Ellis (née Woodcock), Vicky

From: Shields , Chris (TECHNICAL OFFICER (POLL)) <ChrisShields[redacted]>
Sent: 17 May 2021 13:53
To: Sanderson, Paul
Cc: Weatherley, Mariam
Subject: RE: Air Quality Assessment, MU1 Barnsley
Attachments: RE: Barnsley West - 2021/ENQ/00167 EIA Scoping Request (P18-1848PL)

Paul,

Further to your e-mail response dated 14.05.21 below, please see my further comments **(orange text, bold)**.

Kind Regards,

Chris

Chris Shields
Technical Officer (Pollution Control), Regulatory Services
Business Unit 10
Public Health Directorate
Barnsley Council

[redacted]gov.uk
Mail: PO Box 634, Barnsley, S70 9FH

https://www.gov.uk/guidance/wuhan-novel-coronavirus-information-for-the-public
https://publichealthmatters.blog.gov.uk/2020/01/23/wuhan-novel-coronavirus-what-you-need-to-know/

You can find more information about COVID-19 on

- NHS guidance
- NHS Frequently Asked Questions
- Advice for people travelling
- Guidance for non-clinical settings (education, employers and businesses, social, community care and residential settings)

From: Sanderson, Paul <psanderson[redacted]>
Sent: 14 May 2021 11:48
To: Shields , Chris (TECHNICAL OFFICER (POLL)) <ChrisShields[redacted]>
Cc: Weatherley, Mariam <mweatherley[redacted]>
Subject: RE: Air Quality Assessment, MU1 Barnsley

Hi Chris,

Please find my further responses in blue text below – I hope these give the additional detail you needed and address your comments sufficiently:

I'm writing to discuss the air quality assessment for the MU1 Barnsley West development. We have corresponded previously on the assessment for this site in support of the SCRIF planning applications for the proposed roundabouts on Higham Common Road and Barugh Green Road and the link road between them associated with the development.

As previously requested, in support of the roundabout applications we assessed the traffic associated with the MU1 development in detail. The EIA Scoping Request has been submitted to Barnsley Council (05/03/21), who have now advised that they are in the process of preparing the scoping response, which has been allocated reference: *2021/ENQ/00167.*

As such we are going to progress the Air Quality assessment as part of the Environmental Statement for MU1, and we propose to update the assessment work to make use of the latest Defra Emission Factor Toolkit v10.1, released in August 2020, as well as incorporating amended traffic data. Agreed.

We propose to undertake the following works as part of the air quality assessment:

1. A construction phase dust assessment will be undertaken in accordance with the Institute of Air Quality Management (IAQM) document 'Guidance on the Assessment of Dust from Demolition and Construction (February 2014)'. This will consider the potential dust soiling and human health effects, at existing sensitive receptor locations, as a result of demolition, earthworks, construction and the trackout of dirt and mud onto the public highway. Mitigation measures will be recommended, where necessary. My colleague Paul Denton (t: 01226 772860, e: pauldenton@barnsley.gov.uk) will comment on the construction phase dust assessment.

2. Air dispersion modelling, using ADMS-Roads will be undertaken to consider the impact of changing traffic flows, as a result of the proposed development, at existing human sensitive receptor locations. Pollutant concentrations will also be predicted for locations considered representative of the proposed residential dwellings at the site. The assessment will consider nitrogen dioxide (NO_2) and fine particulate matter (PM_{10} and $PM_{2.5}$) concentrations. A sensitivity analysis will be carried out in line with relevant guidance. Agreed. Will the assessment consider the short term air quality standards for NO_2 and PM_{10} as well the long term (annual mean) standards? Could you also reference the sensitivity analysis methodology within your assessment please, along with appropriate explanation of this methodology?

   LAQM.TG(16) states that " exceedances of the NO_2 1-hour mean are unlikely to occur where the annual mean is below 60µg/m^3." The monitoring data in and outside of the AQMA does not indicate concentrations close to this threshold of 60µg/m^3, where the highest baseline measured NO_2 concentration within the study area was 45.8µg/m^3 in 2018. It is not anticipated that modelled results will approach or exceed NO_2 concentrations of the 60µg/m^3 threshold, since modelled results will be verified against local monitoring data. Annual average NO_2 concentrations will however be reviewed, and consideration will be given to assessing short-term objectives if the predicted annual mean is close to or above 60µg/m^3. Please confirm that you are in agreement with this approach? **Agreed**

   In addition, it is not usual practice in a detailed air quality assessment to consider the short term air quality standard for PM_{10}, however the LAQM.TG(16) guidance offers the following within section 7.92:

   "As for NO_2, using a dispersion model to predict exceedances of the PM_{10} short-term (24 hour mean) objective may be challenging. Therefore, to estimate potential exceedances of the PM_{10} 24-hour mean objective, local authorities should use the following relationship, provided in previous Technical Guidance, but still considered adequate:

   No. 24-hour mean exceedances = -18.5 + 0.00145 × annual mean^3 + (206/annual mean)."

   This formula will be applied to receptors, within the study area, which are predicted to experience the highest PM_{10} annual mean concentrations. **Agreed**

   Sensitivity analysis: The IAQM has recently withdrawn its position statement on the use of sensitivity analyses, stating "There is a growing body of evidence to suggest that the latest COPERT vehicle emission factors, which feed into the EFT (v9 and onwards), reflect the real-world NOx emissions more accurately. It is judged that an exclusively vehicle emissions-based sensitivity test is no longer necessary. On this basis, the EFT may be used for future year modelling with greater confidence when considering the per vehicle emission, provided that the assessment is verified against measurements made in the year 2016 or later."

Therefore, we plan to use results obtained using the latest EFT v10.1 for our assessment of significance. Results of a worst-case (no improvement in emission factors or background concentrations) sensitivity test will be included as an appendix. **Agreed**

3. Traffic flow information has been provided by the appointed Transport Consultant for the project and will take into account all committed developments. Please list the committed developments taken account of within your assessment. Potential queuing zones and slow down sections at junctions/major traffic lights will be modelled at a vehicle speed of 20km/h. Agreed. As a result of previous discussions, we have obtained traffic data to cover the Penny Pie Park area and the forthcoming gyratory system will be incorporated in the air quality models of the 2026 Opening Year and 2033 Future Year scenarios (see below).

   The transport consultants have informed us that the following committed developments have been included within the traffic dataset:

Planning Reference	Application Summary
2016/0259	Smithy Wood Lane - Residential development of 36 dwellings
2016/0268	Green Road - Residential development of 50 dwellings
2017/1002	Capitol Park - Development of approximately 7,000 sqm of industrial land use
2016/0713	Capitol Park Industrial Estate - Outline application for 16,499 sqm GFA of industrial development
2017/0987	Capitol Park - NHS blood storage facility on Unit C
B/04/1998/DO	Capitol Park - Industrial development with a site area of 0.95 hectares
2018/0965	Penny Pie Park Gyratory
2019/0286	Capitol Park - Employment development of approximately 16,723 sqm
2020/0977	Land off Barugh Green Road - Residential development of 140 dwellings
2020/0040	Highways works comprising the linking of Capitol Close and Higham Lane via a new roundabout

4. In line with previous work for the roundabout applications, we propose to assess the following scenarios for MU1 (omitting those 2021 scenarios assessed in the roundabout applications which did not include any additional MU1 traffic): In addition to the below scenarios, an additional scenario for assessment is required (2026 opening year, with Barugh Green Road and Higham Common Road roundabouts, partial completion of MU1, **completion of link road**). I appreciate that you may have to discuss this with the traffic consultants in order to determine availability of appropriate traffic data for this additional scenario, however I recall there was a desire within the Council at the time of granting of permission for the roundabouts for subsequent early completion of the link road, particularly in order to prevent additional traffic from the partially completed development being diverted onto the wider road network, especially onto the existing AQMA on Dodworth Road (BMBC AQMA 2A), with subsequent increase in emissions.

   We have been informed that this scenario is not going to come about under the existing plans for the buildout of the development, and therefore we do not plan to include this scenario within the assessment. **Noted, please note also, the attached e-mail for information only at this stage, from the Council's Head of Planning Joe Jenkinson recently sent to Pegasus about this, suggesting that there are still outstanding issues to be resolved prior to resolving of the timescale for delivery of the link road.**

   a. 2018 Base Year and model verification; Agreed that 2018 can be used as the base and verification year

b. 2026 Opening Year (without Barugh Green Road and Higham Common Road roundabouts);
c. 2026 Opening Year (with Barugh Green Road and Higham Common Road roundabouts, partial completion of MU1, no link road);
d. 2033 Future Year (No link road, roundabouts or MU1 development); and
e. 2033 Future Year (including both roundabouts, link road and full completion of MU1).

5. We anticipate using meteorological data within the air dispersion modelling. We propose to use data from the Emley Moor Recording Station, which is considered to be most similar in terms of distance and altitude. The Emley Moor station is located approximately 11km to the northwest of the proposed development site. Agreed

6. As for the roundabout applications, model verification for NO_2 will be undertaken using data from the SCRIF applications supplied to us by AECOM, and using Barnsley Metropolitan District Council data from monitoring locations on the A628 Dodworth Road between the M1 and the Pogmoor Crossroads. Agreed. As there are no monitoring locations for PM_{10} and $PM_{2.5}$ within the study area, we do not propose to undertake model verification for PM_{10} and $PM_{2.5}$. Will any subsequent model verification factor applied to the modelled NO2 concentrations be also applied to modelled the PM_{10} and $PM_{2.5}$ concentrations?

   This isn't something we always do, but we note that LAQM TG(16) does advise that it can be appropriate, so we could apply NO_2 adjustment factors to particulate matter when processing the model output data. **Agreed**

7. Background data for NO_2 will be taken from the Barnsley Gawber Continuous Monitoring Station. It seems that there are no suitable background monitoring locations nearby for PM_{10} and $PM_{2.5}$ which would be representative of the proposed development site and therefore these will be obtained from the 2018-based DEFRA background maps for the appropriate grid squares. Agreed

8. Predicted pollutant concentrations for human receptors will be compared with the current air quality objectives as set out in the Air Quality Standards Regulations 2010. Changes in pollutant concentrations, as a result of the proposed development, will be calculated and compared against the IAQM and Environmental Protection UK guidance document on planning for air quality: 'Land-Use Planning and Development Control: Planning for Air Quality (January, 2017).' Agreed

I note the EIA scoping report in support of this application states the following:

"13.10 The air quality assessment will include consideration of both the construction and operational phases of development and will be undertaken in line with BMBC Air Quality and Emissions Good Practice Planning Guidance, October 2018". The latest version of the BMBC Air Quality and Emissions Good Practice Planning Guidance (March 2020) can be found at https://www.barnsley.gov.uk/media/16257/pdc-2020-mar-bmbc-aqe-technical-planning-guidance-v12.pdf.

In addition, following the adoption of the Sustainable Travel Supplementary Planning Document, installation of electric vehicle charge points are recommended in accordance with the requirements of this document, the details of which are in the table below.

Residential	1 charging point per unit (dwelling with dedicated parking), or 1 charging point per 10 spaces (unallocated parking)

It is further recommended that the electric vehicle charge points are demonstrated to be "mode 3", minimum 7 kW (32 AMP) in order to meet future electric vehicle charge point requirements, and these requirements shall be acknowledged when discussing mitigation of operational phase traffic emissions within your assessment.

We have been informed that the client plans to implement EV charging points as required in the Sustainable Travel SPD and have made them aware of the BMBC Good Practice Guidance also. These documents will be noted within the assessment. **An assessment of the proposed development in accordance with the BMBC Air Quality and Emissions Good Practice Planning Guidance will be required in order to determine the scale of the proposed development (minor, medium, major). As this is expected to be a "major" development, an accompanying damage cost calculation in accordance with this guidance will be required, should this be deemed to be the case.**

It would be most helpful if you could confirm whether this approach is acceptable.

If you require any further information, or wish to discuss anything further, please do not hesitate to contact me. Please supply for my appraisal a map of the receptor locations to be used with the proposed assessment, along with grid co-ordinates and a brief description of each location.

We will prepare a plot of the receptor locations. I am not sure exactly what is required from a description, will an approximate address and a comment that it's a residential property be sufficient? **An approximate address along with the 12 digit grid reference will be satisfactory for me to appraise these proposed locations.**

Kind regards,

Paul

Dr. Paul Sanderson | Senior Environmental Scientist (Air Quality)
Wardell Armstrong LLP
Sir Henry Doulton House, Forge Lane, Etruria, Stoke on Trent, ST1 5BD
t. [redacted] m:

From: Shields , Chris (TECHNICAL OFFICER (POLL)) <ChrisShields[redacted]>
Sent: 29 March 2021 15:15
To: Sanderson, Paul <psanderson[redacted]>
Cc: Weatherley, Mariam <mweatherley[redacted]>; White , Stacey (SPATIAL PLANNING PROJECT MANAGER) <StaceyWhite[redacted]>; Denton , Paul (ENVIRONMENTAL HEALTH OFFICER) <PaulDenton[redacted]>
Subject: RE: Air Quality Assessment, MU1 Barnsley

Hi Paul,

Thank you for your below e-mail. My comments are in detailed in red below.

Regards,

Chris

Chris Shields
Technical Officer (Pollution Control), Regulatory Services
Business Unit 10
Public Health Directorate
Barnsley Council

Telephone: [redacted]
Mobile: [redacted]
Email: [redacted]

https://www.gov.uk/guidance/wuhan-novel-coronavirus-information-for-the-public
https://publichealthmatters.blog.gov.uk/2020/01/23/wuhan-novel-coronavirus-what-you-need-to-know/

You can find more information about COVID-19 on

- NHS guidance
- NHS Frequently Asked Questions
- Advice for people travelling
- Guidance for non-clinical settings (education, employers and businesses, social, community care and residential settings)

From: Sanderson, Paul <psanderson@[redacted]>
Sent: 24 March 2021 10:15
To: Shields , Chris (TECHNICAL OFFICER (POLL)) <ChrisShields@[redacted]>
Cc: Weatherley, Mariam <mweatherley[redacted]>
Subject: Air Quality Assessment, MU1 Barnsley
Importance: High

Hi Chris,

I'm writing to discuss the air quality assessment for the MU1 Barnsley West development. We have corresponded previously on the assessment for this site in support of the SCRIF planning applications for the proposed roundabouts on Higham Common Road and Barugh Green Road and the link road between them associated with the development.

As previously requested, in support of the roundabout applications we assessed the traffic associated with the MU1 development in detail. The EIA Scoping Request has been submitted to Barnsley Council (05/03/21), who have now advised that they are in the process of preparing the scoping response, which has been allocated reference: *2021/ENQ/00167.*

As such we are going to progress the Air Quality assessment as part of the Environmental Statement for MU1, and we propose to update the assessment work to make use of the latest Defra Emission Factor Toolkit v10.1, released in August 2020, as well as incorporating amended traffic data. Agreed.

We propose to undertake the following works as part of the air quality assessment:

1. A construction phase dust assessment will be undertaken in accordance with the Institute of Air Quality Management (IAQM) document 'Guidance on the Assessment of Dust from Demolition and Construction (February 2014)'. This will consider the potential dust soiling and human health effects, at existing sensitive receptor locations, as a result of demolition, earthworks, construction and the trackout of dirt and mud onto the public highway. Mitigation measures will be recommended, where necessary. My colleague Paul Denton (t:[redacted] e: pauldenton@b[redacted]) will comment on the construction phase dust assessment.

2. Air dispersion modelling, using ADMS-Roads will be undertaken to consider the impact of changing traffic flows, as a result of the proposed development, at existing human sensitive receptor locations. Pollutant concentrations will also be predicted for locations considered representative of the proposed residential dwellings at the site. The assessment will consider nitrogen dioxide (NO_2) and fine particulate matter (PM_{10} and $PM_{2.5}$) concentrations. A sensitivity analysis will be carried out in line with relevant guidance. Agreed. Will the assessment consider the short term air quality standards for NO_2 and PM_{10} as well the long term (annual mean) standards? Could you also reference the sensitivity analysis methodology within your assessment please, along with appropriate explanation of this methodology?

3. Traffic flow information has been provided by the appointed Transport Consultant for the project and will take into account all committed developments. Please list the committed developments taken account of within your assessment. Potential queuing zones and slow down sections at junctions/major traffic lights will

be modelled at a vehicle speed of 20km/h. Agreed. As a result of previous discussions, we have obtained traffic data to cover the Penny Pie Park area and the forthcoming gyratory system will be incorporated in the air quality models of the 2026 Opening Year and 2033 Future Year scenarios (see below).

4. In line with previous work for the roundabout applications, we propose to assess the following scenarios for MU1 (omitting those 2021 scenarios assessed in the roundabout applications which did not include any additional MU1 traffic): In addition to the below scenarios, an additional scenario for assessment is required (2026 opening year, with Barugh Green Road and Higham Common Road roundabouts, partial completion of MU1, **completion of link road**). I appreciate that you may have to discuss this with the traffic consultants in order to determine availability of appropriate traffic data for this additional scenario, however I recall there was a desire within the Council at the time of granting of permission for the roundabouts for subsequent early completion of the link road, particularly in order to prevent additional traffic from the partially completed development being diverted onto the wider road network, especially onto the existing AQMA on Dodworth Road (BMBC AQMA 2A), with subsequent increase in emissions.

    a. 2018 Base Year and model verification; Agreed that 2018 can be used as the base and verification year
    b. 2026 Opening Year (without Barugh Green Road and Higham Common Road roundabouts);
    c. 2026 Opening Year (with Barugh Green Road and Higham Common Road roundabouts, partial completion of MU1, no link road);
    d. 2033 Future Year (No link road, roundabouts or MU1 development); and
    e. 2033 Future Year (including both roundabouts, link road and full completion of MU1).

5. We anticipate using meteorological data within the air dispersion modelling. We propose to use data from the Emley Moor Recording Station, which is considered to be most similar in terms of distance and altitude. The Emley Moor station is located approximately 11km to the northwest of the proposed development site. Agreed

6. As for the roundabout applications, model verification for NO_2 will be undertaken using data from the SCRIF applications supplied to us by AECOM, and using Barnsley Metropolitan District Council data from monitoring locations on the A628 Dodworth Road between the M1 and the Pogmoor Crossroads. Agreed. As there are no monitoring locations for PM_{10} and $PM_{2.5}$ within the study area, we do not propose to undertake model verification for PM_{10} and $PM_{2.5}$. Will any subsequent model verification factor applied to the modelled NO2 concentrations be also applied to modelled the PM_{10} and $PM_{2.5}$ concentrations?

7. Background data for NO_2 will be taken from the Barnsley Gawber Continuous Monitoring Station. It seems that there are no suitable background monitoring locations nearby for PM_{10} and $PM_{2.5}$ which would be representative of the proposed development site and therefore these will be obtained from the 2018-based DEFRA background maps for the appropriate grid squares. Agreed

8. Predicted pollutant concentrations for human receptors will be compared with the current air quality objectives as set out in the Air Quality Standards Regulations 2010. Changes in pollutant concentrations, as a result of the proposed development, will be calculated and compared against the IAQM and Environmental Protection UK guidance document on planning for air quality: 'Land-Use Planning and Development Control: Planning for Air Quality (January, 2017).' Agreed

I note the EIA scoping report in support of this application states the following:

"13.10 The air quality assessment will include consideration of both the construction and operational phases of development and will be undertaken in line with BMBC Air Quality and Emissions Good Practice Planning Guidance, October 2018". The latest version of the BMBC Air Quality and Emissions Good Practice Planning Guidance (March 2020) can be found at https://www.barnsley.gov.uk/media/16257/pdc-2020-mar-bmbc-aqe-technical-planning-guidance-v12.pdf.

In addition, following the adoption of the Sustainable Travel Supplementary Planning Document, installation of electric vehicle charge points are recommended in accordance with the requirements of this document, the details of which are in the table below.

Residential	1 charging point per unit (dwelling with dedicated parking), or 1 charging point per 10 spaces (unallocated parking)

It is further recommended that the electric vehicle charge points are demonstrated to be "mode 3", minimum 7 kW (32 AMP) in order to meet future electric vehicle charge point requirements, and these requirements shall be acknowledged when discussing mitigation of operational phase traffic emissions within your assessment.

It would be most helpful if you could confirm whether this approach is acceptable.

If you require any further information, or wish to discuss anything further, please do not hesitate to contact me. Please supply for my appraisal a map of the receptor locations to be used with the proposed assessment, along with grid co-ordinates and a brief description of each location.

Kind regards,

Paul

Dr. Paul Sanderson | Environmental Scientist (Air Quality)
Wardell Armstrong LLP
Sir Henry Doulton House, Forge Lane, Etruria, Stoke on Trent, ST1 5BD
m:

From:	Sanderson, Paul
To:	JohnScott [redacted]
Cc:	EmilyConvey-McGovern [redacted]; Weatherley, Mariam
Subject:	Air quality assessment methodology, Barnsley West (MU1)
Date:	24 May 2023 12:04:00
Attachments:	image001.png image002.jpg image003.png image004.png image005.png image006.png image007.png

Hi John,

I'm writing to discuss the air quality assessment for the Barnsley West development (MU1). We have corresponded extensively with your predecessor Chris Shields on the assessments for this site, I can provide earlier correspondence if you need it. I have also copied in Emily Convey-McGovern who I understand is dealing with dust issues.

As a result of some amendments to the proposals, a new Environmental Statement is to be submitted and we are therefore updating the air quality assessment work to make use of the latest Defra Emission Factor Toolkit v11.1, released in November 2021, as well as incorporating amended traffic data.

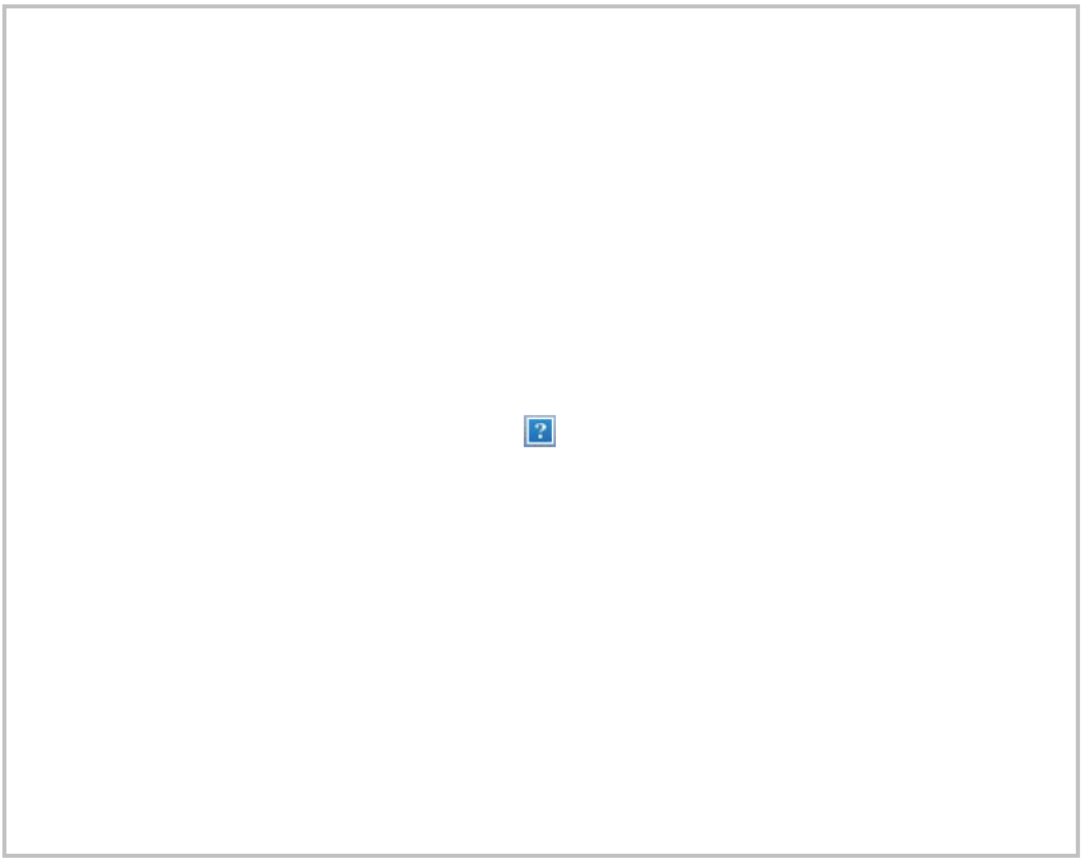
We propose to undertake the following works as part of the air quality assessment:

1. A construction phase dust assessment will be undertaken in accordance with the Institute of Air Quality Management (IAQM) document 'Guidance on the Assessment of Dust from Demolition and Construction (February 2014)'. This will consider the potential dust soiling and human health effects, at existing sensitive receptor locations, as a result of demolition, earthworks, construction and the trackout of dirt and mud onto the public highway. Mitigation measures will be recommended, where necessary (I believe your colleague Paul Denton, copied commented on the construction phase previously).

2. Air dispersion modelling, using ADMS-Roads will be undertaken to consider the impact of changing traffic flows, as a result of the proposed development, at existing human sensitive receptor locations. Pollutant concentrations will also be predicted for locations considered representative of the proposed residential dwellings at the site. The assessment will consider nitrogen dioxide (NO_2) and fine particulate matter (PM_{10} and $PM_{2.5}$) concentrations. It is not considered that a sensitivity analysis will be required in this instance, as the assessment will be verified against post-2016 monitoring data (as detailed in Point 7 below), as advised by the IAQM (see withdrawal of Position Statement *Dealing with Uncertainty in Vehicle NOx Emissions within Air Quality Assessments*).

3. Based on Local Air Quality Management Technical Guidance (LAQM.TG(22)), it is not anticipated that there is a risk of exceedances of the short-term objective for NO_2, as monitoring data in and outside of the AQMA does not indicate concentrations close to the threshold of an annual mean concentration of 60µg/m^3 above which this is considered to be likely to occur. Annual average NO_2 concentrations will however be reviewed, and consideration will be given to assessing short-term objectives if the predicted annual mean is close to or above 60µg/m^3. The LAQM guidance provides a calculation based on predicted annual mean concentrations to determine whether there is a risk of the short-term objective of PM_{10} being exceeded, and this will be included within the assessment (applied to the receptor location with the highest predicted annual mean PM_{10}).

4. Traffic flow information has been provided by the appointed Transport Consultant for the project. Potential queuing zones and slow down sections at junctions/major traffic lights will be modelled at a vehicle speed of 20km/h. We have been advised, by the transport consultant, that the following committed developments are included within the dataset:



5. Traffic data has been provided to assess the following scenarios:

    a. 2019 Base Year;
    b. 2026 Without Development;
    c. 2026 With Residential Phase 1 Development (No Link Road through the Development);
    d. 2026 With Employment Development (No Link Road through the Development);
    e. 2026 With Residential Phase 1 Development and Employment Development (No Link Road through the Development);
    f. 2026 With Residential Phase 1 Development and Employment Development (With Link Road through the Development);
    g. 2033 Without Development;
    h. 2033 With Full Residential Development (With Link Road through the Development); and
    i. 2033 With Full Development (With Link Road through the Development)

6. We will use meteorological data within the air dispersion modelling and propose to use data for 2019 from the Emley Moor Recording Station, which is considered to be most similar in terms of distance and altitude. The Emley Moor station is located approximately 11km to the northwest of the proposed development site.

7. As for the roundabout applications and the earlier assessment work for Barnsley West, model verification for NO_2 will be undertaken using data from the SCRIF applications supplied to us by AECOM for 2017 (to be re-annualised to 2019), and using Barnsley Metropolitan District Council data from monitoring locations on the A628 Dodworth Road between the M1 and the Pogmoor Crossroads. As there are no monitoring locations for PM_{10} and $PM_{2.5}$ within the study area, we do not propose to undertake model verification for PM_{10} and $PM_{2.5}$.

8. Background data for NO_2 will be taken from the Barnsley Gawber Continuous Monitoring Station. It seems that there are no suitable background monitoring locations nearby for PM_{10} and $PM_{2.5}$ which would be representative of the proposed development site and therefore these will be obtained from the 2018-based DEFRA background maps for the appropriate grid squares.

9. Predicted pollutant concentrations for human receptors will be compared with the current air quality objectives as set out in the Air Quality Standards Regulations 2010. Changes in pollutant concentrations, as a result of the proposed development, will be calculated and compared against the IAQM and Environmental Protection UK guidance document on planning for air quality: 'Land-Use Planning and Development Control: Planning for Air Quality (January, 2017).' It is expected that the same sensitive receptors will be assessed as for the previous 2021 ES chapter for Air Quality.

10. In accordance with the requirements of the *BMBC Air Quality and Emissions Good Practice Planning Guidance (November 2021)*, an Emissions Mitigation (Damage Cost) Calculation will be undertaken as part of the assessment.

It would be most helpful if you could confirm whether this approach is acceptable.

If you require any further information, or wish to discuss anything further, please do not hesitate to contact me.

Kind regards,

Paul

Dr. Paul Sanderson | Senior Environmental Scientist (Air Quality)
Wardell Armstrong LLP
Sir Henry Doulton House, Forge Lane, Etruria, Stoke on Trent, ST1 5BD
[redacted] m: