ZEBRA Change Control Process – scope increase requests

(Excludes commercially sensitive information as marked redacted)

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.

LTAs should provide the below information by 5pm 17th February 2023, 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:

- Rationale
- 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 clarify 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 clarify 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.

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

18 additional double deck buses are requested.

[redacted]

The supporting infrastructure that is needed to support the additional ZEBs

[redacted]

[redacted]

Total Costs for Buses and Infrastructure

[redacted]

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.

[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 Firstbus depot at Abbey Lane, Leicester.
- This is the same depot for which ZEBRA Fast Track funding was received.

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 operator involved in the existing ZEBRA project.

Bus routes where the additional ZEBs will operate.

Service	Attractions / Destinations on Route
4	City Centre, Leicester College, Belgrave, The Golden Mile (Retail / Leisure), Sikh Temple, Soar Valley College
14	City Centre, New Parks estate, Braunstone Frith estate, Braunstone Frith Industrial Estate
25 / 26	City Centre, Abbey Park, Beaumont Leys estate, Beaumont Leys Centre (retail), Gorse Hill Industrial Estate, Astill Lodge estate, Beaumont Leys Industrial Estate (Pepsico/Walkers Crisps), Mowmacre Hill estate, The Golden Mile, Belgrave, Leicester College
54	Beaumont Leys Centre (retail), Gorse Hill Industrial Estate, Babington Academy, Beaumont Leys estate, Stocking Farm estate, Abbey Lane (retail / industrial), National Space Centre, Abbey Park, City Centre, Leicester Railway Station, Highfields estate, East Park Road (retail / leisure), Rowlatts Hill estate, Goodwood estate

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 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 request forms part of a live project to fully electrify the First Bus depot on Abbey Lane in Leicester. First Bus operates a network of high frequency commercial bus routes across the urban area of Leicester, from a single depot. The current ZEBRA Fast Track bid covers the 68 single decker buses within this fleet. The proposed change control covers the remaining 18 double decker buses used on this network.

This proposed addition therefore builds on our current project by providing additional funding to complete the conversion of the whole Leicester First Bus network to a fully electric network, all operated from a single depot dedicated exclusively to electric buses. Works have already commenced and can all be completed as one single expanded project, to the same timescales as the original project – with all 86 buses coming into operation [redacted].

Specification, tendering and preferred suppliers for all aspects of this proposed project expansion have all taken place. A project management plan for the full expanded project has been drawn up to ensure everything will be in place to meet the current ZEBRA Fast Track December 2023 operational deadline.

This addition to the project will increase the efficiency and the value for money of our earlier ZEBRA Fast Track bid as there is no need for additional Distribution Network Operator power infrastructure. The power upgrade costs within the original bid will be spread over 86 rather and 68 electric buses.

The change request opportunity has come at the right time to include the additional fleet into existing plans, meaning that there is less disruption in terms of depot structure and operational change management. These additional 18 double decker buses, together with the already funded 68 single decker buses will all come into service before December 2023, providing both swift deliverability and good value for money.

Additional ZEBRA funding, primarily for fleet, enables First Bus to move at pace and reduce emissions earlier than originally anticipated. There will be operational efficiencies to be gained by full electrification and not running a mixed fleet.

[redacted]

A fully electric Leicester depot could present the UK's first re-purposed (existing building) diesel depot and an exemplar "depot of the future" model, providing spill over benefit to other areas of the UK where the model is implemented, providing important direction and learning to the bus industry as a whole.

The change will enable local upskilling of existing workforces, in particular the engineering community and driver teams. The change 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 and aging transport sector workforce. Our operator First Bus currently runs a successful engineering programme for apprentices in partnership with Reaseheath college in Cheshire, in which apprentices are taught to work on ZEBs. This programme is being extended to include driver apprenticeships, and there will be opportunities to roll out the programme in Leicester, in partnership with local institutions.

More generally, the fully electrified depot will offer a more attractive working environment than the previous diesel depot, with less noise and vibration (ZEBs are extremely quiet relative to diesel engines) and hydrocarbon pollutants. We therefore expect 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.

This is fully consistent and further reinforces the strategic business case for electric bus investment in First bus Leicester routes as set out in the original Zebra Fast Track bid [redacted]
However, traffic levels have risen to above pre-covid levels, with associated air pollution issues rising accordingly.

The funding will enable the remaining (double decker) routes 4, 14, 25/26 and 54 to be operated with electric buses serving the North, West and East of Leicester.

All routes run through one or more designated air quality management areas (AQMA).

Air Quality Management Area	**Additional Route:**			
	4	**14**	**25/26**	**54**
City Centre/Inner Ring Road	yes	yes	yes	yes
Ring Rd - New Parks Way	no	yes	no	no
Ring Rd - Colchester Rd/Goodwood Rd	no	no	no	yes
Abbey Lane	no	no	yes	yes
Melton Rd	yes	no	no	no

These are all high frequency routes connecting areas of low car ownership to important education, workplace, retail or tourist locations shown above. [redacted]

[redacted]

All four routes will benefit from new bus priority measures being introduced over the next 12 months as part of Leicester Enhanced Bus Partnership Scheme:

Service 4 : Melton Rd inbound bus lane
Service 14 : Fosse Rd North/A6 (part) bus lanes
Service 25/26 : Abbey Park Rd inbound/outbound bus lanes
Service 54 : Abbey Park Rd and A6 inbound and outbound bus lanes

They will also benefit from real time information displays and new shelters at all boarding stops, digital ‘best fare’ contactless capping and timetable co-ordination with other operators sharing similar corridors, again as formal commitments within the Partnership Scheme.

Unlike at the Fasttrack bidding stage, much of this complementary work has either already taken place (digital ticketing, shelters, real time information, Melton Rd, Abbey Park Rd bus lanes) or in construction (A6 and Fosse Rd bus lanes).

[redacted]

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 (see page 5). **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.

The indicative VfM for the proposal is low. This only reflects monetised impacts as determined by the DfT Greener Bus Tool.

[redacted]

Tables showing vfm sensitivity testing should be deleted – as here

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
£160,000	£170,000	£200,000	£210,000	4
£200,000	£210,000	£240,000	£250,000	3
£240,000	£250,000	£280,000	£290,000	2
£280,000	£290,000	£320,000	£330,000	1

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 the **local MD of the bus operator,** 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.

We have a strong Enhanced Bus Partnership Scheme which was formally approved in April 2022 and includes significant deliverables and targets related to electric bus investment and associated complementary measures. See www.leicesterbuses.co.uk for more details, including a list of those projects already delivered since April 2022.https://www.leicesterbuses.co.uk/completed-projects

First Bus is a key operator within this formal Partnership, with a proven delivery template, and an ambitious decarbonisation road map to fully decarbonise its fleet by 2035.

Under ZEBRA Fast Track, First Bus placed the largest order outside London for electric buses, with UK firm Wright Bus, to the value of £81m providing 60% of the funding directly from its own cash reserves.

First Bus has confirmed it is positioned to similarly match fund DfT's investment again here in Leicester.

First Bus has successfully proven its ability to deliver at scale. It has built the UK's largest electric charging hub at Caledonia Depot in Glasgow, with its own investment of over £50m (or 60% of total investment). This charging hub has 150 state of the art, rapid charging points, and will be 50% electrified in 2023

Our operator First Bus has substantively 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 Mace for procurement and project management, Land Use Consultants for town planning support, Expedition Engineering for structural engineering and Green Jam for power connections support. The First Bus decarbonisation programme also has a newly appointed Executive sponsor in Isabel McAllister, Chief Sustainability and Compliance Officer.

For this extension funding, our operator First Bus proposes simply to increase its existing order with UK bus manufacturer Wright Bus. Wright Bus has confirmed that it has the capacity to fulfil this order and we have attached a letter of support from John McLeister the Director of Sales and Business Development at Wright Bus.

Similarly, First Bus has secured confirmation from their charger supplier partner Heliox that they too can meet the necessary delivery dates as they have available UK stock. First Bus has confirmed with Leicester town planning colleagues 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.

ZEBRA Fast Track works are on site and are scheduled to finish in March. If successful with this ZEBRA contract extension, First Bus propose to continue to work with the ZEBRA Fast Track appointed contractors, namely: Brookes Contracting (groundworks), Envivo (high voltage infrastructure) and Heliox (chargers). The extended contract for infrastructure works will run from March 2023 for a further eight weeks.

To enable rapid implementation, the City Council and First Bus swiftly organised and implemented a local grant method for the City Council to pay First Bus in line with the ZEBRA specification, procurement and delivery timescales.

Leicester's existing ZEBRA Fast Track project also includes two other projects – one with the Centrebus and the other with Arriva. The Arriva project is on track for delivery by December 2023, with grant letters fully signed up.

The Centrebus project includes a new substation and charging depot, together with the introduction of 6 electric buses on a long orbital bus route. This has already been delivered in full in October 2022, including complementary measures such as real time information at main bus stops and contactless ticketing. This was the first ZEBRA-funded electric bus project to be delivered in England – proving that Leicester can swiftly deliver to specification and timescale.

The City Council in conjunction with two other operators has also delivered a further 24 electric buses and two charging depots on 5 other routes since 2021, using other funding streams. This include three high profile park and ride services, a joint partnership project with the Health Trust and a new City Centre free bus service. These use a range of different bus types, delivered under complicated joint contractual arrangements.

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