

Zero Emission Bus Regional Areas Scheme – 2021 to 2022 Application Form

Call for Expressions of Interest

Applicant Information

Local transport authority:

Sheffield City Region Mayoral Combined Authority

(For joint bids only) Which local transport authority is the lead bidder:

Area within authority covered by bid:

South Yorkshire (Sheffield, Rotherham, Doncaster and Barnsley).

Bid Manager Name and position:

Ben Hardy, Principal Project Manager

Contact telephone number:

[REDACTED]

Email address:

[REDACTED]

Postal address:

11 Broad Street West, Sheffield City Centre, Sheffield S1 2BQ

SECTION A: Mandatory Questions

A1. In total, how many new zero emission buses will your proposal deliver?

27

A2. Total DfT funding sought (£m)

£6,832,262

A3. Third party funding contributions (£m)

South Yorkshire Mayoral Combined Authority:

- **£6,990,140** capital funding.
- **£400,000** per year revenue costs, over a minimum of 5 years (in relation to the tendered city centre shuttle bus element of the South Yorkshire-wide proposal).

Stagecoach:

No direct capital cost contribution, although there are other indirect contributions, as detailed in this EOI.

Independent Distribution Network Operator (“IDNO”):

Although a full tender process would be needed if the project progresses past the business case stage, an IDNO has indicated a potential contribution to the scheme in the region of [REDACTED] to the build cost.

A4. Funding from other government schemes (£m)

The Intra-City Transport Settlements (ICTS) will provide capital funding for transport in South Yorkshire for five years from March 2022. The third-party capital funding required as set out in A3 will be considered for inclusion in the MCA’s ICTS submission and/or BSIP proposals.

A5. Total cost of the proposal (£m):

£13,897,403 capital cost.

£400,000 per year revenue costs, over a minimum of 5 years (in relation to the tendered city centre shuttle bus element of the South Yorkshire-wide proposal).

A6. If your bid is successful, are you able to invest DfT funding within the time outlined by your scheme?

Yes

A7. If your bid is successful, are you able to capitalise DfT grant funding?

Yes

A8. Have you considered whether additional zero emission buses are needed to replace existing buses?

Yes

A9. Have you provided a breakdown of infrastructure costs for your proposal?

Yes – on a new tab within the VfM spreadsheet, included as part of **Appendix C**.

A10. Does your proposal have the support of bus operator(s) in the area?

Yes – Stagecoach – EOI bid partner. Letter of support is provided in **Appendix A**.

A11. Have you spoken with any energy companies when preparing your proposal?

Yes. We have engaged with SSE, an Independent Distribution Network Operator (IDNO). A letter of support is included in **Appendix A**.

A12. Does your proposal comply with the accessibility requirements set out in the scheme guidance?

Yes

SECTION B. Defining the place

This section will seek a definition of the area to be covered by the Zero Emission Bus Regional Area. Areas should:

- Include information setting out the extent of the area to be covered by the proposal – the **defined area**. If the defined area is different to the area covered by the local transport authority please make this clear. Please provide maps if required.

A location plan is provided in **Appendix B**, which defines the area as ‘South Yorkshire’ for this ZEBRA proposal. There are currently no Zero Emission Buses (ZEBs) in operation in South Yorkshire. Our proposal therefore includes Barnsley, Doncaster, Rotherham and Sheffield, to provide an initial phase of electric bus roll out in all districts of South Yorkshire encompassed within the Mayoral Combined Authority, directly addressing the climate emergency, Air Quality Management Areas (AQMAs) and the Clean Air Zone (CAZ).

The proposal includes the electrification of Stagecoach’s 221 (Rotherham to Doncaster) and 22x (Rotherham to Barnsley) services, both of which run from Stagecoach’s Rawmarsh depot (just outside Rotherham town centre). This would require depot charging infrastructure in the Rawmarsh depot, as well as pantograph charging at Rotherham Interchange. In addition, electrification would be rolled out in Sheffield via a tendered electric city centre shuttle bus, which would provide greater accessibility and connectivity, with greater integration with active travel modes and supporting CAZ aims. The charging area for the CAZ is proposed to be within the city centre, therefore by introducing a ZEB shuttle service, although not replacing existing diesel buses, would encourage people to move away from less sustainable modes onto a better integrated and connected zero emission shuttle bus service.

As can be seen from the Growth Employment Areas and Transforming Cities Fund (TCF) plans, both provided in **Appendix B**, the ZEBRA proposals align exceptionally well to these growth areas, alongside the bus and active travel priority schemes as part of TCF. This will help to maximise the benefits of all schemes in the area. Collectively, the South Yorkshire ZEBRA proposal will provide a much needed first phase in transitioning from no ZEBs, to a full ZEB fleet by 2035, directly addressing the climate emergency and areas of poor air quality that exceed legal limits.

- Provide details on the bus sector including naming **all** operators who operate services in the defined area, their market share and fleet sizes. This should include both operators who are supporting your proposal and will be operating the zero emission buses and other bus operators in the defined area.

Table 1 outlines the market share and **Table 2** outlines the fleet sizes, within the defined area of South Yorkshire.

Table 1: Market share in the defined area of South Yorkshire (based on mileage data)

Operator	Market Share by Mileage (%)
First	45.6%
Stagecoach	41.9%
TM Travel	3.4%
Others*	3.1%

**Includes all local bus service providers except dedicated home to school operators.*

Table 2: Fleet sizes in the defined area of South Yorkshire

Operator	Fleet size
First	363 (PVR 315) – currently no Zero Emission Buses
Stagecoach	348 (PVR 306) – currently no Zero Emission Buses
TM Travel	38 (PVR 31) – currently no Zero Emission Buses
Others*	86 (PVR 70) – currently no Zero Emission Buses
<i>Approximate Total in South Yorkshire</i>	<u>833 (PVR 722)</u>

**Includes all local bus service providers except dedicated home to school operators.*

- Clarify what proportion of bus services in the defined area will be operated using zero emission buses.

In the defined area of South Yorkshire, the proportion of buses that would be operated as Zero Emission would be approximately 3.5%. This strikingly low percentage is due to the starting point of no ZEBs operating in South Yorkshire.

It should be noted that the above proportion is based on the South Yorkshire region as a whole. When looking specifically at the Barnsley/Doncaster to Rotherham bus corridors (services 221 and 22X), the ZEBs on these corridors would be **32%**. With regards to the electric Sheffield City Centre shuttle bus element of the South Yorkshire proposal, this would be a brand-new route through the city, which no other service currently operates.

SECTION C: Ambition

C1. Public transport ambitions

Areas should:

- Provide clear explanation of your ambition to decarbonise the bus fleet in the defined area and how this proposal will support this ambition. If the defined area is different to the local transport authority area please explain your ambitions to decarbonise the bus fleet in your local transport authority area and how this proposal will support this ambition.

The region's ambition is set out in various strategies, including the Sheffield City Region (SCR) Transport Strategy (https://sheffieldcityregion.org.uk/wp-content/uploads/2019/03/SCR_Transport_Strategy_11.04.2019.pdf). Specific policies relating our ambition are outlined below:

- **Policy 4** – Improve air quality across the City Region to meet legal thresholds, supporting improved health and activity for all, especially in designated AQMAs and CAZs.
- **Policy 5** – Lead the way towards a low carbon transport network, including a zero-carbon public transport network.
- **Policy 5** – also commits SCR to a Zero Emission public transport network by 2040.

Our ambition is to use the ZEBRA opportunity to introduce ZEBs and the infrastructure needed in South Yorkshire for the first time across all four districts, a stepping stone to achieving our transport strategy target of all buses being zero-emission by 2040. ZEBRA will be a key building block by:

- supporting the recommendations from the independent South Yorkshire Bus Review, published in June 2020 (<https://sheffieldcityregion.org.uk/wp-content/uploads/2020/06/Bus-Review-Report-June-2020.pdf>);
 - laying the foundations for a wider electric bus fleet rollout;
 - building close partnership with the supply market, including operators, energy suppliers and vehicle suppliers, and;
 - getting a full appreciation of what developments are needed to achieve a full rollout of ZEBs in South Yorkshire (i.e. infrastructure, vehicle and financial requirements).
- Provide evidence of existing plans to support the provision and operation of local bus services in the area. This could include existing partnership working between the local transport authority and bus operators, bus priority measures, improvements to information about bus services.

Many projects included within the South Yorkshire TCF bid support the operation of local bus services in the area. **Appendix B** shows the TCF schemes in proximity to the ZEBRA proposals. The areas covered by this bid currently experience “transport

poverty”, defined as areas of high deprivation where both public transport uptake and car ownership are low.

The Levelling Up Fund (LUF), if successful, would invest in infrastructure that improves everyday life and would support local transport projects, and cultural and heritage assets. There are a number of proposed projects within the bid that would help to support local bus services.

South Yorkshire already has a voluntary bus partnership, that has fostered a close working relationship between SYPTE, the local bus operators and the four local authorities, in developing and implementing bus priority improvements.

- **Include complementary policies to decarbonise transport in the area.**

The region’s Energy Strategy contains policy targets that if delivered would enable South Yorkshire to reach net zero by 2040. The region also encompasses two Clean Air Zones.

Specific policies in our Transport Strategy (https://sheffieldcityregion.org.uk/wp-content/uploads/2019/03/SCR_Transport_Strategy_11.04.2019.pdf) relating our ambition are:

- **Policy 4** – Improve air quality across the City Region to meet legal thresholds, supporting improved health and activity for all, especially in designated AQMAs and CAZs.
- **Policy 5** – Lead the way towards a low carbon transport network, including a zero-carbon public transport network.
- **Policy 5** – Also commits SCR to a Zero Emission public transport network by 2040.

- **Explain how the proposal supports wider ambitions to increase public transport use and active travel in the area.**

The region’s Active Travel Implementation Plan(https://sheffieldcityregion.org.uk/wp-content/uploads/2020/06/SCR_Active_Travel_Implementation_AW_Single_Pages.pdf) states that active travel can form a small part of a longer distance journey. Most longer distance journeys start with a shorter journey, mainly to a bus stop, interchange or rail station. The Plan will deliver infrastructure and support the increased activity levels for the next generation. The ZEBRA proposals align well to the wider ambitions, with better integration of zero emission public transport with active travel provision.

The proposed electric city centre shuttle bus would increase public transport usage within the city centre, as the new service would increase and improve passenger connectivity, maximising the benefits of the significant TCF transformational changes. Furthermore, the Doncaster, Rotherham and Barnsley elements of the scheme, whilst part of existing bus services, would link up to various active travel projects across South Yorkshire.

C2. Community benefits

Please highlight any community benefits from your proposal. This could include economic development in the area or the creation and/or retention of jobs and apprenticeships related to the maintenance of zero emission vehicles, including batteries and fuel cells, and supporting infrastructure.

Input from a smart charging company, to develop the ZEBRA proposal, has indicated that when maintaining the electric charging infrastructure, local engineers would be used where possible from the South Yorkshire region. This would therefore bring community benefits to the area. At this stage, we have not gone through the tender process for the charging infrastructure supplier, but this provides an indication of potential community benefits (i.e. local supply chain, local jobs, etc) from infrastructure maintenance. In addition, the project would also facilitate local electric bus maintenance at the Stagecoach depot.

The proposed pantograph charging at two public transport interchanges in the region would not only support the ZEBRA proposal, but also help to facilitate the commercial roll out of electric buses across the region by multiple operators, lowering the threshold for operators to introduce electric fleet considering the availability of rapid charging infrastructure available to use. This would therefore provide much wider benefit to the region, with the investment used to provide the infrastructure operating conditions that make further rollout of electric vehicles more cost effective and therefore supporting the financial sustainability of bus operations.

We would investigate the feasibility of making second and third life usage of the bus batteries when they are due to be replaced. As the Mayoral Combined Authority (MCA) would own the vehicles and the batteries within them, we would explore opportunities to reuse the batteries where possible. For example, we will explore if these batteries could be used for electricity storage at the sites that we own, which currently include solar panels and a wind turbine. This second and potentially third life of the batteries could help reduce landfill waste, but also provide wider societal benefits in energy storage.

C3. Support for your proposal and wider vision

Provide evidence of support for your proposal and wider vision, such as letters of support or evidence of engagement, from partners.

Our ZEBRA proposal is strongly supported by each of our four districts (Barnsley, Doncaster, Rotherham and Sheffield), who have been directly involved in developing the proposals through a series of workshops. Furthermore, Stagecoach is working in close partnership on this bid and we are also working closely with energy, infrastructure and vehicle suppliers.

Appendix A provides letters of support from:

- Stagecoach (who will operate the buses);
- SSE (energy company);
- Swarco Smart Charging;
- Barnsley Metropolitan Borough Council (BMBC);
- Doncaster Metropolitan Borough Council (DMBC).

SECTION D: Air Quality

This section will seek evidence of the air quality challenges in the area and how your plans tackle air quality in the area. Areas should:

- Set out the air quality challenge in the area, such as whether the area is identified in the national assessment as exceeding statutory limits.

In South Yorkshire there are 28 areas declared as Air Quality Management Area (AQMA) for exceedances of the pollutant NO₂. The entire urban area of Sheffield has been identified as an AQMA, in addition to 6 locations in Barnsley, 7 in Rotherham and 8 in Doncaster. Each of these AQMAs has an Air Quality Action Plan (AQAP), setting out measures which will reduce emission levels.

Sheffield City Council (SCC) has outlined plans for a Clean Air Zone (CAZ) to tackle high levels of NO₂ within the urban centre (the area within the ring road), with proposals under consideration for implementation post COVID.

The MCA declared a Climate Emergency in November 2019 and published an Energy Strategy in 2020 that sets out the goals and policies required to meet net-zero by 2040. This includes transitioning to a zero-emission public transport fleet by 2035 and securing a 10% reduction in car miles by 2030, rising to a 25% reduction in 2040.

The proximity of the South Yorkshire ZEBRA proposal alongside the region's air quality issues (CAZ / AQMAs) is shown in **Appendix B**.

- Set out how the proposal would address the local air problem.

The ZEBRA proposals, would enhance the Clean Air Plans (CAP) by:

- Allowing to move directly from diesel to ZEB. Funding for the CAP is only sufficient to allow upgrade of the cleanest class of diesel vehicle;
 - Markedly improving the degree to which fleet upgrades achieve savings in zero emissions, as well as helping to reduce carbon emissions which is not viable under current funding opportunities, and;
 - Directed proposals under the CAP involve rerouting of buses to address an air quality hotspot. Improving the fleet beyond Euro 6 diesel will reduce the proportion of buses which must be diverted to achieve compliance, giving more flexibility to meet passenger needs within air quality constraints.
- Provide evidence of existing transport plans to tackle air quality and greenhouse gas emissions.

Rotherham and Sheffield, key areas of the South Yorkshire ZEBRA proposal, have plans to address the CAZ and AQMAs under a joint Sheffield–Rotherham CAP, with a combination of vehicle fleet upgrades and traffic management measures. Delivery of the traffic management measures was approved by the Rotherham Council cabinet, with fleet upgrades dependent upon securing Clean Air Fund monies, dependent on submission of a joint business case with SCC. Such proposals

include highway improvements on the A633 at Rawmarsh High Street and bus priority including 450m of bus lane reallocated from traffic lanes.

Looking at Rotherham specifically, the wider TCF programme includes 3km of new bus lane, 5.5km of new separate cycleway, and 2km of improved cycle routes through a combination of traffic reduction, infrastructure improvements, as well as two new tram train park and ride sites to support this decarbonisation objective.

A currently live project, funded through a combination of ITB, Gainshare, and potentially LUF (subject to a successful bid), involves the upgrade of 42 diesel Community Transport (CT) minibuses to electric minibuses. This will include the necessary charging infrastructure at the four CT depots across South Yorkshire.

Appendix B includes a plan showing the alignment of the ZEBRA routes, alongside TCF schemes, showing very close alignment.

SECTION E: Value for Money

See attached Value for Money proforma, included as **Appendix C**. Please note that this Appendix also includes the infrastructure breakdown. *[Not included – Commercially Sensitive]*

SECTION F: Deliverability

This section will seek evidence of how the Zero Emission Bus Regional Area will be delivered, and demonstrate that plans are credible and deliverable.

F1. Method of delivery and timescale for implementation

Establish the method of delivery, to cover:

- How you will work with local bus operators and other partners to deliver the proposal

In South Yorkshire, there are long established voluntary Bus Partnerships, where collaboration takes place between bus operators, SYPTE, as well as the four local authorities. We are also now moving towards Enhanced Partnerships, with even closer working relationships. These Partnerships will be used to keep all operators informed of project progress, as well as get valuable delivery assistance and coordination where needed.

We have considerable experience of working with bus operators in South Yorkshire, successfully delivering large capital projects, including the delivery of bus priority infrastructure across the region and retrofitting buses.

Stagecoach will work collaboratively with SYPTE to ensure successful project delivery, using knowledge and experience from other electric bus projects Stagecoach delivered elsewhere in the UK.

A project delivery team, involving Stagecoach, would be assembled if successful with ZEBRA. If necessary, we will draw on technical expertise through our engineer's framework. Governance arrangements would replicate those that have already been set up for the TCF programme.

- Any public Consultation or third-party permission that will be required (e.g. for infrastructure)

Charging infrastructure is proposed at Stagecoach's Rawmarsh depot (Rotherham), as well as Rotherham Interchange and at Sheffield Interchange.

- *Rawmarsh*

Stagecoach owns this depot, which will be upgraded with electric depot charging infrastructure. No external landlord permissions would be necessary.

- *Sheffield Interchange*

SYPTE owns Sheffield Interchange, so although planning permission is needed, no external landlord permissions are needed for the proposed pantograph charging. SCC's planning team did not identify any problems in principle, as the Interchange isn't in a sensitive location and SCC would work with SYPTE on the best design solution.

- *Rotherham Interchange*

The proposal also involves pantograph chargers at Rotherham Interchange. Planning permissions would be needed. Rotherham Interchange is leased to SYPTE by a third party and contact has been made to the owners of the Interchange with regards to introducing pantograph infrastructure. If we are unable to obtain approval from the landlord, we have established that the chargers can be installed at either Barnsley or Doncaster Interchange. Although obtaining the relevant owner permissions is a low risk, there are robust alternative options available, and these have already been explored with the owners of Doncaster Interchange previously stating that they would welcome charging infrastructure within their Interchange.

- Explain any mitigations put in place for SMEs.

A big advantage of our ZEBRA proposal is that there would be rapid charging infrastructure in both Rotherham and Sheffield Interchanges, which can be used by all operators. Having this infrastructure in place could be the catalyst needed to encourage more operators (large or small) to operate electric buses across South Yorkshire. Many parts of South Yorkshire would require pantograph charging due to the hilly topography of the region and the associated reduction in battery range. This could be a key enabler for operators to introduce electric buses. This could therefore provide a mechanism to overcome the operator hesitancy of running commercial services, in particular in Sheffield, due to concerns over the hilly topography.

A further big advantage is that the Sheffield City Centre shuttle bus element of the proposal would be tendered, with all operators having the opportunity to bid for the service. This could encourage all bus operators irrespective of size to become involved in running electric buses.

- Timescales for implementation, including when orders will be placed for zero emission buses and when supporting infrastructure will be delivered.

Approximate timescales for implementation are shown in **Table 3**. The orders for ZEBs would be placed around September 2022 and the supporting infrastructure delivered by December 2023. This allows circa two months to mobilise the electric buses and start service operations around February/March 2024. The timescales have been based on close working with Eol delivery partners including SSE (IDNO), Swarco, and Stagecoach and SYPTE's recent South Yorkshire electric bus feasibility work by consultants Arup.

Table 3: Key delivery timescales

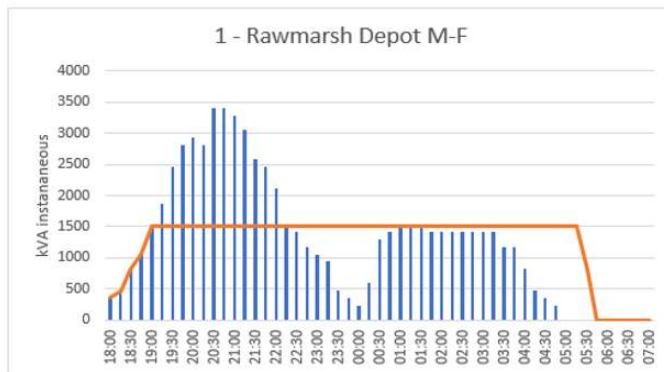
Item	Timescale
<ul style="list-style-type: none"> • Business Case development – items including: <ul style="list-style-type: none"> - Site surveys to inform planning (2 months). - Building warrant process (2 months). - Planning application process at Rotherham and Sheffield interchanges – preparation, submission, decision (6 months). - Appointment of technical specialist to assist with business case delivery. - Charger specification (2 months) – including use of “electric bus toolkit” (further details on this provided below). Includes rapid and depot charging. - Bus specifications (22x, 221, city centre shuttle) – 2 months. 	August 2021 – January 2022
<ul style="list-style-type: none"> • Delivery commences following ZEBRA business case approval and funding award. <i>Procurement strategy will have been developed as part of the business case.</i> 	March 2022
<ul style="list-style-type: none"> • Rapid Charging infrastructure – at Rotherham and Sheffield interchanges. Key tasks and timescales: <ul style="list-style-type: none"> • Following planning approval: • Procurement (6 months) – <i>linked with depot charging and bus order procurement process.</i> • Charger production (7 months). • Delivery (1 month). • DNO connection works (8 months). • Ground works installations – <i>similar timeframe to DNO connection works (7-8 months).</i> 	<p>Overall, approximately 22 months duration (noting some overlap with the individual timescales).</p> <p>March 2022 – December 2023</p> <p><u>Anticipated rapid charging infrastructure delivery around December 2023.</u></p>
<ul style="list-style-type: none"> • Depot Charging infrastructure – depot charging at Rawmarsh Stagecoach depot. Key tasks & timescales: <ul style="list-style-type: none"> • Procurement (6 months) – <i>linked with rapid charging and bus order procurement process.</i> • Charger production (6 months). • Delivery (1 month). • DNO connection works (6 months). • Ground works installations - <i>similar timeframe to DNO connection works (6 months).</i> 	<p>Overall, approximately 19 months duration (noting some overlap with the individual timescales and some alignment with rapid charging and bus procurement timescales).</p> <p>March 2022 – September 2023</p> <p><u>Anticipated depot charging infrastructure delivery around September 2023.</u></p>
<ul style="list-style-type: none"> • Procurement of bus operator (for Sheffield City Centre Shuttle bus). <i>Stagecoach will be the supplier for the 22x and 221 services.</i> <ul style="list-style-type: none"> • Tender specification (3 months). • Evaluation and contract award (4 months). 	<p>From March 2022. Approximately 7 months, excluding service planning and preparation.</p>
<ul style="list-style-type: none"> • Procurement of buses – <i>for the 22x, 221, as well as the new Sheffield City Centre shuttle bus tendered service. Note specification of the single decker shuttle buses in Sheffield will be slightly different due to different usage needs.</i> <ul style="list-style-type: none"> • Procurement (6 months) – <i>linked to charger procurement above.</i> • Production (6 months). • Testing (1 month). • Delivery & vehicle acceptance inspection (1 month). • Modifications (if required) (1 month). • Acceptance confirmed (1 month). • Mobilisation / driver training (2 months). 	<p>Overall, approximately 24 months duration (noting some overlap with the individual timescales and some alignment with rapid charging and bus procurement timescales).</p> <p>March 2022 – February 2024</p> <p><u>Anticipated bus orders placed around September 2022.</u></p> <p><u>Electric bus roll out to align with charger implementation timescales. Therefore, anticipated start date for electric buses on the ground – February / March 2024.</u></p>

- Please demonstrate how your plans are credible and deliverable in the time proposed, and that any risks have been understood and mitigated

We have drawn on the expertise and experience from a range of sources, all experienced in delivering successful ZEB projects. For example, working with SSE on this proposal has provided valuable insight into the potential for smart charging depot infrastructure in Rawmarsh. Working with an IDNO has provided more confidence in the timescales, cost estimates, as well as opportunities for smart charging. The IDNO has indicated it could offer a capital contribution to the build cost in the region of [REDACTED], therefore improving the VfM of the ZEBRA scheme. Using the IDNO would provide financial flexibility, operational certainty, as well as providing community benefits of offering access to the charging infrastructure when not in use by the buses (although more work is needed on this). SSE has modelled the electric bus power consumption at the Rawmarsh depot. The orange line within **Figure 1** below shows the potential smart managed charging profile.

Figure 1: Stagecoach's Rawmarsh depot - Monday to Friday based on 150kW depot charging.

150 kw DC Charging



1 - Rawmarsh Depot M-F

Delay for early run-in charges (connection only)	00:10
Delay for evening charge (wash, park, connection)	00:30
Min 15 periods for viable run-in charge	2
Total daily propulsion (kWh)	11,829
Total daily heating (kWh)	2,872
Total daily energy (kWh)	14,702

kWh/mi	1.71
Total Mileage	8,591

Peak consumption (kVA)	3401.7
Max buses simultaneous charging	29
Total EV buses charged each day	51

Our close engagement with energy providers and other experts with experience of electric bus delivery demonstrates the robustness and credibility of this proposal.

We will use SYPTE's award winning 'Electric Bus Toolkit' (see screenshot in **Figure 2**)

Figure 2: South Yorkshire Electric Bus Toolkit Dashboard.



This toolkit will refine the bus and charger specification, factoring in elements like topography, battery size and charge time availability. This will mitigate the risk of incorrect specifications.

One new area of risk for the MCA would be in owning the electric buses, a change in current operating model and contractual relations with bus operators, although South Yorkshire do own the CT fleet of minibuses. For the Rotherham, Doncaster and Barnsley areas of the proposal, the buses would be owned and leased to Stagecoach for deployment on commercial services. This model of ownership has

worked with local authorities and Stagecoach elsewhere. The Sheffield shuttle bus service would be subject to a tender. Details of the legal implications/risks are set out in F3 of this EOI.

The biggest timing risk for ZEBRA is around the DNO works and connections, as these are generally unknown until firm orders are placed. An additional risk is around the demand on the e-mobility supply chain. Although supply chains are gearing up to meet demand, delivery timescales in 2-3 years may differ from those assumed.

F2. Monitoring and evaluation

Please provide indicative details of how monitoring and evaluation will be used to ensure learning about the project and inform future schemes. A detailed monitoring and evaluation plan is not required at this stage but should explain how the approach to delivering services will ensure that future learning is maximised.

The ZEBRA project will be subject to a before and after Monitoring and Evaluation (M&E) plan, in line with SCR's Assurance Framework. The SCR Assurance Framework (2018) highlights the importance of measuring success as this provides "important lessons which are used to further improve the decision-making processes" and can increase the likelihood of successfully delivering future projects. The Assurance Framework also notes that it is important to understand the outcomes achieved by the funds available to SCR.

It is envisaged that the frequency of monitoring and evaluation would be as follows:

1. Baseline data (prior to scheme opening).
2. 1 to 2 years after scheme opening.
3. 3 to 5 years after scheme opening.

The project objectives, as set out in the ZEBRA business case, would help to define the scope of the M&E required. It is envisaged that the objectives would be developed around the key themes of:

- Improvements to local air quality.
- Improvements to bus patronage.
- Improvements to accessibility (the new electric city centre shuttle bus).
- Facilitating wider electric bus roll out through the provision of charging infrastructure.

Monitoring seeks to check progress against planned targets in order to consider whether the scheme has achieved what it intended to do and how success metrics have changed over time. It is envisaged that the monitoring would involve the following data collection for this project:

- **Patronage data** – this will be compared before and after scheme opening for the 221 and 22x. It will also compare the city centre shuttle bus against forecast patronage.

- **Journey times, reliability, punctuality** – this will be collected by SYPTE and compared before and after scheme opening.
- **Bus passenger attitudinal surveys** – this would be a new form of data collection to understand any change of customer perception changes.
- **Depth interviews** – this would be a new form of data collection with stakeholders, to provide a wider understanding of the impact of the improvements on scheme objectives.
- **Air quality surveys at key roadside locations** – to provide a greater understanding of the air quality impact of the project.
- **TRACC** – new data collected to assess the improvements in accessibility resulting from the new electric city centre shuttle bus service.

Evaluation is the assessment of the effectiveness and efficiency of the project during and after implementation. This enables an understanding of whether the project worked as expected, was cost-effective and what the impact of the project, on who, and why.

The evaluation of the ZEBRA scheme would follow three core strands of evaluation:

- The **process** evaluation would review the activities involved in ZEBRA delivery to understand what lessons can be learnt.
- The **impact** evaluation will consider what difference the project has made by gaining an understanding of the changes in measurable outcomes (intended and unintended) and the extents to which outcomes can be attributed to the delivered project.
- The **economic** evaluation will reflect on the outturn costs and benefits to review the value for money assessment made in the business case.

F3. Procurement, State Aid and subsidy rules

Please confirm you have received advice on legal requirements in relation to procurement, subsidy control and state aid.

Please also demonstrate how you will abide by legal requirements in relation to procurement, subsidy control and state aid, including an explanation, together with supporting evidence, of how you will comply with the principles under the UK-EU Trade and Cooperation Agreement.

Legal advice has been obtained.

With regard to Subsidy Control (ex EU State Aid), the TCA (Article 1 of Chapter 3) defines what is a "subsidy" and then sets out ways in which funding may be lawfully awarded.

Funding may be lawfully awarded by demonstrating that the measure respects each of the 'Common Principles' listed at Article 3.4 of the TCA¹³:

- “Principles” are established to ensure that subsidies are not granted where they have or could have a “material effect” on investment or trade between the Parties. Despite the fact that it is arguable that no subsidy exists (on the grounds that we are only meeting additional costs on the operator that they would, but for participating, not incur, the ‘common principles’ have been assessed and recorded using the BEIS guidance template.
- From the assessment any subsidies given will be restricted to pursuing a specific public policy objective of significant carbon reduction (the MCA declared a climate emergency in 2020) and of achieving both national and local climate targets.
- Subsidising the cost of providing electric vehicles is an appropriate intervention to achieve carbon reduction (via decarbonising the bus fleet used to provide public transport services In South Yorkshire).
- This subsidy is designed to bring about a change of economic behaviour of the beneficiary that is conducive to achieving the objective that would not be achieved in the absence of subsidies being provided. Given that for services 221 and 22X the subsidy will only involve meeting the additional cost incurred by the operator in utilising electric vehicles to operate services that are already operated by the Operator then it is difficult to see how the subsidies could cause a distortion in or harm to competition, trade or investment. For the Sheffield Service there is no subsidy in that the right to operate and the requirement to utilise electric vehicles supplied by the PTE/MCA will form part of the procurement exercise.

We are satisfied that the proposed subsidy (the difference in the commercial leasing cost of a new euro 6 diesel and a new electric equivalent) is a proportionate subsidy for the reasons given above.

The UK Government has not yet specified how each of the Common Principles may be guaranteed as satisfied. We believe that a UK Court would assess each of the requirements determining whether the awarding authority had a reasonable basis to conclude each to be properly considered and satisfied.

We believe that each principle is satisfied.

The MCA will fully and openly procure the electric vehicles, the infrastructure and the operation of the Sheffield shuttle service, to ensure that VfM is obtained and suppliers in the market are given equal opportunity to tender for the supply/services.

Appendix A



1 July 2021

Pat Beijer

Director of Transport Operations
South Yorkshire PTE
11 Broad Street West
Sheffield
S1 2BQ

Dear Pat

**SUPPORT FOR THE SHEFFIELD CITY REGION EXPRESSION OF INTEREST SUBMISSION
FOR DfT'S ZERO EMISSION BUS REGIONAL AREA SCHEME ("ZEBRA")**

This letter is to express our support of the Sheffield City Region Mayoral Combined Authority's Expression of Interest (Eol) submission for DfT's ZEBRA scheme and the outline service proposals contained within it.

The use of Zero Emission buses will deliver one of our key objectives within the Transport Strategy: Objective 4 – To reduce and mitigate the impact of transport based emissions and noise in Barnsley. Reductions in exposure to pollutants would result in significant health benefits for Barnsley residents.

We are looking forward to our continued work on the ZEBRA scheme in liaison with the Department for Transport and key stakeholders and learning of the outcome of the Eol evaluation.

Yours sincerely

Kathy McArdle
Service Director
Regeneration & Culture



**Doncaster
Council**

Civic Office
Waterdale
Doncaster
DN1 3BU

2nd July 2021

Pat Beijer
Director of Transport Operations

South Yorkshire PTE
11 Broad Street West
Sheffield S1 2BQ

Dear Pat

SUPPORT FOR THE SHEFFIELD CITY REGION EXPRESSION OF INTEREST SUBMISSION FOR DfT'S ZERO EMISSION BUS REGIONAL AREA SCHEME ("ZEBRA")

This letter is to express our support of the Sheffield City Region Mayoral Combined Authority's Expression of Interest (Eol) submission for DfT's ZEBRA scheme and the outline service proposals contained within it.

We are looking forward to our continued work on the ZEBRA scheme in liaison with the Department for Transport and key stakeholders and learning of the outcome of the Eol evaluation.

Yours faithfully

Ros Jones
Mayor of Doncaster

Charlie Barnes
SSE Enterprise
One Forbury Place
43 Forbury Road
Reading
RG1 3JH

17th June 2021

Ben Hardy
Principal Project Manager
South Yorkshire Passenger Transport Executive
11 Broad Street West,
Sheffield
S1 2BQ

Dear Ben,

DfT ZEBRA scheme EOI

On behalf of SSE Enterprise, I should like to confirm our support of South Yorkshire Passenger Transport Executive in its application to the Department for Transport for the Zero Emission Regional Areas scheme.

SSE Enterprise Utilities brings the wider SSE Group services and expertise to provide expertise, innovation and value for money in projects across the electrical sector. We can implement packages that include the provision of green electricity, infrastructure maintenance, design and build of bespoke electrical smart systems including solar and battery operations and operate as an Independent Distribution Network Operator providing effective, whole system solutions for our clients.

As a Principal Partner of COP26, SSE continues to deliver its £7.5bn investment programme, leading the way in developing low-carbon assets and infrastructure required for the UK to reach its target of net zero emissions by 2050.

SSE has undertaken initial investigative works on behalf of SYPTE in order to understand the scale and feasibility of the bid project and support them in the application for grant funding. This work has included:

1. Route schedule analysis to predict the anticipated power requirements of the electric vehicle charging infrastructure and demonstrate the benefits to be gained from smart charging.
2. Illustrative, non-binding costs, based on the typical development of a bus depot to provide charging capabilities for electric vehicles of the required scale.

3. Investigation into the grid connection for the power upgrade and provided estimated budget costs of that connection.

Through this work we consider that this is a viable project and one that SSE has the capability to undertake through our UK wide network of staff and project partners.

As such we have provided a non-binding indication of the financial contribution that SSE would be willing to invest into the project in order to support the bid.

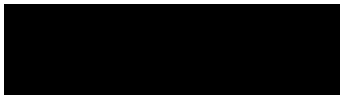
As a UK company, we are dedicated to acting now to support jobs and create opportunities across the county while providing solutions and infrastructure to decarbonise and deliver economic recovery for the long term. As such, we welcome the opportunity to support SYPTE with this ambitious project.

Yours sincerely,



Charlie Barnes MEng

EV Project Development Manager – Bus & Coach Lead



<https://www.sseutilitysolutions.co.uk/>

25 June 2021

Pat Beijer, Director of Transport Operations
SYLTE
11 Broad Street West
Sheffield
S1 2BQ

Via email: [REDACTED]

Dear Pat

Letter of Support to DfT re. ZEBRA

The Yorkshire Traction Co Ltd, trading as Stagecoach Yorkshire ("Stagecoach") is pleased to formally record its support for SYLTE's bid for ZEBRA funding for an initial tranche of 27 battery electric vehicles.

In the event that SYLTE's bid is successful, Stagecoach wishes to confirm that in principle, it would agree to

- (i) Lease and operate the electric vehicles on the services and for the duration set out, provided that SYLTE would fund the provision of power supply infrastructure for these vehicles at Stagecoach's depot in Yorkshire; or
- (ii) Consider contributing some level of capital investment for the purchase of the vehicles

This support would be subject to

- (i) Agreement of suitable commercial terms for any leasing arrangement
- (ii) Further assessment of the overall affordability of electric vehicle investment requirements and absent any material changes to our financial position or outlook

Given the low level of investment funding in the bus industry at present, Stagecoach believes that this would represent a significant investment and further demonstrate Stagecoach's commitment to continue to run public passenger bus services in Yorkshire whilst improving air quality in the city's AQMZ.

Yours sincerely



Martin Griffiths
Chief Executive
Stagecoach Group Plc

Ben Hardy
SYLTE
11 Broad St W, Sheffield City Centre, Sheffield S1 2BQ

11TH JUNE 2021

Dear Ben,

ZEBRA – DFT ZEBRA Programme

On behalf of Swarco Smart Charging part of Swarco UK. Swarco Smart Charging working alongside SSE would like to confirm its support to SYLTE in its application for the Department For Transport Swarco will provide SYLTE and its associated stakeholders with the following.:

1. Data analysis into power and infrastructure requirements to ensure the most cost effective solution.
2. Information and guidance into how the system can be installed, delivered and maintained.
3. Pricing and quotations as required to assist the application for grant funding.
4. Performance data and reviews to support the project throughout its life.

Swarco Smart Charging are happy to undertake this work free of charge and with the understanding that SYLTE and its partners are under no obligation to purchase products from Swarco.

Best regards
Adrian Felton MSOE MIRTE
National Strategic Account Manger E-Bus and E-Truck



www.swarco.com.....

Sheffield City Region Mayoral Combined Authority
11 Broad Street West
Sheffield, S1 2BQ

02 July 2021

Matthew Bentley
Green Bus Policy Lead, Buses, Light Rail and Taxis
Department for Transport
3rd Floor, Great Minster House,
33 Horseferry Rd
London
SW1P 4DR

Dear Matthew

EXPRESSION OF INTEREST: DFT'S ZERO EMISSION BUS REGIONAL AREA SCHEME ("ZEBRA")

I am writing on behalf of the South Yorkshire Mayoral Combined Authority to express keen interest in participating in the Department for Transport's ZEBRA scheme.

Our attached Expression of Interest for the region is focused on securing the first zero-emission buses for South Yorkshire as a key stepping-stone towards our regional Transport Strategy goal of a zero-carbon public transport network by 2040.

We would be delighted to commence rollout of zero-emission buses, working in concert with our bus operators, across our four districts, which include two Clean Air Zones, and to do so in partnership with DfT.

These first zero-emission buses would perfectly complement our tram system, which is already zero-emission, as well as making a significant contribution towards South Yorkshire's aim of an integrated transport system that is fully zero-carbon.

We look forward to hearing the outcome of our Expression of Interest and continuing to work both with the Department for Transport and our bus operators to make South Yorkshire a great place to work, live, visit and invest in.

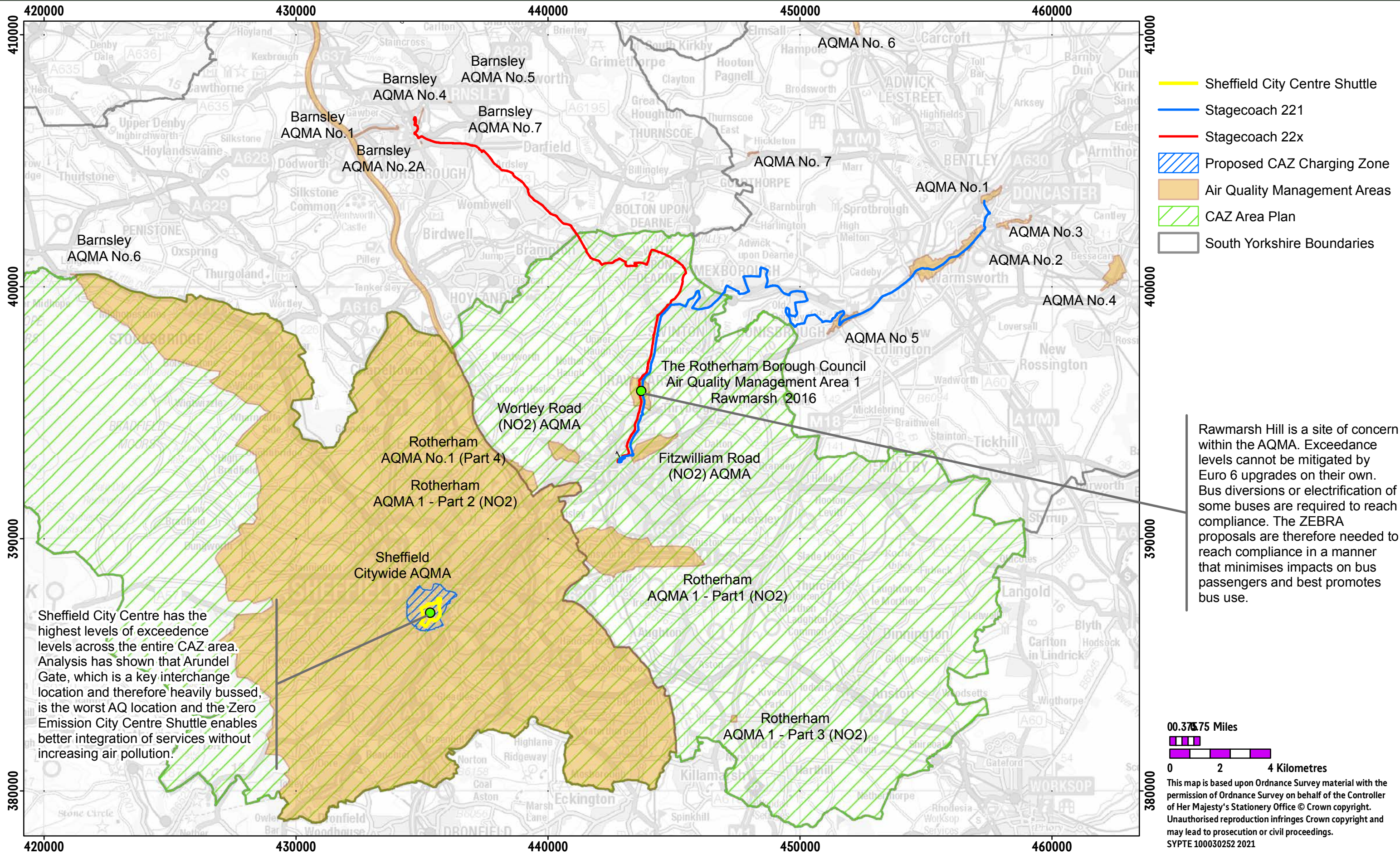
With the very best wishes



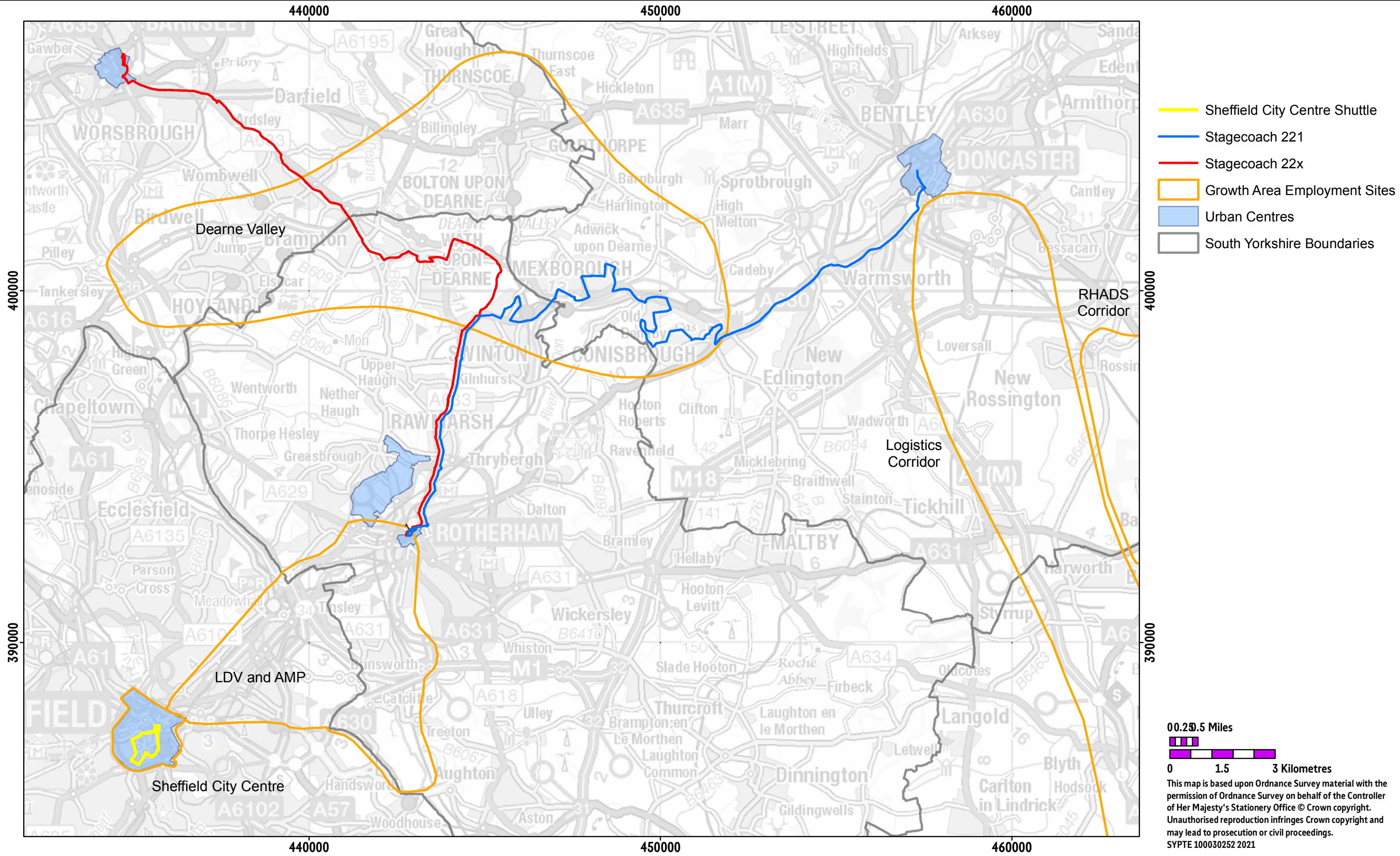
Dan Jarvis MBE MP
Mayor, Sheffield City Region Mayoral Combined Authority

Appendix B

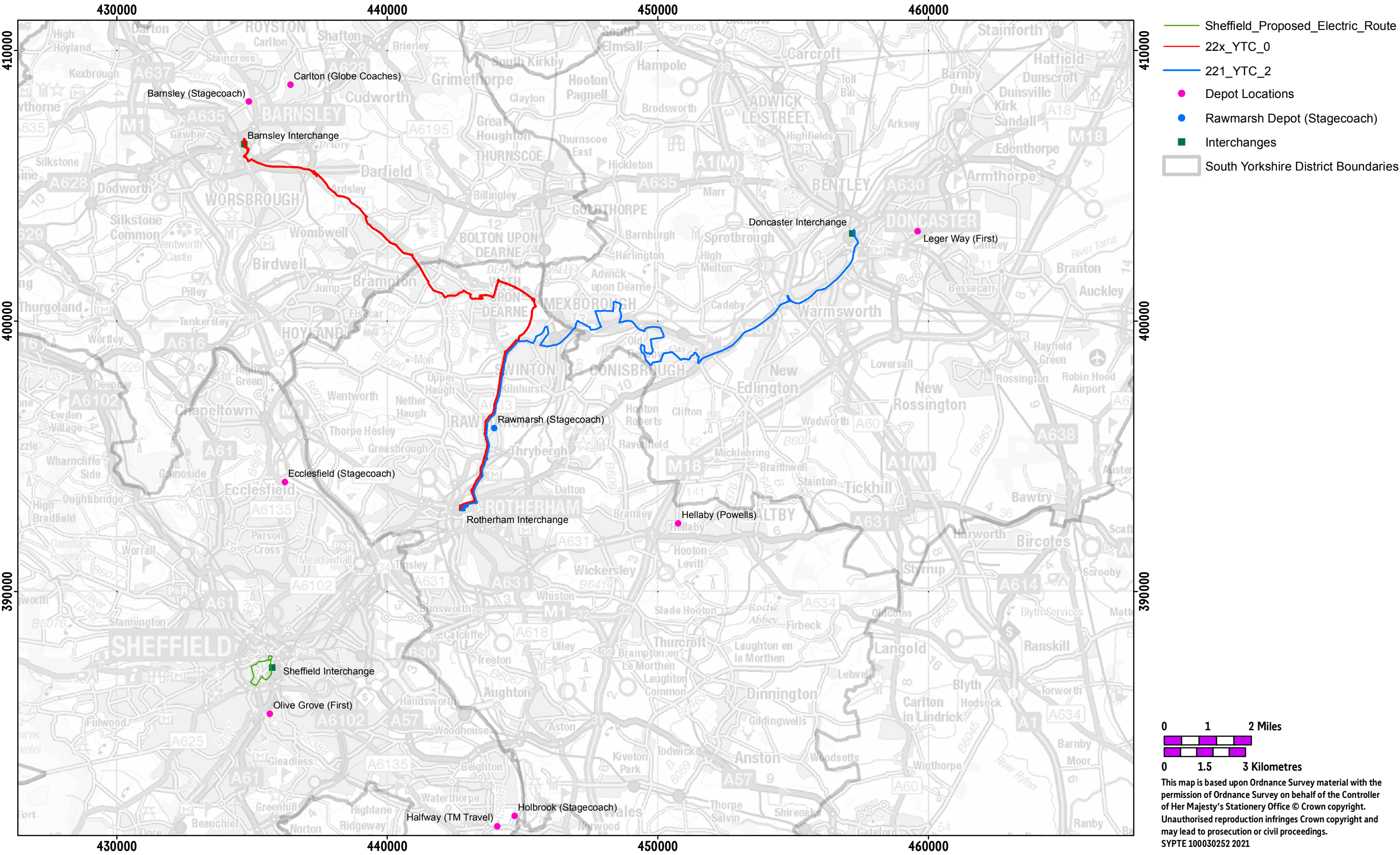
Proposed Electric 221, 22x and Sheffield City Centre Shuttle Bus - CAZ and AQMAs



Proposed Electric 221, 22x and Sheffield City Centre Shuttle Bus - Growth Area Employment Sites and Urban Centres



Service 221, 22x & Proposed Sheffield Route - Depot Locations & Interchanges



Service 221, 22x & Proposed Sheffield Route - Transforming Cities Fund Schemes

