

## High Speed Rail (West Midlands - Crewe)

Supplementary Environmental Statement 2 and  
Additional Provision 2 Environmental Statement

Volume 5: Technical appendices

CA1: Fradley to Colton  
Air quality report (AQ-001-001)

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## Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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# 1 Introduction

## 1.1 Structure of this appendix

- 1.1.1 This document is an appendix to the air quality assessment which forms part of Volume 5 of the Supplementary Environmental Statement 2 (SES2) and Additional Provision 2 Environmental Statement (AP2 ES) for the Fradley to Colton community area (CA1).
- 1.1.2 This appendix provides details of changes to the air quality assessment since the production of the High Speed Two (HS2) Phase 2a (West Midlands - Crewe) Environmental Statement (ES)<sup>1</sup> published in July 2017 (the main ES), as well as the Supplementary Environmental Statement (SES1) and Additional Provision Environmental Statement (AP1 ES) published in March 2018<sup>2</sup>.
- 1.1.3 This report should be read in conjunction with Volume 5, Appendix AQ-001-001, which accompanied the main ES, and Volume 5, Appendix AQ-001-000 of the SES1 and AP1 ES.
- 1.1.4 Maps referred to in this appendix are contained in the SES2 and AP2 ES Volume 5, Air quality Map Book, Map Series AQ-01. In addition, the traffic data used for the air quality assessment is set out in Background Information and Data (BID)<sup>3</sup> which accompanies the SES2 and AP2 ES (see BID-AQ-002-000: Traffic data used for the air quality assessment in the SES2 and AP2 ES).
- 1.1.5 In this appendix the scheme is referred to as the AP2 revised scheme, which is the SES2 scheme (i.e. the SES1 scheme, submitted to Parliament in March 2018, with the changes described in the SES2) as amended by the AP2 amendments.
- 1.1.6 Where it has been possible to differentiate the air quality assessment between the SES2 changes and the AP2 amendments, this has been done and presented in this report. However, the assessment of road traffic emissions is a combined assessment of both SES2 changes and AP2 amendments in this area.

## 1.2 Scope, methodology, data sources, assumptions and limitations

- 1.2.1 The assessment scope, key assumptions and limitations are as set out in the main ES Environmental Impact Assessment Scope and Methodology Report and its Addendum (see main ES Volume 5: Appendix CT-001-001<sup>4</sup> and Volume 5: Appendix CT-001-002<sup>5</sup>).

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<sup>1</sup> HS2 Ltd (2017), *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Environmental Statement*, <https://www.gov.uk/government/collections/hs2-phase-2a-environmental-statement>

<sup>2</sup> HS2 Ltd (2018), *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Supplementary Environmental Statement and Additional Provision Environmental Statement*, <https://www.gov.uk/government/collections/hs2-phase-2a-supplementary-environmental-statement-and-additional-provision-environmental-statement>

<sup>3</sup> HS2 Ltd (2019), *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data to accompany Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement*, <https://www.gov.uk/government/organisations/high-speed-two-limited>

<sup>4</sup> HS2 Ltd (2017), *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Environmental Impact Assessment Scope and Methodology Report, Main ES, Volume 5: Appendix CT-001-001*, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/627187/E23\\_EIA\\_SMR\\_CT-001-001\\_WEB.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/627187/E23_EIA_SMR_CT-001-001_WEB.pdf)

<sup>5</sup> HS2 Ltd (2017), *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Environmental Impact Assessment Scope and Methodology Report Addendum, Main ES, Volume 5: Appendix CT-001-002*, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/627188/E24A\\_CT-001-002\\_Part\\_1\\_WEB.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/627188/E24A_CT-001-002_Part_1_WEB.pdf)

1.2.2 In order to differentiate between the original proposals assessed as part of the main ES and subsequent changes, the following terms are used:

- 'the original scheme' – the Bill scheme submitted to Parliament in July 2017, which was assessed in the main ES;
- 'the SES1 scheme' – the original scheme with the changes described in the SES1 submitted in March 2018;
- 'the AP1 revised scheme' – the SES1 scheme as amended by the AP1 submitted in March 2018;
- 'the SES2 scheme' – the SES1 scheme with the changes described in the SES2; and
- 'the AP2 revised scheme' – the SES2 scheme as amended by the AP2.

## 2 Baseline air quality data

### 2.1 Overview

2.1.1 Since the production of the main ES as amended by the SES1 and AP1 ES, air quality measurements for the baseline year of 2016 have become available. Background pollutant concentrations provided by the Department for Environment, Food and Rural Affairs (Defra) have also been updated.

2.1.2 This section provides the new baseline information in the Fradley to Colton area.

### 2.2 Local air quality monitoring data

2.2.1 Monitoring sites within the study area that are considered relevant for this assessment are shown in the SES2 and AP2 ES Volume 5 Map: AQ-01-101.

#### *Continuous monitoring*

2.2.2 There are no continuous air quality monitoring sites within the Fradley to Colton area.

#### *Diffusion tubes*

2.2.3 There are five diffusion tube sites within the Fradley to Colton area considered relevant for the assessment of air quality. Table 1 summarises the results from these diffusion tube sites. Annual mean nitrogen dioxide (NO<sub>2</sub>) concentrations were above the air quality standard at two sites along the A38 Rykneld Street in 2016.

Table 1: Annual mean NO<sub>2</sub> concentrations recorded at diffusion tube monitoring sites<sup>6,7</sup>

Site	Ordnance Survey coordinates	Annual mean NO <sub>2</sub> concentrations (µg/m <sup>3</sup> )			
		2013	2014	2015	2016
Alrewas A38-1	417101, 314180	38	37	38	43
Fradley A38-2/2(1)	416295, 313186	35	36	33	38
Fradley A38-2A/B	416290, 313175	43	43	42	45
Lichfield A38-3	412891, 306817	36	31	30	33
Lichfield L	410544, 310760	17	17	16	18

### 2.3 Background pollutant concentrations

2.3.1 Since the production of the main ES as amended by the SES1 and AP1 ES, updated background pollutant concentrations have become available from Defra<sup>8</sup>.

2.3.2 The updated background NO<sub>2</sub>, PM<sub>10</sub><sup>9</sup> and PM<sub>2.5</sub><sup>10</sup> concentrations are within the air quality standards throughout the study area for the baseline year of 2016. Annual

<sup>6</sup> Cannock Chase Council (2017), 2017 Air Quality Annual Status Report

<sup>7</sup> Lichfield District Council (2018), Annual Status Report 2017, Bureau Veritas

<sup>8</sup> Department for Environment, Food and Rural Affairs (Defra), Background mapping data for local authorities - 2015, <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2015>



mean NO<sub>2</sub> concentrations in the study area were in the range 7.2µg/m<sup>3</sup> – 16.2µg/m<sup>3</sup> in 2016. Annual mean PM<sub>10</sub> and PM<sub>2.5</sub> concentrations were in the range 11.3µg/m<sup>3</sup> – 20.7µg/m<sup>3</sup> and 7.9µg/m<sup>3</sup> – 12.4µg/m<sup>3</sup> in 2016, respectively. The updated background pollutant concentrations are lower than those reported in the main ES as amended by the SES1 and AP1 ES.

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<sup>9</sup> Particulate matter with aerodynamic diameter of less than 10 micrometres.

<sup>10</sup> Particulate matter with aerodynamic diameter of less than 2.5 micrometres.

## 3 Construction dust assessment

### 3.1 Overview

3.1.1 This section provides details of the assessment of dust emissions during construction of the AP2 revised scheme. The assessment is provided separately for each proposed amendment to the design, where it has been identified that the amendment has the potential to change the risk of dust soiling, human health effects or ecological effects compared to the main ES.

### 3.2 Additional land and a change to Bill powers required to make alterations to the Handsacre Junction connection into the West Coast Main Line (AP2-001-001)

#### Dust soiling and human health effects

##### *Assessed receptors and sensitivity of the area*

3.2.1 The assessment of dust soiling and human health effects has been undertaken for the area around Handsacre. Residential dwellings are located within 50m of earthworks, 20m of construction and 50m of trackout<sup>11</sup> activities in this area. There are no demolition activities in this area. There is also Hayes Meadow Primary School located within 20m of earthworks, construction and trackout activities in this area.

3.2.2 The sensitivity of the area to dust soiling and human health effects has been defined as shown in Table 2.

Table 2: Sensitivity of area to dust soiling and human health effects (AP2-001-001)

Effect	Demolition	Earthworks	Construction	Trackout
Dust soiling	n/a	Medium	Medium	Medium
Human health	n/a	Low	Low	Low

##### *Dust emission magnitude*

3.2.3 Each dust generating activity has been assigned a dust emission magnitude as shown in Table 3.

Table 3: Dust emission magnitude for dust soiling and human health effects (AP2-001-001)

Area	Demolition	Earthworks	Construction	Trackout
AP2-001-001	n/a	Large	Large	Large

##### *Risk of impacts*

3.2.4 Taking into consideration the dust emission magnitude of each activity and the sensitivity of the area, the risk of dust effects has been defined as shown in Table 4.

<sup>11</sup> Trackout refers to the transport of dust and dirt from the construction site(s) onto the public road network, where it may be deposited and then re-suspended by vehicles using the network.

Table 4: Risk of dust soiling and human health effects (AP2-001-001)

Effect	Demolition	Earthworks	Construction	Trackout
Dust soiling	n/a	High risk	High risk	High risk
Human health	n/a	Medium risk	Medium risk	Medium risk

3.2.5 In the HS2 Phase One SES and AP2 ES Volume 2, Community Forum Area (CFA) 22 (Whittington to Handsacre), there was no risk of dust soiling or human health effects from trackout activities. In this assessment, it has been identified that there would be a high and medium risk of dust soiling and human health effects respectively from trackout activities associated with this amendment. There is no change to the risk of dust soiling or human health effects from other dust generating activities.

3.2.6 The HS2 Phase One SES and AP2 ES Volume 2, CFA 22 (Whittington to Handsacre), reported no significant effects on air quality from dust generating activities in this area. With the application of the mitigation measures contained in the draft Code of Construction Practice (CoCP)<sup>12</sup>, no new or different significant effects are anticipated from dust generating activities associated with this amendment.

### Ecological effects

#### *Assessed receptors and sensitivity of the area*

3.2.7 An assessment of ecological effects has been undertaken for the area around Handsacre. Two ecological receptors are located within 20m of earthworks, construction and trackout activities in this area. These are Vicars Coppice and Johns Gorse ancient woodland sites. There are no demolition activities in this area.

3.2.8 The sensitivity of the area to ecological effects is defined as low for all dust generating activities.

#### *Dust emission magnitude*

3.2.9 Each dust generating activity has been assigned a dust emission magnitude as shown in Table 5.

Table 5: Dust emission magnitude for ecological effects (AP2-001-001)

Area	Demolition	Earthworks	Construction	Trackout
AP2-001-001	n/a	Large	Large	Large

### *Risk of impacts*

3.2.10 Taking into consideration the dust emission magnitude of each activity and the sensitivity of the area, the risk of dust effects has been defined as shown in Table 6.

<sup>12</sup> HS2 Ltd (2017), *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Environmental Statement, Draft Code of Construction Practice*, Volume 5: Appendix CT-003-000, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/627182/E26\\_CT-003-000\\_WEB.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/627182/E26_CT-003-000_WEB.pdf)

Table 6: Risk of ecological effects (AP2-001-001)

Effect	Demolition	Earthworks	Construction	Trackout
Ecological	n/a	Low risk	Low risk	Low risk

3.2.11 There is no change to the risk of ecological effects from that reported in the HS2 Phase One Whittington to Handsacre area (CFA22) SES and AP2 ES. With the application of the mitigation measures contained in the draft CoCP, no new or different significant effects are anticipated from dust generating activities associated with this amendment.

### 3.3 Additional land and a change to Bill powers required to divert Common Lane to the A515 Lichfield Road (AP2-001-006)

#### *Assessed receptors and sensitivity of the area*

3.3.1 The assessment of dust soiling and human health effects has been undertaken for the area around Common Lane. Residential dwellings are located within 20m of dust generating activities in this area. No ecological receptors are located in this area and therefore an assessment of ecological effects from dust generating activities associated with this amendment has not been undertaken.

3.3.2 The sensitivity of the area to dust soiling and human health effects has been defined as shown in Table 7.

Table 7: Sensitivity of area to dust soiling and human health effects (AP2-001-006)

Effect	Demolition	Earthworks	Construction	Trackout
Dust soiling	Medium	Medium	Medium	Medium
Human health	Low	Low	Low	Low

#### *Dust emission magnitude*

3.3.3 Each dust generating activity has been assigned a dust emission magnitude as shown in Table 8.

Table 8: Dust emission magnitude for dust soiling and human health effects (AP2-001-006)

Area	Demolition	Earthworks	Construction	Trackout
AP2-001-006	Small	Large	Large	Large

#### *Risk of impacts*

3.3.4 Taking into consideration the dust emission magnitude of each activity and the sensitivity of the area, the risk of dust effects has been defined as shown in Table 9.

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Table 9: Risk of dust soiling and human health effects (AP2-001-006)

Effect	Demolition	Earthworks	Construction	Trackout
Dust soiling	Low	Medium	Medium	Medium
Human health	Negligible	Low	Low	Low

3.3.5 There is no change to the risk of dust soiling human and health effects from dust generating activities from those reported in the main ES.

3.3.6 The main ES reported no significant effects on air quality from dust generating activities in this area. With the application of the mitigation measures contained in the draft CoCP, no new or different significant effects are anticipated from dust generating activities associated with this amendment.

## 4 Air quality assessment – road traffic

### 4.1 Overview

4.1.1 This section provides details of the assessment of road traffic emissions during construction of the AP2 revised scheme. The assessment considers the combined effects of SES2 changes and AP2 amendments in this area.

### 4.2 Model verification

4.2.1 Since the production of the main ES, air quality measurements for the baseline year of 2016 have become available. The model verification has therefore been updated to take account of the 2016 monitoring data.

4.2.2 Model verification was undertaken on a route-wide basis where monitoring sites are located adjacent to the modelled road network. The objectives of the model verification are to evaluate model performance and to determine if model adjustment is required.

4.2.3 Some of the monitoring locations were not considered suitable for model verification, due to missing traffic or monitoring data, or other spatial considerations. A total of 21 monitoring sites were included in the verification exercise. The comparison of monitored and modelled NO<sub>2</sub> concentrations is shown in Table 10.

Table 10: Comparison of monitored and modelled NO<sub>2</sub> concentrations

Site	Monitored concentration (µg/m <sup>3</sup> )	Modelled concentration (µg/m <sup>3</sup> )	Difference [(modelled – monitored)/monitored] *100]
CE206	30.7	22.9	-25.4%
CE225	35.1	25.1	-28.4%
CE247	20.6	20.1	-2.6%
DT28	30.8	32.6	5.9%
2	34.0	49.5	45.5%
5	34.0	21.5	-36.8%
8	33.0	40.7	23.2%
10	27.0	23.4	-13.4%
21	27.0	22.4	-16.9%
26	33.0	31.0	-6.1%
29	25.0	23.4	-6.5%
M6CLAYTON	36.0	46.7	29.6%

Site	Monitored concentration ( $\mu\text{g}/\text{m}^3$ )	Modelled concentration ( $\mu\text{g}/\text{m}^3$ )	Difference [(modelled – monitored)/monitored] *100]
DT13	35.0	34.0	-2.8%
DT14	39.0	34.7	-11.2%
DT36	38.0	36.8	-3.2%
DT38	37.0	29.3	-20.8%
DT39	39.0	31.7	-18.6%
DT43	41.0	37.9	-7.5%
A38-1	43.0	41.7	-3.0%
A38-2/2(1)	37.6	40.0	6.4%
A38-2A/B	45.1	42.8	-5.2%

4.2.4 As the majority of modelled NO<sub>2</sub> concentrations were within  $\pm 25\%$  of the monitored concentrations and there was no systematic under or over prediction, no model adjustment was undertaken. Modelled concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> have not been adjusted. Therefore, no changes are predicted from the assessment presented in the main ES.

### 4.3 Assessment of construction traffic emissions

4.3.1 Construction traffic data used in this assessment is detailed in the BID that accompanies the SES2 and AP2 ES (see BID-AQ-002-000: Traffic data used for the air quality assessment in the SES2 and AP2 ES). The assessment of construction traffic emissions has used traffic data based on an estimate of the average daily flows at the peak year during the construction period (2020-2026). However, vehicle emissions and background concentrations have been taken for the first construction year in 2020.

4.3.2 As set out in SES2 and AP2 ES, Volume 1, Introduction to the SES2 and the AP2 ES, since the production of the main ES, updated background pollutant concentrations<sup>8</sup> and road vehicle emission factors<sup>13</sup> have become available from Defra. These have been used in this assessment. The updated road vehicle emission factors are higher for nitrogen oxides (NO<sub>x</sub>) than those used in the main ES, especially along motorways. Therefore, higher concentrations have been predicted for the future baseline scenario (without the HS2 scheme). At locations where NO<sub>2</sub> concentrations are predicted to exceed the annual mean air quality standard of  $40\mu\text{g}/\text{m}^3$  without the scheme, it is more likely that a small increase in concentrations due to the scheme will result in a significant effect.

<sup>13</sup> Department for Environment, Food and Rural Affairs (Defra), *Emissions Factors Toolkit*, <https://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html>

## Screening of traffic data

4.3.3 The screening process has identified a total of 9 roads in the Fradley to Colton area for further assessment; these are:

- the A38 Rykneld Street;
- the A513 Kings Bromley Lane;
- the B5014 Ridware Road;
- the A51 Stafford Road;
- Wood End Lane;
- the A515 Tewnals Lane/Lichfield Road;
- the A5127 Church Street;
- the A5192 Cappers Lane/Eastern Avenue; and
- the A5148.

4.3.4 Traffic data for construction vehicles using the haul roads and moving between compounds has also been included in the assessment. Further roads have been included in the assessment to account for their emissions at nearby receptors.

## Receptors assessed and background concentrations

4.3.5 Table 11 presents the sensitive receptors included in this assessment and the background pollutant concentrations for 2020.

4.3.6 No ecological receptors were identified within 200m of the screened in roads within the Fradley to Colton area during construction of the AP2 revised scheme.

Table 11: Modelled receptors (construction phase) and 2020 background pollutant concentrations

Receptor	Description/ location	Ordnance Survey coordinates	Background concentrations in 2020 ( $\mu\text{g}/\text{m}^3$ )			
			NOx	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
1-C-H1	Residential development of 71 new homes, including 62 affordable homes, access, landscaping and all associated works near A513 (14_01018_FULM)	406041, 316688	13.5	10.1	11.8	8.1
1-C-H2	Rosewood Farm, Rugeley	406991, 320265	9.5	7.3	12.0	8.1
1-C-H3	Luthbur, Pipe Ridware, Rugeley	409284, 318075	9.0	6.9	12.7	8.4
1-C-H4	Hadley Gate Farm, Rugeley	407209, 320364	9.1	7.0	12.7	8.4



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Receptor	Description/ location	Ordnance Survey coordinates	Background concentrations in 2020 (µg/m <sup>3</sup> )			
			NOx	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
1-C-H5	Hamley Fields, Rugeley	405677, 321497	9.3	7.1	11.9	8.0
1-C-H6	Bleak Cottage, Ws15 3lu	405526, 321542	9.3	7.1	11.9	8.0
1-C-H7	Rose Cottage, Rileyhill	412000, 315108	10.2	7.8	12.7	8.4
1-C-H8	Parva House, Pipe Ridware	409568, 317786	9.8	7.5	12.3	8.2
1-C-H9	Dimble Cottage, Blithbury	408055, 319729	9.1	7.0	12.8	8.5
1-C-H10	Echills Farmhouse, Kings Bromley	410855, 316384	10.3	7.9	13.1	8.6
1-C-H11	Woodhouse Farm, Pipe Ridware	409088, 318737	9.0	6.9	12.7	8.4
1-C-H12	Barn Farmhouse, Rileyhill	412247, 315257	10.2	7.8	12.7	8.4
1-C-H13	Conversion of existing agricultural buildings to two dwellings on Pipe Lane (12_01025_COU)	408777, 318507	9.4	7.2	12.6	8.4
1-C-H14	Wellfield Road, Alrewas	417287, 314520	17.4	12.9	15.5	10.1
1-C-H15	Wharf Farmhouse, Bromley Hayes	411600, 314693	11.9	9.0	13.1	8.7
1-C-H16	Glebe Cottage, Rugeley	409708, 316803	11.4	8.7	13.1	8.7
1-C-H17	Lysways Lodge, Longdon	409020, 312796	11.4	8.7	12.7	8.5
1-C-H18	The Meadows, Lichfield	410656, 313088	11.0	8.4	12.2	8.2
1-C-H19	Rileyhill Farm, Rileyhill	411684, 315103	11.1	8.4	13.8	9.0

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Receptor	Description/ location	Ordnance Survey coordinates	Background concentrations in 2020 ( $\mu\text{g}/\text{m}^3$ )			
			NOx	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
1-C-H20	Cherry Orchard Farm, Longdon	408593, 313884	11.4	8.7	12.3	8.2
1-C-H21	Mill House, Lichfield	413772, 308672	17.9	13.2	14.4	9.3
1-C-H22	Croxall Road, Alrewas	417624, 314844	17.4	12.9	15.5	10.1
1-C-H23	Hill Top Coppice, Brereton Hill	406013, 315772	11.8	8.9	12.0	8.2
1-C-H24	Bridge Bungalow, Rugeley	404905, 318934	19.6	14.1	20.2	12.0
1-C-H25	West Farmhouse, Lichfield	414050, 309202	15.5	11.6	14.1	9.2
1-C-H26	Humpty Dumpty Day Nursery, Lichfield	413313, 310008	16.7	12.3	13.9	9.1
1-C-H27	The Colliers, Rugeley	405106, 317769	14.8	11.0	13.0	8.6
1-C-H28	Pool Farm, Kings Bromley	411825, 315232	11.1	8.4	13.8	9.0
1-C-H29	Woods Farmhouse, Fradley	412084, 313350	12.2	9.2	12.8	8.6
1-C-H30	Valley Lane, Lichfield	413209, 310018	16.7	12.3	13.9	9.1
1-C-H31	Wychnor Bridges Farm Cottage, Wychnor	418622, 316191	16.2	12.0	14.3	9.4
1-C-H32	Bell Bridge Cottage, Lichfield	415899, 312597	17.6	12.9	15.3	9.9
1-C-H33	The Hartlands, Longdon	407922, 314333	11.6	8.8	12.2	8.2
1-C-H34	Whiteoaks, Kings Bromley	411399, 316358	10.3	7.8	12.7	8.4
1-C-H35	Rookery Lodge, Kings Bromley	410862, 316786	10.3	7.9	13.1	8.6

SES2 and AP2 ES Appendix AQ-001-001

Receptor	Description/ location	Ordnance Survey coordinates	Background concentrations in 2020 ( $\mu\text{g}/\text{m}^3$ )			
			NOx	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
1-C-H36	Laburnum Cottage, Streethay	414278, 310457	18.6	13.6	15.1	9.8
1-C-H37	Streethay House Farm, Streethay	414275, 310528	18.6	13.6	15.1	9.8
1-C-H38	Eastfields, Hill Ridware	408644, 317474	10.3	7.9	12.8	8.5
1-C-H39	Stafford Road, Lichfield	410386, 310566	13.2	10.0	12.6	8.4
1-C-H40	Featherbed Cottages, Lichfield	409972, 311213	12.1	9.1	13.2	8.7
1-C-H41	Coppice Grove, Lichfield	413621, 309527	18.8	13.8	13.5	9.0
1-C-H42	New Haven, Fradley	414199, 312566	13.3	10.0	13.5	8.9
1-C-H43	Highbridge House, Hill Ridware	409297, 316766	11.4	8.7	13.1	8.7
1-C-H44	Thimblecottage, Hill Ridware	408126, 317839	10.3	7.9	12.8	8.5
1-C-H45	Oaklands Close, Hill Ridware	408038, 317920	10.3	7.9	12.8	8.5
1-C-H46	Henry Chadwick Primary School, Hill Ridware	408283, 317799	10.3	7.9	12.8	8.5
1-C-H47	Street Hay Cottage, Streethay	414498, 310791	18.6	13.6	15.1	9.8
1-C-H48	Worcester Close, Lichfield	411985, 311449	12.9	9.8	12.9	8.5
1-C-H49	Residential development outlined in the local plan strategy near the A38 (Lg_Land_off_Burt on_Road_(East)_St reethay)	414317, 310495	18.6	13.6	15.1	9.8
1-C-H50	Temporary siting of a mobile home for	405019, 321406	9.3	7.1	11.9	8.0

SES2 and AP2 ES Appendix AQ-001-001

Receptor	Description/ location	Ordnance Survey coordinates	Background concentrations in 2020 ( $\mu\text{g}/\text{m}^3$ )			
			NOx	NO2	PM10	PM2.5
	an agricultural worker on Moor Lane (14_00779_FUL)					
1-C-H51	Change of use of barn into residential receptor on Moor Lane (16_00462_COU)	405596, 321561	9.3	7.1	11.9	8.0
1-C-H52	Conversion of outbuilding to form a 3 bedroom dwelling near Newlands Lane (17_01412_COU)	405647, 321613	9.3	7.1	11.9	8.0
1-C-H53	Conversion of outbuilding to form a 3 bedroom dwelling near Park Lane (17_00201_COU)	405678, 321634	9.3	7.1	11.9	8.0

## Assessment results

4.3.7 Table 12 to Table 14 provide the summary of the modelled pollutant concentrations at the assessed receptors, including the magnitude of change and impact descriptor, and comparison against the main ES as amended by SES1 and AP1 ES.

Table 12: Predicted annual mean NO<sub>2</sub> concentrations and impacts (construction)

Receptor	Description/location	NO <sub>2</sub> concentrations (µg/m <sup>3</sup> )		Change in NO <sub>2</sub> concentrations (µg/m <sup>3</sup> )	Impact descriptor	Impact descriptor in the main ES as amended by SES1 and AP1 ES	Significance
		2020 without the AP2 revised scheme	2020 with the AP2 revised scheme				
1-C-H1	Residential development of 71 new homes, including 62 affordable homes, access, landscaping and all associated works near A513 (14_01018_FULM)	14.8	14.8	0.0	Negligible	Negligible	Not significant
1-C-H2	Rosewood Farm, Rugeley	7.9	8.0	0.1	Negligible	Negligible	Not significant
1-C-H3	Luthbur, Pipe Ridware, Rugeley	7.3	7.3	0.0	Negligible	Negligible	Not significant
1-C-H4	Hadley Gate Farm, Rugeley	7.4	7.6	0.2	Negligible	Negligible	Not significant
1-C-H5	Hamley Fields, Rugeley	7.3	7.5	0.2	Negligible	Negligible	Not significant
1-C-H6	Bleak Cottage, Ws15 3lu	7.4	7.7	0.3	Negligible	Negligible	Not significant
1-C-H7	Rose Cottage, Rileyhill	8.4	8.5	0.1	Negligible	Negligible	Not significant
1-C-H8	Parva House, Pipe Ridware	8.1	8.2	0.1	Negligible	Negligible	Not significant
1-C-H9	Dimble Cottage, Blithbury	7.8	7.9	0.1	Negligible	Negligible	Not significant
1-C-H10	Echills Farmhouse, Kings Bromley	8.3	8.4	0.1	Negligible	Negligible	Not significant
1-C-H11	Woodhouse Farm, Pipe Ridware	7.2	7.4	0.2	Negligible	Negligible	Not significant

Receptor	Description/location	NO2 concentrations ( $\mu\text{g}/\text{m}^3$ )		Change in NO2 concentrations ( $\mu\text{g}/\text{m}^3$ )	Impact descriptor	Impact descriptor in the main ES as amended by SES1 and AP1 ES	Significance
		2020 without the AP2 revised scheme	2020 with the AP2 revised scheme				
1-C-H12	Barn Farmhouse, Rileyhill	8.3	8.4	0.1	Negligible	Negligible	Not significant
1-C-H13	Conversion of existing agricultural buildings to two dwellings on Pipe Lane (12_01025_COU)	7.5	7.5	0.0	Negligible	Negligible	Not significant
1-C-H14	Wellfield Road, Alrewas	26.1	26.2	0.1	Negligible	Negligible	Not significant
1-C-H15	Wharf Farmhouse, Bromley Hayes	10.4	10.4	0.0	Negligible	Negligible	Not significant
1-C-H16	Glebe Cottage, Rugeley	11.0	11.0	0.0	Negligible	Negligible	Not significant
1-C-H17	Lysways Lodge, Longdon	12.3	12.3	0.0	Negligible	Negligible	Not significant
1-C-H18	The Meadows, Lichfield	10.1	10.1	0.0	Negligible	Negligible	Not significant
1-C-H19	Rileyhill Farm, Rileyhill	9.3	9.4	0.1	Negligible	Negligible	Not significant
1-C-H20	Cherry Orchard Farm, Longdon	11.6	11.6	0.0	Negligible	Negligible	Not significant
1-C-H21	Mill House, Lichfield	17.1	17.1	0.0	Negligible	Negligible	Not significant
1-C-H22	Croxall Road, Alrewas	31.2	31.2	0.0	Negligible	Negligible	Not significant
1-C-H23	Hill Top Coppice, Brereton Hill	12.1	12.1	0.0	Negligible	Negligible	Not significant
1-C-H24	Bridge Bungalow, Rugeley	18.0	18.1	0.1	Negligible	Negligible	Not significant
1-C-H25	West Farmhouse, Lichfield	16.4	16.4	0.0	Negligible	Negligible	Not significant

Receptor	Description/location	NO <sub>2</sub> concentrations (µg/m <sup>3</sup> )		Change in NO <sub>2</sub> concentrations (µg/m <sup>3</sup> )	Impact descriptor	Impact descriptor in the main ES as amended by SES <sub>1</sub> and AP <sub>1</sub> ES	Significance
		2020 without the AP <sub>2</sub> revised scheme	2020 with the AP <sub>2</sub> revised scheme				
1-C-H26	Humpty Dumpty Day Nursery, Lichfield	20.5	20.5	0.0	Negligible	Negligible	Not significant
1-C-H27	The Colliers, Rugeley	12.7	12.7	0.0	Negligible	Negligible	Not significant
1-C-H28	Pool Farm, Kings Bromley	10.9	11.0	0.1	Negligible	Negligible	Not significant
1-C-H29	Woods Farmhouse, Fradley	12.1	12.2	0.1	Negligible	Negligible	Not significant
1-C-H30	Valley Lane, Lichfield	21.3	21.3	0.0	Negligible	Negligible	Not significant
1-C-H31	Wychnor Bridges Farm Cottage, Wychnor	22.5	22.6	0.1	Negligible	Negligible	Not significant
1-C-H32	Bell Bridge Cottage, Lichfield	32.4	32.4	0.0	Negligible	Negligible	Not significant
1-C-H33	The Hartlands, Longdon	13.3	13.3	0.0	Negligible	Negligible	Not significant
1-C-H34	Whiteoaks, Kings Bromley	9.9	10.0	0.1	Negligible	Negligible	Not significant
1-C-H35	Rookery Lodge, Kings Bromley	9.8	9.9	0.1	Negligible	Negligible	Not significant
1-C-H36	Laburnum Cottage, Streethay	22.0	22.0	0.0	Negligible	Negligible	Not significant
1-C-H37	Streethay House Farm, Streethay	20.3	20.3	0.0	Negligible	Negligible	Not significant
1-C-H38	Eastfields, Hill Ridware	8.8	8.8	0.0	Negligible	Negligible	Not significant
1-C-H39	Stafford Road, Lichfield	15.2	15.2	0.0	Negligible	Negligible	Not significant

Receptor	Description/location	NO2 concentrations ( $\mu\text{g}/\text{m}^3$ )		Change in NO2 concentrations ( $\mu\text{g}/\text{m}^3$ )	Impact descriptor	Impact descriptor in the main ES as amended by SES1 and AP1 ES	Significance
		2020 without the AP2 revised scheme	2020 with the AP2 revised scheme				
1-C-H40	Featherbed Cottages, Lichfield	16.4	16.5	0.1	Negligible	Negligible	Not significant
1-C-H41	Coppice Grove, Lichfield	21.0	21.0	0.0	Negligible	Negligible	Not significant
1-C-H42	New Haven, Fradley	12.6	12.6	0.0	Negligible	Negligible	Not significant
1-C-H43	Highbridge House, Hill Ridware	9.6	9.6	0.0	Negligible	Negligible	Not significant
1-C-H44	Thimblecottage, Hill Ridware	9.1	9.1	0.0	Negligible	Negligible	Not significant
1-C-H45	Oaklands Close, Hill Ridware	9.1	9.1	0.0	Negligible	Negligible	Not significant
1-C-H46	Henry Chadwick Primary School, Hill Ridware	8.5	8.5	0.0	Negligible	Negligible	Not significant
1-C-H47	Street Hay Cottage, Streethay	33.5	33.6	0.1	Negligible	Negligible	Not significant
1-C-H48	Worcester Close, Lichfield	12.8	12.8	0.0	Negligible	Negligible	Not significant
1-C-H49	Residential development outlined in the local plan strategy near the A38 (L9_Land_off_Burton_Road_(East)_Streethay)	25.3	25.3	0.0	Negligible	n/a	Not significant
1-C-H50	Temporary siting of a mobile home for an agricultural worker on Moor Lane (14_00779_FUL)	7.4	7.4	0.0	Negligible	n/a	Not significant
1-C-H51	Change of use of barn into residential receptor on Moor Lane (16_00462_COU)	7.4	7.4	0.0	Negligible	n/a	Not significant



Receptor	Description/location	NO2 concentrations ( $\mu\text{g}/\text{m}^3$ )		Change in NO2 concentrations ( $\mu\text{g}/\text{m}^3$ )	Impact descriptor	Impact descriptor in the main ES as amended by SES1 and AP1 ES	Significance
		2020 without the AP2 revised scheme	2020 with the AP2 revised scheme				
1-C-H52	Conversion of outbuilding to form a 3 bedroom dwelling near Newlands Lane (17_01412_COU)	7.4	7.4	0.0	Negligible	n/a	Not significant
1-C-H53	Conversion of outbuilding to form a 3 bedroom dwelling near Park Lane (17_00201_COU)	7.3	7.3	0.0	Negligible	n/a	Not significant

Table 13: Predicted annual mean PM10 concentrations and impacts (construction)

Receptor	Description/location	PM10 concentrations ( $\mu\text{g}/\text{m}^3$ )		Change in PM10 concentrations ( $\mu\text{g}/\text{m}^3$ )	Impact descriptor	Impact descriptor in the main ES as amended by SES1 and AP1 ES	Significance
		2020 without the AP2 revised scheme	2020 with the AP2 revised scheme				
1-C-H1	Residential development of 71 new homes, including 62 affordable homes, access, landscaping and all associated works near A513 (14_01018_FULM)	12.4	12.4	0.0	Negligible	Negligible	Not significant
1-C-H2	Rosewood Farm, Rugeley	12.1	12.1	0.0	Negligible	Negligible	Not significant
1-C-H3	Luthbur, Pipe Ridware, Rugeley	12.8	12.8	0.0	Negligible	Negligible	Not significant
1-C-H4	Hadley Gate Farm, Rugeley	12.8	12.8	0.0	Negligible	Negligible	Not significant
1-C-H5	Hamley Fields, Rugeley	11.9	11.9	0.0	Negligible	Negligible	Not significant
1-C-H6	Bleak Cottage, Ws15 3lu	11.9	11.9	0.0	Negligible	Negligible	Not significant
1-C-H7	Rose Cottage, Rileyhill	12.8	12.8	0.0	Negligible	Negligible	Not significant

Receptor	Description/location	PM10 concentrations ( $\mu\text{g}/\text{m}^3$ )		Change in PM10 concentrations ( $\mu\text{g}/\text{m}^3$ )	Impact descriptor	Impact descriptor in the main ES as amended by SES1 and AP1 ES	Significance
		2020 without the AP2 revised scheme	2020 with the AP2 revised scheme				
1-C-H8	Parva House, Pipe Ridware	12.4	12.4	0.0	Negligible	Negligible	Not significant
1-C-H9	Dimble Cottage, Blithbury	13.0	13.0	0.0	Negligible	Negligible	Not significant
1-C-H10	Echills Farmhouse, Kings Bromley	13.2	13.2	0.0	Negligible	Negligible	Not significant
1-C-H11	Woodhouse Farm, Pipe Ridware	12.8	12.8	0.0	Negligible	Negligible	Not significant
1-C-H12	Barn Farmhouse, Rileyhill	12.8	12.8	0.0	Negligible	Negligible	Not significant
1-C-H13	Conversion of existing agricultural buildings to two dwellings on Pipe Lane (12_01025_COU)	12.6	12.6	0.0	Negligible	Negligible	Not significant
1-C-H14	Wellfield Road, Alrewas	17.6	17.6	0.0	Negligible	Negligible	Not significant
1-C-H15	Wharf Farmhouse, Bromley Hayes	13.3	13.4	0.1	Negligible	Negligible	Not significant
1-C-H16	Glebe Cottage, Rugeley	13.5	13.5	0.0	Negligible	Negligible	Not significant
1-C-H17	Lysways Lodge, Longdon	13.3	13.3	0.0	Negligible	Negligible	Not significant
1-C-H18	The Meadows, Lichfield	12.5	12.5	0.0	Negligible	Negligible	Not significant
1-C-H19	Rileyhill Farm, Rileyhill	13.9	13.9	0.0	Negligible	Negligible	Not significant
1-C-H20	Cherry Orchard Farm, Longdon	12.7	12.7	0.0	Negligible	Negligible	Not significant

Receptor	Description/location	PM10 concentrations ( $\mu\text{g}/\text{m}^3$ )		Change in PM10 concentrations ( $\mu\text{g}/\text{m}^3$ )	Impact descriptor	Impact descriptor in the main ES as amended by SES1 and AP1 ES	Significance
		2020 without the AP2 revised scheme	2020 with the AP2 revised scheme				
1-C-H21	Mill House, Lichfield	14.9	14.9	0.0	Negligible	Negligible	Not significant
1-C-H22	Croxall Road, Alrewas	18.3	18.3	0.0	Negligible	Negligible	Not significant
1-C-H23	Hill Top Coppice, Brereton Hill	12.4	12.5	0.1	Negligible	Negligible	Not significant
1-C-H24	Bridge Bungalow, Rugeley	20.7	20.7	0.0	Negligible	Negligible	Not significant
1-C-H25	West Farmhouse, Lichfield	14.8	14.8	0.0	Negligible	Negligible	Not significant
1-C-H26	Humpty Dumpty Day Nursery, Lichfield	15.0	15.0	0.0	Negligible	Negligible	Not significant
1-C-H27	The Colliers, Rugeley	13.2	13.2	0.0	Negligible	Negligible	Not significant
1-C-H28	Pool Farm, Kings Bromley	14.2	14.2	0.0	Negligible	Negligible	Not significant
1-C-H29	Woods Farmhouse, Fradley	13.2	13.2	0.0	Negligible	Negligible	Not significant
1-C-H30	Valley Lane, Lichfield	15.0	15.0	0.0	Negligible	Negligible	Not significant
1-C-H31	Wychnor Bridges Farm Cottage, Wychnor	15.7	15.7	0.0	Negligible	Negligible	Not significant
1-C-H32	Bell Bridge Cottage, Lichfield	18.1	18.1	0.0	Negligible	Negligible	Not significant
1-C-H33	The Hartlands, Longdon	12.9	12.9	0.0	Negligible	Negligible	Not significant
1-C-H34	Whiteoaks, Kings Bromley	13.0	13.0	0.0	Negligible	Negligible	Not significant

Receptor	Description/location	PM10 concentrations ( $\mu\text{g}/\text{m}^3$ )		Change in PM10 concentrations ( $\mu\text{g}/\text{m}^3$ )	Impact descriptor	Impact descriptor in the main ES as amended by SES1 and AP1 ES	Significance
		2020 without the AP2 revised scheme	2020 with the AP2 revised scheme				
1-C-H35	Rookery Lodge, Kings Bromley	13.4	13.4	0.0	Negligible	Negligible	Not significant
1-C-H36	Laburnum Cottage, Streethay	16.3	16.3	0.0	Negligible	Negligible	Not significant
1-C-H37	Streethay House Farm, Streethay	16.0	16.0	0.0	Negligible	Negligible	Not significant
1-C-H38	Eastfields, Hill Ridware	12.9	12.9	0.0	Negligible	Negligible	Not significant
1-C-H39	Stafford Road, Lichfield	13.3	13.3	0.0	Negligible	Negligible	Not significant
1-C-H40	Featherbed Cottages, Lichfield	14.0	14.0	0.0	Negligible	Negligible	Not significant
1-C-H41	Coppice Grove, Lichfield	14.4	14.4	0.0	Negligible	Negligible	Not significant
1-C-H42	New Haven, Fradley	13.9	14.0	0.1	Negligible	Negligible	Not significant
1-C-H43	Highbridge House, Hill Ridware	13.3	13.3	0.0	Negligible	Negligible	Not significant
1-C-H44	Thimblecottage, Hill Ridware	12.9	12.9	0.0	Negligible	Negligible	Not significant
1-C-H45	Oaklands Close, Hill Ridware	12.9	12.9	0.0	Negligible	Negligible	Not significant
1-C-H46	Henry Chadwick Primary School, Hill Ridware	12.8	12.8	0.0	Negligible	Negligible	Not significant
1-C-H47	Street Hay Cottage, Streethay	17.6	17.6	0.0	Negligible	Negligible	Not significant
1-C-H48	Worcester Close, Lichfield	13.3	13.3	0.0	Negligible	Negligible	Not significant

Receptor	Description/location	PM10 concentrations ( $\mu\text{g}/\text{m}^3$ )		Change in PM10 concentrations ( $\mu\text{g}/\text{m}^3$ )	Impact descriptor	Impact descriptor in the main ES as amended by SES1 and AP1 ES	Significance
		2020 without the AP2 revised scheme	2020 with the AP2 revised scheme				
1-C-H49	Residential development outlined in the local plan strategy near the A38 (L9_Land_off_Burton_Road_(East)_Streethay)	16.7	16.7	0.0	Negligible	n/a	Not significant
1-C-H50	Temporary siting of a mobile home for an agricultural worker on Moor Lane (14_00779_FUL)	11.9	11.9	0.0	Negligible	n/a	Not significant
1-C-H51	Change of use of barn into residential receptor on Moor Lane (16_00462_COU)	11.9	11.9	0.0	Negligible	n/a	Not significant
1-C-H52	Conversion of outbuilding to form a 3 bedroom dwelling near Newlands Lane (17_01412_COU)	11.9	11.9	0.0	Negligible	n/a	Not significant
1-C-H53	Conversion of outbuilding to form a 3 bedroom dwelling near Park Lane (17_00201_COU)	11.9	11.9	0.0	Negligible	n/a	Not significant

Table 14: Predicted annual mean PM2.5 concentrations and impacts (construction)

Receptor	Description/location	PM2.5 concentrations ( $\mu\text{g}/\text{m}^3$ )		Change in PM2.5 concentrations ( $\mu\text{g}/\text{m}^3$ )	Impact descriptor	Impact descriptor in the main ES as amended by SES1 and AP1 ES	Significance
		2020 without the AP2 revised scheme	2020 with the AP2 revised scheme				
1-C-H1	Residential development of 71 new homes, including 62 affordable homes, access, landscaping and all associated works near A513 (14_01018_FULM)	8.4	8.4	0.0	Negligible	Negligible	Not significant
1-C-H2	Rosewood Farm, Rugeley	8.1	8.1	0.0	Negligible	Negligible	Not significant
1-C-H3	Luthbur, Pipe Ridware, Rugeley	8.5	8.5	0.0	Negligible	Negligible	Not significant

Receptor	Description/location	PM2.5 concentrations ( $\mu\text{g}/\text{m}^3$ )		Change in PM2.5 concentrations ( $\mu\text{g}/\text{m}^3$ )	Impact descriptor	Impact descriptor in the main ES as amended by SES1 and AP1 ES	Significance
		2020 without the AP2 revised scheme	2020 with the AP2 revised scheme				
1-C-H4	Hadley Gate Farm, Rugeley	8.5	8.5	0.0	Negligible	Negligible	Not significant
1-C-H5	Hamley Fields, Rugeley	8.0	8.0	0.0	Negligible	Negligible	Not significant
1-C-H6	Bleak Cottage, Ws15 3lu	8.0	8.0	0.0	Negligible	Negligible	Not significant
1-C-H7	Rose Cottage, Rileyhill	8.5	8.5	0.0	Negligible	Negligible	Not significant
1-C-H8	Parva House, Pipe Ridware	8.3	8.3	0.0	Negligible	Negligible	Not significant
1-C-H9	Dimble Cottage, Blithbury	8.6	8.6	0.0	Negligible	Negligible	Not significant
1-C-H10	Echills Farmhouse, Kings Bromley	8.7	8.7	0.0	Negligible	Negligible	Not significant
1-C-H11	Woodhouse Farm, Pipe Ridware	8.5	8.5	0.0	Negligible	Negligible	Not significant
1-C-H12	Barn Farmhouse, Rileyhill	8.5	8.5	0.0	Negligible	Negligible	Not significant
1-C-H13	Conversion of existing agricultural buildings to two dwellings on Pipe Lane (12_01025_COU)	8.4	8.4	0.0	Negligible	Negligible	Not significant
1-C-H14	Wellfieldroad, Alrewas	11.4	11.4	0.0	Negligible	Negligible	Not significant
1-C-H15	Wharf Farmhouse, Bromley Hayes	8.9	8.9	0.0	Negligible	Negligible	Not significant
1-C-H16	Glebe Cottage, Rugeley	8.9	8.9	0.0	Negligible	Negligible	Not significant

Receptor	Description/location	PM2.5 concentrations ( $\mu\text{g}/\text{m}^3$ )		Change in PM2.5 concentrations ( $\mu\text{g}/\text{m}^3$ )	Impact descriptor	Impact descriptor in the main ES as amended by SES1 and AP1 ES	Significance
		2020 without the AP2 revised scheme	2020 with the AP2 revised scheme				
1-C-H17	Lysways Lodge, Longdon	8.8	8.8	0.0	Negligible	Negligible	Not significant
1-C-H18	The Meadows, Lichfield	8.4	8.4	0.0	Negligible	Negligible	Not significant
1-C-H19	Rileyhill Farm, Rileyhill	9.1	9.1	0.0	Negligible	Negligible	Not significant
1-C-H20	Cherry Orchard Farm, Longdon	8.5	8.5	0.0	Negligible	Negligible	Not significant
1-C-H21	Mill House, Lichfield	9.6	9.7	0.1	Negligible	Negligible	Not significant
1-C-H22	Croxall Road, Alrewas	11.8	11.8	0.0	Negligible	Negligible	Not significant
1-C-H23	Hill Top Coppice, Brereton Hill	8.5	8.5	0.0	Negligible	Negligible	Not significant
1-C-H24	Bridge Bungalow, Rugeley	12.3	12.3	0.0	Negligible	Negligible	Not significant
1-C-H25	West Farmhouse, Lichfield	9.6	9.6	0.0	Negligible	Negligible	Not significant
1-C-H26	Humpty Dumpty Day Nursery, Lichfield	9.7	9.7	0.0	Negligible	Negligible	Not significant
1-C-H27	The Colliers, Rugeley	8.8	8.8	0.0	Negligible	Negligible	Not significant
1-C-H28	Pool Farm, Kings Bromley	9.3	9.3	0.0	Negligible	Negligible	Not significant
1-C-H29	Woods Farmhouse, Fradley	8.8	8.9	0.1	Negligible	Negligible	Not significant
1-C-H30	Valley Lane, Lichfield	9.7	9.7	0.0	Negligible	Negligible	Not significant

Receptor	Description/location	PM2.5 concentrations ( $\mu\text{g}/\text{m}^3$ )		Change in PM2.5 concentrations ( $\mu\text{g}/\text{m}^3$ )	Impact descriptor	Impact descriptor in the main ES as amended by SES1 and AP1 ES	Significance
		2020 without the AP2 revised scheme	2020 with the AP2 revised scheme				
1-C-H31	Wychnor Bridges Farm Cottage, Wychnor	10.3	10.3	0.0	Negligible	Negligible	Not significant
1-C-H32	Bell Bridge Cottage, Lichfield	11.6	11.6	0.0	Negligible	Negligible	Not significant
1-C-H33	The Hartlands, Longdon	8.6	8.7	0.1	Negligible	Negligible	Not significant
1-C-H34	Whiteoaks, Kings Bromley	8.6	8.6	0.0	Negligible	Negligible	Not significant
1-C-H35	Rookery Lodge, Kings Bromley	8.8	8.8	0.0	Negligible	Negligible	Not significant
1-C-H36	Laburnum Cottage, Streethay	10.5	10.5	0.0	Negligible	Negligible	Not significant
1-C-H37	Streethay House Farm, Streethay	10.4	10.4	0.0	Negligible	Negligible	Not significant
1-C-H38	Eastfields, Hill Ridware	8.6	8.6	0.0	Negligible	Negligible	Not significant
1-C-H39	Stafford Road, Lichfield	8.8	8.8	0.0	Negligible	Negligible	Not significant
1-C-H40	Featherbed Cottages, Lichfield	9.2	9.2	0.0	Negligible	Negligible	Not significant
1-C-H41	Coppice Grove, Lichfield	9.5	9.5	0.0	Negligible	Negligible	Not significant
1-C-H42	New Haven, Fradley	9.1	9.1	0.0	Negligible	Negligible	Not significant
1-C-H43	Highbridge House, Hill Ridware	8.8	8.8	0.0	Negligible	Negligible	Not significant
1-C-H44	Thimblecottage, Hill Ridware	8.6	8.6	0.0	Negligible	Negligible	Not significant



Receptor	Description/location	PM2.5 concentrations ( $\mu\text{g}/\text{m}^3$ )		Change in PM2.5 concentrations ( $\mu\text{g}/\text{m}^3$ )	Impact descriptor	Impact descriptor in the main ES as amended by SES1 and AP1 ES	Significance
		2020 without the AP2 revised scheme	2020 with the AP2 revised scheme				
1-C-H45	Oaklands Close, Hillridware	8.6	8.6	0.0	Negligible	Negligible	Not significant
1-C-H46	Henry Chadwick Primary School, Hill Ridware	8.6	8.6	0.0	Negligible	Negligible	Not significant
1-C-H47	Street Hay Cottage, Streethay	11.4	11.4	0.0	Negligible	Negligible	Not significant
1-C-H48	Worcester Close, Lichfield	8.8	8.8	0.0	Negligible	Negligible	Not significant
1-C-H49	Residential development outlined in the local plan strategy near the A38 (L9_Land_off_Burton_Road_(East)_Streethay)	10.8	10.8	0.0	Negligible	n/a	Not significant
1-C-H50	Temporary siting of a mobile home for an agricultural worker on Moor Lane (14_00779_FUL)	8.0	8.0	0.0	Negligible	n/a	Not significant
1-C-H51	Change of use of barn into residential receptor on Moor Lane (16_00462_COU)	8.0	8.0	0.0	Negligible	n/a	Not significant
1-C-H52	Conversion of outbuilding to form a 3 bedroom dwelling near Newlands Lane (17_01412_COU)	8.0	8.0	0.0	Negligible	n/a	Not significant
1-C-H53	Conversion of outbuilding to form a 3 bedroom dwelling near Park Lane (17_00201_COU)	8.0	8.0	0.0	Negligible	n/a	Not significant

- 4.3.8 The annual mean NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations are predicted to be within the air quality standards during construction of the AP2 revised scheme. Since the annual mean NO<sub>2</sub> concentrations are predicted to be well below 60µg/m<sup>3</sup>, the hourly mean standard is also expected to be met. Similarly, since the annual mean PM<sub>10</sub> concentrations are predicted to be below 35µg/m<sup>3</sup>, the daily mean standard is also expected to be met.
- 4.3.9 Negligible impacts are predicted at all receptors for annual mean NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations.

### **Assessment of significance**

- 4.3.10 No significant effects are anticipated at any receptors in relation to annual mean NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations.
- 4.3.11 There are no new or different significant effects from construction of the AP2 revised scheme compared to the main ES as amended by SES1 and AP1 ES.

## 5 References

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