ZEBRA Change Control Process – scope increase requests

This document provides guidance and a change control form for Local Transport Authorities (LTAs) who wish to submit a request to change the scope of their existing Zero Emission Bus Regional Areas (ZEBRA) scheme.

The change control process is for changes to existing ZEBRA projects and we will not consider requests for new zero emission bus projects. LTAs should provide the below information by 5pm 15th November, if they wish to have their change control request considered by the Department before the end of the year.

There is no guarantee that funding will be available to meet these, or any further, scope increase requests. Any requests should follow the existing ZEBRA funding parameters:

Any funding support available would be the same as under the ZEBRA scheme:

- DfT would contribute up to **75% of the cost difference** between a ZEB and a standard conventional diesel bus equivalent of the same total passenger capacity.
- For infrastructure, DfT would contribute up to **75% of the total** capital expenditure incurred as a result of its purchase and installation.

Change control requests for increased scope will be assessed and scored against three criteria:

- Value for Money
- Grant funding per bus
- Deliverability

Change control form

Summary

LTAs should provide a short summary of their change control request including:

- Number of additional buses the change control is requesting, and the cost, including how many are single and double deck buses.
- The supporting infrastructure that is needed to support the additional ZEBs.
- For battery electric buses, LTAs should set out the number of charging points that will be needed to support the additional electric buses and their specification. LTAs should provide a breakdown of the cost of the additional charging points and any additional installation costs.
- For hydrogen fuel cell buses, LTAs should set out the additional refuelling infrastructure that may be needed and any additional costs.
- If relevant, LTAs should set out any changes needed to the grid connection. LTAs should set out the additional power that is needed and what the additional costs of a larger grid connection are.
- LTAs should name the bus depot(s) where the additional ZEBs will be located. LTAs should confirm whether this is the same as the bus depot(s) where the ZEBs from the existing ZEBRA project are located.
- The bus operator(s) who will be operating the additional ZEBs. LTAs should confirm whether this is the same operator(s) involved in the existing ZEBRA project.

- Bus routes where the additional ZEBs will operate.

Please provide a summary of your change control request in no more than 1,000 words. This summary will not be scored.

This change control request builds on Norfolk County Council's successful ZEBRA application, which was prepared in partnership with bus operator First Bus. Our original application covered the provision of 15 buses and associated power infrastructure (including civils works and power upgrade) to enable First Bus's Roundtree Way depot to support the operation of Zero Emission Buses (ZEBs). This application sets out our proposals to enable First Bus to fully switch the entire fleet they are operating from their Roundtree Way depot to ZEBs, through the addition of 55 extra ZEBs and associated charging infrastructure. As a result of this full switch to ZEBs, the depot itself will only support ZEBs and First Bus will therefore, with the support of this funding, be in a position to decommission the existing diesel related infrastructure, making it First Bus's first fully electric depot in East Anglia.

This change control request will see First Bus operating exclusively with ZEBs on their four main cross city routes in Norwich, which account for nearly REDACTED bus journeys within the city centre, with corresponding benefits to the Norwich Air Quality Management Area, in addition to wider carbon and environmental benefits. These additional ZEBs will provide a visible example of how we are seeking to enhance connectivity whilst also delivering a sustainable Norfolk, increasing accessibility and embracing the future in terms of technology (all of which are objectives of our Local Transport Plan) and with average annual passenger numbers of REDACTED across these four routes, a significant number of passengers will directly benefit from using these new vehicles.

New number of additional buses the change control is requesting, and the cost, including how many are single and double deck buses

- 55 additional double deck buses at a total cost of REDACTED.
- First Bus will provide total funding of REDACTED
- Our grant request for the vehicles is REDACTED

The supporting infrastructure that is needed to support the additional ZEBs

- A further REDACTED charger heads REDACTED transformers, and associated cable management and framing to securely position chargers in the depot.

For battery electric buses, LTAs should set out the number of charging points that will be needed to support the additional electric buses and their specification. LTAs should provide a breakdown of the cost of the additional charging points and any additional installation costs.

- The proposed REDACTED fast charger specifications align with the original ZEBRA bid products. The total cost of the charging points including installation is REDACTED. In addition to the chargers, the steel gantry, cabling, transformers, and disposal of diesel **infrastructure** (eg. fuel tanks) costs REDACTED (with the disposal of the diesel infrastructure making up around REDACTED of this). Each bus must be connected to smart charger software, which costs REDACTED per bus. The total cost of infrastructure is REDACTED.

If relevant, LTAs should set out any changes needed to the grid connection. LTAs should set out the additional power that is needed and what the additional costs of a larger grid connection are.

- REDACTED

LTAs should name the bus depot(s) where the additional ZEBs will be located. LTAs should confirm whether this is the same as the bus depot(s) where the ZEBs from the existing ZEBRA project are located.

- The additional ZEBs will be located at the First Bus depot at Roundtree Way. This is the same depot for which funding was received in our original ZEBRA bid.

The bus operator(s) who will be operating the additional ZEBs. LTAs should confirm whether this is the same operator(s) involved in the existing ZEBRA project.

- First Bus will operate the additional ZEBs. This is the same bus operator involved in the existing ZEBRA project.

Bus routes where the additional ZEBs will operate.

The four bus routes served by the additional ZEBs account for REDACTED (based on 2019/20 pre-pandemic figures). Current patronage is now around REDACTED.

A summary of bus routes where the additional ZEBs will operate is outlined in the Table below.

Service	Attractions / Destinations on Route
Pink Line 11/11A/12	Norfolk and Norwich University Hospital, Norwich City centre, Sprowston, Rackheath, Wroxham, Hoveton
Red Line 23/23A/24/24A	Queens Hills, Longwater Retail Park, Costessey, Norwich city centre, Thorpe St Andrew, Heartsease
Blue Line 25/26/26A	Norfolk and Norwich University Hospital or Bowthorpe, University of East Anglia, Norwich city centre, Riverside, Norwich railway station
Orange Line 21	Old Catton, Norwich city centre, Dereham Road, West Earlham, Bowthorpe, Norfolk & Norwich University Hospital

Overall, the proposals set out in this change request represent Value for Money (in line with the Green Book) and, given the experience and successful track record of the project teams involved from Norfolk County Council and First Bus, as well as the governance arrangements already in place for ZEBRA, are highly deliverable.

Rationale

In no more than 2,000 words please set out the rationale for the change control.

The Department will determine whether the change control is a reasonable extension of the existing ZEBRA project or a new zero emission project and therefore outside of the scope of

the change control process. Requests that are determined to be outside the change control process will not be reviewed.

This change control request is a highly deliverable extension of our existing ZEBRA project, which was prepared in partnership with bus operator First Bus. Our original application covered the provision of 15 buses, plus sufficient infrastructure (including civils works and power upgrade) to enable First Bus's Roundtree Way depot to support the operation of ZEBs.

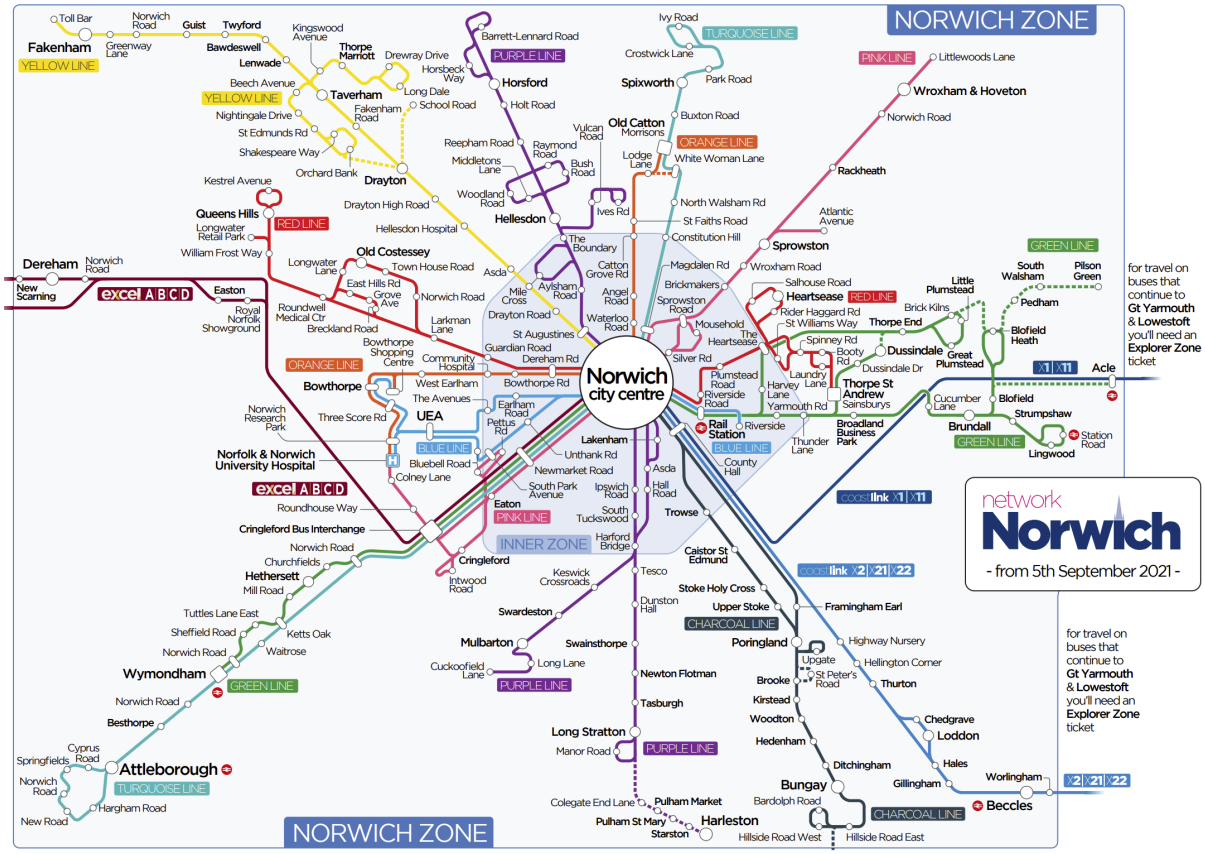
As with our original ZEBRA bid, this proposal presents an opportunity to invest in transport in this region at a critical time for facilitating growth and increasing productivity, whilst at the same time tackling congestion, carbon emissions and poor air quality. Norwich is identified as a priority place in the East of England for economic development with a workday population of 280,000, and an extension to our ZEBRA funding will enable us to give even greater numbers of residents, businesses and visitors compelling reasons to use reliable, clean, shared transport.

This extension of our existing ZEBRA project REDACTED and simply focusses on the provision of additional vehicles and charging infrastructure. This will enable First Bus to operate a fully zero emission, electric fleet, from their Roundtree Way depot. The depot itself will then only support ZEBs and First Bus will be in a position to decommission the existing diesel related infrastructure at the depot, making it First Bus's first fully electric depot in East Anglia.

This change control request will see First Bus operating exclusively with ZEBs on their four main cross city routes, REDACTED, with corresponding benefits to the Norwich Air Quality Management Area, in addition to the wider carbon and environmental benefits. Using brand new ZEBs on these four routes complements investment along these transport corridors taking place through the Transforming Cities Fund (TCF) and Bus Service Improvement Plan (BSIP).

The four main cross-city routes which the additional ZEBs will be used on are detailed below, and with average annual passenger numbers of REDACTED across the four routes, a significant number of passengers will directly benefit from using these vehicles. These cross-city routes also connect major retail, employment and education sites, as well as Norwich Rail Station, a key gateway to and from the wider region.

Service	**Attractions / Destinations on Route**
Pink Line 11/11A/12	Norfolk and Norwich University Hospital, Norwich City centre, Sprowston, Rackheath, Wroxham, Hoveton
Red Line 23/23A/24/24A	Queens Hills, Longwater Retail Park, Costessey, Norwich city centre, Thorpe St Andrew, Heartsease
Blue Line 25/26/26A	Norfolk and Norwich University Hospital or Bowthorpe, University of East Anglia, Norwich city centre, Riverside, Norwich railway station
Orange Line 21	Old Catton, Norwich city centre, Dereham Road, West Earlham, Bowthorpe, Norfolk & Norwich University Hospital



As there REDACTED, delivery of this extension of our existing ZEBRA project removes this element of risk and uncertainty, providing strong confidence in delivery. The costs of this extension are based on firm quotations, provided as supporting documents to this application, from suppliers already engaged on the original ZEBRA project delivery. Discussions with these suppliers have confirmed deliverability of the buses and charging equipment within the original timescale of the ZEBRA programme (end-March 2024 at the latest). This approach of REDACTED and working with suppliers we are already engaged with significantly minimises risk in terms of costs and timescales.

This opportunity to extend our existing ZEBRA project has come at the right time to include in vehicle replacement plans, meaning that not only are the proposals set out in this change control request highly deliverable, but also that the changes will cause less disruption in terms of depot structure and operational change management than making these changes at a later date. REDACTED There will also be operational efficiencies to be gained earlier than originally anticipated by full electrification and not running a mixed diesel / electric fleet from the depot. Full electrification of the Roundtree Way depot also presents First Bus with the opportunity to remove all diesel infrastructure and related engineering equipment, demonstrating a permanent and complete commitment to ZEBs, and serving as an example to other large fleet operators in the region.

There was a focus in our original ZEBRA application to work with REDACTED. This also had a good fit operationally in terms of replacing older, single deck diesel buses on a number of routes in Norwich. Colleagues at the Department for Transport (DfT) will be aware that zero emission single deck vehicles for Norwich have instead been ordered from REDACTED following the decision by REDACTED. This engagement with other suppliers and securing the contract with REDACTED as well as further assessment of the bus operations across Norwich by First Bus, the majority of which are currently operated by double deck vehicles,

has identified the opportunity to convert diesel double deck vehicles to electric double deck vehicles as part of this potential expansion of the ZEBRA project. It is for these reasons that an application is being made to secure funding for double deck vehicles, whereas this type of vehicle didn't feature in our original application.

This extension of our existing ZEBRA project and the full electrification of their Roundtree Way depot allows First Bus to develop a wider and bigger knowledge base than previously and deliver a centre of engineering excellence and training for electric buses in the Eastern region. Without this extension, such a centre of excellence couldn't have been developed for a number of years and this extension would effectively accelerated the rate of which best practice and new skills can be shared.

This extension will also enable local upskilling of existing workforces to happen earlier and at a faster rate, in particular the engineering community and driver teams. The extension will also enable the bus sector to become a more attractive proposition to future workforces. A green, digitally enabled transport sector aligns much more closely with the career aspirations of younger people, which is especially important given the well-publicised driver and engineer shortages.

REDACTED

More generally, the REDACTED and hydrocarbon pollutants. It can be expected, therefore, that the bus sector would become a more attractive employer to the future workforce. In addition, the reduced noise pollution and contaminants at the site will have a positive benefit for neighbouring communities.

REDACTED

REDACTED

In terms of strategic context, these proposals will support a wide range of local strategic and policy objectives, including embracing the future (in terms of technology), delivering a sustainable Norfolk, enhancing connectivity and Norfolk's quality of life (all objectives set out in Norfolk County Council's Local Transport Plan 4 (2021-36), as well as improving air quality, influencing people to make sustainable travel choices and achieving Net Zero carbon emissions from transport in Norwich by 2050 (all policies set out in Norfolk County Council's Transport for Norwich Strategy (2021).

As well as having a high level of Cllr support within the County Council, this proposed extension to our existing ZEBRA project is strongly supported by Norwich City Council and a letter of support is attached.

In terms of project governance, no new governance arrangements need to be put in place for this proposed extension to our existing ZEBRA project. We will use the same governance structure already in place. Additionally, we will use the same arrangements for communications and engagement, albeit there will be increased opportunity to promote the strong and additional benefits brought about by the additional vehicles.

Value for Money

Change control requests will need to detail the expected VfM of the additional investment, using outputs from the latest version of the Department's Greener Bus Tool (shared on the 25th of October). Please refer to the Greener Bus Tool guidance for more specific advice on what is required to appropriately complete the tool and guidance on how to maximise value for money. **Please attach completed versions of the tool with your return.**

If the transport analysis guidance (TAG) values are updated during or after change requests are returned, then the department will apply these confirmed updated values.

At minimum, requests should include the following:

- The indicative VfM category for the investment proposal reflecting the central BCR, non-monetised impacts and risks and uncertainties. The indicative VfM category will be reviewed and where appropriate amended by the Department to form the final VfM category. The final VfM category will be the basis for the VfM score.
- The central BCR informing the VfM category.
- All completed versions of the Greener Bus Tool, showing the central BCR output and the BCR outputs of sensitivity analysis.
- The evidence and analysis informing key inputs/assumptions including: the estimated annual vehicle distance per bus, battery replacement costs (if the suggested values in the Greener Bus Tool are not used), annual infrastructure maintenance costs (if an annual maintenance cost is stated in the tool) and the fuel/electricity consumption scenario chosen. If a quantified risk assessment has been conducted, then evidence of how this has been conducted should be provided e.g. listing all identified risks with associated cost outcomes and likelihoods. Please refer to the relevant sections in the Greener Bus Tool guidance for further detail on the level of evidence required for assumptions. If the evidence is not in a suitable format to present in the below text box, please briefly summarise and signpost where the supplementary evidence has been provided i.e. in a spreadsheet, e-mail etc as an annex.
- Description of any significant impacts of the scheme which have not been estimated by the tool.
- If any significant non-monetised benefits are identified, the scale of change needed to reach a higher VfM category should be determined, by calculating the required % increase and absolute increase in present value benefits (PVB). Evidence should be used to imply the scale of any non-monetised benefit and whether this is sufficient to influence value for money. Please refer to the greener bus model guidance for more detail.
- Description 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's BCR. This might include risks that total bus distance or private-sector contributions could be lower than assumed to estimate the central BCR.
- Sensitivity testing should be used to provide an understanding of the impact of the risks and uncertainties.
- Proposals for electric buses must achieve at least low VfM. We strongly recommend the Greener Bus Tool should be used to inform optioneering to ensure that a scheme that can achieve this threshold is selected, and to influence continued scheme development.

Please outline the detail for this section below in no more than 1,000 words.

REDACTED

TABLE REDACTED

The scheme is considered to offer Value for Money because the Present Value of Benefits outweighs the Present Value of Costs. Furthermore, in line with the Green Book, schemes which help deliver the governments objectives[1], and transport decarbonisation and Levelling Up are two of the government's priority objectives, which this scheme contributes towards, should be considered Value for Money.

Grant funding per bus

Change control requests will be assessed on the amount of grant funding per bus requested, with less grant funding per bus receiving a higher score in the assessment process. The grant funding per bus is automatically calculated in the Greener Bus Tool based on the user inputs. This can be found in the Input Summary sheet of the tool.

Grant funding requested for both ZEBs and supporting infrastructure will be assessed. Grid reinforcement costs (also known as "non-contestable works") will be removed from infrastructure costs for the purpose of assessing grant funding per bus. These works can only be undertaken by the Distribution Network Operator with regulated charges. LTAs should ensure they set out these costs in the 'costs to other funding sources' section for infrastructure costs (rows 85-92) in the I- User proforma tab of the GBT.

Evidence from ZEBRA demonstrated that hydrogen fuel cell bus proposals generally require a higher level of grant funding per bus than battery electric bus proposals. Therefore, any hydrogen bus proposals would be scored against a different funding range.

The ZEBRA scheme also demonstrated that the grant funding per bus required for double deck ZEBs is higher than for single deck ZEBs. Therefore, any double decker ZEBs would be scored against a different set of funding range bands.

Requests will be assessed against the funding ranges set out in the below table. Please note that requests will receive a score that will be to one decimal place rather than a round number (e.g. A score of 3.5, rather than 3).

Grant funding per single deck electric bus	Grant funding per double deck electric bus	Grant funding per single deck hydrogen bus	Grant funding per double deck hydrogen bus	Score
REDACTED	REDACTED	REDACTED	REDACTED	4
REDACTED	REDACTED	REDACTED	REDACTED	3
REDACTED	REDACTED	REDACTED	REDACTED	2
REDACTED	REDACTED	REDACTED	REDACTED	1

1 Discussing the Green Book Review and updated Green Book: "Options will be assessed first and foremost on whether they deliver relevant policy objectives" (National Infrastructure Strategy, 2020)

Deliverability

LTAs will be assessed on the deliverability of their change control request. LTAs will also be assessed on progress on delivering their existing ZEBRA project.
LTAs must provide evidence of support from the bus operator(s) who would operate the additional ZEBs. This evidence must be a signed letter by both the CEO/equivalent level of the company and the local MD, committing to investing in the additional ZEBs and operating them in the designated area for a minimum of 5 years.

LTAs will need to provide evidence for the costs set out in their change control request. This should include:

- Evidence of the cost of the additional ZEBs
- Evidence of the cost of the supporting infrastructure needed
- Where relevant, costs for a grid connection

LTAs will receive a higher score in the assessment process by providing up to date evidence for costs. LTAs can use evidence of costs that was provided in their ZEBRA business case. LTAs that explain why these costs are still valid will receive a higher score in the assessment process.

LTAs should explain the procurement process for the additional ZEBs and the supporting infrastructure. LTAs should explain how these procurement processes align with the procurement processes for the existing ZEBRA project.

LTA must provide a timeline for the change control request. LTAs must also provide an updated delivery schedule for their existing ZEBRA project. This timeline should also include information on the delivery of the additional ZEBs and supporting infrastructure included in their change control request.

The timeline should include:

- Timelines for the delivery of the infrastructure to support the additional ZEBs:
    - Tender dates for choosing an infrastructure supplier.
    - Date when an order would be placed for supporting infrastructure.
    - Where relevant, dates for when an order for a grid connection would be placed and when work on a grid connection would be complete.
    - Date when all work on supporting infrastructure would be complete.

- Timelines for the additional ZEBs:
    - Tender dates for the procurement for the additional ZEBs.
    - Date orders would be placed for the additional ZEBS.
    - Date the additional ZEBs would be delivered
    - Date the additional ZEBs would be in service.

Information on the delivery of the additional ZEBs and supporting infrastructure included in the change control request should be clearly distinguishable from information on the delivery of the existing ZEB project.

The timeline should show how the delivery of the additional ZEBs and supporting infrastructure would interact with the latest timelines for the existing ZEBRA project.
The timelines should show how the additional ZEBs and supporting infrastructure would be introduced by **March 2024**.

LTAs should produce this timeline on the assumption that they will receive a response from the Department about their request to introduce additional ZEBs by the end of December 2022.

LTAs will also be assessed on delivery of their existing ZEBRA scheme. This will be based on information that LTAs have provided through their regular engagement with the Department.

Please outline the detail for this section below in no more than 2,000 words.

Summary

This change control request builds on Norfolk County Council's successful ZEBRA application and is considered to be highly deliverable within the original timescales of the ZEBRA programme on the basis that REDACTED and firm commitments regarding timescale and cost have been secured from partners required to deliver buses and charging infrastructure. Good progress has been made on delivery of our current ZEBRA application, which has been evidenced through the regular engagement we have had with the DfT, and this extension will utilise the same governance already in place.

Letters of Support / Evidence of ability to deliver

Letters of support from First Bus and Norwich City Council are attached to this application, as well as correspondence from REDACTED and REDACTED evidencing the costs of ZEBs and supporting infrastructure. These costs are up-to-date and are fully relevant for this application being made. REDACTED has confirmed that it has the capacity to fulfil the additional order of vehicles, as set out by REDACTED at REDACTED. Similarly, charger supplier partner REDACTED has confirmed that they too can meet the necessary delivery dates as they have available UK stock.

Governance arrangements

Norfolk County Council, in partnership with First Bus and other stakeholders, have an existing ZEBRA governance structure already in place, which is overseeing the delivery of our current ZEBRA project, and this arrangement would be used to cover the proposals set out in this change request. At the heart of this is the Transport for Norwich (TfN) Board, which is accountable through the Project Sponsor to the County Council and is responsible for overseeing the current ZEBRA scheme and taking key decisions regarding delivery of the overall project. The TfN Board has considered this opportunity to submit a change control request and there was unanimous support for an application to be made. A separate ZEBRA Project Team is in place to oversee the day-to-day delivery of the ZEBRA project, reporting to the TfN Board, and this same Project Team will remain in place should the ZEBRA scheme be expanded. Discussions with our Cabinet Member for Highways, Infrastructure and Transport, as well as our Member Champion for Sustainable Transport, has highlighted strong support for this application to be made.

Communications and engagement

For any extension of our current ZEBRA scheme, we would use the same arrangements we already have in place for communications and engagement, albeit there will be an additional and welcome opportunity to promote the strong and additional benefits brought about by the additional vehicles. We would be happy to work with the DfT on maximising the positive messaging around this at the earliest opportunity, which could include Norwich being used as the location of any announcement, for example.

Resourcing

In terms of resourcing the project team needed to deliver an extended ZEBRA project, we do not consider there to be any problems and that this can be accommodated within the resource we have. As outlined in our original application, all those working on this project from the County Council have extensive experience of working in partnership with bus operators and have relevant project delivery experience. This experience has already brought benefit to the delivery of the ZEBRA project to date and our working relationship with First Bus on this particular project has already been positive, professional and engaging.

Ability of First Bus to deliver

Through the original ZEBRA funding, REDACTED.

First Bus has successfully proven its ability to deliver at scale the infrastructure works required for the current and extended proposals in Norwich. It has built the UK's largest electric charging hub at Caledonia Depot in Glasgow, which has 160 state-of-the-art, rapid charging points. Through this proposal, First Bus's Roundtree Way depot would be their first fully electric depot in the region.

First Bus has substantially invested in their in-house decarbonisation team, to enable delivery of decarbonisation at scale. Specifically, they have grown their team of project managers and construction managers and have strengthened their external network of specialist partners, including REDACTED for procurement and project management, REDACTED for town planning support, REDACTED for structural engineering and REDACTED for power connections support. The First Bus decarbonisation programme also has a newly appointed Executive sponsor in REDACTED.

Planning considerations

First Bus has discussed the opportunity for increased civils works at their depot with the Planning Team at Norwich City Council, which has confirmed that the necessary adjustments to the existing planning permission (additional chargers, etc) could be amended quickly as a Section 73 notice, and therefore not impact on programme timescales. We are currently working through a noise survey which was requested by the Planning Team. Once this is complete, this should allow approval to be gained – we are not envisaging any issues with this.

Consideration of timescales / programme plan

Works for the original ZEBRA project are progressing well and remain on track for delivery within the original timescales set for the programme. Should this proposal to extend the ZEBRA project in Norwich be successful, we will work with already appointed contractors to revise work orders and agree revised timescales. We are confident that this will still see the overall programme delivered within the original ZEBRA programme timescales of end-March 2024. Key programme elements that will require modifications to project tasks and timescales are as follows:

- **Order of additional ZEBs**: These would be ordered in REDACTED depending on the exact timing of a decision on ZEBRA extension funding. The order would be placed with the REDACTED.
- **Revision to planning application**: This cannot take place until a decision has been made on ZEBRA extension funding. This process is expected to take place REDACTED. Initial discussions have already been held with the planning authority.
- **Change orders for on-site electrical infrastructure works**: This cannot take place until a decision has been made on ZEBRA extension funding (REDACTED).

- **Extension to completion of on-site electrical works**: Due to the additional work needed to install more charging units, this work is expected to take REDACTED. Completion by REDACTED at the latest is expected, although every effort will be made to complete earlier.
- **Deliveries of additional vehicles and bringing them into service**: Due to the additional vehicles, this is expected to take an additional REDACTED. This will see vehicles being delivered and entering service during REDACTED.
- **Decommission of diesel related infrastructure**: This cannot take place until ZEBs begin to arrive at the depot and become operational. We expect this to start from REDACTED.
- **Communications and engagement**: An extension to the ZEBRA project provides an opportunity for additional comms and engagement around the time of announcement in advance of already planned comms around construction works starting at the bus depot. Timing of this additional comms would be agreed with DfT to ensure maximum positive coverage.

The key project tasks and milestones are outlined in a project plan at the end of this document. This clearly separates out those tasks and milestones that relate to the existing and extended ZEBRA programme.

Risk Management

In terms of risk management, in our original ZEBRA submission, the County Council set out our approach to Risk Management, including the Risk Management Strategy and programme risk register.

Risks relevant to our current ZEBRA project are being proactively managed using the governance arrangements described above. There are a number of risks highlighted in our current project that don't apply to this proposal for an extended scheme, most notably those relating to:

- Delivery of the power upgrade
- Use of a new to market vehicle manufacturer

Other key risks that were identified that are applicable to an extension of the project relate to the following:

- **Securing appropriate planning permission**: This is being mitigated through current working with the Planning Team at Norwich City Council on the existing proposal (noise survey requested) and early discussions with them on a possible extended scheme.
- **Driver and engineer knowledge and experience of using electric vehicles:** An extended ZEBRA scheme would result in the entire bus depot being operational only for BEVs, which will require all engineering staff and drivers to be REDACTED. This is being mitigated through an expansion of the already planned training programme to be delivered within the original timescales
- **EV batteries don't provide sufficient / predicted vehicle range**: This is being mitigated through the bus routes being selected based on an ability to operate comfortably within the manufacturer's stated battery range, allowing for battery degradation over its lifetime. REDACTED.

There are some additional risks which arise as a result of the extended ZEBRA proposals and these are set out in the table below. A risk score has been calculated based on multiplying the risk likelihood by the risk severity (tables showing risk likelihood and severity are at the end of this application).

Ref	Risk category	Description	Impact	Mitigations	Risk score	Risk Manager
1	Financial loss	Supply chain cost increases	REDACTED	REDACTED	6	REDACTED
2	Reputation	Inability to secure planning permission for the additional electrical infrastructure required	REDACTED	REDACTED	6	REDACTED
3	Service delivery	Delay in securing planning permission for the additional electrical infrastructure required.	REDACTED	REDACTED	4	REDACTED
4	Service delivery	Delay to the installation of the additional charging infrastructure.	REDACTED	REDACTED.	3	REDACTED
5	Service delivery	Vehicles delivered late.	REDACTED	REDACTED	6	REDACTED

Revised Project Plan

TABLE REDACTED

Calculation of risk scores

Risk Likelihood

Score	Descriptor	Definition
1	Rare	The event may occur only in exceptional circumstances before the target date e.g. <10% chance)
2	Unlikely	The event is not expected to occur before the target date e.g. 10% to 25% chance)
3	Possible	The event may possibly occur at some time before the target date e.g. (>25% to 50% chance)
4	Probable	The event will most probably occur before the target date in most circumstances, e.g. >50% to 80% chance)
5	Almost Certain	The event is expected to occur before the target date in most circumstances, e.g. (>80% chance)

Risk Severity

Level (Across) Description (Down)	1. Insignificant	2.Minor	3.Moderate	4.Major	5. Extreme
Service Delivery	Little disruption to services	Minimal disruption to services	Significant disruption to services	Loss critical services for more than 48 hours but less than seven days	Loss of critical services for more than seven days
Health & Safety	No injury	Minor injury	Threat of violence, serious injury or ill health requiring medical attention	Extensive or multiple injuries or significant ill health	Fatality or multiple major injuries
Financial Loss (Corporate)	Loss less than £100,000	Loss of £100,000 to £500,000	Loss of £500,000 to £1m	Loss of £1m to £3m	Loss greater than £3m
Financial Loss (Local level)	Loss <0.1% of annual revenue budget	Loss 0.10% to 0.25% of annual revenue budget	Loss 0.25% to 0.5% of annual revenue budget	Loss 0.5% to 1% of annual revenue budget	Loss >1% of annual revenue budget
Performance	Little or no effect on County Council objective	Minimal effect on achieving County Council objective	Partial failure to achieve County Council objective	Significant impact on achieving County Council objective	No-delivery of County Council objective
Reputation	Insignificant damage to reputation	Minimal negative coverage in local multimedia	Significant negative coverage in local multimedia	Significant negative coverage in national multimedia	Extensive negative coverage in national and international multimedia
Environment	Insignificant environmental damage	Minor damage to local environment	Moderate damage to local environment	Major damage to local environment	Significant damage to local or national environment