.

Through competitive procurement and updated quotations, Wrightbus was identified as the preferred supplier as the only one able to offer all vehicle types on acceptable terms. Following a successful bid, WSCC will conduct a review to determine that the procedure followed by Metrobus was compliant with the PCR

2015. Approval for the investment in the buses has been received from the applicable Go-Ahead management level, as evidenced by the letter of support signed by the local Managing Director of Metrobus and the national Chief Executive of Go-Ahead.

Liquid hydrogen fuel for the existing fleet of ZEBs is already contracted to be supplied by Air Products, the world's largest hydrogen supplier. The supply is secured through a long-term contract, which commits to 15 years of green hydrogen supply, extending far beyond the minimum 5 years that the buses are committed to be operated for under ZEBRA 2.

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	Wrightbus	Alexander Dennis
Make and Model of bus	StreetDeck Hydroliner / GB Kite Hydroliner (10.9m) / GB Kite Hydroliner (12.4m)	Enviro400FCEV
Number of buses in bid	43 (24 DD / 15 SD / 4 long SD)	43 (24 DD only)
Vehicle technology (eg. Battery electric or hydrogen fuel cell)	Hydrogen Fuel Cell	Hydrogen Fuel Cell
Cost per bus (£)	REDACTED	REDACTED
Cost of diesel equivalent (£)	REDACTED	REDACTED
Has evidence for the cost of this bus model been provided alongside the application form?	Yes	Yes
Link to ZEMO ZEB certificate	https://www.zemo.org.uk/ugc-1/uploads/4429/11bed9f7233a8f3656c6ae00dce757a0.pdf https://www.zemo.org.uk/ugc-1/uploads/4428/d613cad356145922349412002 1dce93e.pdf	None yet available
Battery manufacturer	N/A	N/A
Battery Installed Capacity (kWh)	N/A	N/A

	Quote from preferred manufacturer	Quote from second manufacturer
Battery Usable Capacity (kWh)	N/A	N/A
Maximum zero emission range for type of route	372km / 642km / 642km	482km
Battery chemistry	N/A	N/A
Plug type	N/A	N/A
Rated charging power (kW)	N/A	N/A
Charger compatibility (eg. AC, DC or both)	N/A	N/A
Fuel cell manufactuer	Ballard	Ballard
(For hydrogen proposals) Hybridised battery size	52 kWh	30 kWh
(For hydrogen proposals) Fuel cell power rating (kW)	70	45
Total system power rating	70kw	60kw
Hydrogen Storage Capacity (kg)	29 / 37 / 37	29.4kg
On board hydrogen Storage Pressure (bar)	350	350
Vehicle length	10.9m / 10.9m / 12.4m	11.1m
Passenger capacity (seated)	65 / 37 / 40	73
Number of PSVAR compliant wheelchair spaces	1	1
Number of additional flexible spaces	1	1
Total passenger capacity	84 / 81 / 82	88

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	Not applicable to hydrogen	Not applicable to hydrogen

Make and Model name		
Number of charging units (charging unity with dual plug counts as one unit)		
Cost per charging unit		
Has evidence for the cost of this model been provided alongside the application form?		
Max Charging rate (kW)		
AC or DC charger		
Chargepoint protocol utilised		

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**
Hydrogen refuelling station (HRS) operator	Air Products	Not required as already installed
Technology provider	Air Products	
Number of HRS	1	
Cost per HRS	N/A – included in supply cost	
Hydrogen storage (kg)	Confidential	
Dispensing pressure (bar)	Confidential	
Fuelling capacity (kg/day)	Sufficient for depot 140 buses	
Production on-site or off-site?	Off-Site	
(If on-site) Size of electrolyser stack	N/a	
(If off-site) Source of hydrogen: supplier and location of hydrogen supply	Air Products - Phase 1 Rotterdam, Phase 2, Immingham	
Hydrogen supplier	Air Products	

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.

Metrobus' parent company, Go-Ahead, tested the original equipment manufacturers ("OEMs") market fully for quotes across suppliers earlier in 2023 for diesel, electric and hydrogen fuel cell (HFC) vehicles to a base Go-Ahead standard specification. This exercise was led at a group level to maximise the buying power of Go-Ahead as a whole and in accordance with Go-Ahead's Procurement Policy.

At that time, 11 suppliers responded with fully-priced quotations. Of those 11 manufacturers, only Wrightbus provided the option of both single and double deck FCEBs.

Following the launch of ZEBRA 2, and in order to ascertain a more up-to-date specific quote incorporating 2024 prices to make the ZEBRA 2 bid more accurate and include a mix of two lengths of single deck buses (which are tailored to the requirements of the routes in this bid), Metrobus recently approached Wrightbus directly for a quote for the bid, according to the requirements of the ZEBRA 2 guidance. The amounts quoted were in the expected range, following the previous full tender exercise.

The only other manufacturer known to offer double deck FCEBs in the UK market – Alexander Dennis Limited (ADL) – was also approached to provide a quotation for consideration during the development of the proposal and to satisfy ZEBRA 2 requirements of a second supplier quote. As ADL does not offer single deck FCEBs in the UK market, a further supplier – Caetano – was also invited to provide a quote under ZEBRA 2, based on the previous Go-Ahead procurement exercise.

The hydrogen fuel cell is confirmed as being covered by a 5-year manufacturer's warranty, reflecting ZEBRA 2 guidance about battery electric vehicles. Other parts are common to diesel buses in Metrobus's fleet while others are of course different and in both cases Metrobus commits to maintaining these other parts at its own cost for 5 years, if not otherwise covered by warranties which come as standard from the manufacturer.

As buses normally represent the largest capital outlay for any bus operator, Metrobus approached the manufacturers directly as it has all the technical, commercial and procurement skills needed to undertake this part of its business in-house.

As the hydrogen refuelling station has already been installed by Air Products to support the existing hydrogen fleet of Metrobus, and its maintenance is included in the cost rate for the supply of the liquid hydrogen over the 15 years of the contract, no further procurement is needed for that element of the project.

For the workshop modifications, the cost of works undertaken by the previous contractor – KH Engineering – have been developed into a scaled estimate by Go-Ahead's in-house property and engineering specialists, based on the specific requirements of the depot and the rates applicable to the elements which need to be addressed across the necessary floor space within the maintenance workshop. Given the very specialised nature of the work to modify the existing depot and the need to meet stringent environmental and health and safety requirements, it is not considered desirable to seek a quotation from any other contractor to carry out these works. Furthermore, to ensure independent verification of the suitability of the works, Frazer Nash (a specialist engineering consultancy) will be appointed to oversee and sign off the design, progress of works and the finished facility prior to use by Metrobus, as it was for the works already conducted in the depot in support of the hydrogen buses procured to date.

It is imperative that the project secures the most favourable costs for all elements and both WSCC and Metrobus believe that this approach helps achieve this.

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.

An electricity grid connection from a Distribution Network Operator or Independent Connection Provider is not relevant to this bid, as it is for hydrogen fuel cell vehicles. There is also no cost of hydrogen refuelling infrastructure as this is already in place and was built to support a full depot conversion. As a result no further expansion is required to refuel additional hydrogen buses.

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.

Annex D Bus Manufacturers, Infrastructure Budget Estimate and Hydrogen Supplier (REDACTED)

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.

Upon DfT award of ZEBRA 2 funding, and building upon the signed commitment included in this bid, WSCC and Gatwick Airport Limited (GAL) will enter into a binding agreement for the payment and spending of the GAL funding contribution for ZEBRA 2. This will be based on an agreement structure which has previously been used for public transport enhancements funded through GAL's Sustainable Transport Fund and is therefore 'fit for purpose' in respect of the transfer of the funding and securing the expected benefits for both parties. No further approval processes are required within GAL as the allocation of the funds to ZEBRA 2 has already been endorsed by the GAL Decade of Change Steering Group and the spending of funds from GAL's Sustainable Transport Fund is delegated authority to Jonathan Pollard, Chief Commercial Officer, who will be the GAL signatory to the agreement with WSCC.

As set out in 8.1.1, the internal governance of GAL has been completed and so approval to spend an existing fund which GAL is legally required to use on providing alternatives to travel by private car has already been obtained. Furthermore, this approach has been endorsed by the stakeholder Transport Forum Steering Group. As such, the non-availability of this funding is considered to be low risk to the project as the decision-making has already been made as part of providing the letter of support included in Annex H (REDACTED).

In the event that all or part of this funding was not available, and no other suitable funding could be identified within the timescale on similar terms, the ultimate backstop would be that WSCC would agree with Metrobus to scale back the project, by reducing the number of routes converted to zero emission buses which provide connectivity to Gatwick Airport.

The letter of support from Gatwick Airport Limited is included at Annex H (REDACTED).

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.

The governance for the delivery of this zero-emission bus project will be led by West Sussex County Council (WSCC) working in close collaboration with Metrobus, Surrey County Council (SCC), Kent County Council (KCC) and Gatwick Airport Ltd (GAL).

WSCC will lead on administering the ZEBRA 2 grant drawdown by Metrobus through a Grant Funding Agreement, taking responsibility for ensuring its correct and appropriate use during delivery of the project and the subsequent operation over the Grant Funding Agreement period. WSCC will also lead on all required monitoring and evaluation reporting to DfT in line with the ZEBRA 2 grant funding criteria.

Metrobus will take the lead in procuring the buses, commissioning them into service and will be responsible for their subsequent operation and maintenance. Metrobus will also arrange the workshop modifications to enable the ongoing maintenance of the liquid hydrogen fleet.

Funding from public and private sector partners that will contribute to this ZEBRA 2 project will come from SCC, KCC and GAL and all partners will provide their funding to West Sussex County Council to hold for draw down by Metrobus in accordance with the Grant Funding Agreement. A summary of the main duties of each partner organisation is given below:

Metrobus: Funding the base cost of the equivalent diesel buses; Procurement, commissioning and deployment of the buses; Maintenance of vehicles; Procurement and commissioning of depot modifications; Maintenance of in-depot infrastructure and; Training of drivers and engineering staff to operate and maintain the new buses and; Promotion of hydrogen buses.

WSCC: Overall responsibility for delivery of ZEBRA 2 grant; coordination between all project partners and management of incoming and outgoing payments; ongoing enforcement of Grant Funding Agreement obligations; Promotion of hydrogen buses; and Monitoring and Evaluation.

SCC is involved with the project by providing significant funding towards the cost of the vehicles which will operate on bus routes that serve the county. SCC will input to the strategic development of the project and participate in Monitoring and Evaluation activities related to the deployment of the technology in a rural context. SCC has already demonstrated this approach by investing £16.4m to roll out 34 of the 54 hydrogen fuel cell buses to be operated by Metrobus from its Crawley depot – and in doing so, creating one of Britain's largest hydrogen bus fleets and offering residents cleaner, greener bus travel.

KCC is involved with the project by providing a level of funding towards the cost of the vehicles which is commensurate with the extent of the routes included in the project which serve Kent, in the form of service 291, between Crawley and Tunbridge Wells. KCC will input to the strategic development of the project and participate in Monitoring and Evaluation activities related to the deployment of the technology in a rural context.

GAL is involved with the project by providing significant funding towards the cost of the vehicles which will operate services in and around the area of Crawley and Gatwick Airport. GAL will input to the strategic development of the project and participate in Monitoring and Evaluation activities related to the deployment of the technology on routes which provide connectivity to the airport.

Metrobus are suited to their role as operator of the buses. They have the management capacity to deliver the project due to their previous work in transitioning to hydrogen. Extra training for drivers and engineers will be needed, however Metrobus already have the training programmes set up to deliver this.

Metrobus has a long and proud record of investing in their people, vehicles and depots to run reliable and innovative services. Its Crawley depot was Top National Depot award winner at the 2019 UK Bus Awards, repeating its success of multiple previous years, with the judges impressed by the Crawley depot's overall performance, from how the company looks after and rewards its employees, through to its investment in depot facilities and growing community outreach. Metrobus owns the freehold of the depot that allows timely 24/7, 365 operational and maintenance support coverage for the fleet. The depot, with overall spatial capacity of 140 vehicles, is expected to accommodate all the new zero emission buses in addition to 54 hydrogen fuelled buses that were funded by earlier schemes. This includes:

- Recent introduction of 20 Fastway hydrogen fuel cell buses funded through government Ultra-Low Emission Bus scheme and now fully operational.
- Placing order for 34 hydrogen fuel cell buses that are leased from Surrey County Council and that will be fully delivered before the ZEBRA 2 fleet.

The liquid hydrogen fuelling station was established in Crawley depot in 2021 to enable accommodating hydrogen fuel cell buses. The station is owned and operated by Air Products, a world-leading industrial gas company. Once it reaches full capacity, by bunkering liquid hydrogen onsite, this depot will be the largest capacity hydrogen refuelling station in Europe and will be capable of providing the equivalent of fuel for over 140 buses per day.

Metrobus and Air Products have an active and binding contract for the supply of hydrogen to fuel its Crawley bus depot for a 15-year period (from 2021). Metrobus are provided with a cost of green hydrogen that rivals diesel and other low carbon fuels, which is indexed for electricity, labour and distribution prices. The agreement enables all new investments to be used on buses rather than re-fuelling infrastructure that is already in place.

To manage the project between partners, a dedicated Project Board will be established, under the direction of WSCC's Assistant Director in Place Services, for Highways, Transport and Planning (Senior Responsible Officer). The Project Board will be comprised of WSCC, Metrobus, and the funding partners (SCC, KCC and GAL). The Project Board will be responsible for project delivery, with additional governance provided externally through the West Sussex Enhanced Partnership Board and internally through the WSCC Capital Programme Board, ensuring that the project is managed with appropriate skills and visibility of any emerging issues.

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.

West Sussex County Council will allocate the ZEBRA grant funding to Metrobus through a Grant Funding Agreement (GFA) which will form a legally binding and enforceable agreement between the two parties over the drawdown and use of the awarded funding. The Council has significant experience in grant agreement processes with external parties, including in conjunction with central government departments. An example of this is the delivery of BSIP funding, where payments are made to bus operators in West Sussex (including Metrobus) for initiatives which are ultimately funded by DfT under a Memorandum of Understanding. WSCC has additionally developed a GFA specific to this opportunity.

No competition is necessary to enter into a GFA with Metrobus as this is deemed to have been satisfied through the initial ZEBRA 2 market engagement by WSCC with the county's bus operators as detailed in Section 8.1.3, from which only Metrobus was able to proceed with a ZEBRA 2 application.

The GFA will specify the following key aspects, among others:

- Duration
- Purpose of the grant;
- Payment of grant including Payment Profile Schedule – clearly aligned with the overall programme with milestones defined by asset (bus and infrastructure) proof of order and delivery required for payment by WSCC:
- Use of the grant;
- Financial records;
- Monitoring, reporting and provision of data to allow assessment of the effectiveness of the grant;
- Warranties;
- Withholding, suspension and repayment of grant;
- Subsidy control rules;
- Protection of WSCC's interests in the grant funded assets;
- Limitation of liability and surviving obligations.

Payment milestones will be linked to achievement of a specific, demonstrable project milestone or deliverable having due regard to the milestones the grant recipient will need to meet to place orders with and make payments to its suppliers.

Recognising that the principal risks to WSCC arise not during delivery of the grant-funded assets but during their subsequent operation over the Grant Period up to the end of the period of years after the Operation Date, the GFA will include protections regarding maintenance of and insurance cover for any Asset and Infrastructure Works; change of use or disposal of any Asset or Property incorporating the Infrastructure Works; cessation of trade or insolvency. A GFA

is necessary to protect WSCC's interests in these low probability, high impact scenarios.

A draft Grant Funding Agreement is included at Annex E (REDACTED).

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.

Metrobus as the bus operator project partner will take the lead on the execution of the agreed project programme, by carrying out the necessary bus fleet procurement and to commission the necessary workshop modifications in the bus depot. WSCC will retain overall responsibility for the project plan, monitoring progress, management of incoming and outgoing payments and reporting to DfT.

A full project plan is given in Annex F (REDACTED). It can be summarised as being organised into the following project workstreams:

Project set up – led by WSCC: Bid preparation and submission, addressing any clarifications from DfT during the bid process, acceptance of ZEBRA 2 grant and finalisation of partner funding, setup of internal project governance, development and execution of Grant Funding Agreement.

Following confirmation of the outcome of this application (expected in March 2024), the project plan allows for the rest of 2024 for the development, negotiation and ratification of the Grant Funding Agreement between the lead LTA for this bid, West Sussex County Council, and the participating bus operator, Metrobus. Agreements will also be formalised between WSCC and the other partners of the project funding allocation:

public: Surrey County Council, Kent County Council

private: Gatwick Airport Limited.

The procurement process of Metrobus to date will be reviewed in respect of PCR 2015 to determine if any further procurement activity is needed in compliance with WSCC's legal advice.

Vehicle Procurement – led by Metrobus: Confirmation of final specifications, , placing of orders and ongoing supplier management. Procurement bidding and review of 11 potential suppliers has already been completed by Metrobus's parent company Go-Ahead earlier in 2023 and preferred supplier has been identified. If needed to follow WSCC's legal advice, a further formal procurement may be conducted but this does not affect the programme as sufficient time is available within the timeline already identified for ordering and delivery.

Vehicle orders would be placed in December 2024 in line with DfT's expectations given in the ZEBRA application guidance.

Depot (Workshop Modifications) – led by Metrobus: Confirmation of site specifications, procurement, appointment of contractor, contractor design phase, on-site civils work, workshop modifications installation and commissioning.

Workshop modifications are programmed to be undertaken in the first half of 2025. The programme intentionally allows for completion of the works six months ahead of the expected first arrival of the new vehicles.

Vehicle Deliveries – led by Metrobus: Engineering staff training, driver staff training, initial soft launch and full fleet enter into service. Vehicle deliveries would be expected to commence in November 2025 and be completed by the end of January 2026, or 22 months after the grant award from DfT to the Council.

Marketing and communications – led by WSCC: Preparation of stakeholder and public marketing and communications plan, Development of a marketing and communications strategy in collaboration with Metrobus, production of marketing and communications material.

Monitoring and evaluation – led by WSCC: Definition of strategy, scope and approach (taking into account requirements of MoU with DfT) and agree success factors, Baseline assessment, Quarterly assessments, Bespoke analysis, Undertake re-baselining exercise.

Ongoing project management – led by WSCC: Monthly project update call, Quarterly project reporting, Project review, lessons learned and close out.

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.

As this bid is based on previous investment in zero-emission bus infrastructure in the same depot, with the preferred supplier of vehicles having delivered Metrobus' existing hydrogen buses and a long-term liquid hydrogen supply contract in place with the world's largest hydrogen supplier, the project is already considered by the bid partners to have a substantially lower risk profile than a typical zero-emission bus project.

Nevertheless, WSCC has taken a measured approach and been realistic in our ambitions and timescales to ensure deliverability and value for money, capitalising on the knowledge, experience and buying power of a national operator.

The ZEBRA 2 guidance set out the main risks which are generally associated with ZEB projects. WSCC and the bid partners have considered these, and other risks, as part of its bid preparation and explain how local circumstances affect each of these risks and mitigations as follows:

COST INCREASES FOR ZEBs

Description: Unexpected price rises for buses, or a lack of a defined procurement approach, could make the scheme unaffordable or require it to be reduced in scope.

Mitigation: Cost estimates use the binding offer from Metrobus's preferred vehicle supplier, which has supplied such vehicles previously. The price is valid until after the expected funding announcement decision. Due to delivery timescale, formal procurement of vehicles will not begin immediately after ZEBRA 2 funding is awarded but the existing relationship is considered strong and extension to validity period – or a further procurement if needed to satisfy PCR 2015 – is expected to maintain current pricing.

COST INCREASES FOR CHARGING/REFUELLING INFRASTRUCTURE

Description: Unexpected price rises for the infrastructure, or a lack of a defined procurement approach, could make the scheme unaffordable or require it to be reduced in scope.

Mitigation: as this is a hydrogen fuel cell vehicle project which capitalises on the hydrogen refuelling station which is already in the depot, the risk relating to a cost increase for the refuelling station is not applicable. The risk relating to the cost of maintaining the station is managed by the existing long-term (15 year) supply contract which Metrobus has with Air Products in which the price of hydrogen is indexed to publicly available published indices for electricity, labour, and distribution prices. This formula-based approach ensures transparency between the Air Products as the supplier and Metrobus as the bus operator.

DELAYS INTRODUCING ZEBs

Description: Delay in the delivery of buses (for example due to constraints in manufacturer capacity or upstream component global supply issues) could cause delays in project implementation and hence benefits realisation.

Mitigation: Procurement of vehicles and equipment will begin immediately after ZEBRA 2 funding is awarded and run concurrently to project governance and setup, principally execution of the GFA in order to secure slots in production schedules as early as possible. Buying all of the buses for the ZEBRA 2 projects with a single order offers the manufacturers more certainty to allow them to scale up their production and supply chain capacity, which helps mitigate this risk. The programme allows for a conservative lead time for the delivery of vehicles 12-15 months from order which is considered to be cautiously realistic based on recent experience. There is a limit to what other mitigations can be applied and the project accepts this risk.

DELAYS INTRODUCING CHARGING/REFUELLING INFRASTRUCTURE

Description: delays in providing enough refuelling points in the depot could mean needing to the limit use of the ZEBRA 2 fleet or hold the vehicles in storage until sufficient points are available.

Mitigation: none required as this is a hydrogen fuel cell vehicle project which capitalises on the hydrogen refuelling station which is already in the depot and is sufficient for the whole depot fleet.

DELAYS SECURING A GRID CONNECTION

Description: delays in providing enough power for the depot charging infrastructure could mean needing to the limit use of the ZEBRA 2 fleet or to hold the vehicles in storage until the connection is available.

Mitigation: as a hydrogen fuel cell vehicle project, the grid connection risk is not applicable, however the risk in respect of the existing hydrogen refuelling station is approval before 31st January 2025 by the Health and Safety Executive of the required Control of Major Accident Hazards Regulations 2015 (COMAH) application to store the required quantity of hydrogen fuel on site needed to fuel the existing hydrogen fleet and the ZEBRA 2 fleet. The mitigation is that the application has already been submitted. Metrobus have already made the COMAH application to HSE and have continued to liaise with the agency to take forward the application. Air Products are developing further solutions to mitigate HSE concerns such as smaller storage tanks instead of one large storage tank. Metrobus can defer the ordering of additional FCEV buses in the event of a decision by HSE still not having been reached by the point of the DfT deadline of 31st January 2025 for ordering of vehicles. Any decision by HSE to reject the application would also impact the operation of the existing FCEV bus fleet given only a small number can operate without the liquid hydrogen facility.

ENERGY PRICE INCREASES

Description: Unexpected price rises for the energy source (hydrogen) could make the scheme unaffordable or require it to be reduced in scope once implemented, manifested by either withdrawing bus services, increasing fares or requiring local transport authority service support.

Mitigation: This risk is managed by the existing long-term (15 year) supply contract which Metrobus has with Air Products in which the price of hydrogen is indexed to publicly available published indices for electricity, labour, and distribution prices. This formula-based approach ensures transparency between the Air Products as the supplier and Metrobus as the bus operator.

WSCC and the bid partners confirm that all other risks relating to the project have been assessed as having a lower overall risk profile (likelihood and impact) than the risks described above; this includes the availability of liquid hydrogen as Air Products will bring on stream a supply of liquid hydrogen produced in the UK from 2026 onwards.

8.3.5 Programme level Monitoring & Evaluation

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

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

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:

West Sussex County Council (WSCC) welcomes the approach to Monitoring and Evaluation which is set out in the ZEBRA 2 guidance and the draft Memorandum of Understanding with the Department for Transport.

WSCC looks forward to collaborating with the Department over assurance requirements, which will include the Section 151 Officer using the templates provided to give annual written confirmation that the project continues to represent value for money to the Department. WSCC will also collaborate with the Department in case of need of further assurances, which could include engagement with the Senior Responsible Officer, Section 151 Officer and Project Leads; attendance at project boards; and/or review of specified procurement, financial and decision-making evidence on request. WSCC will welcome the Department's assistance and will work collaboratively to satisfy these requirements.

The approach to Monitoring and Evaluation will be further developed following receipt of the expected Monitoring and Evaluation Guidance from the Department. WSCC will provide reports to the Department, expected to be in a format that the Department will provide in order to be consistent with other ZEBRA 2 projects, demonstrating that outputs and outcomes are being met, in line with the approved project. This may include sharing of the following information:

i. Current funding that has been spent

ii. Planned expenditures

iii. Updates on key project milestones and risks

iv. Procurement and governance

Where relevant, WSCC will ensure data collected as part of its own monitoring and evaluation will be made shareable with the Department to allow for meaningful national monitoring and evaluation.

WSCC will be pleased to support the Department in publishing relevant data so it can be used to inform public statements.

Our logic map in Annex G sets out our theory of change and the outcomes and impacts we expect our project to have.

WSCC and Metrobus will co-develop a strong suite of evaluation tools, liaising with DfT to ensure that our scheme-level monitoring and evaluation feeds into and benefits from national programme-level M&E activity. This will be a mix of qualitative and quantitative approaches, covering bus operations, outputs, and public perceptions.

The Project Board will oversee M&E activity with the project manager acting as the main point of contact for DfT. Once embedded as business as usual the Council's Public Transport Manager will take on this liaison role. The Project Board will report the main findings of the M&E activity to the West Sussex Enhanced Partnership Board annually.

For all indicators we will ensure baseline data is collected for 12 months while the new hydrogen fuelled vehicles are on order, and for 36 months after the new vehicles are in service, to allow for month-by-month and year-on-year comparisons. A non-disclosure agreement will protect Metrobus's commercial confidentiality while allowing proper evaluation of the public investment in the scheme, in accordance with the requirements of ZEBRA 2.

- Telematics will be recorded to monitor vehicle distance covered, vehicle speed and energy consumption (diesel / hydrogen).
- Breakdowns and maintenance costs will be reported monthly by Metrobus.
- Through annual reporting Metrobus will confirm the numbers of their staff trained in driving and maintaining hydrogen fuelled buses, including the numbers of apprentices and local residents benefiting from this training.
- Patronage and revenue will be recorded through Metrobus's automatic ticket machines (ATM) and reported to the Council quarterly to allow changes in passenger numbers and fares paid to be assessed.
- Passenger satisfaction will be measured with tailored surveys for services that operate between Gatwick Airport and Crawley and between Crawley and Brighton, specifically to identify changes in passengers' attitudes towards the vehicles they travel on.
- The Council will consider installing one new ambient air quality monitoring station at a key location in Crawley town centre in particular to measure NOx and PM2.5 levels.
- Carbon emissions will be modelled using DfT TAG databook values and manufacturers' specifications.
- Semi-structured qualitative interviews with bid partners and key stakeholders (neighbouring local transport authorities of East Sussex

County Council and Brighton & Hove City Council, constituent district councils, passenger representative groups, and others) and focus groups with passenger and potential passenger groups (for example, residents of new residential developments) will capture their impressions of the current bus service and opinions about the new vehicles, six months after their introduction. This will also cover any complementary initiatives introduced during the period of the ZEBRA 2 project, such as timetable changes to align more closely with staff and visitor profiles at Gatwick Airport.

- Metrobus will report to the Council annually on staff attitudes and experiences with driving and maintaining the electric vehicles, including working environment, ease of use.