

Appendix EP3 of the Proof of Evidence of Esme Portsmouth

(Air Quality Proof of Evidence prepared by Rachel Perryman)

Leicestershire County Council (A511 Growth Corridor) (Side Roads) Order 2023

Leicestershire County Council (A511 Growth Corridor) Compulsory Purchase Order 2023

PINS Ref: NATTRAN/EM/HAO/299

Proof of Evidence of Rachel Perryman

Air Quality

dated 20 May 2024

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1 Introduction

1.1 Qualifications and experience

1.2 I, Rachel Perryman, am the Lead Air Quality Consultant. I have been in this role since 2021. In my role I led the undertaking of the air quality baseline monitoring and impact assessment. I have previously worked as the lead air quality consultant on many large-scale projects for both Local Authorities and National Highways including A38 Derby Junctions, A454 Willenhall Road, East Airedrie Link Road (Stage 2) and M32 Park and Ride.

1.3 Accordingly, I have extensive experience in the field of air quality and have worked in this industry for approximately 15 years. I am a Chartered Scientist and full member of the Institute of Air Quality Management and Institution of Environmental Sciences.

1.4 This proof of evidence is made in respect of the Leicestershire County Council (A511 Growth Corridor) (Side Roads) Order 2023 (the **SRO**) and the Leicestershire County Council (A511 Growth Corridor) Compulsory Purchase Order 2023 (the **CPO**) (together, the **Orders**) in connection with the Leicestershire County Council A511 Growth Corridor (also referred to in this Proof of Evidence as the **Scheme**).

1.5 The facts and matters set out in this proof of evidence are within my own knowledge. The facts set out below are true to the best of my knowledge and belief. Where reference is made to facts which are outside my knowledge, I set out the source of my information and I believe such information to be true.

1.6 I have been assisted by other professional advisors and officers of the Council with the preparation of this proof of evidence, some of whom will also provide evidence to the inquiry.

1.7 Involvement with the Scheme

1.8 I have been working on the Scheme, comprised of various alterations to the network and the addition of the Bardon Link Road as part of my role at AECOM since 2021. The majority of my input, for the reasons set out and explained below, was in respect of the Bardon Link Road element of the Scheme. My role involved:

1.8.1 scoping the approach to be taken for the air quality assessment;

1.8.2 co-ordinating and managing the baseline air quality survey;

1.8.3 discussions with the environmental protection officer at North West Leicestershire District Council (**NWLDC**) to confirm the air quality assessment methodology approach;

1.8.4 reviewing the air quality assessment inputs and outputs to the detailed modelling assessment, verification procedure and report.

1.9 Throughout my time working on the Bardon Link Road I have been working alongside Mr Gareth Rees at the Council who confirmed the air quality assessment methodology approach.

2 Scope of Evidence

2.1 I set out the following in my evidence:

2.1.1 relevant Legislation and Planning Policy;

2.1.2 a summary of the methodology and outcome of the air quality assessment for both construction and operational phases, including any potential change arising on roads in the locality.

2.2 Within this evidence I address matters relating to air quality for the Scheme as a whole given it is a single proposal. In air quality terms however, the consequences for air quality arising from most of the junction improvement works will be limited.

2.3 The following Projects (described in full within in the Proof of Evidence of Ann Carruthers) will give rise to no meaningful change in the current air quality (although there may be some improvement:

2.3.1 A511 / Hoo Ash Roundabout (widened entry and exit to the roundabout allowing two ahead lanes for the A511 in both directions);

2.3.2 A511 / Thornborough Road Roundabout (widened entry and exit to the roundabout allowing two ahead lanes for the A511 in both directions);

2.3.3 A511 Stephenson Way Dualling (alter the existing single lane road to a dual carriageway on Stephenson Way between the Thornborough Road and Whitwick Road roundabouts);

2.3.4 A511 / Whitwick Road Roundabout (widened approaches and exits allowing two ahead lanes for A511 in both directions and from Thornborough Road from the south);

2.3.5 A511 / Broom Leys Road Junction (altering the existing left turn lane on Stephenson Way into Broom Leys Road (eastbound) to enable ahead and left traffic; carriageway widening that will provide two ahead lanes for traffic travelling northbound on Stephenson Way);

2.3.6 A511 / Birch Tree Roundabout (widened entry and exit lanes allowing three lanes around part of the roundabout to enable an additional lane on the exit towards Coalville; widening on the A511 southbound approach to facilitate an additional lane on the exit of the A511 eastbound);

2.3.7 A511 / Flying Horse Roundabout (modification of the current partially signalised roundabout so that traffic from Stanton Road and traffic from Copt Oak Road can only turn left onto the A511);

2.3.8 A50 / Field Head Roundabout (introduction of part time signals on the A50 approaches to the roundabout. A two-lane exit is proposed on Launde Road).

2.4 There will be no significant detrimental impacts on air quality in respect of the Projects listed above improvement works are dealing with existing traffic flows in the same location, and all works are within the existing highway boundary or subject to small adjustments.

However, there may be in fact some beneficial changes in air quality at other along with A511, as a result of traffic being redirected along the Bardon Link Road.

- 2.5 This evidence therefore focuses on the works to create the Bardon Link Road and the new roundabout on Bardon Road, for which express planning permission has been granted (The Original Bardon Link Road Planning Permission and the S73 Bardon Link Road Planning Permission), as it is in this location and this Project which has the potential for air quality to materially change as a result of the Scheme, as such a comprehensive assessment has been undertaken.

3 **Air Quality**

3.1 **Development of the Scheme**

- 3.2 A refinement to the drainage design in the Bardon Link Road has occurred since the original planning permission was granted, the revised design was consented in September 2023 through the S73 Bardon Link Road Planning Permission. This refinement has no potential to affect the air quality impacts of the proposed A511 Bardon Link Road as reported in the original assessment.

3.3 **Assessment of the Scheme proposals**

- 3.4 The air quality assessment is contained in the Bardon Link Road Air Quality Assessment Report (**AQA**) (Document P15 in the List of Documents). Reference to the relevant sections, table and figures are given throughout this proof.

- 3.5 The AQA was undertaken with consideration of relevant legislation and policies at the time of undertaking the assessment, as described in Section 2 of the report. The requirements to meet limit values for pollutants within European Union (EU) Legislation as provided in the Ambient Air Quality Directive have been transcribed into UK legislation by the Air Quality Standards Regulations 2010 and more recent updates. These requirements are retained in UK law through the EU (Withdrawal) Act 2018 and the UK remains legally obliged to meet EU limit values.

- 3.6 The Environment Act 2021 (Document L9 in the List of Documents) sets out air quality as one of the four priority areas of environmental targets. Part IV of the Environment Act (2021) requires the Government to produce a national Air Quality Strategy (**AQS**) which contains standards, objectives and measures for improving ambient air quality. The AQS was produced by Defra and published in July 2007 (Document NP15 in the List of Documents). The AQS sets out Air Quality Objectives (**AQOs**) that are maximum ambient pollutant concentrations that are not to be exceeded either without exception or with a permitted number of exceedances over a specified timescale. For this assessment, the relevant objectives for nitrogen dioxide (NO₂) and fine particulates (PM₁₀) are shown in Table 2-1 of the Report. These include an annual mean objective value of 40 µg/m³ for concentrations of both NO₂ and PM₁₀.

- 3.7 In terms of policies, the AQA was undertaken with consideration of paragraph 186 of the National Planning Policy Framework (NPPF) (July 2021) and the Planning Practice Guidance (PPG) chapter on Air quality (Documents NP5 and NP16 in the List of Documents). As well as policy EN6 as set out in the NWLDC Local Plan (Document LP3 in the List of Documents).

- 3.8 The air quality assessment methodology is outlined in Section 3 of the AQA. The assessment considered impacts during the construction and operation of the Scheme and determines the overall significance of these impacts at selected worse case sensitive receptors.
- 3.9 The assessment was conducted in accordance with the methodology and guidance set out in the National Highways Design Manual for Roads and Bridges (**DMRB**) LA105 Air Quality and technical guidance issued by Department for Environment Food and Rural Affairs at the time of assessment (LAQM.TG16) (Document NP17 in the List of Documents). Given the size and scale of the Scheme, a detailed level of assessment was triggered following DMRB LA105 criteria.
- 3.10 The methodology was discussed and agreed with Gareth Rees, Environmental Protection Officer from NWLDC on 28th March 2022. Mr Rees confirmed that to ensure consistency with the assessment of the wider Scheme (as listed in paragraph 2.3), the operational phase traffic data should be screened using the screening criteria set out in DMRB HA207/07 in terms of using actual speeds rather than speed bands. All other criteria remained the same. Therefore, with the exception of using actual speeds for the purpose of screening the traffic data and in the assessment itself, all other aspects of the assessment methodology were undertaken in accordance with DMRB LA 105.
- 3.11 **Bardon Link Road Impacts – Construction**
- 3.12 The construction phase assessment identified that there is a small risk of adverse effects occurring during the construction of the Bardon Link Road. Therefore, the sensitivity to potential dust effects is considered to be ‘high’ for receptors located within 50 m of the construction activity and ‘low’ for receptors located within 50 to 200 m as illustrated in Figure B-4 of the AQA.
- 3.13 The potential dust effects could be suitably minimised by the application of industry standard mitigation measures as set out in Institute of Air Quality Management (IAQM) ‘Guidance on the assessment of dust from demolition and construction’. with the application of industry standard mitigation measures the potential effects were considered to be insignificant.
- 3.14 **Bardon Link Road Impacts - Operational**
- 3.15 The results of the operational phase local air quality modelling for the assessed years are provided in Section 5 (paragraphs 5.4 to 5.19) and Appendix B of the AQA as well as **Appendix RP1** accompanying this Proof of Evidence.
- 3.16 The AQA predicted that annual mean PM₁₀ concentrations were below the relevant objective at sensitive public exposure receptors in the base year. Therefore, in line with the DMRB LA 105 guidance, it was concluded that there is no risk of the Bardon Link Road leading to exceedances of the PM₁₀ objective in future years and changes in PM₁₀ concentrations have not informed the judgement of significance for air quality.
- 3.17 Annual mean NO₂ concentrations were predicted at sensitive receptors in the base year (2019) and opening year (2026), with and without the A511 Bardon Link Road in operation. With the Bardon Link Road in operation, both increases and decreases in annual mean NO₂ concentrations at public exposure receptors were predicted due to the re-routing of traffic around Coalville. Increases in traffic flows are anticipated on roads within the existing committed developments as the Bardon Link Road will complete the north-south link

between Beveridge Lane and Bardon Road as well as on the A511, north of the Bardon Link Road. Decreases in traffic flow are anticipated on the A511, east of the new roundabout, Regs Way and Central Road, as vehicles use the new road to access Coalville in preference to the existing north-south routes.

- 3.18 The largest reduction in annual mean NO₂ concentrations with the Bardon Link Road was predicted to be 2.3 µg/m³ at a residential property adjacent to Central Road (ID 07). At this property, in the opening year without the Bardon Link Road operational, an annual mean NO₂ concentration of 33.6 µg/m³ was predicted and with the Bardon Link Road operational, an annual mean NO₂ concentration 31.3 µg/m³ was predicted. This was due to a predicted decrease of approximately 1,000 vehicles per day using Central Road and the close proximity of the property to the road.
- 3.19 The largest increase in annual mean NO₂ concentrations of 2.2 µg/m³ was predicted at a residential property located on Bardon Road, adjacent to the Bardon Link Road. This is due to the proximity of the property to the Bardon Link Road (approximately 10m to the west) which is anticipated to have a traffic flow of approximately 4,000 vehicles per day. In addition, the A511/Bardon Road roundabout will be realigned further south and closer to the property as part of the Bardon Link Road.
- 3.20 All receptors are predicted to experience annual mean NO₂ concentrations below the objective in the opening year with or without the Bardon Link Road operational, with a maximum concentration of 35.5 µg/m³ predicted at a property located at the junction of Grange Road and Station Road. Therefore, in accordance with DMRB LA 105, the air quality effects at public exposure receptors are considered not significant.
- 3.21 Predictions of NO_x concentrations and nitrogen deposition were undertaken at the Nature Alive Local Nature Reserve. The results concluded that a reduction in NO_x concentrations of 0.1 µg/m³ was predicted in the opening year with the Bardon Link Road operational, whilst the change in nitrogen deposition is predicted to be < 0.1 kg N/ha/yr. The results have been interpreted taking account of Natural England guidance and show that the change in nitrogen deposition rates due to the Bardon Link Road was <0.1% of the critical load.
- 3.22 Consultation with the Biodiversity specialists was undertaken which concluded that the air quality effects are not considered to be significant as 'the change in nitrogen deposition associated with the proposed Bardon Link Road will not lead to the loss of one species' as per the DMRB LA 105 guidance.
- 3.23 The compliance risk assessment included a review to determine if there were any road links within the affected road network (**ARN**) that were part of Defra's national pollution climate mapping (**PCM**) model which is used to report to the EU on compliance with the NO₂ limit value. Paragraph 5.17 concludes that that there was only one PCM road link (the A511, north of Coalville) which intersected the ARN. The annual mean NO₂ concentration in the PCM model at this road was 12.7 µg/m³ in the opening year. The change in annual mean NO₂ concentration in the opening year at the qualifying features adjacent to this link was up to a maximum increase of 2.0 µg/m³ and therefore there is no risk to the UK's reported ability to comply with the Air Quality Directive.

4 **Conclusion**

- 4.1 The construction phase dust assessment concluded that the potential dust effects could be suitably minimised by the application of industry standard mitigation measures as set out in IAQM Guidance on the assessment of dust from demolition and construction.
- 4.2 The Bardon Link Road air quality operational phase assessment concluded that there were no predicted exceedances of relevant objective values in the opening year of the Bardon Link Road at public exposure receptors and designated habitats. There was also no risk to compliance with the EU limit values.
- 4.3 Therefore, overall no significant air quality effects are anticipated with the Bardon Link Road during either the construction or operational phases.
- 4.4 Other element of the Scheme will not result in any material changes in air quality, although other locations along the A511 may benefit from a reduction in traffic and consequentially air quality, as a result of traffic being redirected on the Bardon Link Road.

5 Statement of Truth and Declaration

5.1 Statement of Truth

5.1.1 I confirm that I have made clear which facts and matters referred to in this report are within my own knowledge and which are not. Those that are within my own knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.

5.2 Declaration

5.2.1 I confirm that my report has drawn attention to all material facts which are relevant and have affected my professional opinion.

5.2.2 I confirm that I understand and have complied with my duty to the inquiry as an expert witness which overrides any duty to those instructing or paying me, that I have given my evidence impartially and objectively, and that I will continue to comply with that duty as required.

5.2.3 I confirm that I am not instructed under any conditional or other success based fee arrangement.

5.2.4 I confirm that I have no conflicts of interest.

5.2.5 I confirm that I am aware of and have complied with the requirements of the rules, protocols and directions of the inquiry.

Signed:

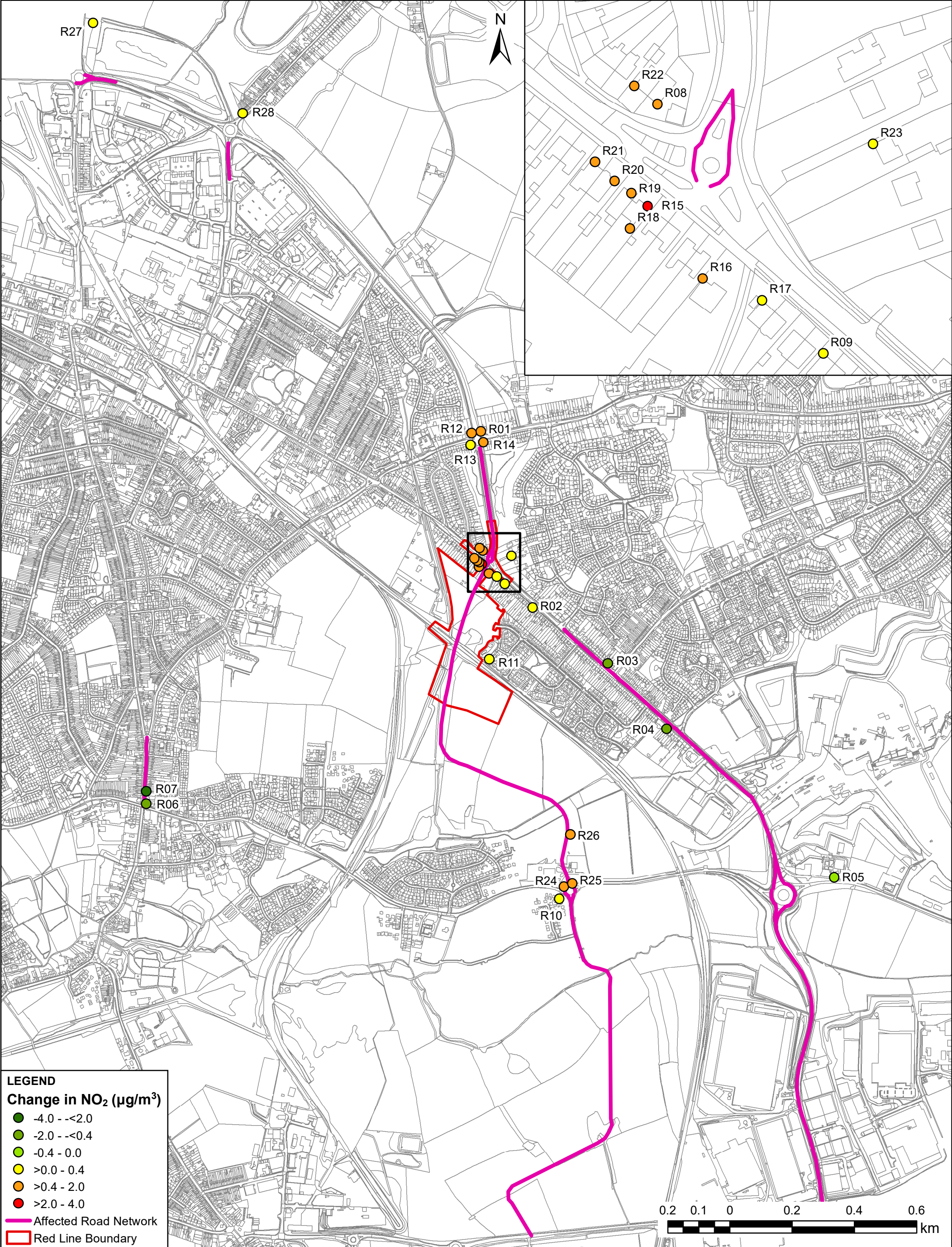
A rectangular box containing a handwritten signature in black ink that reads "R Perryman".

Dated: 20 May 2024

Rachel Perryman

Appendix RP1
Figure B-5

Revision: Rev No. 1 Drawn: IR Checked: RP Approved: EC Date: 09/05/2022
File Name: L:\Legacy\UK\LDSD2PPSPW001\1\1\ENVIRONMENT\Proposals and Marketing\FY20 Speculative\Minor Bids\Air Quality\A511 Barton Link Road\2021_2022\Report\Final figures\With new updated red line\Figure_D_portrait.mxd



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