

Norfolk ZEBRA Scheme

Management Case

January 2022

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**First**  **EasternCounties**



**Norfolk** County Council

# MANAGEMENT CASE

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**Norfolk** County Council

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## 1 Executive Summary

1.1.1 This Management Case provides evidence that the scheme is deliverable from a programme and capability perspective, that there are appropriate governance and assurance arrangements in place and that risks have been considered and where possible managed and / or mitigated.

1.1.2 The key milestones the project will need to meet should the bid be successful, and the funding award is announced in March 2022, are as follows:

- April 2022: Order placed on electrical power upgrade.
- May 2022: Vehicle order placed.
- January 2023 onwards - Driver and engineer training.
- April 2022 – December 2022: Electrical upgrade works
- June 2022 – April 2023: Electrical infrastructure works.
- October 2023 – January 2024: Vehicle delivery.
- February 2024 – March 2024: Vehicle operation.

1.1.3 To ensure the successful delivery of the project, the key risks below have been highlighted with a corresponding plan for mitigation.

- **Risk:** Securing appropriate planning permission for the electrical upgrade works. **Mitigation:** close liaison with planning officers and stakeholders,
- **Risk:** The delivery of energy on site on time. **Mitigation:** full communication and clear detail from all parties within infrastructure provision,
- **Risk:** REDACTED
- **Risk:** Driver and engineer knowledge and experience of using electric vehicles. **Mitigation:** extensive training will be undertaken





prior to vehicle operation to ensure safe and efficient operation of vehicles and infrastructure,

- **Risk:** EV batteries don't provide sufficient / predicted vehicle range.

**Mitigation:** bus routes have been selected based on ability to operate comfortably within the manufacturer's stated battery range, allowing for battery degradation over its lifetime.

## 2 Deliverability / Governance

### 2.1 Project Team, Governance Structure and Key Roles / Responsibilities

2.1.1 There is an existing Transport for Norwich (TfN) governance structure already in place that oversees the delivery of transport schemes in Norwich and this structure will be used for the ZEBRA project but adapted accordingly to ensure all relevant project partners specific to the ZEBRA are included.

2.1.2 The organisational and governance structure for ZEBRA is illustrated in **Figure 1**. This shows the essential lines of accountability and responsibility. At the heart of project governance is the TfN Board, which is accountable through the Project Sponsor to Norfolk County Council (NCC). NCC will be responsible for overseeing the overall ZEBRA scheme and taking key decisions regarding delivery of the overall project. A separate ZEBRA Project Team will be established to oversee the day-to-day delivery of the ZEBRA project and will report to the TfN Project Board. Further details on this are set out below.

#### Project Sponsor

2.1.3 The Project Sponsor is NCC, represented by the Director of Highways and Waste.

#### Senior Responsible Owner



- 2.1.4 The Senior Responsible Owner will be Infrastructure Delivery Manager within the Community and Environmental Services Department of NCC.

## Project Manager

- 2.1.5 The Project Manager will be the TfN Project Manager within the Community and Environmental Services Department at NCC.

**FIGURE 1: GOVERNANCE DIAGRAM**

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2.1.6 The TfN Board meets bi-monthly, with the Terms of Reference (ToR) being reviewed on an annual basis. The main roles of the TfN Board are as follows:

- Provide officer governance to the development and delivery of the TfN strategy and associated actions as well as projects within the TfN programme, initiating corrective action where necessary,
- Receive updates, including progress reports regularly from key officers, in particular, about the delivery of TfN projects and other key initiatives such as ZEBRA,
- To monitor and oversee the delivery of the TfN programme, ensuring opportunities to develop the TfN programme are taken in the context of the wider strategic development of the area. Any updates to the TfN programme promoted by the TfN Board are reported through County Council Cabinet / appropriate committee,
- Receive updates on succession planning and resilience of the project delivery teams, including the identification of roles where successors need to be identified and who would need to act as successor. This will allow the TfN Board to consider this risk and have appropriate plans in place.

2.1.7 The TfN Board will also determine whether any specific issues require escalation to the TfN Joint Committee / other relevant Committee / County Council Cabinet Meeting. The roles and responsibilities for the TfN Board are outlined in **Table 1**. The ToR for the TfN Board states that the “Board may also invite others to attend specific meetings, including specialists, for specific agenda items”. Should the ZEBRA funding application be successful, a new role would be created during the delivery and evaluation of the project, which would allow the Project Lead from the ZEBRA Project Team to present updates to, and take instruction from, the TfN Board.





**TABLE 1:TFN PROJECT BOARD TEAM MEMBERS AND ROLES**

<b>Role</b>	<b>Responsibilities</b>	<b>Name</b>	<b>Position</b>
Project Sponsor	Chair of TfN Board Ensure the role of the Board is met.	REDACTED	Director of Community and Environmental Services (NCC)
Project Owner and Senior Responsible Owner (SRO). The “customer for the scheme”, representing the public’s interests.	Responsible for the successful delivery of the project, ensuring that it meets its objectives and delivers its intended benefits.	REDACTED	Infrastructure Delivery Manager (NCC)
Project Finance	Review budget and costs to ensure funding is available.	REDACTED	Finance Lead and CES Business Partner (NCC)
Director of Governance	Ensure all appropriate governance arrangements are in place.	REDACTED	Director of Governance (NCC)
Stakeholder & Project Communication	Responsible for communication planning and management for this ZEBRA project.	REDACTED	Project Communication Lead Officer (NCC)
Project Manager	Managing the project to ensure that it delivers the required products within the agreed constraints.	REDACTED	Project Manager (NCC)
Strategic Infrastructure Planning	Responsible for Economic Development including transport policy.	REDACTED	Strategic Transport Manager (NCC)
South Norfolk and Broadland District Council Representative	Represents the interests of South Norfolk and Broadland District Councils.	REDACTED	Director of Place, Broadland and South Norfolk Councils
Norwich City Council Representative	Represents the interests of Norwich City Council.	REDACTED	Executive Director, Development and City Services, Norwich City Council
Representative from ZEBRA Project Team	Provides updates on project progress. Takes instruction and feedback from the TfN Board back to the ZEBRA Project Team.	See information presented in the ‘ZEBRA Project Team’ section below.	Project Lead, ZEBRA Project Team



### ZEBRA Project Team

- 2.1.8 The ZEBRA Project Team will be led by a Project Lead appointed by First Bus. This will either be a colleague from the Strategic Change Office or from roles which are currently being recruited in the form of Decarbonisation Delivery Programme Managers. The Project Lead, and others from within First Bus that will support the ZEBRA Project Team, will be selected based on their experience and suitability for this project. First Bus has a range of individuals who have undertaken decarbonisation projects of varying scale and complexity.
- 2.1.9 The ZEBRA Project Team will include representatives of the various disciplines and work streams involved in delivering the project to completion and would meet weekly or as required, with the Project Lead from this team attending the TfN Project Board.
- 2.1.10 The main responsibilities of the ZEBRA Project Team are to:
- Co-ordinate the different activities which make up the project,
  - Provide direction to the technical delivery of the project,
  - Undertake monthly reviews of progress against targets and project schedule,
  - Undertake monthly review of the risk register, and initiate corrective action where appropriate,
  - Share learning across the different delivery activities to drive efficiencies,
  - Provide progress reports to the TfN Board.
- 2.1.11 Decisions that are outside the ZEBRA Project Team's capacity will be the following:
- **Changes in project cost**, increase and decrease. In this instance, approval would be sought from the TfN Board based on recommendations made by the ZEBRA Project Team through that



team's representative at the TfN Board meeting. As set out in the ToR, should the change in project cost be significant, the TfN Board may choose to escalate any specific issues to the TfN Joint Committee / other relevant Committee / County Council Cabinet Meeting. The TfN Board may choose to seek advice from the DfT,

- **Changes in project timescale**, increase and decrease. In this instance, approval would be sought from the TfN Board based on recommendations made by the ZEBRA Project Team through that team's representative at the TfN Board meeting. As set out in the ToR, should the change in project timescale be significant, the TfN Board may choose to escalate any specific issues to the TfN Joint Committee / other relevant Committee / County Council Cabinet Meeting. The TfN Board may choose to seek advice from the DfT,
- **Changes in project scope**. This could include factors such as proposed changes in the number of buses, charging units or modification to planning requirements. In this instance, approval would be sought from the TfN Board based on recommendations made by the ZEBRA Project Team through that team's representative at the TfN Board meeting. As set out in the ToR, should the change in project scope be significant, the TfN Board may choose to escalate any specific issues to the TfN Joint Committee / other relevant Committee / County Council Cabinet Meeting. The TfN Board may choose to seek advice from the DfT,
- **Changes in procurement / supplier**. The most significant example of this would be a change in vehicle supplier. In this instance, approval would be sought from the TfN Board based on recommendations made by the ZEBRA Project Team through that team's representative at the TfN Board meeting. As set out in the ToR, should the change to the project be significant, the TfN Board may choose to escalate any specific issues to the TfN Joint Committee / other relevant Committee / County Council Cabinet Meeting. The TfN Board may choose to seek advice from the DfT.



2.1.12 The roles and responsibilities for the ZEBRA Project Team are outlined in **Table 2**. Not all roles outlined in the table will need to attend every meeting.

**TABLE 2: ZEBRA PROJECT TEAM MEMBERS AND ROLES**

Role	Responsibilities	Name
<b>Project Lead</b>	<p>Ensure the day-to-day delivery of the ZEBRA project meets all required timescales, budgets and other requirements as agreed with the TfN Board. Reports to the NCC Project Manager and Heads of Service within First Bus covering:</p> <ul style="list-style-type: none"> <li>• <b>Planning</b> (ensuring all appropriate planning consents are secured for infrastructure works)</li> <li>• <b>Procurement</b> (ensuring all appropriate procurement is undertaken for vehicles, infrastructure and professional services, working closely with finance and procurement officers at NCC)</li> <li>• REDACTED</li> </ul>	Person to be nominated by First (see reference in 2.1.8).
<b>Project Manager, Norfolk County Council</b>	Update on project progress. Link between ZEBRA Project Team and TfN Board for day-to-day issues and updates.	REDACTED
<b>Project Co-ordination and support in Norwich</b>  <b>Project Co-ordination and support in Norwich</b>	<p>Provided by First Bus to support and co-ordinate activities in Norwich, liaising frequently with the ZEBRA Project Team Project Lead, based around:</p> <ul style="list-style-type: none"> <li>• <b>Training:</b> ensuring all appropriate training is undertaken for drivers, maintenance engineers and wider staff,</li> <li>• <b>Bus operations:</b> ensuring new vehicles are allocated to agreed routes and that the changeover from existing to new vehicles occurs smoothly,</li> <li>• <b>Depot management:</b> ensuring all infrastructure works at the depot are carried out safely, with minimum disruption to day-to-day operations,</li> <li>• <b>Communications:</b> ensuring essential communications are undertaken and that all opportunities for positive engagement with media and stakeholders are undertaken. Will liaise closely with Project Communication Lead at NCC.</li> </ul>	<p>This will be a member of the Senior Leadership Team based in Norwich.</p> <p>This will be a member of the Senior Leadership Team based in Norwich.</p>



### 2.2 Project team experience and resourcing

- 2.2.1 From a local authority perspective, NCC has successfully delivered a large number of projects and initiatives of different sizes and content and has a strong track record of working in partnership with bus operators and other stakeholders. Relevant examples of projects based around partnership working with bus operators, reducing bus emissions and providing priority to public transport on the public highway are outlined in **Table 4** below. At an individual officer level, those working on this project from NCC all have extensive experience of working in partnership with bus operators and relevant project delivery. We also have the opportunity to draw on appropriate resourcing and experience from consultants, WSP, via our current Highways design framework.
- 2.2.2 From the perspective of First Bus, the project team allocated to this project has extensive experience of deploying battery electric vehicles of varying sizes into service at a number of locations in the UK, including, York, Leeds, Glasgow and hydrogen vehicles in Aberdeen.
- 2.2.3 Appropriate use will be made of consultancy and contractor technical input and resource across the different workstreams that will make up the project delivery. We recognise it will be essential to appoint a contractor(s) with significant experience in delivering similar improvement programmes and projects. The selection and procurement of contractor support is summarised in the Commercial Case.
- 2.2.4 Project team experience is outlined in **Table 3**.





**TABLE 3: PROJECT TEAM EXPERIENCE**

Name and/or position	Experience
Project Manager (Norfolk County Council)	<ul style="list-style-type: none"> <li>• Project Manager, Clean Bus Technology Fund.</li> <li>• Project Lead, Engine Switch Off initiative in Norwich Low Emission Zone.</li> <li>• County Council lead for working with District Councils on Air Quality Action Plans.</li> <li>• County Council Sustainable Transport Lead, working directly with the County Councillor nominated as Sustainable Transport Champion.</li> <li>• Programme Manager, Transforming Cities Fund – delivering the £40m programme of bus priority measures, walking and cycling improvements.</li> <li>• Responsible for co-ordinating funding applications for air quality and transport initiatives.</li> </ul>
Finance Business Partner (Norfolk County Council)	<ul style="list-style-type: none"> <li>• Section 151 co-ordination across externally funded schemes.</li> <li>• Business case development / Value for Money assessment.</li> <li>• Liaison with Legal and Procurement teams.</li> </ul>
Project Manager (First Bus)	<ul style="list-style-type: none"> <li>• Co-ordinated successful zero emission bus funding awards.</li> <li>• Working with local authorities on joint funding applications and scheme delivery.</li> <li>• Working across different teams within First responsible for different elements of scheme delivery.</li> </ul>
<p>Project Co-ordination and support in Norwich (First Bus)</p> <p>Project Co-ordination and support in Norwich (First Bus)</p>	<ul style="list-style-type: none"> <li>• First Bus local lead for partnership working, technical and operational support.</li> <li>• Worked closely with NCC on preparing successful funding applications for a wide range of initiatives, including Transforming Cities Fund and Clean Bus Technology Fund.</li> <li>• Working as part of the Project Delivery Team for the Transforming Cities Fund programme.</li> <li>• Already co-ordinates activity with First Bus relating to training, communications, bus operations and depot management.</li> </ul>



## 2.3 Reporting arrangements

- 2.3.1 Clearly defined reporting arrangements are already in place for the TfN programme and will form the basis of the ZEBRA project being delivered. Added to this will be specific reporting requirements brought about by the formation of the ZEBRA Project Team and internal reporting arrangements within First Bus. The TfN Board meets every 2 months so this is likely to form the greatest frequency of reporting, which will take the form of an update report in the format template already established within NCC. Previous experience of working on DfT-funded projects has taken the form of reporting quarterly (4 times per year), so it is envisaged, at this stage, that this will form the frequency of reporting to DfT for the ZEBRA programme. Experience has shown that a template for reporting is provided by DfT, so it is anticipated that this will be the case. However, we would be happy to provide reporting in a format consistent with that already used within NCC if that was sufficient. Lines of reporting are summarised in **Figure 2** below.

### ***FIGURE 2: LINES OF REPORTING***

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The figure has been redacted.

## 2.4 Evidence of similar projects / experience - Norfolk County Council

- 2.4.1 Examples of projects based around partnership working with bus operators, reducing bus emissions and providing priority to public transport are outlined in **Table 4** below, along with lessons learnt



**TABLE 4: NCC PROJECT EXPERIENCE / LESSONS LEARNT**

Project	Lessons Learnt relevant to ZEBRA application	How these lessons will be implemented
<b>Clean Bus Technology Fund (2015):</b> This saw the reduction in tailpipe emissions from buses through the installation of Selective Catalytic Reduction Technology (SCRT) on 24 of the worst polluting buses in Norwich.	<ul style="list-style-type: none"><li>• Successful partnership working with First Bus was demonstrated, which sets a positive basis for joint working on ZEBRA.</li><li>• Principle of funding being allocated to the County Council before being distributed to bus operators worked successfully.</li><li>• Phased payment of funding ensured some funding was held back until all installation issues were resolved.</li><li>• Closer communication with bus operator regarding progress with third-party equipment installers was needed.</li><li>• Bus operators are better placed than the local authority to engage with, and undertake procurement from, specialist suppliers to the bus industry.</li></ul>	<ul style="list-style-type: none"><li>• Implement the same internal processes for handling funding between the County Council and First Bus. This has already passed relevant audit inspections and worked well previously for both parties.</li><li>• Implement a phased payment approach with an agreed allocation of funding held back until full project delivery has been achieved.</li><li>• The governance structure set up for ZEBRA will ensure there is close communication with First Bus and that any issues related to third-party contractors and installations are identified and communicated at the earliest opportunity.</li><li>• First Bus will lead on engagement and procurement with contractors and specialist suppliers to the bus industry. Reporting on this will be managed through the governance structure set up.</li></ul>



Project	Lessons Learnt relevant to ZEBRA application	How these lessons will be implemented
<b>Engine switch-off (2018 onwards):</b> Introduction of fixed penalty notices in the Low Emission Zone in Norwich where buses are the dominant vehicle.	<ul style="list-style-type: none"><li>• Working relationships between the County Council and bus operators are strong in Norfolk. This sets a positive basis for joint working on ZEBRA.</li><li>• Air quality improved but it was difficult to identify this being a specific impact of this initiative.</li><li>• Pro-active communication with stakeholders and the media about the initiative is essential in raising positive awareness and securing support. Without this, negative media reporting will dominate.</li><li>• Talking to other local authorities and sharing ideas / best practice helped to shape how we delivered this scheme in terms of public-facing material and an initial education-led approach to enforcement.</li><li>• Individual initiatives such as this need to be complemented by other schemes to maximise benefit and impact. Individual schemes in isolation will not gain as much local support unless they are presented as part of a co-ordinated package. This knowledge will inform our stakeholder and engagement plan.</li></ul>	<ul style="list-style-type: none"><li>• The specific impact of the ZEBRA rollout on air quality will be improved through the ZEBRA monitoring and evaluation programme through a more focussed analysis of background air quality, comparing scenarios when zero emission and known emission (diesel engines) buses are operating through the Low Emission Zone during specific time periods.</li><li>• Our communications and engagement strategy will focus on pro-active engagement.</li><li>• We are committed to knowledge sharing for the ZEBRA project across local authorities, bus industry and wider transport arena.</li><li>• Our communications and engagement strategy will ensure the ZEBRA project is presented as part of a co-ordinated and complementary package of measures associated with our Transforming Cities programme, development of our Bus Service Improvement Plan and recently approved Local Transport Plan and Transport for Norwich Strategy.</li></ul>



Project	Lessons Learnt relevant to ZEBRA application	How these lessons will be implemented
<b>Norwich Bus Charter (2015 onwards):</b> Voluntary Quality Partnership between the County Council and Norwich bus operators outlining minimum standards that passengers can expect in terms of bus service provision.	<ul style="list-style-type: none"><li>• Working relationships between the County Council and bus operators are strong in Norfolk. This sets a positive basis for joint working on ZEBRA.</li><li>• More effort needs to go into joint communications from the County Council and bus operators on how and why improvement to the bus offering is being made.</li><li>• The Norwich Bus Charter is an integral part of the Enhanced Bus Partnership and Bus Service Improvement Plan and supports the case for zero emission buses in Norfolk.</li></ul>	<ul style="list-style-type: none"><li>• Our communications and engagement strategy will ensure there will be joint communications, where appropriate, highlighting why improvements are being made to the bus offering and how they will benefit existing and potential bus users.</li><li>• The role that zero emission buses has in supporting the Bus Service Improvement Plan and the new Enhanced Bus Partnership in Norfolk will be clearly communicated through our communications and engagement strategy.</li></ul>
<b>Bus Service Improvement Plan (2021):</b> Recently published Plan outlining the County Council and bus environment and where the bus plays its full role in our communities' journey to operators in Norfolk wanting to create a Carbon Net Zero future.	<ul style="list-style-type: none"><li>• Working relationships between the County Council and bus operators are strong in Norfolk. This sets a positive basis for joint working on ZEBRA.</li><li>• Strongly outlines the case for zero emission buses in Norfolk.</li></ul>	<ul style="list-style-type: none"><li>• The role that zero emission buses has in supporting the Bus Service Improvement Plan and the new Enhanced Bus Partnership in Norfolk will be clearly communicated through our communications and engagement strategy.</li></ul>





Project	Lessons Learnt relevant to ZEBRA application	How these lessons will be implemented
<b>Transforming Cities Fund (TCF) programme (2020 onwards):</b> £59m programme to deliver bus priority, walking and cycling infrastructure across Greater Norwich.	<ul style="list-style-type: none"><li>• Working relationships between the County Council and bus operators are strong in Norfolk. This sets a positive basis for joint working on ZEBRA.</li></ul>	<ul style="list-style-type: none"><li>• Our communications and engagement strategy will ensure the ZEBRA project is presented as part of a co-ordinated and complementary package of measures associated with our Transforming Cities programme.</li><li>• First Bus sit on the project delivery team for the Transforming Cities programme and the same resource from First will be engaged on the ZEBRA programme. This will ensure continuity of relationship, experience and co-ordination of infrastructure delivery on the ground and bus service operation.</li></ul>



**2.5 Evidence of similar projects / experience - First Bus**

2.5.1 Examples of relevant projects delivered by First are outlined in Table 5 below, along with lessons learnt.



**TABLE 5: FIRST BUS PROJECT EXPERIENCE / LESSONS LEARNT**

Project	Lessons Learnt relevant to ZEBRA application	How these lessons will be implemented
Deployment of battery electric vehicles of varying sizes into service at a number of locations in the UK, including, York, Leeds, Glasgow and hydrogen vehicles in Aberdeen.	<ul style="list-style-type: none"> <li>Working with local authority teams.</li> <li>Requirement for technical training to be suitably accounted for in project plans for engineers.</li> <li>Driver training on new vehicles and how to get the best out of them in terms of driving style, etc needs to be included.</li> <li>Early engagement with the Distribution Network Operator (DNO) is essential.</li> <li>Establish good relationships with providers proven to deliver necessary infrastructure.</li> </ul> <p>Appropriate timescales for infrastructure works have been identified.</p>	<ul style="list-style-type: none"> <li>First Bus currently has a close working relationship with NCC, which is demonstrated through the development of the Bus Service Improvement Plan and being part of the delivery team for the Transforming Cities programme.</li> <li>Training in new processes and technical requirements of driving and maintaining electric buses will be provided to all relevant First Bus staff, ensuring this is delivered at the most appropriate time for deployment - with sufficient time allocated for this, based on experience from other electric vehicle deployments in the UK.</li> <li>Early engagement with the DNO has been undertaken for this ZEBRA application.</li> <li>Early engagement with infrastructure contractors has been undertaken for this ZEBRA application. Contractors known to First Bus through other UK projects are to be used as there is confidence in the price and quality of their work, as well as an existing professional relationship already being established.</li> </ul> <p>Our project plan incorporates appropriate timescales for infrastructure works based on experience from other electric vehicle deployments in the UK.</p>



2.5.2 Further detail of this project experience by First Bus of low emission vehicles are highlighted.

### 2.6 Senior level support from partner organisations

2.6.1 This ZEBRA application has senior level support from partner organisations and stakeholders.

## 3 Contract Management

3.1.1 As described in the Commercial Case, the bus operator, First Bus, will be responsible for procuring the buses, as well as the electrical upgrade works required at their depot and charging equipment to charge the buses.

3.1.2 NCC will retain the grant funding from government until the bus operator has demonstrated that equipment and vehicles have been procured in accordance with achieving best value. A grant payment will then be made to First Bus at agreed milestones. This approach has previously been adopted by NCC on the Clean Bus Technology Fund. Our experience on this project showed that procurement is more efficient (from a programme and resource perspective) if undertaken by the bus operator.

3.1.3 REDACTED. This is set at March 2023 and is outlined in the Project Plan in **Table 6**.

3.1.4 Procurement steps REDACTED

3.1.5 The mitigation plans include actively working in partnership with all UK-based bus manufacturers to take a fresh look at the specifications of the vehicles that they have traditionally supplied to First Bus. This is to ensure that requirements (both present and future) are met and delivered for the best value for money possible. The exercise includes all aspects of costs that go into the finished vehicle, including body, chassis, electronic systems and selection of third-party sub-systems and second-tier suppliers.



3.1.6 REDACTED

3.1.7 REDACTED

3.1.8 REDACTED

## 4 Project Plan

4.1.1 The Project Plan for delivery is outlined in **Figure 3**. This has mapped out key tasks that are required to complete the ZEBRA project, identifying the amount of time for each activity and the dependencies of each activity on any others. This has set a critical path for the project and a realistic deadline for the project, as well as a means of tracking progress along the way. Project progress will be carefully monitored, and every effort will be made for an earlier delivery at each stage and an earlier completion overall.

4.1.2 Working closely with the bus supplier, vehicle deliveries will take place October 2023 to January 2024. This will see vehicles going into service from February 2024. Both NCC and First Bus are confident that all deadlines and milestones are realistic and achievable based on the following:

- Strong governance established through the existing TfN programme arrangement, with additional reporting structures being put in place to ensure clearly defined decision making occurs. A dedicated ZEBRA Project Team will report to the TfN Board as set out in this Management Case.
- A clear approach to risk management will be undertaken through risk identification, mitigation and monitoring, as set out in this Management Case.
- First Bus has an existing track record of successfully procuring, operating and maintaining zero emission electric buses elsewhere in the UK within challenging timescales.





- NCC has experience of delivering schemes in partnership with bus operators where funding is allocated to the Local Authority but equipment is utilised by bus operators as part of their commercial bus network, with scheme delivery required within challenging timescales.
- REDACTED

4.1.3 Key milestones for delivery are summarised in **Table 6** below. Milestones for grant payments are highlighted.

**TABLE 6: SUMMARY OF KEY MILESTONES**

Milestone	When	By Whom
Funding award	March 2022	DfT
Order placed for electrical power upgrade with DNO <b>(Milestone for grant payment)</b>	April 2022	First Bus
Vehicle order placed <b>(Milestone for grant payment)</b>	May 2022	First Bus
Electrical and civil infrastructure works <b>(Milestone for grant payment – completion of civil engineering works)</b> <b>(Milestone for grant payment – completion of installation of fast-charging infrastructure)</b>	April 2022 – April 2023	Appointed contractor(s)
Driver and engineer training	January 2023 onwards	Appointed vehicle manufacturer / First Bus
Vehicle delivery	October 2023 – January 2024	Appointed vehicle manufacturer
Vehicle operation	February 2024	First Bus
Correction of any snagging issues with vehicles or infrastructure <b>(Milestone for grant payment)</b>	Conclusion of agreed snagging issues being resolved	First Bus / NCC

## Interdependences



- 4.1.4 The ZEBRA project is not dependent upon any other project to be delivered, nor is any other project dependent upon the ZEBRA project for delivery.
- 4.1.5 There are a number of interrelated tasks which are dependent upon each other within the project. Key tasks are summarised in **Table 7**.



**TABLE 7: KEY DEPENDENCIES AND RISKS**

Project Element	Dependency	Risk Management
Successful funding award from government.	Without this, First Bus will not be able to confirm match funding. Funding is required for infrastructure and vehicles to be procured.	Feedback from Ernst & Young and DfT to draft versions of this Business Case has been fully considered and incorporated in order to submit the strongest possible Business Case.
Planning permission for the depot to have required power supply upgrade works.	Without this, the electrical supply upgrade at the First Bus depot will not be able to take place.	Close liaison with District Council planning officers and affected stakeholders has taken place. Discussions with planning colleagues at the City Council indicate that there should be no significant barriers to planning permission being granted and advice has been given as to how potential issues could be mitigated through design and placement of equipment.
Electrical supply upgrade.	Without this, there won't be sufficient electrical power for new vehicles to be charged and for electrical charging infrastructure to be utilised.	Close liaison with the Distribution Network Owner (DNO) has taken place throughout the preparation of this Business Case to ensure infrastructure requirements and timescales for implementation are fully understood, are relevant for the needs of the project and can be implemented within the timescales required.
Electrical charging infrastructure.	This is needed for new vehicles to be charged reliably, safely and within the time needed overnight for vehicles to be charged and ready for service the following day.	A contractor known to First Bus, who has previously installed electric charging infrastructure for buses at other depots, is being used. This ensures that the performance of the infrastructure is known in terms of ability to charge buses overnight within the timescales needed, as well as the reliability and maintenance of charging equipment.
Training of drivers and engineers.	Without this, new vehicles cannot be operated safely and reliably or at all.	Lessons learnt from new electric vehicle rollouts elsewhere in First Bus will be implemented. Training is scheduled to be completed in good time prior to vehicles being delivered.
Provision of the electric buses.	Without the new electric buses being available, it is not possible to deliver the benefits of this programme.	Vehicle suppliers have been engaged with, and could be used to fulfil the requirements of this funding round.



***FIGURE 3: PROJECT PLAN***

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The project plan has been redacted.



### 4.2 Assurance framework

- 4.2.1 As Norfolk County Council is neither a Mayoral Combined Authority with a Single Pot funding arrangement or a Local Enterprise Partnership (LEP), a Local Assurance Framework is not in place as a statutory document. However, our delivery structure for the delivery of the ZEBRA programme is built around the core assurance framework as laid out in the Ministry of Housing, Communities and Local Government's National Local Growth Assurance Framework.
- 4.2.2 Approval for the ZEBRA funding application to be submitted to the DfT will be sought from the Cabinet Member for Highways and Transport through a Delegated Decision procedure in January 2022. This follows on from the approval given through this procedure for the ZEBRA Expression of Interest submitted in 2021. This decision is reported at County Council Cabinet.

## 5 Communications and stakeholder engagement strategy

- 5.1.1 The communication of the ZEBRA scheme will sit within the TfN programme, which is a partnership led by NCC with partner local authorities Norwich City, Broadland District and South Norfolk Councils.
- 5.1.2 The partnership is the mechanism through which strategic infrastructure improvements in Norwich are delivered. Communications around the ZEBRA scheme will highlight the strategic benefits brought by this investment and how this complements the delivery of other infrastructure schemes that are providing priority to public transport on the highway network, as well as behaviour-change programmes that are aimed at reducing single-car occupancy and encouraging greater use of public transport and active modes.
- 5.1.3 Established ways of communicating and engagement already used by TfN will continue and be adapted to suit any new demands for the ZEBRA scheme. This will maintain continuity in the strategic vision for the area's





transport requirements and help tell the story of how far we have come and where we are going.

### 5.2 Communications Strategy

5.2.1 The ZEBRA project's communication, sitting within the TfN communications, is divided into two strands – one that addresses active engagement with our range of key stakeholders and another that is informed by activity around the delivery of schemes and initiatives.

5.2.2 The communications strategy has both delivery-led and stakeholder-led communications plans sitting under its overarching aims, objectives and key messages below.

#### Aims

- To produce joined up, planned and considered communications,
- To raise awareness of funded projects, like ZEBRA and its objectives,
- To engage and gain the support of the public and stakeholders as ZEBRA and the TfN programme evolves.

#### Objectives

- Make sure the public and stakeholders fully understand our strategic vision for the investment of ZEBRA money,
- Build awareness and understanding about projects as they happen,
- Make sure information is clear, easily accessible and available through a range of channels, with a focus on succinct but comprehensive web content,
- Achieve good media coverage of success stories, particularly at a local level.

#### Key messages

5.2.3 NCC:



- The ZEBRA fund is a DfT-funded scheme supporting local authorities to partner with local transport providers to accelerate the introduction of zero emission buses and the infrastructure needed to support them,
- NCC is highly experienced at delivering new infrastructure schemes across the TfN network and has a proven track record of strong partnership working with First Bus,
- This project directly supports our TfN Strategy and objectives to improve public transport and reduce carbon emissions across Greater Norwich and is further aided by TCF-funded infrastructure improvements currently being delivered along public transport routes that will be operated by zero emission vehicles funded by ZEBRA, which will improve journey times and reliability,
- This project will see the first zero emission public transport vehicles operating in Norwich and Norfolk and will provide a springboard for additional zero emission vehicles to be introduced across the county and wider region,
- This project also supports NCC's environmental targets to be a carbon neutral county by 2030, as set out in our Environmental Strategy, supporting UK net zero and CoP26 climate change ambitions.

### First Bus:

- The government investment is being match funded by First Bus and will provide a strong base to build a bigger electric fleet in the future,
- First Bus are a well-established and trusted operator within the local public transport network, highly experienced at introducing new vehicles and routes,
- First Bus are committed to safety and delivering a first-class service to customers.



**5.3 Communications activity schedule**

- 5.3.1 This communications schedule is based on the current project programme, which assumes timely completion of all statutory processes. Dates and key milestones will be reviewed regularly and adjusted accordingly to reflect the latest programme.
- 5.3.2 The communications schedule in **Table 8** reflects principal key milestones/areas of activity.



**TABLE 8: COMMUNICATION SCHEDULE**

Dates	Project activity	Communications activity / Key messages	Audience
March / April 2022	Funding Award	<p><b>Communications activity</b> Email/verbal update to key stakeholders. Press release/social media/web update following official announcement from DfT.</p> <p><b>Key messages</b> DfT initiative to accelerate introduction of zero emission vehicles. First zero emission vehicles in Norfolk. Supports TfN Strategy, Environmental Strategy and complementary investment through TCF. Partnership between NCC and First Bus.</p>	Key stakeholders Wider Public
May / June 2022	Supplier selected/ vehicles ordered	<p><b>Communications activity</b> Social media/press release led by First Bus.</p> <p><b>Key messages</b> Partnership between NCC and First Bus. First zero emission vehicles in Norfolk.</p>	Trade/local media
June 2022 / April 2023	Electrical Infrastructure Works	<p><b>Communications activity</b> First internal comms for all activities on site. Progress update shared with key stakeholders via TfN channels Standard NCC consultation process followed for all external works.</p> <p><b>Key messages</b> Partnership between NCC and First Bus. First zero emission vehicles in Norfolk</p>	Key stakeholders / those directly affected
February / August 2023	Driver and Engineer training	<p><b>Communications activity</b> Internal First Bus comms only.</p> <p><b>Key messages</b> Partnership between NCC and First Bus.</p>	First staff / NCC project team
September / January 2023/24	Vehicles delivered	<p><b>Communications activity</b> Social media/press photo op.</p> <p><b>Key messages</b> First zero emission vehicles in Norfolk. Supports TfN Strategy, Environmental Strategy and complementary investment through TCF. Partnership between NCC and First Bus.</p>	All stakeholders



Dates	Project activity	Communications activity / Key messages	Audience
February 2024	Pre-launch event	<p><b>Communications activity</b> Press and Public launch event, with opportunity to try buses. To be led by First.</p> <p><b>Key messages</b> DfT initiative to accelerate introduction of zero emission vehicles. First zero emission vehicles in Norfolk. Supports TfN Strategy, Environmental Strategy and complementary investment through TCF. Partnership between NCC and First Bus.</p>	All stakeholders
February 2024 onwards	Operational Phase	<p><b>Communications activity</b> Reactive media as required and regular updates for key stakeholders via TfN channels.</p> <p><b>Key messages</b> First zero emission vehicles in Norfolk. Supports TfN Strategy, Environmental Strategy and complementary investment through TCF. Partnership between NCC and First Bus.</p>	Key stakeholders
February 2025	Monitoring and Evaluation	<p><b>Communications activity</b> Good news stories re usage / CO2 savings and other environmental impacts. Web/press /social and updates for key stakeholders via TfN channels.</p> <p><b>Key messages</b> Supports TfN Strategy, Environmental Strategy and complementary investment through TCF.</p>	All stakeholders

## 5.4 Stakeholder management

- 5.4.1 The ZEBRA scheme will use existing, established stakeholder management that is in place for the TfN programme, and this is handled across two main groups – a Stakeholder Liaison Group, which includes representatives from key organisations, and a wider distribution list of stakeholders.
- 5.4.2 The Stakeholder Liaison Group is made up of members with a strategic interest in the TfN programme and meets every 6 weeks. The ToR for this



Group is around sharing updates on upcoming transport schemes and initiatives, seeking feedback on proposals and issues that need to be considered and utilisation of communications networks they have access to. Attendees include:

- Norwich Business Improvement District (BID),
- Norfolk Chamber of Commerce,
- New Anglia Local Enterprise Partnership (LEP),
- First Bus (bus operator),
- konectbus (bus operator),
- Greater Anglia (rail operator),
- Norwich International Airport,
- University of East Anglia (UEA),
- Norfolk and Norwich University Hospital,
- Access & Inclusion Officer (Norfolk County Council) representing accessibility groups.

5.4.3 The wider distribution list is made up of people with a general, rather than 'hands on', interest in the TfN programme, and those who might only have an interest in a specific scheme or geographical area. This group is kept informed by email, as appropriate, on project progress and milestones, such as consultation opportunities.

5.4.4 The wider public are provided communications through the project web pages, press releases and social media.

5.4.5 To inform weighting of communications resource, stakeholders are divided into four priority groups from a communications perspective. This stakeholder analysis chart is summarised in **Figure 4**.



**FIGURE 4: STAKEHOLDER ANALYSIS CHART**

Direction of travel	Interest Low	Interest High
Influence High	<b>Keep in close contact (2)</b> Norwich Bid Improvement Development (BID) Norfolk Chamber of Commerce New Anglia Local Enterprise Partnership (LEP)	<b>Keep on board (1)</b> First Bus Media Elected Councillors Senior Council Officers Funders
Influence Low	<b>Keep informed (4)</b> General Public Transport network users	<b>Keep informed: 2 way comms (3)</b> Rail operator (Greater Anglia) Norfolk & Norwich University Hospital Interest groups Other bus operators Norwich International Airport University of East Anglia (UEA)

(Above table replaces figure 4)

5.4.6 Communication with all key stakeholders that we need to ‘keep in close contact/keep on board’ will be maintained through TfN’s regular stakeholder liaison mechanisms and the existing TfN governance structures; TfN Co-ordination Group, TfN Board etc. This will ensure that regular contact with senior officers, elected members and key partners is maintained. **Table 9** summarises the frequency of contact and key messages for our key stakeholders.

**TABLE 9: STAKEHOLDER COMMUNICATION PLAN**

Stakeholders	Frequency of Contact	Key Messages
Norwich Business Improvement District (BID)	Every 2 months through the TfN Stakeholder Group	<ul style="list-style-type: none"> <li>• Demonstrate progress / success / effective partnership working.</li> <li>• Gain support from business community for wider TfN Strategy</li> </ul>
Norfolk Chamber of Commerce	Every 2 months through the TfN Stakeholder Group	<ul style="list-style-type: none"> <li>• Demonstrate progress / success / effective partnership working.</li> <li>• Gain support from business community for wider TfN Strategy.</li> </ul>
New Anglia Local Enterprise Partnership (LEP)	Every 2 months through the TfN Stakeholder Group	<ul style="list-style-type: none"> <li>• Demonstrate progress / success / effective partnership working.</li> <li>• Gain support from business community for wider TfN Strategy.</li> <li>• Attract further investment</li> </ul>





Stakeholders	Frequency of Contact	Key Messages
First Bus (bus operator)	Daily/weekly as part of project delivery team, plus monthly/bi-monthly discussion with wider stakeholder groups	<ul style="list-style-type: none"> <li>• Day to Day project liaison</li> <li>• Demonstrate Progress</li> <li>• Attract further investment</li> </ul>
Rail operator (Greater Anglia)	Every 2 months through the TfN Stakeholder Group	<ul style="list-style-type: none"> <li>• Demonstrate progress / success / effective partnership working.</li> <li>• Gain stakeholder support for wider TfN Strategy.</li> </ul>
Other bus operators	Monthly through Enhanced Partnership board	<ul style="list-style-type: none"> <li>• Demonstrate progress / success / effective partnership working.</li> <li>• Gain stakeholder support for wider TfN Strategy.</li> <li>• Attract further investment</li> </ul>
Norwich International Airport	Every 2 months through the TfN Stakeholder Group	<ul style="list-style-type: none"> <li>• Demonstrate progress / success / effective partnership working.</li> <li>• Gain stakeholder support for wider TfN Strategy.</li> <li>• Attract further investment</li> </ul>
University of East Anglia (UEA)	Every 2 months through the TfN Stakeholder Group	<ul style="list-style-type: none"> <li>• Demonstrate progress / success / effective partnership working.</li> <li>• Gain stakeholder support for wider TfN Strategy.</li> <li>• Attract further investment</li> </ul>
Norfolk and Norwich University Hospital	Every 2 months through the TfN Stakeholder Group	<ul style="list-style-type: none"> <li>• Demonstrate progress / success / effective partnership working.</li> <li>• Gain stakeholder support for wider TfN Strategy.</li> <li>• Attract further investment</li> </ul>
General public	Ad hoc – specific events (virtual and face-to-face) Ad hoc – transport consultations/media releases	<ul style="list-style-type: none"> <li>• Demonstrate progress / success / effective partnership working.</li> <li>• Gain public support for wider TfN Strategy.</li> <li>• Benefits to residents and the environment</li> </ul>
Transport network users	Ad hoc – specific events (virtual and face-to-face) Ad hoc – transport consultations/media releases/key service updates	<ul style="list-style-type: none"> <li>• Demonstrate progress / success / effective partnership working.</li> <li>• Gain public support for wider TfN Strategy.</li> <li>• Benefits to passengers and the environment</li> <li>• Service updates</li> </ul>



Stakeholders	Frequency of Contact	Key Messages
Interest groups	Ad hoc – transport consultations/media releases and direct contact 2-3 times per year in-line with councillor updates	<ul style="list-style-type: none"> <li>• Demonstrate progress / success / effective partnership working.</li> <li>• Gain support for wider TfN Strategy.</li> <li>• Demonstrate environmental impact</li> </ul>
Media	In advance of all public events, consultations and media releases and Ad hoc reactive media liaison as required	<ul style="list-style-type: none"> <li>• All central key messages (<b>Table 8</b>) and tailored response based on nature of enquiry.</li> </ul>
Elected Councillors	2-3 times per year as a general update on transport issues across Norwich. Cabinet Member updated monthly Ad-hoc where a scheme impacts a particular area	<ul style="list-style-type: none"> <li>• Demonstrate progress / success / effective partnership working.</li> <li>• Gain support for wider TfN Strategy.</li> <li>• Benefits to passengers and the environment</li> <li>• Opportunities for further investment.</li> </ul>
Senior Council Officers	Every 2 months through the TfN Board	<ul style="list-style-type: none"> <li>• Demonstrate progress / success / effective partnership working.</li> </ul>
Funders	Quarterly via reporting	<ul style="list-style-type: none"> <li>• Demonstrate progress / success / effective partnership working.</li> <li>• Attract further investment</li> </ul>

5.4.7 Communication with funders and members of the project team will be maintained through the mechanisms put in place as part of the project delivery.

5.4.8 Both First Bus and NCC have well-established good working relationships with the local media and will brief them in advance of key communications as appropriate.

5.4.9 We will conduct highly personalised and direct early engagement with any businesses or individuals directly impacted by the required infrastructure changes as part of our standard consultation process.

5.4.10 Other groups requiring personalised communication may include briefing/updates for local MPs and key representatives from local political parties.



- 5.4.11 We will maintain communication with the wider public and all other stakeholder groups through our general TfN channels.

### 5.5 Approach to consultation

- 5.5.1 Any consultations required to deliver the ZEBRA project, such as electrical substation / cabling works and modifications to the existing bus depot, would be delivered under the TfN brand within the Greater Norwich area. The approach used is:

- Letter drop to frontages directly affected (e.g. electrical substation works, depot modifications, etc), including a clear, branded plan of the proposals and information on the reasons behind them,
- All consultations will be available on the council's consultation portal, Citizen Space, with the option to request material in other formats and to respond through other channels,
- Direct engagement with specific groups, such as those representing users with specific needs,
- Non-statutory consultations to run for three weeks to allow plenty of opportunity for engagement,
- Promotion of consultation opportunities to a wider audience through media, social media and communications channels available through the partnership.

### 5.6 Marketing Strategy

- 5.6.1 The marketing strategy will be focused on a substantial pre-launch event. This will be organised to raise public awareness and build support and excitement about the EV buses prior to deployment on the streets of Norwich. This will allow stakeholders and the wider public to not only view, but also experience the vehicles prior to operation. The event would be publicised, well in advance of the event, via First Bus and NCC's social media / marketing channels. This will also be co-ordinated with other



stakeholders and partnering organisations such as Norwich BID, Archant and Norwich City Council. The event would be held at The Forum (a venue successfully used for previous public transport launch events).

- 5.6.2 For the pre-event launch event, three buses would be displayed outside the building along with staff to engage with visitors. A range of information displays would also be provided for attendees to interact with, and marketing material, which includes bus features and environmental credentials will be provided for the public to take home. The buses would be available to allow attendees the opportunity to experience travel on the buses (via free shuttle rides) between the First Bus depot and The Forum. Once at the bus depot, passengers will also be allowed the opportunity to view the EV bus charging facilities. Whereas most bus launches wouldn't offer opportunities for bus rides, with electric buses being so very different in terms of ride quality and experience, it is important that this activity provides a clear demonstration that these are not just 'any old bus'.
- 5.6.3 Additional buses will be 'posed' at the depot with their 'panels open' allowing people to see the technology behind the vehicle. The bus manufacturer will have staff on hand to answer questions from the public / stakeholders.
- 5.6.4 After the event we would use social and news media to promote the arrival of the vehicles, and build up to, and beyond, their entry into service.

## 6 Risk Management

- 6.1.1 The production of a Risk Management Strategy is an integral component of the standard project management procedures that are used by NCC on major capital projects. We have undertaken an examination of the risks and these have been incorporated into a programme risk register.
- 6.1.2 The NCC Project Manager will have day-to-day responsibility for managing risks of the overall ZEBRA project, as local devolved grant



administrator, working closely with the Project Lead of the ZEBRA Project Team, and will escalate any issues to the SRO. In case of any urgent risk events, the NCC Project Manager will initially seek guidance from the SRO on behalf of the TfN Board. In case of major issues where the risk response would exceed the authority of the TfN Board, the SRO will produce a Cabinet Report to inform, and seek approval from, the NCC Cabinet. Advice will be sought from DfT where appropriate. Whilst the NCC Project Manager has responsibility for managing overall project risk as outlined above, it should be noted that many of the individual risk elements, as outlined in **Table 11**, are owned and managed by First Bus. The governance for the delivery of this project ensures close interaction between NCC and First Bus through the ZEBRA Project Team and TfN Board where project risks will be a standing agenda item at each meeting. Risk updates will be provided at every TfN Board through attendance by the Project Lead appointed by First Bus.

- 6.1.3 There are significant interdependencies within the project as outlined previously, which adds risk to successful delivery on time, budget and specification.
- 6.1.4 Project risks will be reviewed on an ongoing basis through the life of the scheme development and the NCC Project Manager will report on project and programme risks to the TfN Board as required.
- 6.1.5 The most significant, high-level, risks are set out in **Table 11** below and are informed through experience on the delivery of similar major programmes. The scoring for “Likelihood”, “Impact” and “Overall Risk Score” used in the risk tables are set out in **Table 10**, **Table 11** and **Table 12**. The risk likelihood (in **Table 10**) is multiplied by the risk severity (in **Table 11**) to give an overall risk score (**Table 12**) for each individual risk element.



**TABLE 10: 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)

**TABLE 11: RISK SEVERITY**

Level (Across) Description (Down)	1. Insignificant	2.Minor	3.Moderate	4.Major	5. Extreme
<b>Service Delivery</b>	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
<b>Health &amp; Safety</b>	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
<b>Financial Loss (Corporate)</b>	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
<b>Financial Loss (Local level)</b>	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
<b>Performance</b>	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
<b>Reputation</b>	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
<b>Environment</b>	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



6.1.6 A summary of the key risks is set out below. More detailed information, as well as action/mitigation and risk monitoring is set out in **Table 12**.

- Planning permission issues (delay in process and opposition) associated with the electrical power supply upgrade,
- Electric power supply upgrade issues risks related to timescales for completion of works and ability to consistently deliver the required power required for overnight charging every night,
- REDACTED
- Risks around actual vehicle performance, particularly real-world operating range and vehicle reliability.





**TABLE 12: RISK REGISTER**

Ref	Risk Category	Description	Impact	Action or Mitigation Plan	How will this be monitored?	Likelihood	Severity	Risk Score
1	Financial Loss	A rise in the cost of the zero emission buses.	REDACTED	REDACTED	REDACTED	2	2	4
2	Financial Loss	Inability to have the correct procedure(s) in place	REDACTED	REDACTED	REDACTED.	2	3	6



Ref	Risk Category	Description	Impact	Action or Mitigation Plan	How will this be monitored?	Likelihood	Severity	Risk Score
3	Reputation	REDACTED	REDACTED	REDACTED	REDACTED	2	3	6
4	Service Delivery	REDACTED	REDACTED	REDACTED	REDACTED	2	2	4
5	Financial Loss	REDACTED	REDACTED	REDACTED	REDACTED	3	1	3
6	Service Delivery	REDACTED.	REDACTED	REDACTED	REDACTED	2	3	6



Ref	Risk Category	Description	Impact	Action or Mitigation Plan	How will this be monitored?	Likelihood	Severity	Risk Score
7	Service Delivery	REDACTED	REDACTED	REDACTED	REDACTED	3	1	3
8	Service Delivery	REDACTED	REDACTED	REDACTED	REDACTED	3	1	3
9	Service Delivery	REDACTED	REDACTED	REDACTED	REDACTED	1	2	2
10	Service Delivery	REDACTED	REDACTED	REDACTED	REDACTED	1	2	2
11	Service Delivery	Capacity of vehicles to accommodate passenger demand.	REDACTED	REDACTED.	Monitoring passenger levels.	2	2	4



Ref	Risk Category	Description	Impact	Action or Mitigation Plan	How will this be monitored?	Likelihood	Severity	Risk Score
12	Service Delivery	EV battery vehicle range.	REDACTED	REDACTED	REDACTED	3	2	6
13	Service Delivery	EV battery life	REDACTED	REDACTED	REDACTED	3	3	9
14	Financial Loss	Operating cost of electric buses are significantly higher (e.g. maintenance and repairs).	REDACTED	REDACTED	REDACTED	3	2	6



## 7 Monitoring and Evaluation Report

- 7.1.1 Effective monitoring and evaluation (M&E) is an important part of the overall appraisal process and we will deliver a tailored monitoring and evaluation programme that identifies the extent to which the identified objectives and anticipated outcomes have been achieved.
- 7.1.2 Full details of the monitoring and evaluation we will undertake are set out in the separate Monitoring & Evaluation report.
- 7.1.3 Should DfT procure an external research contractor to coordinate M&E across the ZEBRA programme, the Norfolk M&E will fully support this and provide the necessary data as and when required.

## 8 ANNEX

- 8.1.1 All Appendices can be found in a separate Appendices document.

## 9 Glossary of Abbreviations and Defined Terms

- **AQAP** - Air Quality Action Plan
- **AQMA** - Air Quality Management Area
- **BCR** - Benefit Cost Ratio
- **BEV** - Battery Electric vehicle
- **BID** - Business Improvement District
- **BSIP** - Bus Service Improvement Plan
- **BSOG** - Bus Service Operator Grant
- **CO2** - Carbon Dioxide
- **CSS** - Combined Charging System
- **CYC** - City of York Council
- **DEFRA** - Department for Environment, Food and Rural Affairs
- **DfT** - Department for Transport



## Norfolk County Council

- **DNO** - Distribution Network Operator
- **EOI** - Expression of Interest
- **EQIA** - Equality Impact Assessment
- **EV** - Electric Vehicle
- **GBT** - Greener Bus Tool
- **GDP** - Gross Domestic Product
- **GJT** - Generalised Journey Time
- **GNR** - Greater Norwich Region
- **ICE** - Internal Combustion Engine
- **ITT** - Invitation to Tender
- **JCS** - Joint Core Strategy
- **LED** - Light-Emitting Diode
- **LEP** - Local Enterprise Partnership
- **LEZ** - Low Emission Zone
- **LTA** - Local Transport Authority
- **LTP** - Local Transport Plan
- **M&E** - Monitoring and Evaluation
- **NBS** - National Bus Strategy
- **NCC** - Norfolk County Council
- **NNUH** - Norfolk and Norwich University Hospital
- **NO<sub>2</sub>** - Nitrogen Dioxide
- **NO<sub>x</sub>** - Oxides of Nitrogen
- **NRP** - Norwich Research Park
- **NSIDP** - Norfolk Strategic Infrastructure Delivery Plan
- **OEM** - Original Equipment Manufacturer
- **OfGEM** - Office of Gas and Electricity Markets



## Norfolk County Council

- **ONS** - Office of National Statistics
- **PIPs** - Punctuality Improvement Partnerships
- **PM10** - Particulate Matter
- **PM2.5** - Particulate Matter to 2.5 microns
- **PSVAR** - Public Service Vehicles Accessibility Regulations
- **PVB** - Present Value of Benefits
- **PVR** - Peak Vehicle Requirement
- **R&D** - Research and Development
- **SCRT** - Selective Catalytic Reduction Technology
- **SLA** - Service Level Agreement
- **SRO** - Senior Responsible Owner
- **SSE** - Scottish and Southern Elect
- **TAG** - Transport Analysis Guidance
- **TCA** - Trade Cooperation Agreement
- **TCF** - Transforming Cities Fund
- **TfN** - Transport for Norwich
- **ToR** - Terms of Reference
- **UEA** - University of East Anglia
- **UKPN** - UK Power Networks
- **VfM** - Value for Money
- **VQP** - Voluntary Quality Partnership
- **WHO** - World Health Organisation
- **ZEB** - Zero Emission Bus
- **ZEBs** - Zero Emission Buses