

Oxfordshire County Council Zero Emission Bus Regional Area (ZEBRA) - Business Case Executive Summary



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Executive Summary

Project Background

Oxfordshire County Council's ZEBRA Bid will deliver 159 zero-emission buses that will operate on 34 routes within the 'defined area', comprising all of Oxford City LTA and its near hinterland.

ZEBRA services will be procured and operated by the two dominant bus operators – Oxford Bus Company and Stagecoach. Both operators will deliver electric buses, with charging facilities located at existing (re-purposed) depot facilities. The overall cost of the scheme, including vehicles and infrastructure is £82.5m. Funding for the scheme will be provided by operators (£43.7m), the Department for Transport (£32.8m) and Oxfordshire County Council (£6.0m).

The scale and ambition of the Oxfordshire ZEBRA scheme will materially contribute towards Government's and Oxfordshire's shared policy objectives towards the decarbonisation of transport and the enhancement of bus quality and provision. The ZEBRA proposals support wider policy proposals for Oxford – including Connecting Oxford, which will deliver a Zero-Emissions Zone and Traffic Filters to remove traffic from highly congested bus radials and the city centre routes, and Oxfordshire's plans to deliver long-term bus enhancements and support patronage growth through its BSIP proposals.

Why this Area and Why Now?

The definition of the 'Defined Area' for the ZEBRA scheme was guided by the strategic outcomes and objectives outlined that are set out in this chapter. The defined area is the core of Oxfordshire's bus network and contains the highest frequency and most used bus routes in the county. It is therefore the part of Oxfordshire where buses contribute most to carbon and other emissions, and where the greatest number of bus users would benefit from zero emission buses. In addition, the area contains a high number of relatively short bus routes, which are ideally suited to battery electric bus operation.

The Connecting Oxford and Zero Emission Zone proposals are focused on Oxford city, while the defined area also covers three AQMAs, including the citywide AQMA covering all of Oxford city. The definition of the 'defined area' therefore reflects the geographic focus of these initiatives, and therefore the impact that ZEBRA can have in ameliorating identified challenges and supporting policy outcomes which share this spatial dimension.

Oxfordshire's ZEBRA bus area therefore reflects a combination of the county's strategic objectives and scale of ambition balanced with a clear and tested understanding of what is practicable, and deliverable based on the operator and wider ZEB market. The area was defined in collaboration with the county's two main bus operators and Oxford City Council.

The ZEBRA scheme covers a total of 34 routes, of which ten are Stagecoach operated and 22 by Oxford Bus Company (OBC). The defined area to be covered by the ZEBRA scheme is the

area covered by the ‘Oxford SmartZone’, a multi-operator bus ticketing covering an area of about 99 sq. km (38 sq. miles) and a resident population of approximately 190,000 people (2019 mid-year estimate). Only services operating wholly within the Oxford SmartZone area are included.

The ZEBRA defined area is shown in its broader administrative and geographical context in Figure 0-1 and the detailed area and routes are shown in Figure 0-2.

Figure 0-1 ZEBRA Defined Area - Wider Context Map

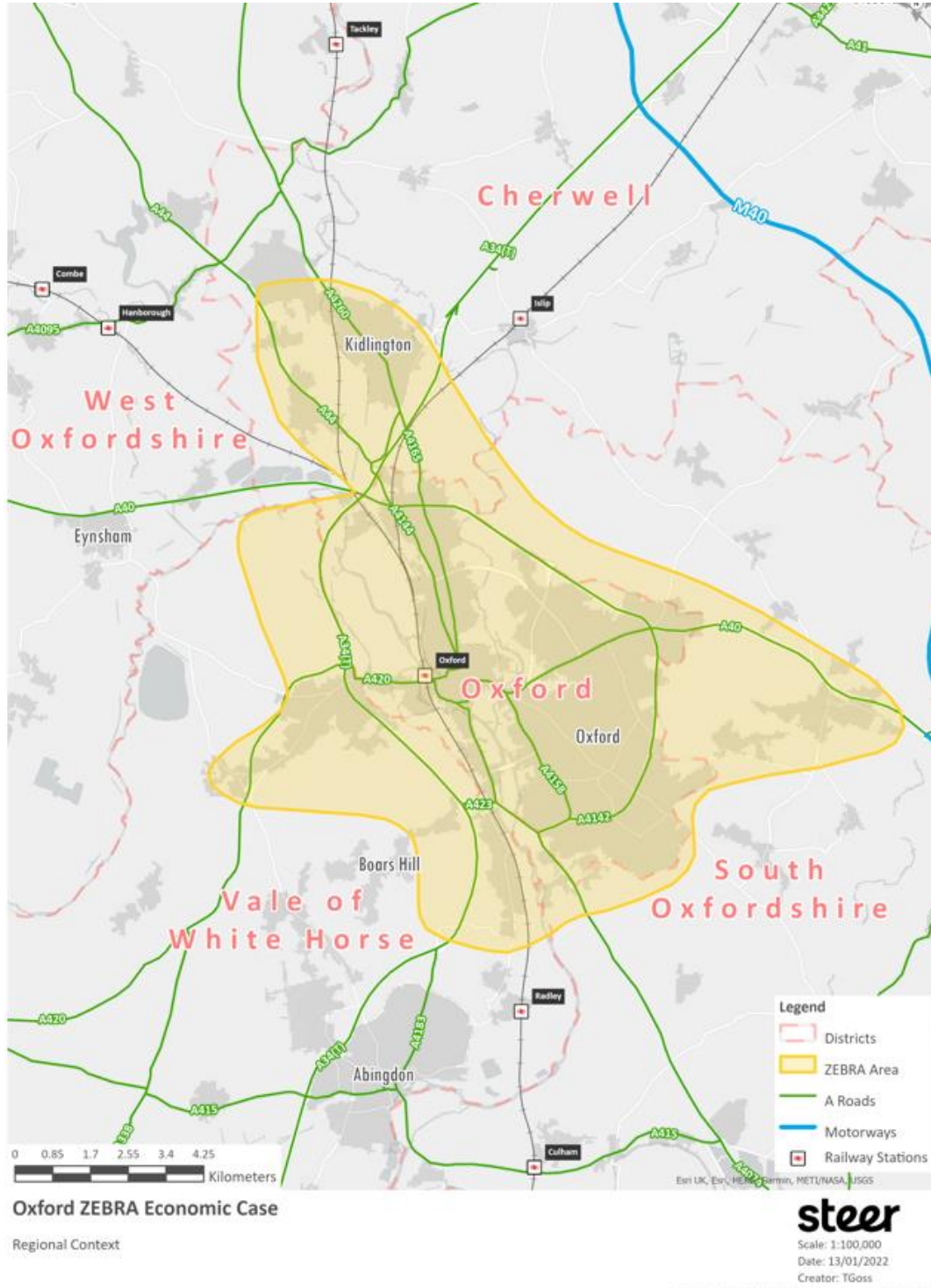


Figure 0-2 ZEBRA Defined Area - Route Detail (January 2022 services)



The overall impact of the OCC ZEBRA scheme will be transformative in terms of its coverage, impact and strategic and economic benefits. In terms of coverage ZEBRA bid will ensure that, within the defined area, zero emission buses will be used to operate:

- 49% of bus services;
- 65% of total hourly bus flows; and
- 69% of total daily bus mileage.

This scale of coverage will deliver a transformative impact on carbon and air quality within the area, underpinning the strategic and economic benefits detailed within this report.

Project Overview

The project will convert 34 bus routes to wholly zero-emission bus operation. This will be achieved using 159 battery electric buses which will be exclusively charged at the two operators depots; predominately overnight but with some vehicles using daytime charging windows to manage range requirements.

There are four distinct project elements that need to be procured – vehicles, chargers, depot infrastructure (cabling, switch gear, civils) and grid connections and on-site transformers.

A summary of the vehicle and infrastructure specifications is presented in Table 0-1.

Table 0-1 Summary of Vehicle and Infrastructure Specification

	Oxford Bus Company	Stagecoach
Single Decker Buses	██████████	█
Double Decker Buses	██████████ ████████████████████	██████████
Grid Connection	████████████████████	████████████████████
Chargers	████████████████████	████████████████████

The specification for the vehicles will also meet the latest accessibility standards and include visible and audible passenger information.

Changes from Expression of Interest Stage

Oxfordshire County Council submitted an Expression of Interest (EOI) for ZEBRA funding in July 2021 which set out their proposed project definition, procurement and delivery route and funding 'ask' of the DfT. Based upon the EOI the DfT invited Oxfordshire County Council to develop and submit a full business case for the scheme. As part of the business case, Promotors were requested to summarise the key changes from the EOI stage, which it set out below.

The scheme definition is ostensibly unchanged from the EOI stage.

- The 'defined area' is the same as EOI
- The definition of ZEB routes, being those that operate wholly within the defined area is also unchanged.
- The ZEB operators, technology choice, commercial model and procurement / delivery model are all as per set out at EOI.

The key change is that a review of routes and services was undertaken in late 2021, between OCC and operators, to refine some routes and services as part of a periodic review in response to demand and operational consideration. This review was completed by early December 2021 and has resulted in changes on some routes and services, that have been enacted from January 2022. The review and resulting changes are wholly independent of the ZEBRA bid but will have a consequential effect on the number of ZEBs required.

This Business Case submission fully reflects the current routes and services at the network and operator level. The two operators participating in the ZEBRA bid have provided updated bus numbers consistent with the revised timetable. The changes result in a small reduction in the overall number of buses from the 166 ZEBs in the EOI to 159 in the Final Submission.

The fact that the fundamental scheme definition is unchanged, and that the only change will be in the number of vehicles at the margin, means that the strategic case for the scheme remains compelling.

The economic case has been fully updated based on the updated number of ZEBs.

The financial case has been fully updated based on the updated number of ZEBs, and updated infrastructure and vehicle costs based on updated quotes and further market engagement. This has informed the update to the costs and funding requirement and split between respective funders. The overall costs for the ZEBRA investment have increased from £78.7m at EOI to £82.5m in the Final Bid.

The overall public funding sought is only marginally different from that presented at the EOI stage. At EOI DfT funding sought was £32.1m. Within this submission the DfT funding requirement and ask is £32.8m. The OCC contribution will be £6.0m (compared to £5.8m at EOI) – this contribution has been approved at Cabinet level.

The commercial model is ostensibly unchanged from the EOI Stage. The commercial case includes detail of the procurement and delivery of infrastructure and vehicles, which has been fully developed from the EOI stage.

Strategic Case

The strategic case for investment is compelling. The scheme will deliver against key policy priorities and outcomes - carbon, air quality, economic growth and levelling up and improving transport for the user. These benefits accrue in part due to the inherent properties of the scheme - the replacement of emitting buses with zero-emission buses. However, benefits are fully realised and maximised through strategic policy context in which the scheme is being implemented, and through the shared objectives of Oxfordshire County Council, Oxford City Council and bus operators to improve journey times and reliability which, in turn, will drive patronage growth and improve operational efficiency.

Strategic Policy Context and Drivers of Change

The ZEBRA proposal is a central component of Oxfordshire's wider strategy to develop and enhance its public transport offer and deliver the necessary change to achieve transport decarbonisation / net zero, better health outcomes and sustainable and inclusive growth.

The County's strategic priorities fully align with the Governments wider objectives and drivers for change around the themes of **tackling climate change, economic growth/ levelling up, air quality/ environmental impacts and improving transport for user.**

The strategic context for the ZEBRA proposals is summarised in Table 0-2.

Table 0-2 Strategic Context

Driver for Change	Stated Policy Ambition (Outcomes) and Strategic Initiatives (Policies and strategies to achieve outcomes)
Climate Change and carbon reduction	<p>Policy Outcomes</p> <ul style="list-style-type: none"> Oxfordshire County Council aims to be a carbon neutral council by 2030 Enable a zero carbon Oxfordshire by 2050 <p>Strategic Initiatives</p> <ul style="list-style-type: none"> Our Climate Action Framework target to be a carbon neutral council by 2030 and to enable a zero-carbon Oxfordshire by 2050.
Air Quality / Quality of Environment	<p>Policy Outcomes</p> <ul style="list-style-type: none"> Transformation in quality and urban environment and improved air quality. <p>Strategic Initiatives</p> <ul style="list-style-type: none"> Oxford City Council's new Air Quality Action Plan, which sets a target of 30 ug/m3 nitrogen dioxide at all monitored locations in Oxford, by 2025. The Oxford Zero Emission Zone, due to start in February 2022. All but zero emission vehicles will be charged a daily fee to drive in the ZEZ. Connecting Oxford, which will reduce traffic in the city through a workplace parking levy and new traffic filters on major traffic routes An £80m programme of sustainable transport schemes in and around Oxford Low traffic neighbourhoods across the city as part of a wider package of enhancements to boost active travel
Sustainable Economic Growth and Levelling-Up	<p>Policy Outcomes</p> <ul style="list-style-type: none"> Economic ambition to be "one of the top three global innovation ecosystems by 2040". Supported by delivery of 100,000 homes across county by 2031. Decarbonation of economy, sustainable growth and inclusion underpin strategy. <p>Strategic Initiatives</p> <ul style="list-style-type: none"> The Oxfordshire Local Industrial Strategy, 2019 Oxfordshire Housing and Growth Deal, March 2017. Deal between the Government, the six Oxfordshire Local Authorities and the Oxfordshire Local Economic Partnership (OXLEP) – commits local authorities to deliver up to 100,000 new homes across the county by 2031.
Improving Transport for the User	<p>Policy Outcomes</p> <ul style="list-style-type: none"> LTP4 Sets out 4 overarching goals for transport which directly support delivery of wider outcomes. <p>Strategic Initiatives</p> <ul style="list-style-type: none"> Connecting Oxfordshire: Local Transport Plan 2015-2031. 4 overarching goals: <ul style="list-style-type: none"> support jobs and housing growth and economic vitality reduce transport emissions protect and enhance Oxfordshire's environment and improve quality of life improve public health, air quality, safety and individual wellbeing 10 supporting objectives and supporting strategy including Bus Strategy and Connecting Oxford Oxfordshire Bus Services Improvement Plan (BSIP), November 2021 Specific objectives for bus and partnership for delivery.

Driver for Change – Carbon Reduction

In 2019, the UK passed laws to end its contribution to global warming by bringing its greenhouse gas emissions to net zero (relative to 1990 levels) by 2050. In July 2021 the Department for Transport (DfT) published its plan for Decarbonising Transport¹ which sets out plan to reduce carbon from the transport sector.

National Bus Strategy - Bus Back Better

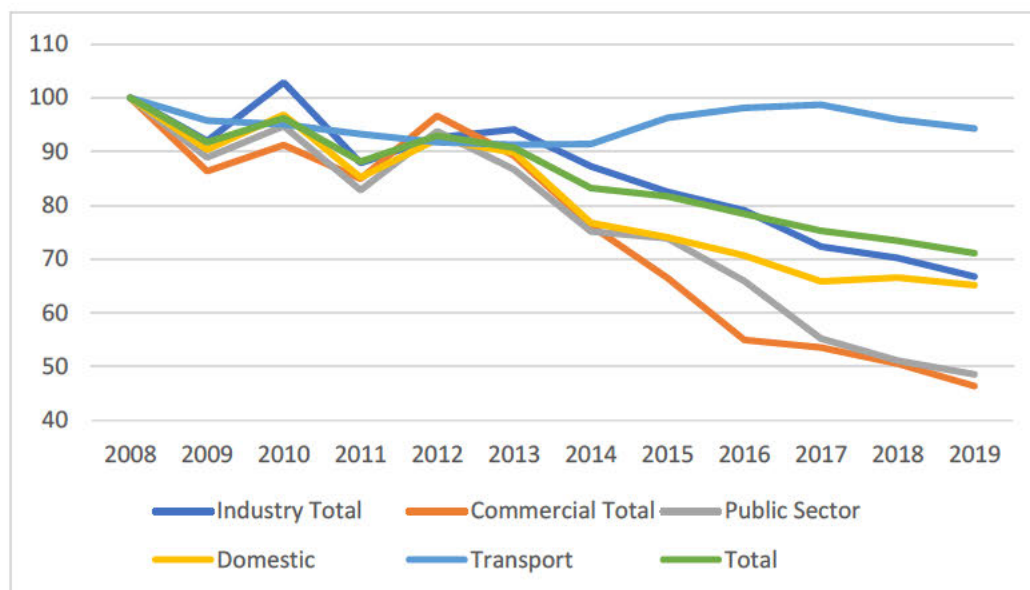
In March 2021 the Government published ‘Bus Back Better’ – its National Bus Strategy for England². The strategy set out a long-term vision for bus which envisaged long-term growth supported by enhanced infrastructure (priority), vehicles and integrated fares and ticketing, enabled by Government capital investment and delivered through enhanced partnership working between Local Authorities and Operators.

A central focus of Bus Back Better was to herald a ‘green bus revolution’³. Accordingly, the strategy set out Government’s commitment to “support the purchase of at least 4,000 new zero emission buses, more than a tenth of the fleet”. At publication Bus Back Better identified a ‘first step’ to invest £120m in zero emission buses in 2021/22, though the ZEBRA process. In November 2021 the overall ZEBRA funding commitment was more than doubled to £250m, demonstrating the Government’s commitment to the supporting ZEB roll out.

Oxfordshire’s Carbon Context

Oxfordshire’s total carbon emissions have reduced by almost 30% from 2008 to 2019. However, this reduction over has varied by significantly sector, as shown in Figure 0-3.

Figure 0-3 Carbon Emissions by Sector (Indexed, 2008 = 100)



¹

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009448/decarbonising-transport-a-better-greener-britain.pdf

² <https://www.gov.uk/government/publications/bus-back-better>

³ Chapter 5 of Bus Back Better is titled ‘A Green Bus Revolution’

Source: Steer analysis, based on data provided by Oxfordshire. Original data from Department of Business, Energy and Industrial Strategy⁴.

Emissions in 2019 from 'commercial' and 'public sector' are less than half their 2008 equivalent, whereas for 'industry' and 'domestic' emissions levels are around two-thirds of their 2008 level. By contrast, emissions from transport in 2019 were 94% of the 2008 level. Indeed, emissions from transport have actually increased from a low in 2012 to 2014 (around 91%) to between 94% and 99% from 2015 to 2019.

Transport's share of overall carbon emissions has increased from 33% in 2008 to 44% in 2019. Meeting Oxfordshire's commitment to becoming carbon neutral by 2050 cannot be met unless there is a fundamental shift towards the decarbonation of transport.

Oxfordshire's Carbon Commitment and Policy Priorities

Oxfordshire has aligned itself with UK policy and has committed to becoming carbon neutral by 2050, and the council itself has committed in its Climate Action Framework⁵ to making its own operations carbon neutral by 2030.

The Climate Action Framework includes the aim to enable safe, convenient electric public transport across and between towns and sets out the following priorities under 'Transport and Connectivity':

- Deliver a new Local Transport and Connectivity Plan supporting a zero-carbon ambition
- Implement post-covid schemes to support active travel
- Deliver our Connecting Oxford and Zero Emission Zone schemes
- Develop and implement local cycling and walking infrastructure plans
- Pilot low traffic neighbourhoods
- Publish cross-county EV charging infrastructure strategy
- Roll-out up to 300 electric vehicle charge points in over-night charging hubs by 2022
- Support electrification of bus fleet in Oxford

OCC ZEBRA Scheme – Impact on Climate Change 'Driver'

ZEBRA will deliver significant carbon benefits. The introduction in the ZEB fleet of 159 vehicles will deliver a reduction of 6,500 tonnes carbon per annum, equivalent to 118,000 over the 18 years of the GBT appraisal period.

Moreover, energy will be supplied from Ray Valley Solar Limited - a solar park located in Oxfordshire near Didcot, which who a Power Purchase Agreement (PPA) has been agreed. The use of solar power, rather than from standard generation from a blend of sources, will deliver a further carbon reduction of 1,000 tonnes carbon reduced per annum, equivalent to 18,000 over the appraisal period.

⁴ <https://www.gov.uk/government/collections/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics>

⁵ 2020 Climate Action Framework, Oxfordshire County Council, Available at: https://www.oxfordshire.gov.uk/sites/default/files/file/about-council/OCC_Climate_Action_Framework2020.pdf

The ZEBRA scheme will also play an integral role within the wider Oxfordshire policy aimed at moderating car use encouraging sustainable travel and supporting sustainable development and growth.

Driver for Change – Air Quality and Environment

Improving Air Quality represents a priority for Government. The Clean Air Strategy, 2019⁶ asserts that:

“Air pollution is the top environmental risk to human health in the UK, and the fourth greatest threat to public health after cancer, heart disease and obesity. Air quality is the largest environmental health risk in the UK. It shortens lives and contributes to chronic illness. Health can be affected both by short-term, high-pollution episodes and by long-term exposure to lower levels of pollution.”

According to the Oxfordshire Joint Health and Wellbeing Strategy, it was estimated that 2,300 years of healthy life in Oxfordshire were lost due to air pollution in 2019⁷. This loss was caused by a variety of associated issues including cardiovascular disease, diabetes and chronic respiratory disease. In the current health crisis, 35% of deaths involving COVID-19 listed respiratory or cardiovascular disease as the main pre-existing health condition, increasing the mounting imperative to reduce air pollution.

Air Quality in ZEBRA Defined Area

Road transport is the main source of emissions at all locations within the defined area which exceed the annual mean objective for nitrogen dioxide.

Across Oxford as whole road transport accounts for approximately 40% of NO_x (oxides of nitrogen) emissions and around 10% of particulate matter emissions. However, many locations within the ZEBRA area traffic accounts for over 75% of NO_x emissions and around 20% of particulate matter emissions.

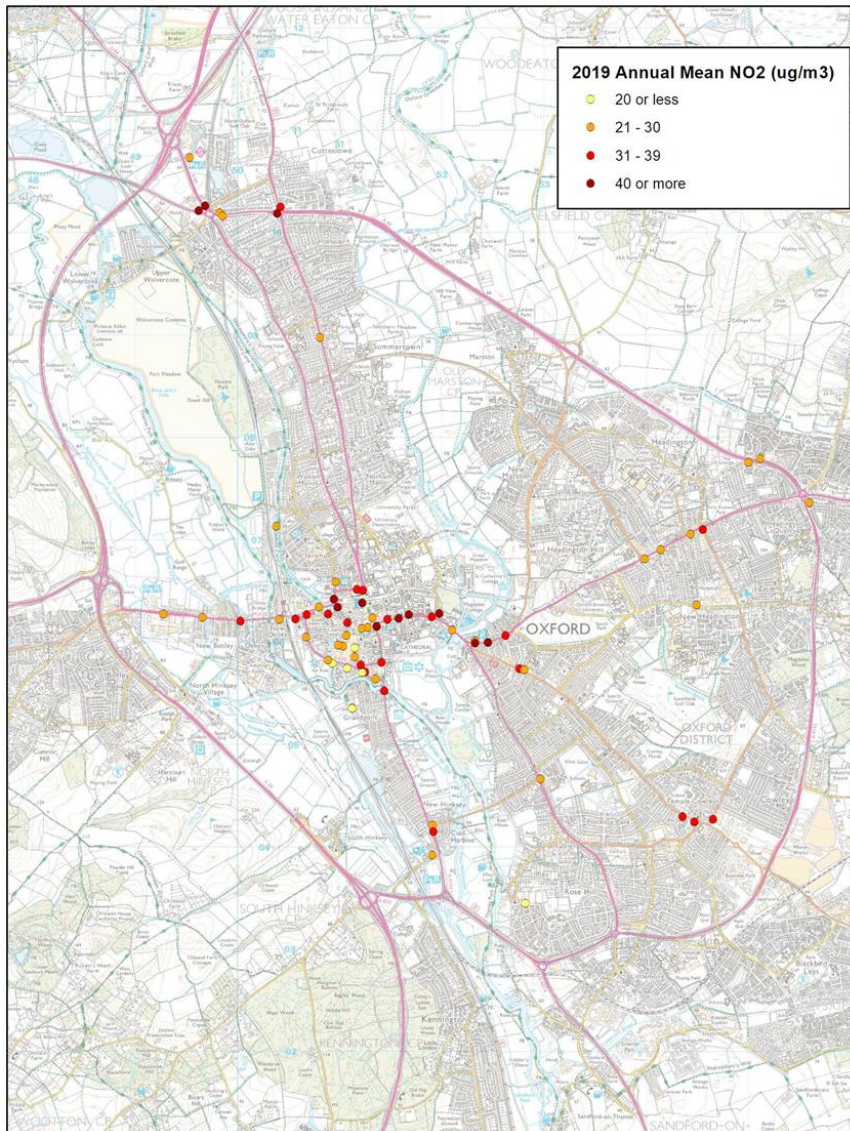
The defined area for our ZEBRA proposal includes three Air Quality Management Areas (AQMAs). In each case the AQMAs were declared based on the exceedance of the annual mean objective for nitrogen dioxide (NO₂), as shown in in Figure 0-4. There are three AQMAs within the ZEBRA area - Oxford Citywide AQMA, Botley AQMA, Kidlington AQMA. The city-wide AQMA covers all of the monitoring points shown in Figure 0-4.

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770715/clean-air-strategy-2019.pdf

⁷ Oxfordshire Health and Wellbeing – Joint Strategic Needs Assessment (March 2021)

Figure 0-4 2019 annual average nitrogen dioxide levels in Oxford UK limit value = 40 ug/m3



Note: Figures shown are for 2019. 2020 figures are available but are not presented as the periods of lockdown due to the pandemic make the 2020 figures unrepresentative and anomalous.

The relative impact of bus-based emissions is greater within the city centre, reflective of the high number of buses on these routes, slow operating speeds and lower volumes of general traffic (in both absolute and relative terms). Within the city centre bus-based emissions account for around 70% of NOx and 56% of particulates (PM10 and PM2.5).

The city centre is also characterised by much higher volumes of pedestrian activity and movement, reflecting the employment, retail, leisure, cultural and educational facilities concentrated within the central area. This means that the city centre in particular is characterised both by a high proportion of bus-based emissions and a high concentration and number of people (or receptors) affected by poor air quality.

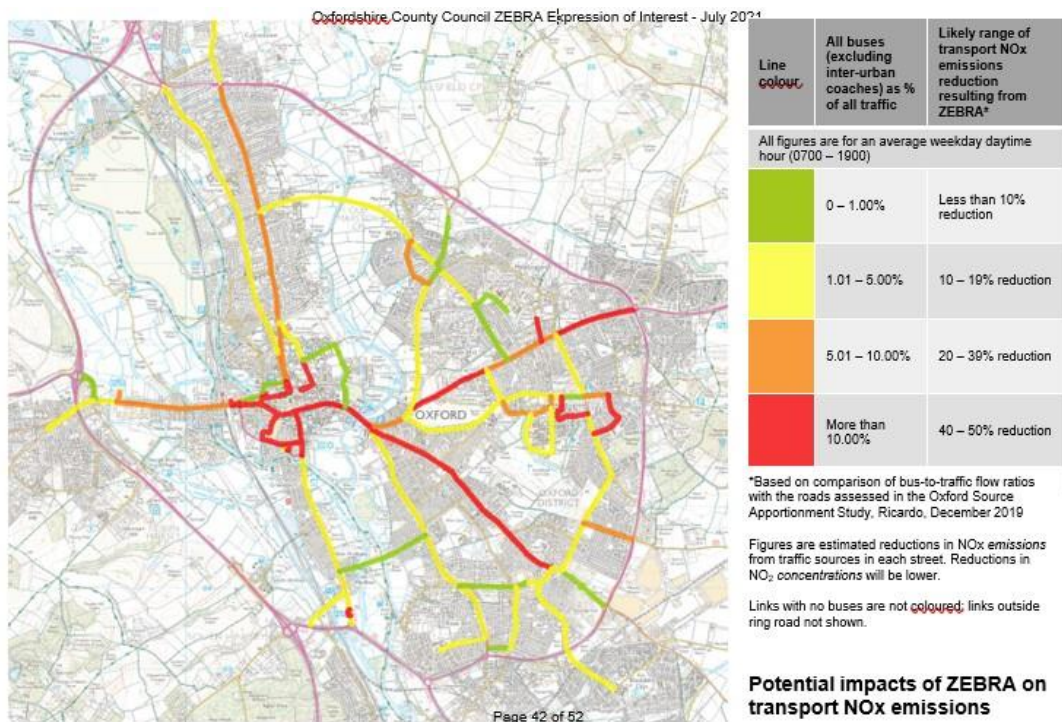
OCC ZEBRA Scheme – Impact on Air Quality ‘Driver’

The ZEBRA scheme would contribute toward a material improvement in air quality within the Defined Area, and specifically within the three designated AQMAs within the area, including the whole of Oxford city.

The ZEBRA scheme is forecast to lead to electrification of 69% of total daily bus mileage. The potential impact on total transport emissions local level is shown in Figure 0-5.

This shown that in the locations with the highest bus flows, this could reduce NOx emissions from road transport by up to approximately 50% (those routes in red in Figure 0-5), and by a material amount across the city.

Figure 0-5 Potential impacts of ZEBRA on transport NOx emissions



Moreover, the reduction in emissions from ZEBRA will address health inequalities by reducing transport emissions in areas of high deprivation, which are concentrated within the city.

Driver for Change - Economic Growth and Levelling Up

Levelling Up

Levelling up is priority for Government that cuts across Departments and aims to address historical imbalances in spending and investment priorities to support people and places that have been ‘left behind’. The Prime Minister’s Foreword to the National Bus Strategy is clear that bus improvements are central to achieving the goal of levelling-up:

*“Some people ask what levelling-up means in practice, and what difference it will really make to people’s lives. This is part of what it means. **As we build back from the pandemic, better buses will be one of our major acts of levelling-up.**” Prime Minister’s Foreword to the National Bus Strategy*

Oxfordshire has long-placed improvements to its bus network and services at the heart of its economic and spatial development, to support inclusive and sustainable growth. Its BSIP

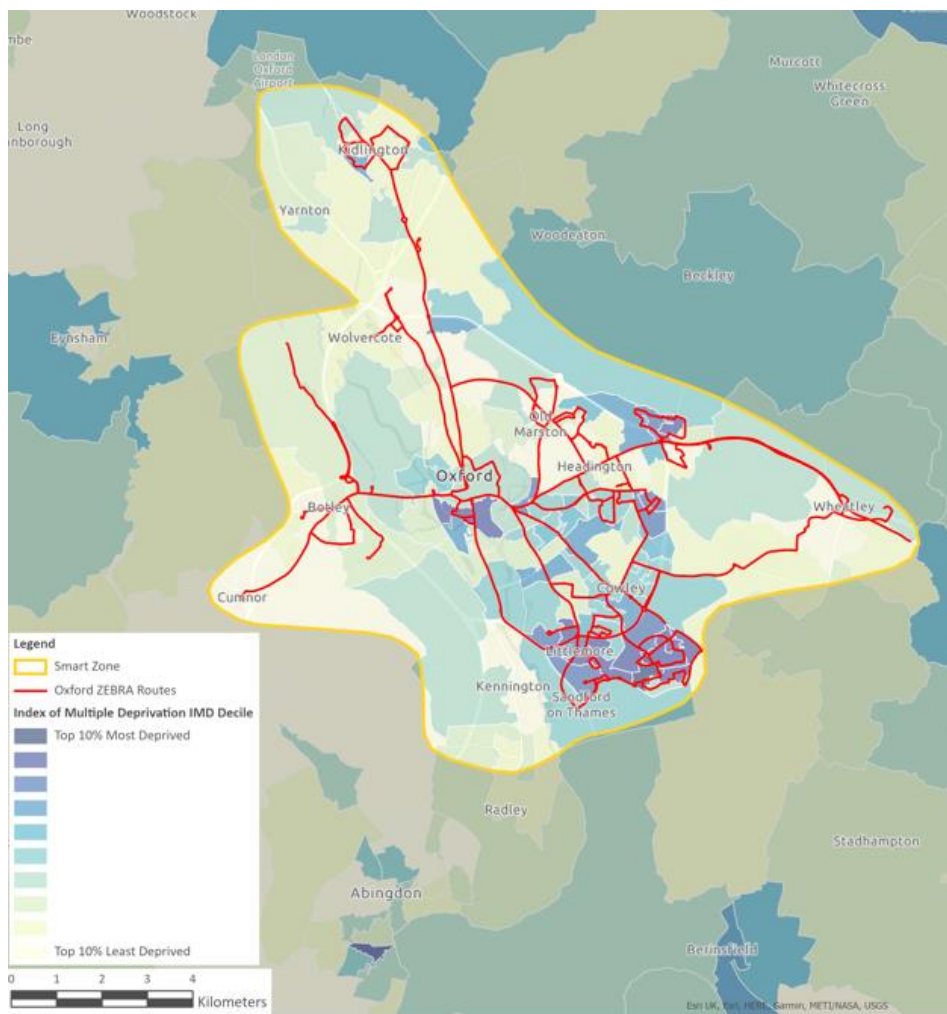
proposals, in response to the Government’s National Bus Strategy, re-emphasise this core commitment and set out specific proposals for the delivery of better buses that will support levelling-up.

In the context of the overall bus strategy and ZEBRA specifically, there are two main ways in which bus is inter-related with the levelling up agenda. Firstly, *who* benefits from bus improvements. This largely reflects the demographic profile of bus users, whereby the bus user profile has a higher proportion lower income, ‘captive’ public transport users (no car available) and older users. Second, *where* the areas are that benefit. The analysis presented below shows that the defined area and a number of the ZEB routes serve areas of comparatively high deprivation and need.

Air pollution tends to disproportionately affect lower income groups, in part because more affordable dwellings such as flats, tend to be near busy roads. The Index of Multiple Deprivation 2019 data shows that deprivation within the county is concentrated within the ZEBRA area with cluster output areas within the bottom 30% (most deprived) nationally located towards the south, east and centre of the Oxford City boundary.

The ZEBRA routes directly serve areas of higher deprivation, shown in Figure 0-6.

Figure 0-6 Index of Multiple Deprivation



Oxford ZEBRA Economic Case

Index of Multiple Deprivation (2019)

steer

Scale: 1:100,000
Date: 13/01/2022
Creator: TGoss

Driver for change - Improving Transport for the User

Oxfordshire's Local Transport Plan (LTP4) - Connecting Oxfordshire - sets out Oxfordshire County Council's policy and strategy for developing the transport system in Oxfordshire to 2031, to support four over-arching transport goals:

- To support jobs and housing growth and economic vitality;
- To reduce transport emissions and meet our obligations to Government;
- To protect, and where possible enhance Oxfordshire's environment and improve quality of life; and
- To improve public health, air quality, safety and individual wellbeing.

These goals directly relate to the strategic drivers around carbon, air quality and health, enhancement of place and supporting sustainable economic growth.

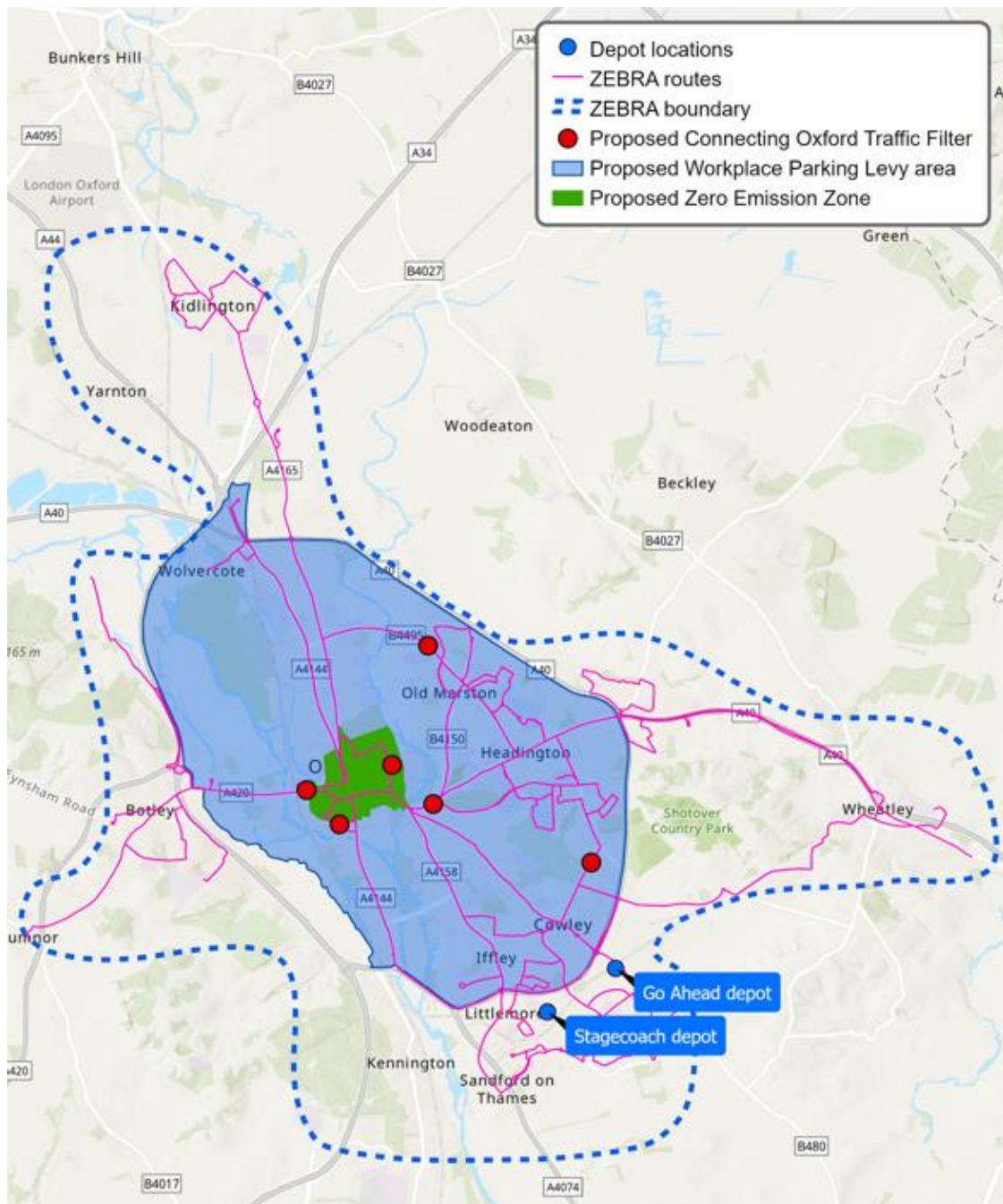
Oxfordshire Bus Service Improvement Plan

Achieving the goals and objectives set out in Connecting Oxfordshire LTP4 requires and necessitates improvement for the transport user. The Oxfordshire Bus Service Improvement Plan sets out a delivery plan that is focused on delivering a range of bus enhancement to improve the quality, coverage, journey time and reliability of the network. The roll-out of Zero-Emission Vehicles, initially in Oxford City (through ZEBRA) and then across the wider network is a key ambition within the BSIP.

The most critical element of the BSIP proposals is the Connecting Oxford Traffic Filters – this is the measure that will have the largest impact on improving bus journey times within central Oxford (and hence apply to all bus services), whereas most other BSIP interventions are corridor specific and deliver a material benefit to services on (and users of) that route.

The Connecting Oxford Traffic Filters and associated transport measures are shown in Figure 0-7. The delivery of the traffic filters will remove through traffic from key bus routes and deliver substantial journey time enhancements.

Figure 0-7 Connecting Oxford Transport Strategy Elements



Note: The Connecting Oxford Traffic Strategy boundary (purple dashed line) is analogous but not identical to the ZEBRA defined area. The traffic filter, LTN, Zero-Emissions Zone bus corridors (green) and cycle 'quickways' are all wholly within the ZEBRA defined area.

Connecting Oxford is integral and complementary in two respects. First, through the underlying policy imperatives to improve air quality, quality of place and the support enhanced bus provision through faster and more reliable journey times (Connecting Oxford) and better vehicles (ZEBRA). Second, to help support the commercial viability of the bus network which is compromised by the impact of the COVID-19 pandemic in reducing bus demand (and revenue), and from the increase congestion that has eroded bus journey times (increasing costs of operation) in recent years.

The Connecting Oxford scheme – specifically the traffic filter element - is expected to reduce bus journey times by at least 10% on average, and this will affect all bus routes in the Oxford area. The impact on operators will be substantial, with a broadly directly proportionate impact on operating costs and a positive impact on demand and revenues. The positive impact on demand would be further reinforced by comparative journey time benefit being greater, as the traffic filters will both reduce bus journey times and increase journey times for car for those movements directly affected i.e. key inner radials and the city centre.

Scheme Objectives

We have developed the Oxfordshire ZEBRA objectives to fully align with those of the ZEBRA Programme and wider DfT Priorities, which are shared and reflected by the County. The objectives have also been developed to be measurable, and form part of the Monitoring and Evaluation Plan submitted alongside the submission.

The objectives for the Oxfordshire, ‘nested’ within those of the wider ZEBRA programme and Government priorities are set out in Table 0-3.

Table 0-3 Oxfordshire ZEBRA Scheme Objectives

ZEBRA programme objectives/ Government Priority	Oxfordshire Objective	How ZEBRA and Oxfordshire Objectives are aligned
#1. Support the government's commitment to decarbonisation and to reduce the transport sector's contribution to CO2 emissions	To support the transition to a low carbon future by reducing emissions from transport. <i>[based on and consistent with OCC LTP 4 objective]</i>	ZEBRA and OCC objectives fully aligned in terms of their key outcome (carbon reduction) that objective relates to and the wider policy commitment it supports - to be carbon neutral by 2030. The scheme will deliver 6,500 tonnes of carbon reduction per year, equivalent to 118,000 over an 18-year appraisal period. The overall monetised value of carbon reduction is £28m PV, 2021 prices.
#2. Support the roll-out of the 4,000 Zero Emission Buses that the government committed to in Feb 2020	Implement 159 Zero Emission Buses in the Oxfordshire ZEBRA area by 2024	ZEBRA and OCC objectives fully aligned. OCC objective will contribute materially to achievement of ZEBRA by delivering 159 (around 4%) of the total ZEBs that comprise the Government target.
#3. Support bus manufacturers in the development of zero emission bus technology	Support development of zero emission bus technology and market through tendering (via bus operators) of Zero Emission bus vehicles and infrastructure.	The ZEBRA funding will support Oxfordshire's two main operators in competitively procuring 159 ZEBs, helping to support the further development of zero-emission bus technology by bus manufacturers, and hence help the sector to develop better technological solutions, promote innovation and

		greater efficiency through the competition.
#4. Support partnership working between Local Transport Authorities, bus operators, and other local stakeholders as set out in the NBS	For Oxfordshire County and partner LTAs to work in partnership to successfully deliver and implement zero-emission buses and achieve the intended outcomes of the scheme.	Oxfordshire's BSIP sets out its proposals to develop an Enhanced Partnership with all operators, including the two largest operators that are partners in the ZEBRA bid. Oxfordshire and operators share a vision and commitment to the enhancement of the bus network, vehicles and services within the city – including to the decarbonisation of the fleet. The Enhanced Partnership arrangement will provide the Governance and partnership working through which improvements, including ZEBRA, will be delivered.
#5. Understand better the challenges of introducing zero emission buses and supporting infrastructure to inform future government support for ZEBs	To identify and address challenges through the implementation of ZEBs in Oxfordshire.	Through the ZEBRA bid development key challenges are being identified and addressed. These will form part of the ongoing Risk Management process to ensure issues /risks are identified and mitigated. Through the ZEBRA Bid Process and on-going Monitoring and Evaluation these challenges will be shared with DfT to help DfT identify cross-cutting programme issues and those that are more bespoke (to locations, size of ZEB programme, technological etc) that will inform future Government support for ZEBs.
#1. Grow and level up the economy	To support inclusive growth and economic vitality <i>[based on LTP 4 objective. Direct line to housing / jobs removed as not a scheme objective. 'Inclusive' added to capture levelling up dimension]</i>	Government and OCC share the objective of growing and supporting the vitality of the economy. Oxfordshire is committed to delivering this in an inclusive manner – to deliver the benefits of growth to areas of higher deprivation and to people / communities who are disadvantaged – which fully aligns with the Government's levelling-up agenda.
#2. Reduce environmental impacts / Air quality	To protect and where possible enhance Oxfordshire's	ZEBRA and OCC objectives are fully aligned in terms of their objectives to reduce

	environment and improve quality of health <i>[same as LTP4 objective]</i>	environmental impacts and deliver air quality improvements. Enhanced 'place' and improved health outcomes are shared Government and OCC priorities.
#3. Improve transport for the user	To improve the quality and attractiveness of public transport, walking and cycling for users. <i>[bespoke – reflects #3 but defined users to reflect beneficiaries of ZEBRA]</i>	Oxfordshire's objective to improve transport for the user – and specifically to support improved provision and usage of public transport, walking and cycling – underpin its policies embodied through LTP4, Connecting Oxford and BSIP. These policies all integrate with and complement the ZEBRA proposals in delivering improved transport for users.

Strategic Case Summary

The strategic case presents a compelling case for the Oxfordshire ZEBRA scheme.

The ZEBRA bid is fully aligned with Governments national policy priorities, and the ambitions of Oxfordshire County Council, Oxford City Council and those of partner authorities. This strategic fit is based on the alignment of:

- **Policy priorities and outcomes** – The LTAs' commitment to decarbonisation, air quality and health, enhancement of place, and economic growth and levelling up reflects the Government's priorities as articulated within the ZEBRA guidance.
- **Commitment to improving transport for users through BSIP and Complementary Projects and Proposals.** The programme of measures and interventions within BSIP (including complementary proposals such as Connecting Oxford) demonstrate the LTAs' commitment to improving and developing the bus network for the benefit to users. ZEBRA is one integral element of this programme.
- **Partnership working between LTAs and operators,** towards the shared objective of delivering an enhanced network and improved bus journey times and reliability which, in turn, will support the viability of the commercial bus network and deliver the intended policy outcomes of the LTA and Government.

Economic Case

The economic case sets out the costs, benefits and overall economic performance of the scheme, the benefit-cost ratio (BCR). The BCR reflects monetisable benefits which, for ZEBRA economic appraisals, are based on the DfT's Greener Bus Tool (GBT). The BCR is, in turn, used to inform the overall value for money (VfM) assessment, which takes account of monetizable and non-monetisable impacts.

Project Costs

The overall costs of the ZEBRA scheme comprise vehicle and infrastructure costs, which are summarised in Table 0-4. The overall investment costs are £82.5m, of which £74.4m is for

zero-emission vehicle purchase and [REDACTED] for the associated grid connection and charging infrastructure.

Table 0-4 ZEBRA Project Investment Costs

	Vehicle no.	Vehicle cost (£m)	Infrastructure cost (£m)	Total capital cost (£m)
OBC Investment	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Stagecoach Investment	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total	159	[REDACTED]	[REDACTED]	82.5

For the purposes of economic appraisal, the capital costs of ZEBs are compared to the 'Do Minimum' costs, which reflect the cost of replacing the equivalent number of vehicles with diesel buses. The Do Minimum costs are shown in Table 0-5.

Table 0-5 Do Minimum Costs

	Vehicle no.	Vehicle cost (£m)	Infrastructure cost (£m)	Total capital cost (£m)
OBC Investment	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Stagecoach Investment	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total	159	[REDACTED]	[REDACTED]	[REDACTED]

The incremental costs (ZEBRA 'Do Something' minus the do minimum are shown in Table 0-6. This shows that the overall £82.3m costs of the ZEBRA scheme represents an additional [REDACTED] over and above the investment that would be required to replace the equivalent fleet with diesel vehicles.

Table 0-6 Incremental Costs for Economic Appraisal

	Vehicle no.	Vehicle cost (£m)	Infrastructure cost (£m)	Total capital cost (£m)
OBC Investment	-	[REDACTED]	[REDACTED]	[REDACTED]
Stagecoach Investment	-	[REDACTED]	[REDACTED]	[REDACTED]
Total	-	[REDACTED]	[REDACTED]	43.8
Eligible DfT grant (=75% of incremental costs)				32.8

The DfT funding support for ZEBRA is based on DfT funding 75% of the incremental £43.8m costs, which is £32.8m. This is described further in the Financial Case.

Greener Bus Tool - Inputs

The Greener Bus Tool (GBT) has been developed by DfT to estimate the benefit cost ratio (BCR), taking into consideration the costs and benefits of investing in zero emission buses.

The GBT calculates the overall ZEBRA scheme costs and benefits over an 18-year appraisal period based on:

- The ZEBRA Do Something scheme capital costs, as outlined above.
- The ZEBRA operating and maintenance costs, based on bespoke Oxfordshire operating parameters (e.g. number of vehicles, mileage per vehicle, energy consumption).

- The incremental costs of ZEBRA compared to the 'Do Minimum' costs. The Do Minimum costs reflect the purchase of an equivalent number of diesel vehicles (capital costs), and the operating costs of diesel vehicles based on the same operating parameters, but taking account of diesel operating and maintenance costs (e.g. fuel consumption rather than electricity, engine maintenance rather than battery)
- Benefits of ZEBs from reduced carbon and harmful pollutant (NOx) emissions, monetised in accordance with DfT guidance.

The main input operating parameters and assumptions are shown in Table 0-7.

Table 0-7 Greener Bus Tool inputs and assumptions

Input/Assumption	OBC	Stagecoach	Source/Comments
Total Annual Service kms	████████	████████	Provided by Operators for the ZEBRA routes
Average annual vehicle kms	████████	████████	Calculated from total annual service kms divide by fleet size
Average vehicle speed	██████	██████	Number provided by operators
ZEB vehicle life expectancy	17 years	17 years	Based on GBT default assumption
Average age of vehicles being replaced	████████ ██████ ████████ ██████	████████ ██████	Number provided by OBC. Based on the age of the existing vehicles used on the routes affected.
Kg of CO2 per kWh of electricity	0	0	Energy being supplied from Low Carbon Hub Solar array.

GBT Model Outputs

A summary of the Greener Bus Tool model outputs is presented in Table 0-8.

Table 0-8 Greener Bus Tool Outputs

Impacts (£ 2022 PV)	OBC	Stagecoach	Total
Present Value of Benefits	██████	██████	£41.24
<i>Of which, Carbon benefits</i>	██████	██████	£28.17
Present Value of Costs	██████	██████	£37.28
Net Present Value	██████	██████	£3.96
Benefit for Cost ratio	1.19	0.94	1.11

Source: Results obtained directly from the Green Bus Tool, before inclusion of additional benefits.

Additional Benefits

The ZEBRA guidance acknowledges that the GBT represents only benefits that are monetisable and that other benefits, if applicable, can be identified and quantified to reflect the specific benefits of the Promoter's bid.

For Oxfordshire three additional sources of benefit have been identified. These are summarised in Table 0-9.

Table 0-9 Additional Monetised Benefits

Source of Benefit	Description	Benefit estimated
Benefits of PPA with Ray Valley Solar	OBC and Stagecoach will source the energy through a [REDACTED] PPA for vehicle charging from [REDACTED]. Without this PPA the baseline assumption would be that the energy provided would be using the UK's standard power mix which includes energy from oil, gas and coal and which would have associated GHG emissions. This energy will generate zero greenhouse gas (GHG) emissions.	Carbon benefit from sourcing from a zero-emission Solar supplier, compared to the standard power mix. Benefit values at £4.0m, 2021 PV
Adjusted Emissions Reflecting Network Congestion	Oxford's road network is highly constrained and as a result are very congested, with many key route sections operating at less than 10mph. Congestion increases the amount of acceleration and deceleration of vehicles which increases fuel consumption and increased carbon, Nitrous Oxide and Particulate which are directly related to fuel consumption. ZEBRA will therefore result in a greater saving in emissions than implied by the 'average' rate implicit in the GBT.	Savings from Carbon, Nitrous Oxide and Particulate have been estimated based on actual Oxfordshire bus operating speeds and applied based on DfT's WebTAG emissions curves (Unit A.1.3.11). This delivers an additional £6.7m in benefits, 2021 PV.
Additional NOx and PM emission benefits of directly replacing EuroV Buses with ZEBs	The GBT assumes that all vehicles being replaced use engines of a EuroVI standard. For this scheme, many of the buses being replaced use EuroV engines, which have higher pollutant emissions.	OCC ZEBRA, the additional reduction in emissions for replacing higher polluting EuroIII, EuroIV, and EuroV engines is calculated as £0.7m in benefits, 2021 PV.

Value for Money Summary

The Value for Money Framework⁸ describes value for money as “using public resources in a way that creates and maximises public value”. The economic case appraises the economic, social and environmental impacts, including monetised and non-monetised costs and benefits.

The value for money statement provides a summary of the overall assessment, considering monetised and non-monetised impacts as well as uncertainty and risks in the analysis.

The value for money assessment is a sequential analysis that takes account firstly of the benefit cost ratio from the GBT, secondly incorporates other monetised impacts that reflect the monetizable benefits of the ZEBRA scheme and third stage provides for a VfM categorisation with account taken of impacts that are not monetised.

Adjusted BCR including Other Monetised Benefits

The adjusted BCR, taking the GBT benefits and the additional benefits described above are summarised in the Table 0-10.

⁸ Department for Transport, Value for Money Framework – Moving Britain Ahead, 2015

Table 0-10 Oxfordshire ZEBRA Economic Performance (Benefit - Cost Ratio)

	OBC	Stagecoach	Total
GBT Benefits	████	████	£41.24
Solar Energy Carbon Benefits	████	████	£3.98
Ave. Speed Uplifts	████	████	£6.76
Cascading and Euro V Replacement	████	████	£0.65
Total benefits	████	████	£52.63
Total Costs (GBT)	████	████	£37.28
Net Present Value	████	████	£15.35
Overall Benefit Cost Ratio (BCR)	1.52	1.20	1.41

Sensitivity Analysis

A range of sensitivity tests have also been undertaken to assess the robustness of the overall case. These are summarised in Table 0-11, and show that in all but one case the BCR for the scheme (including other monetised benefits) remains comfortably above 1:1, demonstrating the resilience of the case under a range of sensitivities.

Table 0-11 Sensitivity Analysis

Scenario	BCR based on GBT and other monetised benefits
Central Scenario	1.41
Ave. Vehicle kms +10%	1.57
Ave. Vehicle kms -10%	1.24
ZEB BSOG Rate 6p	1.63
Emissions Low Values	0.85
Emissions High Values	2.07
Battery Replacement Costs +10%	1.40
Battery Replacement Costs -10%	1.53

Overall Value for Money

Based on the GBT alone the BCR of 1.11 : 1 represents 'low' value for money, where the BCR is between 1 and 1.5 : 1.

The inclusion of the additional monetised benefits (which takes the BCR to 1.41 : 1), significant non-monetised benefits and the strong performance of the scheme under a range of sensitivity tests, taken together, would support a **medium value for money** performance and demonstrate a strong case for investment.

Commercial Case

Broad Commercial Model

The commercial model for this project is for the two operators to undertake procurement then direct management of the vehicles and infrastructure required to support their operation of their ZEB fleet and services. The routes within the proposed scope of this ZEBRA scheme are entirely operated by OBC (part of Go-Ahead Group) and Stagecoach and these routes, pre-

pandemic, operated commercially with strong collaboration between operators, the County and City Councils through the Bus Board.

This broader operator experience, combined with the commercial nature of local market, means that the operators are in the best position to procure and own the vehicles and infrastructure.

Outline Procurement Approach

The procurement approach outlined below has been developed in the context of the intended outputs and outcomes for the project. In delivering these it will:

- Maximise the value for money of the scheme both in the context of the use of public funds and the total cost of delivering the project.
- Deliver the outcomes identified in the Strategic and Economic case.
- Ensure the delivery of the ZEBRA scheme compliments and supports the long-term aims bus services in the region as identified through the BSIP.
- Identify and transfer risk as appropriate to those who are best placed to manage and mitigate them.

Procurement

The procurement of vehicles and infrastructure will be undertaken by the operators. Both operators have undertaken extensive market engagement exercises with vehicle suppliers and infrastructure providers in the development of this Bid, to test the market and gain quotes for vehicles and infrastructure that have formed the basis for the costs within this bid.

Should funding be awarded, the procurement exercise will follow OCC's procurement principles to minimise subsidy control risk and ensure value for money is being obtained. These principles govern the competitive tendering process that are required to be undertaken for different thresholds of contract value.

The procurement of vehicles will be based upon an agreed output specification, which will be written into tender documentation. Suppliers will then be invited to tender (ITT), and tenders would be assessed against cost and quality criteria against the specification. The same principles apply to infrastructure procurement.

Administration of Funding

OCC will be the administrator for both the DfT's and Council's grant funding. The administration of the grant will be managed through a Funding Agreement between OCC and the operators. This will set out legally binding conditions associated with the award of funding, including any conditions set by DfT which are relevant to operators.

The Heads of Terms of the agreement have been established and there is a commitment to finalise terms shortly after, and subject to, funding award. The Funding Agreement will include provisions to ensure funding is awarded to operators by OCC in a timely fashion to avoid delays to the delivery of buses and infrastructure, and to ensure OCCs profile of payments to operators will be aligned with the payments to their suppliers.

Procurement, subsidy control and TCA compliance

As OCC is providing additional grant funding to the project alongside being the administrators of the DfT grant, OCC has sought independent legal advice in relation to subsidy control and TCA compliance.

This advice has concluded that the subsidy that OCC would provide to operators would not result in an indirect subsidy resulting from the ZEBRA Grant being used to pay more than a market rate for the buses and infrastructure provided the operators are compelled to tender the contracts, using a transparent competitive procedure equivalent to one under the Public Contracts Regulations 2015. This is the proposed and agreed approach to procurement.

Once the ZEBRA Grant has been provided, the Council will need to comply with the UK-EU Trade and Cooperation Agreement TCA transparency obligations by publishing the required information on the government's transparency website within six months.

Programme Delivery and Risk

As procurement and project delivery is being undertaken by operators, they will own all risks related to project programme and ensuring it is delivered to the proposed timeline.

There are several planning permissions required for the charging infrastructure and depots. As operators are responsible for the delivery of all infrastructure and depot works, they own all planning risk related to the project including any planning costs that may be incurred.

The legal risks of this project relate to subsidy control and the TCA. These risks will be shared by OCC and the operators. Operators, through the Funding Agreement, will be obliged to undertake appropriate tendering processes. Responsibility will sit with OCC to ensure that operators adhere to the agreement.

Procurement Timeline

Each operator has developed its own procurement approach and timetable. However, the procurement timelines for both operators are ostensibly the same and aligned with the ZEBRA bid award date and the requirement that zero-emissions buses are delivered and operating by end-March 2024. Key milestone dates are shown in Table 0-12.

Table 0-12 Operator Procurement Timeline

Activity	Start Date	End Date
Funding Award	March 2022	March 2022
DNO/iDNO Grid Connection Decision	April 2022	May 2022
Vehicle & Infrastructure Tender Preparation	June 2022	July 2022
Vehicle & Infrastructure Tender Return Period	August 2022	September 2022
Vehicle & Infrastructure Tender Assessment	October 2022	November 2022
Charging Infrastructure Works	December 2022	April 2023
Vehicle Manufacture	January 2023	February 2024
Vehicle Delivery	August 2023	February 2024

Marketing Strategy

Increasing the mode share of buses and growing patronage is a goal of the Government's National Bus Strategy, Bus Back Better, which is shared by both the County and City Councils. The perception of buses by passengers and the wider public is vital to achieving this. This project, in parallel with the introduction of the Oxfordshire Enhanced Partnership from winter 2023, offers a once-in-a-generation opportunity to rethink and refocus how bus travel is presented to existing as well as potential passengers. The perception of bus services also interlinks with the wider perception of the City of Oxford. The introduction of a new fleet of

zero-emission buses clearly aligns with the city's identity as the home of one of the world's leading educational establishments as well a centre of innovation.

The Bus Service Improvement Plan identified the harmonisation of branding for bus services within the Oxford SmartZone as a key outcome of the Enhanced Partnership; providing a coherent identify for these services and increasing legibility of the network for passengers. The roll-out of ZEBs would be accompanied by a marketing strategy, overseen by an 'Image of Bus' working group which will include Operator, Local Authority and Passenger representatives.

Key elements of the marketing strategy will include:

- **Livery and Branding** - A common livery for all vehicles which would use a colour scheme relevant to the city as its base (e.g. Oxford Blue) and a standardised logo/icon. Additional colours, graphics, and messaging to highlight the green credentials of the vehicles.
- **Marketing & Communications Strategy** - A co-ordinated communications strategy using common messaging will be deployed across the various channels available to the County Council, City Council and operators. This will include press releases, social media, digital channels such as websites and physical locations such as bus shelters. The operators will conduct their campaigns at both a local and group level.
- **Various launch events** as the fleet is introduced. This will include, for example a joint community launch event with both operators enabling the public to look around, ride the new vehicles and engage in learning about the positive impact of the ZEB fleet, local competitions working with schools and community organisations to engage young people, offers of introductory discounts for local residents to encourage the switch to bus.

The details of the marketing and communication plans would be finalised following funding award and appointment of suppliers.

Financial Case

Summary of Project Costs and Funding

The total scheme investment costs and funding breakdown is summarised in Table 0-13.

Table 0-13 ZEBRA Scheme Investment Costs and Funding Breakdown (£m)

	Vehicles	Infrastructure	Total
Total Costs	█	█	82.5
Funding breakdown:			
Operator Investment	█	█	43.7
DfT ZEBRA Grant	█	█	32.8
OCC Grant	█	█	6.0
Total Funding	█	█	82.5

Over half of the total costs of £82.5m are funded by operator investment of £43.7m. The DfT funding of £32.8m is equivalent to 75% of the incremental costs of investment compared to purchase of diesel equivalent buses.

A further £6m grant will be made available from OCC to supplement DfT's grant to support the significant investment in buses being made by the operators. This grant is being shared proportionally between the operators on the same basis as the DfT's grant i.e. each operator

will receive the same percentage contribution towards the eligible costs for zero-emission vehicles.

OCCs funding will come from earmarked reserves and general balances⁹. As these funds are being provided from existing capital and do not require borrowing, there are no long-term budgetary considerations for OCC. OCC is providing this funding as it recognises the transformation scale of this project and the investment that is being required by the operators to deliver it. Of the total project cost of £82.5m OBC and Stagecoach are contributing [REDACTED] and [REDACTED] respectively of the project's capital costs.

The cost and funding breakdown by operator and funding contributor is shown in Table 0-14 and Table 0-15 for OBC and Stagecoach respectively.

Table 0-14 Scheme Costs and Funding Breakdown – OBC (£m)

	Vehicles	Infrastructure	Total
Total Costs	[REDACTED]	[REDACTED]	[REDACTED]
Funding breakdown:			
Operator Investment	[REDACTED]	[REDACTED]	[REDACTED]
DfT ZEBRA Grant	[REDACTED]	[REDACTED]	[REDACTED]
OCC Grant	[REDACTED]	[REDACTED]	[REDACTED]
Total Funding	[REDACTED]	[REDACTED]	[REDACTED]

Table 0-15 Scheme Costs and Funding Breakdown – Stagecoach (£m)

	Vehicles	Infrastructure	Total
Total Costs	[REDACTED]	[REDACTED]	[REDACTED]
Funding breakdown:			
Operator Investment	[REDACTED]	[REDACTED]	[REDACTED]
DfT ZEBRA Grant	[REDACTED]	[REDACTED]	[REDACTED]
OCC Grant	[REDACTED]	[REDACTED]	[REDACTED]
Total Funding	[REDACTED]	[REDACTED]	[REDACTED]

Long-Term Affordability Assessment

Analysis has been undertaken which shows that on an ongoing operating cost basis, running ZEBs is comparatively less expensive for both operators compare the diesel equivalent. However, when factoring in the annualised investment costs for vehicles and infrastructure ZEBs are comparatively more expensive than the current diesel fleet ([REDACTED]).

However, OCC is planning to implement its Connecting Oxford proposals (including traffic filters), which are expected to reduce average bus journey times by at least 10%. The OCC Cabinet decision to approve Connecting Oxford in will take place by December 2022 and the traffic filters would be implemented in spring 2024. The 10% journey time reduction will reduce bus operating costs and have a positive revenue impact which would more than offset the [REDACTED] higher costs for a ZEB fleet based on current network performance. As such, both

⁹ OCC Cabinet Paper – Budget and Business Planning 2022/23

Stagecoach and OBC consider the project to be affordable in the long-term, on the condition and assumption that Connecting Oxford is approved as planned.

Assessment of financial risk / Risk management strategy

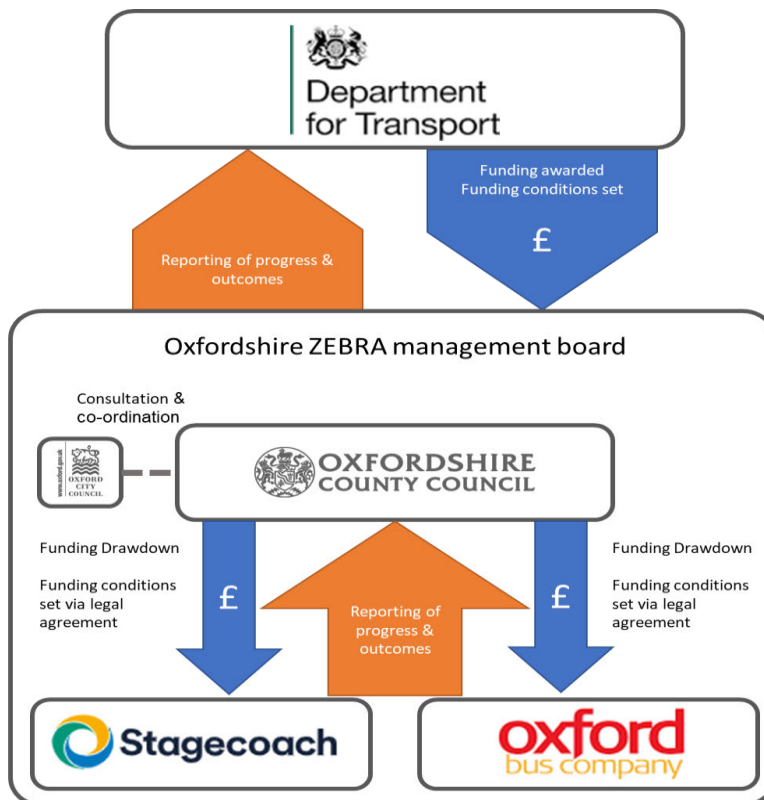
There are a number of financial risks that relate to specific elements of the project. The key items of cost are vehicle purchase costs, battery replacement costs and infrastructure costs related to the grid connection costs and depot infrastructure and charging equipment. Financial risks have been mitigated through engagement from operators with a range of suppliers, who have provided quotes and cost estimates that have been used to underpin the cost and financial analysis within the submission. Each operator has also sought to mitigate specific risks. For example, OBC intend to purchase a [REDACTED] battery warranty to mitigate the cost and timing uncertainty associated with battery replacement. Future energy costs represent a key uncertainty and potential for price volatility. However, both operators have the option of a [REDACTED] PPA from [REDACTED] where the price per kWh offered is below current market rates.

Management Case

Governance and Delivery

The project will be primarily delivered by the partner operators Oxford Bus Company (OBC) and Stagecoach. They will be responsible for procuring and operating the zero-emission bus (ZEB) fleet and its associated infrastructure. As a result, many of the roles and responsibilities of the project will sit with them. Oxfordshire County Council will still retain oversight of the project particularly its relation to monitoring and evaluation, administering the drawdown of funding and scrutinising the operators’ adherence to funding conditions. The proposed governance structure for the project is shown in Figure 0-8.

Figure 0-8 Project Governance Structure



A ZEBRA project management board will be formed comprising of representatives from the two operators, Oxfordshire County Council and the Oxford City Council. This board will be responsible for project co-ordination as well as ongoing monitoring and evaluation. Key roles and responsibilities have been established across the delivery partners for the project – Oxfordshire County Council, Oxford City Council, the Oxford Bus Company and Stagecoach.

Both operators are part of major bus operating groups delivering services across the UK and have significant experience in leading the roll out of ZEBs across the county. This extensive experience has given both operators key insights into the challenges of running battery electric buses. Most importantly providing them with a robust understanding of associated costs but also lessons learnt about real world range performance of these vehicles and how this needs to be accounted for in specifying vehicles.

Project Plan

With the funding award due to be in March 2022, the project will have a delivery period of two years. All vehicles will be operational by the end of March 2024. The key activities that need to take place to deliver the project are:

- Re-engage SSE and Pivot Power to provide final quotes for depot grid connection and appoint a chosen supplier based on the updated prices.
- Develop and submit planning applications required for the project alongside obtaining relevant 3rd party land use permissions.
- Tendering contracts for vehicles and infrastructure.
- Tendering sale and lease back contracts (OBC only).
- Charging infrastructure works including grid connection, depot works and charging equipment installation.
- Vehicle manufacture.

A detailed project programme has been developed which integrates the above within the March 2022 (funding award) to March 2024 (vehicles operational) programme timescale and set out key activities, dependencies and milestones. There is no interactivity between operator programmes as all works and procurement are undertaken separately.

The programme has been developed based on realistically deliverable timescales for all activities. Because of the required sequence of events, and the Councils' gateway decision on Connecting Oxford in late-2022 project gate for the council commitment to the bus priority scheme and lead times for manufacturing buses, there is little scope for early completion of the project prior to the dates outlined in the programme.

Contract Management

OCC will be responsible for the management of both their own funding contribution and the funding being provided by DfT. DfT's grant will be provided on the basis of the conditions set out in the Memorandum of Understanding (MOU) agreed to by all Local Authorities participating in this project.

As delivery partners for the project the two operators will be contracted to OCC through a Funding Agreement which will set conditions on how operator must procure goods and services as well as the process for the drawdown of funds. There will be separate Funding Agreements for each operator, for which draft Heads of Terms have been established. The funding agreement will be finalised following confirmation of award. The funding agreements will be in place before any funding is transferred to operators.

Risk Management

Effective management of project risk is important to ensuring the project is fully realised. Key risk areas include those relating to cost, legal, planning, programme and technology.

In the development of this project the key risks have been identified with clear management and mitigation plans put in place for each. As the project is primarily being delivered by the two bus operators, they will own many of these risks. A risk register has been developed which identifies responsibility and approach to managing each.

Conclusion

The business case for Oxfordshire ZEBRA scheme represents a compelling case for investment.

The strategic case demonstrates how the scheme fully aligned with Governments national policy priorities, and the ambitions of Oxfordshire County Council, Oxford City Council and those of partner authorities. In particular, the proposal will support the Government's commitment to net zero and the decarbonisation of transport, in a way that also support national priorities around economic growth and levelling up. The scheme will help transform transport in Oxford, where the ZEBRA proposal will complement the Connecting Oxford to deliver against the LTAs' commitment to decarbonisation, air quality and health, enhancement of place, and sustainable economic growth.

The economic case demonstrates the scheme represents value for money based on its strong economic performance and wider non-monetisable benefits. The case remains robust under a range of sensitivity tests.

The commercial case is based on a commercial model where the two main operators will deliver the investment in infrastructure and vehicles. The routes within the proposed scope of this ZEBRA scheme are entirely operated by OBC (part of Go-Ahead Group) and Stagecoach and these routes, pre-pandemic, operated commercially with strong collaboration between operators, the County and City Councils through the Bus Board. This broader operator experience, combined with the commercial nature of local market, means that the operators are in the best position to procure and own the vehicles and infrastructure. Both operators also have an extensive track-record in procuring and operating zero-emission buses and associated infrastructure.

The financial case demonstrates that the scheme is fundable, with significant investment from operators supplemented by DfT ZEBRA grant and OCC contribution. The scheme is also affordable on an ongoing basis. The delivery of ZEBRA alongside the Connecting Oxford proposals will enhance the attractiveness of bus and help ensure the commercial viability of the Oxfordshire bus network in the wake of the challenges brought by the COVID-19 pandemic.

The management case establishes the Governance structure and roles and responsibilities of respective parties in delivering ZEBRA. It includes a detailed programme plan and risk register. A Monitoring and Evaluation Plan has been developed as part of the business case and will be used to assess how the scheme has delivered against its intended outputs and outcomes.

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