

# **High Speed Rail (Crewe – Manchester)**

## **Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement**

### **Volume 5: Appendix AQ-001-0MA03**

#### **Air quality**

Air quality report

MA03: Pickmere to Agden and Hulseheath

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##### **Air quality**

Air quality report

MA03: Pickmere to Agden and Hulseheath



## 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 report is an appendix to the air quality assessment which forms part of Volume 5 of the Supplementary Environmental Statement 1 (SES1) and Additional Provision 1 Environmental Statement (AP1 ES) for the Pickmere to Agden and Hulseheath area (MA03).
- 1.1.2 This appendix provides details of changes to the air quality assessment since the High Speed Two (HS2) High Speed Rail (Crewe – Manchester) Environmental Statement (ES)<sup>1</sup> published in 2022 (the main ES).
- 1.1.3 This report is structured into two parts: Part 1 – SES1 and Part 2 – AP1 ES. This report should be read in conjunction with Volume 5, Appendix: AQ-001-0MA03, which accompanied the main ES.
- 1.1.4 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 January 2022, which was assessed in the main ES;
  - ‘the SES1 scheme’ – the original scheme with the changes described in SES1 that are within the existing powers of the Bill; and
  - ‘the AP1 revised scheme’ – the original scheme as amended by the SES1 changes and AP1 amendments.
- 1.1.5 Maps relevant to this appendix are contained in the SES1 and AP1 ES, Volume 5, Air quality Map Book: Map Series AQ-01.
- 1.1.6 In addition, the traffic data used for the air quality assessment is set out in Background Information and Data (BID) which accompanies the SES1 and AP1 ES (see BID AQ-002-0MA03 SES1 and AP1 ES)<sup>2</sup>.
- 1.1.7 Where it has been possible to differentiate the air quality assessment between the SES1 changes and the AP1 amendments, this has been done and presented in this report. However, the assessment of road traffic emissions is a combined assessment of both SES1 changes and AP1 amendments in this area.

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<sup>1</sup> High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

<sup>2</sup> High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Background Information and Data accompanying Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement, Additional data used in the air quality assessment*, BID AQ-002-0MA03 SES1 and AP1 ES. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-1-and-additional-provision-1-environmental-statement>.

## 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 (SMR)<sup>3</sup> (see main ES Volume 5, Appendix: CT-001-00001).

1.2.2 The air quality standards for this assessment are:

- $40\mu\text{g}/\text{m}^3$  as an annual mean for nitrogen dioxide ( $\text{NO}_2$ ) and fine particulate matter ( $\text{PM}_{10}$ );
- $200\mu\text{g}/\text{m}^3$  one-hour mean  $\text{NO}_2$  concentrations, not to be exceeded more than 18 times a year (equivalent to the 99.8<sup>th</sup> percentile of the one-hour mean);
- $50\mu\text{g}/\text{m}^3$  24-hour mean  $\text{PM}_{10}$  concentrations, not to be exceeded more than 35 times a year (equivalent to the 90.4<sup>th</sup> percentile of the 24-hour mean); and
- $20\mu\text{g}/\text{m}^3$  as an annual mean for very fine particulate matter ( $\text{PM}_{2.5}$ ).

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<sup>3</sup> High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Environmental Impact Assessment Scope and Methodology Report*, Volume 5, Appendix: CT-001-00001. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

## 2 Construction dust assessment

2.1.1 This section provides details of the assessment of dust emissions during construction of the AP1 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. A summary is then provided of the overall risk from construction dust in the Pickmere to Agden and Hulseheath area (MA03) and how it has changed from that reported in the main ES.

### 2.2 Removal of the HS2 West Coast Main Line connection (SES1-004-001)

#### Dust soiling and human health effects

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

- 2.2.1 The assessment of dust soiling and human health effects has been undertaken for the area around Hulseheath, which is affected by this SES1 design change. Residential dwellings are located within 50m of demolition, 20m of earthworks, 20m of construction and 20m of trackout<sup>4</sup> activities in this area.
- 2.2.2 The sensitivity of the area to dust soiling and human health effects has been defined as shown in Table 1.

**Table 1: Sensitivity of area to dust soiling and human health effects (area around Hulseheath)**

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

#### Dust emission magnitude

- 2.2.3 Each dust generating activity has been assigned a dust emission magnitude as shown in Table 2.

**Table 2: Dust emission magnitude for dust soiling and human health effects (area around Hulseheath)**

Area	Demolition	Earthworks	Construction	Trackout
Area around Hulseheath	Medium	Large	Large	Large

<sup>4</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.



## Risk of impacts

2.2.4 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 3.

**Table 3: Risk of dust soiling and human health effects (area around Hulseheath)**

	Demolition	Earthworks	Construction	Trackout
Dust soiling	Low risk	High risk	High risk	High risk
Human health	Low risk	Low risk	Low risk	Low risk

## Ecological effects

2.2.5 No ecological sites are located within 50m of dust generating activities or within 50m of a route used by construction traffic that is within 500m of this SES1 design change.

## Summary of risks

- 2.2.6 This section summarises the risks for construction dust for the Pickmere to Agden and Hulseheath area (MA03). Table 4 summarises the risk for the area affected by the SES1 design change and Table 5 summarises the risk accounting for the SES1 design change for the whole Pickmere to Agden and Hulseheath area (MA03).
- 2.2.7 Table 5 shows that the risk summary is the same between that reported in the main ES and for the AP1 revised scheme for the whole Pickmere to Agden and Hulseheath area (MA03). This assessment does not change the conclusion of the main ES.

**Table 4: Summary of risks for construction dust assessment accounting for the SES1 design change (areas affected by the SES1 design change)**

Activity	Dust soiling	Human health	Ecological effects
Demolition	Low to medium	Low	Not applicable
Earthworks	Medium to high	Low	Low
Construction	Medium to high	Low	Low
Trackout	Medium to high	Low	Low

**Table 5: Summary of risks for construction dust assessment accounting for the SES1 design change (Pickmere to Agden and Hulseheath area (MA03))**

Activity	Dust soiling	Human health	Ecological effects
Demolition	Low to medium	Low	Not applicable
Earthworks	Medium to high	Low	Low
Construction	Medium to high	Low	Low
Trackout	Medium to high	Low	Low

## 3 Assessment of road traffic emissions

### 3.1 Overview

3.1.1 This section provides details of the assessment of road traffic emissions during construction of the AP1 revised scheme. The assessment considers the combined effects of SES1 changes and AP1 amendments in this area.

### 3.2 Model verification

3.2.1 Since the main ES, additional traffic information has been collected, as well as further information relating to local junction modelling. As a result of this, revised traffic data for the baseline year of 2018 has become available. The model verification has therefore been updated to take account of this revised baseline traffic data.

3.2.2 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.

3.2.3 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 seven monitoring sites were included in the verification exercise. Additional nearby monitoring sites in the Hulseheath to Manchester Airport area (MA06) were included within the verification model where urban density was deemed similar. The comparison of monitored and modelled NO<sub>2</sub> concentrations is shown in Table 6.

**Table 6: 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)
CE301	42.8	38.1	-11.0%
CE54	42.7	34.6	-19.0%
CE298	26.4	18.0	-31.8%
MA03.4	21.8	17.4	-20.2%
MA03.5	18.2	16.5	-9.3%
MA06.1	19.5	16.7	-14.4%
MA06.3	22.6	23.0	1.8%

3.2.4 As there was systematic under prediction, model adjustment was undertaken. A factor of 1.5 has been applied to modelled NO<sub>x</sub> concentrations. Modelled concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> have not been adjusted. The comparison of monitored and adjusted modelled NO<sub>2</sub> concentrations is shown in Table 7.

**Table 7: Comparison of monitored and adjusted modelled NO<sub>2</sub> concentrations**

Site	Monitored concentration (µg/m <sup>3</sup> )	Modelled adjusted concentration (µg/m <sup>3</sup> )	Percent difference (modelled - monitored/monitored)
CE301	42.8	45.7	6.8%
CE54	42.7	41.0	-4.0%
CE298	26.4	20.5	-22.3%
MA03.4	21.8	20.2	-7.3%
MA03.5	18.2	17.5	-3.8%
MA06.1	19.5	18.4	-5.6%
MA06.3	22.6	25.0	10.6%

### 3.3 Assessment of construction traffic emissions

- 3.3.1 The assessment of construction traffic emissions has used traffic data based on an estimate of the average daily flows in the peak year during the construction period (2025 – 2037). However, vehicle emissions and background concentrations have been taken for the first construction year in 2025. Three construction scenarios have been assessed for air quality to capture peak construction traffic activity at different times in the construction period. It has been assumed that the changes in construction traffic will occur for the whole year. In some cases, this is a conservative approach, as the duration of the peak traffic flows may well be much shorter. These scenarios have been assessed against the relevant future baseline case without the AP1 revised scheme.
- 3.3.2 Traffic data in the study area have been screened to identify roads that require further assessment and to confirm the likely effect of the change in emissions from vehicles using these roads during construction of the AP1 revised scheme.
- 3.3.3 Traffic data for construction vehicles using the site haul routes and moving between compounds have also been included in the assessment. Additional roads have also been included in the assessment where relevant to account for their emissions at nearby receptors.

### Receptors assessed and background concentrations

- 3.3.4 Details of the assessed receptors and the background concentrations used in the assessment remain as reported within the main ES Volume 5, Appendix: AQ-001-0MA03. Seventeen receptors have been removed and 26 receptors have been added due to changes in the study area. The additional human receptors are shown in Table 8.
- 3.3.5 Two designated ecological receptors have been identified within 200m of the screened in roads within the Pickmere to Agden and Hulseheath area (MA03) during construction of the AP1 revised scheme. These ecological receptors are The Mere, Mere SSSI and Ramsar and Tabley Mere SSSI, located east of the AP1 revised scheme.

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3.3.6 Table 9 shows the background concentrations for NO<sub>x</sub>, background nitrogen deposition and critical loads. Table 10 shows the background acid deposition and critical loads. Acid deposition was not previously assessed in the main ES.

**Table 8: Modelled receptors and background concentrations (construction phase)**

Receptor	Description/location	Ordnance Survey coordinates	Background concentrations in 2025 (µg/m <sup>3</sup> )			
			NO <sub>x</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
3-C-H114	Chester Road, Plumley, Knutsford	370698, 376465	9.3	7.3	9.6	6.1
3-C-H115	Chelford Road, Knutsford	376179, 377760	11.3	8.7	9.5	6.2
3-C-H116	Chelford Road, Knutsford	376124, 377787	11.3	8.7	9.5	6.2
3-C-H118	Brook Street, Knutsford	375843, 378118	13.3	10.1	10.2	6.7
3-C-H119	Brook Street, Knutsford	375748, 378208	13.3	10.1	10.2	6.7
3-C-H120	Knutsford (socio-ec)	375728, 378209	13.3	10.1	10.2	6.7
3-C-H121	Brook Street, Knutsford	375564, 378332	13.3	10.1	10.2	6.7
3-C-H122	Hollow Lane, Knutsford	375673, 378422	13.3	10.1	10.2	6.7
3-C-H123	Northwich Road, Knutsford	374348, 378542	11.7	9.0	10.6	6.8
3-C-H124	Northwich Road, Knutsford	374520, 378560	11.7	9.0	10.6	6.8
3-C-H125	Mereheath Lane, Knutsford	375073, 379076	10.7	8.3	9.5	6.2
3-C-H126	Cann Lane, Aston by Budworth, Northwich	368678, 379298	9.0	7.1	9.8	6.1
3-C-H127	Cann Lane, Aston by Budworth, Northwich	368793, 379591	9.0	7.1	9.8	6.1
3-C-H128	Mereheath Lane, Knutsford	374340, 380465	10.3	8.0	9.6	6.1
3-C-H129	Mereheath Lane, Knutsford	374035, 381040	10.3	8.0	9.2	6.0
3-C-H130	Mereheath Lane, Mere, Knutsford	373680, 381257	10.7	8.3	9.7	6.2
3-C-H131	Clamhunger Lane, Knutsford	373590, 381415	10.7	8.3	9.7	6.2
3-C-H132	Whitley Lane, High Legh, Knutsford	369352, 381476	14.4	11.0	12.3	7.3
3-C-H133	Mereside Road 2, Mere	373602, 381483	10.7	8.3	9.7	6.2
3-C-H134	Hall Lane, Lower Stretton, Warrington (socio-ec)	361762, 382010	15.6	11.8	12.0	7.4
3-C-H135	Fir Tree Close, Stretton, Warrington	361830, 382131	15.6	11.8	12.0	7.4
3-C-H136	Rowley Bank Lane, High Legh, Knutsford	369919, 382395	10.9	8.4	10.7	6.5
3-C-H137	Rowley Bank Lane, High Legh, Knutsford	369753, 382546	10.9	8.4	10.7	6.5
3-C-H138	Rowley Bank Lane, High Legh, Knutsford	369698, 382621	10.9	8.4	10.7	6.5
3-C-H140	Reddy Lane, Little Bollington, Altrincham	372668, 385895	15.0	11.4	11.2	7.0

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Receptor	Description/location	Ordnance Survey coordinates	Background concentrations in 2025 ( $\mu\text{g}/\text{m}^3$ )			
			NOx	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
3-C-H148	Reddy Lane, Little Bollington, Altrincham	372790, 386313	12.1	9.3	9.9	6.4

**Table 9: Modelled ecological receptor backgrounds, APIS data and critical loads (construction phase)**

Receptor	Sensitive habitat	2025 NOx background concentration ( $\mu\text{g}/\text{m}^3$ )	APIS data of average total nitrogen deposition (kg N/ha/yr)	Critical load (kg N/ha/yr)
The Mere, Mere SSSI and Ramsar Transect 1	Poor fen	10.7	23.8	10
Tabley Mere SSSI Transect 1	Broadleaved deciduous woodland	9.4	43.0	10
	Poor fen	9.4	25.5	10
Tabley Mere SSSI Transect 2	Broadleaved deciduous woodland	9.4	43.0	10
	Poor fen	9.4	25.5	10

**Table 10: Modelled ecological receptor acid deposition backgrounds, APIS data and critical loads (construction phase)**

Receptor	Sensitive habitat	APIS data of average total acid deposition (kg eq/ha/yr)	Critical load (k eq/ha/yr) (min)	Critical load (kg eq/ha/yr) (max)
The Mere, Mere SSSI and Ramsar Transect 1	Poor fen	1.8	0.2	0.6
Tabley Mere SSSI Transect 1	Broadleaved deciduous woodland	3.2	0.3	0.6
	Poor fen	1.9	0.2	0.6
Tabley Mere SSSI Transect 2	Broadleaved deciduous woodland	3.2	0.3	0.6
	Poor fen	1.9	0.2	0.6

## Assessment results

3.3.7 Table 11 presents the predicted NO<sub>2</sub> impacts across all assessed scenarios for each assessed receptor. All impacts are predicted to be negligible for PM<sub>10</sub> and PM<sub>2.5</sub> concentrations. Table 12 to Table 14 provide the summary of the modelled pollutant concentrations at the assessed receptors for the worst case construction traffic scenarios. The magnitude of change and impact descriptor are also provided along with a comparison against the main ES. Table 15 to Table 17 provide the summary of the ecological receptors for the worst case construction traffic scenarios.

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**Table 11: Comparison of impact descriptors for annual mean NO<sub>2</sub> concentrations across construction scenarios**

Receptor	Impact descriptors for annual mean NO <sub>2</sub> concentrations		
	Scenario 2	Scenario 4	Scenario 5
3-C-H001	Negligible	Negligible	Negligible
3-C-H002	Negligible	Negligible	Negligible
3-C-H003	Negligible	Negligible	Negligible
3-C-H004	Negligible	Negligible	Negligible
3-C-H008	Negligible	Negligible	Negligible
3-C-H009	Negligible	Negligible	Negligible
3-C-H010	Negligible	Negligible	Negligible
3-C-H011	Negligible	Negligible	Negligible
3-C-H012	Negligible	Negligible	Negligible
3-C-H013	Negligible	Negligible	Negligible
3-C-H014	Negligible	Negligible	Negligible
3-C-H015	Negligible	Negligible	Negligible
3-C-H016	Negligible	Negligible	Negligible
3-C-H017	Negligible	Negligible	Negligible
3-C-H018	Negligible	Negligible	Negligible
3-C-H020	Negligible	Negligible	Negligible
3-C-H021	Negligible	Negligible	Negligible
3-C-H022	Negligible	Negligible	Negligible
3-C-H023	Negligible	Negligible	Negligible
3-C-H024	Negligible	Negligible	Negligible
3-C-H025	Negligible	Negligible	Negligible
3-C-H026	Negligible	Negligible	Negligible
3-C-H027	Negligible	Negligible	Negligible
3-C-H028	Negligible	Negligible	Negligible
3-C-H029	Negligible	Negligible	Negligible
3-C-H030	Negligible	Negligible	Negligible
3-C-H031	Negligible	Negligible	Negligible
3-C-H032	Negligible	Negligible	Negligible
3-C-H033	Negligible	Negligible	Negligible
3-C-H034	Negligible	Negligible	Negligible
3-C-H036	Negligible	Negligible	Negligible
3-C-H037	Negligible	Negligible	Negligible
3-C-H038	Negligible	Negligible	Negligible
3-C-H040	Negligible	Negligible	Negligible
3-C-H041	Negligible	Negligible	Negligible
3-C-H042	Negligible	Negligible	Negligible
3-C-H043	Negligible	Negligible	Negligible

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Receptor	Impact descriptors for annual mean NO <sub>2</sub> concentrations		
	Scenario 2	Scenario 4	Scenario 5
3-C-H044	Negligible	Negligible	Negligible
3-C-H045	Negligible	Negligible	Negligible
3-C-H046	Negligible	Negligible	Negligible
3-C-H047	Negligible	Negligible	Negligible
3-C-H048	Negligible	Negligible	Negligible
3-C-H049	Negligible	Negligible	Negligible
3-C-H050	Negligible	Negligible	Negligible
3-C-H051	Negligible	Negligible	Negligible
3-C-H052	Negligible	Negligible	Negligible
3-C-H053	Negligible	Negligible	Negligible
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3-C-H058	Negligible	Negligible	Negligible
3-C-H059	Negligible	Negligible	Negligible
3-C-H060	Negligible	Negligible	Negligible
3-C-H061	Negligible	Negligible	Negligible
3-C-H062	Slight adverse	Negligible	Negligible
3-C-H063	Negligible	Negligible	Negligible
3-C-H064	Negligible	Negligible	Negligible
3-C-H067	Negligible	Negligible	Negligible
3-C-H068	Negligible	Negligible	Negligible
3-C-H069	Negligible	Negligible	Negligible
3-C-H071	Negligible	Negligible	Negligible
3-C-H072	Negligible	Negligible	Negligible
3-C-H073	Negligible	Negligible	Negligible
3-C-H074	Negligible	Negligible	Negligible
3-C-H075	Negligible	Negligible	Negligible
3-C-H076	Negligible	Negligible	Negligible
3-C-H077	Negligible	Negligible	Negligible
3-C-H078	Negligible	Negligible	Negligible
3-C-H079	Negligible	Negligible	Negligible
3-C-H080	Negligible	Negligible	Negligible
3-C-H081	Negligible	Negligible	Negligible
3-C-H082	Negligible	Negligible	Negligible
3-C-H083	Negligible	Negligible	Negligible
3-C-H084	Negligible	Negligible	Negligible
3-C-H085	Negligible	Negligible	Negligible

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Receptor	Impact descriptors for annual mean NO <sub>2</sub> concentrations		
	Scenario 2	Scenario 4	Scenario 5
3-C-H086	Negligible	Negligible	Negligible
3-C-H087	Negligible	Negligible	Negligible
3-C-H088	Negligible	Negligible	Negligible
3-C-H089	Negligible	Negligible	Negligible
3-C-H090	Negligible	Negligible	Negligible
3-C-H091	Negligible	Negligible	Negligible
3-C-H092	Negligible	Negligible	Negligible
3-C-H093	Negligible	Negligible	Negligible
3-C-H094	Negligible	Negligible	Negligible
3-C-H095	Negligible	Negligible	Negligible
3-C-H096	Negligible	Negligible	Negligible
3-C-H097	Negligible	Negligible	Negligible
3-C-H098	Negligible	Negligible	Negligible
3-C-H099	Negligible	Negligible	Negligible
3-C-H100	Negligible	Negligible	Negligible
3-C-H101	Negligible	Negligible	Negligible
3-C-H102	Negligible	Negligible	Negligible
3-C-H103	Negligible	Negligible	Negligible
3-C-H104	Negligible	Negligible	Negligible
3-C-H105	Negligible	Negligible	Negligible
3-C-H114*	Negligible	Negligible	Negligible
3-C-H115*	Negligible	Negligible	Negligible
3-C-H116*	Negligible	Negligible	Negligible
3-C-H118*	Negligible	Negligible	Negligible
3-C-H119*	Negligible	Negligible	Negligible
3-C-H120*	Negligible	Negligible	Negligible
3-C-H121*	Negligible	Negligible	Negligible
3-C-H122*	Negligible	Negligible	Negligible
3-C-H123*	Negligible	Negligible	Negligible
3-C-H124*	Negligible	Negligible	Negligible
3-C-H125*	Negligible	Negligible	Negligible
3-C-H126*	Negligible	Negligible	Negligible
3-C-H127*	Negligible	Negligible	Negligible
3-C-H128*	Negligible	Negligible	Negligible
3-C-H129*	Negligible	Negligible	Negligible
3-C-H130*	Negligible	Negligible	Negligible
3-C-H131*	Negligible	Negligible	Negligible
3-C-H132*	Negligible	Negligible	Negligible
3-C-H133*	Negligible	Negligible	Negligible



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Receptor	Impact descriptors for annual mean NO <sub>2</sub> concentrations		
	Scenario 2	Scenario 4	Scenario 5
3-C-H134*	Negligible	Negligible	Negligible
3-C-H135*	Negligible	Slight adverse	Negligible
3-C-H136*	Negligible	Negligible	Negligible
3-C-H137*	Negligible	Negligible	Negligible
3-C-H138*	Negligible	Negligible	Negligible
3-C-H140*	Negligible	Negligible	Negligible
3-C-H148*	Negligible	Negligible	Negligible

Note: \* Indicates that receptor is new to the SES1 and AP1 ES

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

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	Significance
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H001	Holmes Chapel Road, Knutsford	15.0	15.5	0.5	Negligible	Negligible	Not significant
3-C-H002	Chester Road, Tabley	16.6	17.0	0.4	Negligible	Negligible	Not significant
3-C-H003	Gough's Lane, Knutsford	15.5	15.9	0.4	Negligible	Negligible	Not significant
3-C-H004	Chester Road, Tabley	20.3	20.8	0.5	Negligible	Negligible	Not significant
3-C-H008	Chelford Road, Knutsford	12.8	13.0	0.2	Negligible	Negligible	Not significant
3-C-H009	Pickmere Lane, Pickmere	8.8	10.5	1.7	Negligible	Negligible	Not significant
3-C-H010	Pickmere Lane, Pickmere	8.8	10.6	1.8	Negligible	Negligible	Not significant
3-C-H011	Hield Lane, Northwich	10.2	10.9	0.7	Negligible	Negligible	Not significant
3-C-H012	Hield Lane, Northwich	9.9	10.6	0.7	Negligible	Negligible	Not significant
3-C-H013	School Lane, Tabley	7.9	8.4	0.5	Negligible	Negligible	Not significant
3-C-H014	Chester Road, Mere, MA03/063	27.3	27.7	0.4	Negligible	Negligible	Not significant
3-C-H015	School Lane, Pickmere	7.7	7.8	0.1	Negligible	Negligible	Not significant
3-C-H016	Budworth Road, Aston by Budworth	10.1	10.8	0.7	Negligible	Negligible	Not significant
3-C-H017	Northwich Road, Knutsford	14.0	14.0	< 0.1	Negligible	Negligible	Not significant
3-C-H018	Northwich Road, Knutsford	14.8	14.9	0.1	Negligible	Negligible	Not significant
3-C-H020	Frog Lane, Pickmere	7.7	7.8	0.1	Negligible	Negligible	Not significant
3-C-H021	Pickmere Lane, Tabley	8.6	10.3	1.7	Negligible	Negligible	Not significant
3-C-H022	Pickmere Lane, Tabley	8.2	9.4	1.2	Negligible	Negligible	Not significant
3-C-H023	Tabley Hill Lane, Tabley	14.4	14.4	< 0.1	Negligible	Negligible	Not significant
3-C-H024	Tabley Hill Lane, Tabley	15.8	15.8	< 0.1	Negligible	Negligible	Not significant
3-C-H025	Chester Road, Tabley	21.6	22.5	0.9	Negligible	Negligible	Not significant

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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	Significance
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H026	Budworth Road, Tabley	8.2	8.9	0.7	Negligible	Negligible	Not significant
3-C-H027	Pickmere Lane, Tabley	9.5	10.5	1	Negligible	Negligible	Not significant
3-C-H028	Budworth Road, Tabley	8.9	9.5	0.6	Negligible	Negligible	Not significant
3-C-H029	Pickmere Lane, Tabley	9.6	10.6	1	Negligible	Negligible	Not significant
3-C-H030	Budworth Road, Pickmere	7.7	7.9	0.2	Negligible	Negligible	Not significant
3-C-H031	Budworth Road, Northwich	8.0	8.3	0.3	Negligible	Negligible	Not significant
3-C-H032	Chester Road, Tabley	23.0	23.9	0.9	Negligible	Negligible	Not significant
3-C-H033	Chester Road, Tabley	20.5	21.3	0.8	Negligible	Negligible	Not significant
3-C-H034	Budworth Road, Aston by Budworth	7.9	8.3	0.4	Negligible	Negligible	Not significant
3-C-H036	Old Hall Lane, Tabley	7.8	8.2	0.4	Negligible	Negligible	Not significant
3-C-H037	Old Hall Lane, Over Tabley	13.7	14.1	0.4	Negligible	Negligible	Not significant
3-C-H038	Chester Road	25.0	25.4	0.4	Negligible	Negligible	Not significant
3-C-H040	Old Hall Lane, Over Tabley	17.7	18.4	0.7	Negligible	Negligible	Not significant
3-C-H041	Old Hall Lane, Tabley	11.1	11.2	0.1	Negligible	Negligible	Not significant
3-C-H042	Old Hall Lane, Tabley	12.9	13.1	0.2	Negligible	Negligible	Not significant
3-C-H043	Chester Road, Knutsford	12.4	13.3	0.9	Negligible	Negligible	Not significant
3-C-H044	Manchester Road, Mere	15.3	15.5	0.2	Negligible	Negligible	Not significant
3-C-H045	Mereside Road, Mere	13.7	14.0	0.3	Negligible	Negligible	Not significant
3-C-H046	Winterbottom Lane, Mere	9.6	9.8	0.2	Negligible	Negligible	Not significant
3-C-H047	Warrington Road, Mere	12.8	13.4	0.6	Negligible	Negligible	Not significant
3-C-H048	Whitley Lane, High Legh, Knutsford	13.1	13.3	0.2	Negligible	Negligible	Not significant
3-C-H049	Mereside Road, Mere	13.3	13.7	0.4	Negligible	Negligible	Not significant

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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	Significance
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H050	A556, Mere, Knutsford	12.0	12.0	< 0.1	Negligible	Negligible	Not significant
3-C-H051	Chester Road, Mere	10.9	11.3	0.4	Negligible	Negligible	Not significant
3-C-H052	Mereside Road, Mere	12.0	12.4	0.4	Negligible	Negligible	Not significant
3-C-H053	Ashley Road, Mere	11.4	12.0	0.6	Negligible	Negligible	Not significant
3-C-H054	Chester Road, Mere	12.0	12.5	0.5	Negligible	Negligible	Not significant
3-C-H055	Chester Road, Mere	13.1	13.7	0.6	Negligible	Negligible	Not significant
3-C-H056	Chester Road, Mere	11.9	12.3	0.4	Negligible	Negligible	Not significant
3-C-H057	Chester Road, Mere	13.2	13.7	0.5	Negligible	Negligible	Not significant
3-C-H058	Chester Road, Mere	13.1	13.5	0.4	Negligible	Negligible	Not significant
3-C-H059	Northwich Road, Lower Stretton	18.4	19.9	1.5	Negligible	Negligible	Not significant
3-C-H060	Winterbottom Lane, Mere	9.4	9.6	0.2	Negligible	Negligible	Not significant
3-C-H061	Tatton Dale, Knutsford	9.9	10.4	0.5	Negligible	Negligible	Not significant
3-C-H062	Moss Lane, High Legh	36.7	37.6	0.9	Slight adverse	Slight adverse	Not significant
3-C-H063	Hoo Green Lane, Knutsford	10.9	10.9	< 0.1	Negligible	Negligible	Not significant
3-C-H064	Warrington Road, Mere, Knutsford	13.5	13.8	0.3	Negligible	Negligible	Not significant
3-C-H067	Warrington Road, Mere, Knutsford	14.9	15.2	0.3	Negligible	Negligible	Not significant
3-C-H068	Warrington Road, Mere	12.4	13.0	0.6	Negligible	Negligible	Not significant
3-C-H069	Arley Road, Appleton Thorn	14.4	14.5	0.1	Negligible	Negligible	Not significant
3-C-H071	Wrenshot Lane, High Legh	17.1	18.2	1.1	Negligible	Negligible	Not significant
3-C-H072	Wrenshot Lane, High Legh	8.9	9.2	0.3	Negligible	Negligible	Not significant
3-C-H073	Chapel Lane, Bucklow Hill	12.3	12.5	0.2	Negligible	Negligible	Not significant
3-C-H074	Swineyard Lane, High Legh	20.4	20.7	0.3	Negligible	Negligible	Not significant

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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	Significance
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H075	Woodlands Crescent, High Legh	15.4	16.5	1.1	Negligible	Negligible	Not significant
3-C-H076	Withers Lane, High Legh	24.6	25.1	0.5	Negligible	Negligible	Not significant
3-C-H077	Barleycastle Lane, Appleton Thorn	25.5	25.8	0.3	Negligible	Negligible	Not significant
3-C-H078	Peacock Lane, Mere	10.1	10.4	0.3	Negligible	Negligible	Not significant
3-C-H079	Swinyard Lane, High Legh	13.3	13.6	0.3	Negligible	Negligible	Not significant
3-C-H080	Crabtree Lane, High Legh	16.8	18.0	1.2	Negligible	Negligible	Not significant
3-C-H081	Withers Lane, High Legh	18.5	18.5	< 0.1	Negligible	Negligible	Not significant
3-C-H082	Swineyard Lane, High Legh	13.9	14.3	0.4	Negligible	Negligible	Not significant
3-C-H083	Swineyard Lane, High Legh	14.3	14.9	0.6	Negligible	Negligible	Not significant
3-C-H084	Warington Road, High Legh	15.2	15.8	0.6	Negligible	Negligible	Not significant
3-C-H085	South of Back Lane, Moston	9.6	10.9	1.3	Negligible	Negligible	Not significant
3-C-H086	South of Back Lane, Moston	9.7	10.8	1.1	Negligible	Negligible	Not significant
3-C-H087	Peacock Lane, Knutsford	9.9	10.4	0.5	Negligible	Negligible	Not significant
3-C-H088	Peacock Lane, High Legh	9.6	10.1	0.5	Negligible	Negligible	Not significant
3-C-H089	Peacock Lane, Knutsford	9.3	9.5	0.2	Negligible	Negligible	Not significant
3-C-H090	Heath Lane, High Legh	19.5	20.7	1.2	Negligible	Negligible	Not significant
3-C-H091	Withers Lane 2, High Legh	22.3	22.4	0.1	Negligible	Negligible	Not significant
3-C-H092	Peacock Lane, High Legh	10.0	10.2	0.2	Negligible	Negligible	Not significant
3-C-H093	Primrose Hill, Cliff Lane	17.7	18.4	0.7	Negligible	Negligible	Not significant
3-C-H094	Agden Lane, Agden	10.0	10.7	0.7	Negligible	Negligible	Not significant
3-C-H095	Agden Lane, Agden	9.9	10.5	0.6	Negligible	Negligible	Not significant
3-C-H096	Redbank, Cliff Lane, Lymm	21.1	21.8	0.7	Negligible	Negligible	Not significant

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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	Significance
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H097	Peacock Lane, High Legh	13.2	13.8	0.6	Negligible	Negligible	Not significant
3-C-H098	Old Cherry Lane, Lymm	24.4	24.8	0.4	Negligible	Negligible	Not significant
3-C-H099	Cliff Lane, Lymm	24.7	24.6	-0.1	Negligible	Negligible	Not significant
3-C-H100	Agden Lane, Agden	13.9	15.4	1.5	Negligible	Negligible	Not significant
3-C-H101	Froghall Lane, High Leigh	23.2	23.1	-0.1	Negligible	Slight beneficial	Not significant
3-C-H102	West Lane, High Legh	26.0	25.9	-0.1	Negligible	Slight beneficial	Not significant
3-C-H103	Agden Lane, Agden	27.6	28.0	0.4	Negligible	Slight beneficial	Not significant
3-C-H104	Agden Lane, Agden	14.6	14.6	< 0.1	Negligible	Negligible	Not significant
3-C-H105	Agden Park Lane, Broomedge	13.8	15.1	1.3	Negligible	Negligible	Not significant
3-C-H114 *	Chester Road, Plumley, Knutsford	8.1	8.2	0.1	Negligible	N/A	Not significant
3-C-H115 *	Chelford Road, Knutsford	21.0	21.7	0.7	Negligible	N/A	Not significant
3-C-H116 *	Chelford Road, Knutsford	13.5	13.8	0.3	Negligible	N/A	Not significant
3-C-H118 *	Brook Street, Knutsford	22.1	22.8	0.7	Negligible	N/A	Not significant
3-C-H119 *	Brook Street, Knutsford	22.9	23.2	0.3	Negligible	N/A	Not significant
3-C-H120 *	Knutsford	17.7	17.8	0.1	Negligible	N/A	Not significant
3-C-H121 *	Brook Street, Knutsford	19.5	19.6	0.1	Negligible	N/A	Not significant
3-C-H122 *	Hollow Lane, Knutsford	20.7	21.2	0.5	Negligible	N/A	Not significant
3-C-H123 *	Northwich Road, Knutsford	18.9	18.9	< 0.1	Negligible	N/A	Not significant
3-C-H124 *	Northwich Road, Knutsford	13.2	13.1	-0.1	Negligible	N/A	Not significant
3-C-H125 *	Mereheath Lane, Knutsford	10.5	10.9	0.4	Negligible	N/A	Not significant
3-C-H126 *	Cann Lane, Aston By Budworth, Northwich	7.8	8.1	0.3	Negligible	N/A	Not significant

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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	Significance
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H127 *	Cann Lane, Aston By Budworth, Northwich	8.3	8.8	0.5	Negligible	N/A	Not significant
3-C-H128 *	Mereheath Lane, Knutsford	9.4	9.8	0.4	Negligible	N/A	Not significant
3-C-H129 *	Mereheath Lane, Knutsford	10.3	10.8	0.5	Negligible	N/A	Not significant
3-C-H130 *	Mereheath Lane, Mere, Knutsford	11.3	11.5	0.2	Negligible	N/A	Not significant
3-C-H131 *	Clamhunger Lane, Knutsford	11.7	12.2	0.5	Negligible	N/A	Not significant
3-C-H132 *	Whitley Lane, High Legh, Knutsford	15	15.4	0.4	Negligible	N/A	Not significant
3-C-H133 *	Mereside Road 2, Mere	12.6	13.1	0.5	Negligible	N/A	Not significant
3-C-H134 *	Hall Lane, Lower Stretton, Warrington	22.8	23.1	0.3	Negligible	N/A	Not significant
3-C-H135 *	Fir Tree Close, Stretton, Warrington	33.9	34.6	0.7	Slight adverse	N/A	Not significant
3-C-H136 *	Rowley Bank Lane, High Legh, Knutsford	10.9	11.7	0.8	Negligible	N/A	Not significant
3-C-H137 *	Rowley Bank Lane, High Legh, Knutsford	11.8	12.9	1.1	Negligible	N/A	Not significant
3-C-H138 *	Rowley Bank Lane, High Legh, Knutsford	9.9	10.3	0.4	Negligible	N/A	Not significant
3-C-H140 *	Reddy Lane, Little Bollington, Altrincham	12.0	12.5	0.5	Negligible	N/A	Not significant
3-C-H148 *	Reddy Lane, Little Bollington, Altrincham	9.9	10.3	0.4	Negligible	N/A	Not significant

Note: \* Indicates that receptor is new to the SES1 and AP1 ES

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**Table 13: Predicted annual mean PM<sub>10</sub> concentrations and impacts (construction phase)**

Receptor	Description/location	PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )		Change in PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )	Impact descriptor	Impact descriptor in main ES	Significance
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H001	Holmes Chapel Road, Knutsford	11.2	11.3	0.1	Negligible	Negligible	Not significant
3-C-H002	Chester Road, Tabley	11.8	11.9	0.1	Negligible	Negligible	Not significant
3-C-H003	Gough's Lane, Knutsford	11.4	11.5	0.1	Negligible	Negligible	Not significant
3-C-H004	Chester Road, Tabley	12.6	12.7	0.1	Negligible	Negligible	Not significant
3-C-H008	Chelford Road, Knutsford	10.2	10.3	0.1	Negligible	Negligible	Not significant
3-C-H009	Pickmere Lane, Pickmere	9.9	10.2	0.3	Negligible	Negligible	Not significant
3-C-H010	Pickmere Lane, Pickmere	9.6	9.9	0.3	Negligible	Negligible	Not significant
3-C-H011	Hield Lane, Northwich	10.7	10.8	0.1	Negligible	Negligible	Not significant
3-C-H012	Hield Lane, Northwich	10.6	10.7	0.1	Negligible	Negligible	Not significant
3-C-H013	School Lane, Tabley	9.9	10.0	0.1	Negligible	Negligible	Not significant
3-C-H014	Chester Road, Mere, MA03/063	13.3	13.4	0.1	Negligible	Negligible	Not significant
3-C-H015	School Lane, Pickmere	9.8	9.9	0.1	Negligible	Negligible	Not significant
3-C-H016	Budworth Road, Aston by Budworth	10.1	10.3	0.2	Negligible	Negligible	Not significant
3-C-H017	Northwich Road, Knutsford	11.7	11.7	< 0.1	Negligible	Negligible	Not significant
3-C-H018	Northwich Road, Knutsford	11.9	11.9	< 0.1	Negligible	Negligible	Not significant
3-C-H020	Frog Lane, Pickmere	9.8	9.8	< 0.1	Negligible	Negligible	Not significant
3-C-H021	Pickmere Lane, Tabley	10.0	10.3	0.3	Negligible	Negligible	Not significant
3-C-H022	Pickmere Lane, Tabley	9.9	10.1	0.2	Negligible	Negligible	Not significant
3-C-H023	Tabley Hill Lane, Tabley	11.4	11.4	< 0.1	Negligible	Negligible	Not significant
3-C-H024	Tabley Hill Lane, Tabley	12.5	12.6	0.1	Negligible	Negligible	Not significant
3-C-H025	Chester Road, Tabley	13.1	13.4	0.3	Negligible	Negligible	Not significant



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Receptor	Description/location	PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )		Change in PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )	Impact descriptor	Impact descriptor in main ES	Significance
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H026	Budworth Road, Tabley	9.8	9.9	0.1	Negligible	Negligible	Not significant
3-C-H027	Pickmere Lane, Tabley	11.6	11.8	0.2	Negligible	Negligible	Not significant
3-C-H028	Budworth Road, Tabley	11.5	11.7	0.2	Negligible	Negligible	Not significant
3-C-H029	Pickmere Lane, Tabley	11.6	11.8	0.2	Negligible	Negligible	Not significant
3-C-H030	Budworth Road, Pickmere	10.0	10.0	< 0.1	Negligible	Negligible	Not significant
3-C-H031	Budworth Road, Northwich	9.9	10.0	0.1	Negligible	Negligible	Not significant
3-C-H032	Chester Road, Tabley	14.3	14.5	0.2	Negligible	Negligible	Not significant
3-C-H033	Chester Road, Tabley	13.8	14.0	0.2	Negligible	Negligible	Not significant
3-C-H034	Budworth Road, Aston by Budworth	9.9	10.0	0.1	Negligible	Negligible	Not significant
3-C-H036	Old Hall Lane, Tabley	9.7	9.8	0.1	Negligible	Negligible	Not significant
3-C-H037	Old Hall Lane, Over Tabley	12.3	12.3	< 0.1	Negligible	Negligible	Not significant
3-C-H038	Chester Road	14.1	14.2	0.1	Negligible	Negligible	Not significant
3-C-H040	Old Hall Lane, Over Tabley	12.9	13.0	0.1	Negligible	Negligible	Not significant
3-C-H041	Old Hall Lane, Tabley	11.5	11.5	< 0.1	Negligible	Negligible	Not significant
3-C-H042	Old Hall Lane, Tabley	11.5	11.5	< 0.1	Negligible	Negligible	Not significant
3-C-H043	Chester Road, Knutsford	11.6	11.8	0.2	Negligible	Negligible	Not significant
3-C-H044	Manchester Road, Mere	11.1	11.2	0.1	Negligible	Negligible	Not significant
3-C-H045	Mereside Road, Mere	10.5	10.7	0.2	Negligible	Negligible	Not significant
3-C-H046	Winterbottom Lane, Mere	10.9	10.9	< 0.1	Negligible	Negligible	Not significant
3-C-H047	Warrington Road, Mere	10.4	10.6	0.2	Negligible	Negligible	Not significant
3-C-H048	Whitley Lane, High Legh, Knutsford	12.7	12.7	< 0.1	Negligible	Negligible	Not significant
3-C-H049	Mereside Road, Mere	10.5	10.6	0.1	Negligible	Negligible	Not significant

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Receptor	Description/location	PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )		Change in PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )	Impact descriptor	Impact descriptor in main ES	Significance
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H050	A556, Mere, Knutsford	11.2	11.2	< 0.1	Negligible	Negligible	Not significant
3-C-H051	Chester Road, Mere	11.1	11.2	0.1	Negligible	Negligible	Not significant
3-C-H052	Mereside Road, Mere	10.3	10.4	0.1	Negligible	Negligible	Not significant
3-C-H053	Ashley Road, Mere	10.2	10.3	0.1	Negligible	Negligible	Not significant
3-C-H054	Chester Road, Mere	11.3	11.4	0.1	Negligible	Negligible	Not significant
3-C-H055	Chester Road, Mere	11.4	11.6	0.2	Negligible	Negligible	Not significant
3-C-H056	Chester Road, Mere	11.2	11.3	0.1	Negligible	Negligible	Not significant
3-C-H057	Chester Road, Mere	11.4	11.5	0.1	Negligible	Negligible	Not significant
3-C-H058	Chester Road, Mere	11.4	11.5	0.1	Negligible	Negligible	Not significant
3-C-H059	Northwich Road, Lower Stretton	12.6	13	0.4	Negligible	Negligible	Not significant
3-C-H060	Winterbottom Lane, Mere	10.9	10.9	< 0.1	Negligible	Negligible	Not significant
3-C-H061	Tatton Dale, Knutsford	10.1	10.2	0.1	Negligible	Negligible	Not significant
3-C-H062	Moss Lane, High Legh	16.2	16.3	0.1	Negligible	Negligible	Not significant
3-C-H063	Hoo Green Lane, Knutsford	10.9	10.9	< 0.1	Negligible	Negligible	Not significant
3-C-H064	Warrington Road, Mere, Knutsford	11.4	11.5	0.1	Negligible	Negligible	Not significant
3-C-H067	Warrington Road, Mere, Knutsford	11.7	11.7	< 0.1	Negligible	Negligible	Not significant
3-C-H068	Warrington Road, Mere	10.7	10.8	0.1	Negligible	Negligible	Not significant
3-C-H069	Arley Road, Appleton Thorn	12.0	12.0	< 0.1	Negligible	Negligible	Not significant
3-C-H071	Wrenshot Lane, High Legh	11.6	11.8	0.2	Negligible	Negligible	Not significant
3-C-H072	Wrenshot Lane, High Legh	10.1	10.1	< 0.1	Negligible	Negligible	Not significant
3-C-H073	Chapel Lane, Bucklow Hill	11.5	11.6	0.1	Negligible	Negligible	Not significant
3-C-H074	Swineyard Lane, High Legh	13.7	13.7	< 0.1	Negligible	Negligible	Not significant

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Receptor	Description/location	PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )		Change in PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )	Impact descriptor	Impact descriptor in main ES	Significance
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H075	Woodlands Crescent, High Legh	11.7	11.9	0.2	Negligible	Negligible	Not significant
3-C-H076	Withers Lane, High Legh	14.4	14.5	0.1	Negligible	Negligible	Not significant
3-C-H077	Barleycastle Lane, Appleton Thorn	14.0	14.0	< 0.1	Negligible	Negligible	Not significant
3-C-H078	Peacock Lane, Mere	10.3	10.3	< 0.1	Negligible	Negligible	Not significant
3-C-H079	Swinyard Lane, High Legh	12.4	12.5	0.1	Negligible	Negligible	Not significant
3-C-H080	Crabtree Lane, High Legh	12.0	12.2	0.2	Negligible	Negligible	Not significant
3-C-H081	Withers Lane, High Legh	13.7	13.7	< 0.1	Negligible	Negligible	Not significant
3-C-H082	Swineyard Lane, High Legh	12.5	12.6	0.1	Negligible	Negligible	Not significant
3-C-H083	Swineyard Lane, High Legh	12.6	12.7	0.1	Negligible	Negligible	Not significant
3-C-H084	Warington Road, High Legh	12.8	12.9	0.1	Negligible	Negligible	Not significant
3-C-H085	South of Back Lane, Moston	10.0	10.2	0.2	Negligible	Negligible	Not significant
3-C-H086	South of Back Lane, Moston	10.0	10.2	0.2	Negligible	Negligible	Not significant
3-C-H087	Peacock Lane, Knutsford	10.1	10.1	< 0.1	Negligible	Negligible	Not significant
3-C-H088	Peacock Lane, High Legh	10.0	10.1	0.1	Negligible	Negligible	Not significant
3-C-H089	Peacock Lane, Knutsford	10.0	10.0	< 0.1	Negligible	Negligible	Not significant
3-C-H090	Heath Lane, High Legh	14.0	14.2	0.2	Negligible	Negligible	Not significant
3-C-H091	Withers Lane 2, High Legh	13.4	13.4	< 0.1	Negligible	Negligible	Not significant
3-C-H092	Peacock Lane, High Legh	10.0	10.1	0.1	Negligible	Negligible	Not significant
3-C-H093	Primrose Hill, Cliff Lane	13.7	13.8	0.1	Negligible	Negligible	Not significant
3-C-H094	Agden Lane, Agden	10.1	10.2	0.1	Negligible	Negligible	Not significant
3-C-H095	Agden Lane, Agden	10.1	10.2	0.1	Negligible	Negligible	Not significant
3-C-H096	Redbank, Cliff Lane, Lymm	13.2	13.4	0.2	Negligible	Negligible	Not significant

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Receptor	Description/location	PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )		Change in PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )	Impact descriptor	Impact descriptor in main ES	Significance
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H097	Peacock Lane, High Legh	10.6	10.7	0.1	Negligible	Negligible	Not significant
3-C-H098	Old Cherry Lane, Lymm	13.7	13.8	0.1	Negligible	Negligible	Not significant
3-C-H099	Cliff Lane, Lymm	14.2	14.2	< 0.1	Negligible	Negligible	Not significant
3-C-H100	Agden Lane, Agden	11.7	11.9	0.2	Negligible	Negligible	Not significant
3-C-H101	Froghall Lane, High Leigh	13.1	13.1	< 0.1	Negligible	Negligible	Not significant
3-C-H102	West Lane, High Legh	13.7	13.7	< 0.1	Negligible	Negligible	Not significant
3-C-H103	Agden Lane, Agden	13.9	14.0	0.1	Negligible	Negligible	Not significant
3-C-H104	Agden Lane, Agden	11.7	11.7	< 0.1	Negligible	Negligible	Not significant
3-C-H105	Agden Park Lane, Broomedge	11.8	12.0	0.2	Negligible	Negligible	Not significant
3-C-H114 *	Chester Road, Plumley, Knutsford	9.7	9.7	< 0.1	Negligible	N/A	Not significant
3-C-H115 *	Chelford Road, Knutsford	12.5	12.6	0.1	Negligible	N/A	Not significant
3-C-H116 *	Chelford Road, Knutsford	10.6	10.7	0.1	Negligible	N/A	Not significant
3-C-H118 *	Brook Street, Knutsford	13.2	13.3	0.1	Negligible	N/A	Not significant
3-C-H119 *	Brook Street, Knutsford	13.0	13.1	0.1	Negligible	N/A	Not significant
3-C-H120 *	Knutsford	12.0	12.0	< 0.1	Negligible	N/A	Not significant
3-C-H121 *	Brook Street, Knutsford	12.2	12.2	< 0.1	Negligible	N/A	Not significant
3-C-H122 *	Hollow Lane, Knutsford	12.6	12.8	0.2	Negligible	N/A	Not significant
3-C-H123 *	Northwich Road, Knutsford	12.4	12.4	< 0.1	Negligible	N/A	Not significant
3-C-H124 *	Northwich Road, Knutsford	11.5	11.5	< 0.1	Negligible	N/A	Not significant
3-C-H125 *	Mereheath Lane, Knutsford	9.9	10.0	0.1	Negligible	N/A	Not significant
3-C-H126 *	Cann Lane, Aston By Budworth, Northwich	9.9	10.0	0.1	Negligible	N/A	Not significant

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Receptor	Description/location	PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )		Change in PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )	Impact descriptor	Impact descriptor in main ES	Significance
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H127 *	Cann Lane, Aston By Budworth, Northwich	10.0	10.1	0.1	Negligible	N/A	Not significant
3-C-H128 *	Mereheath Lane, Knutsford	9.8	9.9	0.1	Negligible	N/A	Not significant
3-C-H129 *	Mereheath Lane, Knutsford	9.6	9.7	0.1	Negligible	N/A	Not significant
3-C-H130 *	Mereheath Lane, Mere, Knutsford	10.2	10.2	< 0.1	Negligible	N/A	Not significant
3-C-H131 *	Clamhunger Lane, Knutsford	10.2	10.3	0.1	Negligible	N/A	Not significant
3-C-H132 *	Whitley Lane, High Legh, Knutsford	13.0	13.0	< 0.1	Negligible	N/A	Not significant
3-C-H133 *	Mereside Road 2, Mere	10.4	10.5	0.1	Negligible	N/A	Not significant
3-C-H134 *	Hall Lane, Lower Stretton, Warrington	13.8	13.9	0.1	Negligible	N/A	Not significant
3-C-H135 *	Fir Tree Close, Stretton, Warrington	15.5	15.6	0.1	Negligible	N/A	Not significant
3-C-H136 *	Rowley Bank Lane, High Legh, Knutsford	11.1	11.3	0.2	Negligible	N/A	Not significant
3-C-H137 *	Rowley Bank Lane, High Legh, Knutsford	11.3	11.5	0.2	Negligible	N/A	Not significant
3-C-H138 *	Rowley Bank Lane, High Legh, Knutsford	11.0	11.0	< 0.1	Negligible	N/A	Not significant
3-C-H140 *	Reddy Lane, Little Bollington, Altrincham	11.3	11.4	0.1	Negligible	N/A	Not significant
3-C-H148 *	Reddy Lane, Little Bollington, Altrincham	9.9	10.0	0.1	Negligible	N/A	Not significant

Note: \* Indicates that receptor is new to the SES1 and AP1 ES

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**Table 14: Predicted annual mean PM<sub>2.5</sub> concentrations and impacts (construction phase)**

Receptor	Description/location	PM <sub>2.5</sub> concentrations (µg/m <sup>3</sup> )		Change in PM <sub>2.5</sub> concentrations (µg/m <sup>3</sup> )	Impact descriptor	Impact descriptor in main ES	Significance
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H001	Holmes Chapel Road, Knutsford	6.9	7.0	0.1	Negligible	Negligible	Not significant
3-C-H002	Chester Road, Tabley	7.3	7.4	0.1	Negligible	Negligible	Not significant
3-C-H003	Gough's Lane, Knutsford	7.0	7.1	0.1	Negligible	Negligible	Not significant
3-C-H004	Chester Road, Tabley	7.7	7.8	0.1	Negligible	Negligible	Not significant
3-C-H008	Chelford Road, Knutsford	6.6	6.7	0.1	Negligible	Negligible	Not significant
3-C-H009	Pickmere Lane, Pickmere	6.2	6.4	0.2	Negligible	Negligible	Not significant
3-C-H010	Pickmere Lane, Pickmere	6.1	6.3	0.2	Negligible	Negligible	Not significant
3-C-H011	Hield Lane, Northwich	6.5	6.6	0.1	Negligible	Negligible	Not significant
3-C-H012	Hield Lane, Northwich	6.5	6.6	0.1	Negligible	Negligible	Not significant
3-C-H013	School Lane, Tabley	6.2	6.2	< 0.1	Negligible	Negligible	Not significant
3-C-H014	Chester Road, Mere, MA03/063	8.3	8.3	< 0.1	Negligible	Negligible	Not significant
3-C-H015	School Lane, Pickmere	6.1	6.2	0.1	Negligible	Negligible	Not significant
3-C-H016	Budworth Road, Aston by Budworth	6.4	6.5	0.1	Negligible	Negligible	Not significant
3-C-H017	Northwich Road, Knutsford	7.4	7.4	< 0.1	Negligible	Negligible	Not significant
3-C-H018	Northwich Road, Knutsford	7.5	7.5	< 0.1	Negligible	Negligible	Not significant
3-C-H020	Frog Lane, Pickmere	6.1	6.1	< 0.1	Negligible	Negligible	Not significant
3-C-H021	Pickmere Lane, Tabley	6.2	6.4	0.2	Negligible	Negligible	Not significant
3-C-H022	Pickmere Lane, Tabley	6.2	6.3	0.1	Negligible	Negligible	Not significant
3-C-H023	Tabley Hill Lane, Tabley	7.1	7.2	0.1	Negligible	Negligible	Not significant
3-C-H024	Tabley Hill Lane, Tabley	7.6	7.6	< 0.1	Negligible	Negligible	Not significant
3-C-H025	Chester Road, Tabley	8.1	8.3	0.2	Negligible	Negligible	Not significant

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		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H026	Budworth Road, Tabley	6.2	6.3	0.1	Negligible	Negligible	Not significant
3-C-H027	Pickmere Lane, Tabley	7.2	7.3	0.1	Negligible	Negligible	Not significant
3-C-H028	Budworth Road, Tabley	7.2	7.2	< 0.1	Negligible	Negligible	Not significant
3-C-H029	Pickmere Lane, Tabley	7.2	7.3	0.1	Negligible	Negligible	Not significant
3-C-H030	Budworth Road, Pickmere	6.2	6.2	< 0.1	Negligible	Negligible	Not significant
3-C-H031	Budworth Road, Northwich	6.2	6.2	< 0.1	Negligible	Negligible	Not significant
3-C-H032	Chester Road, Tabley	8.6	8.7	0.1	Negligible	Negligible	Not significant
3-C-H033	Chester Road, Tabley	8.3	8.4	0.1	Negligible	Negligible	Not significant
3-C-H034	Budworth Road, Aston by Budworth	6.2	6.3	0.1	Negligible	Negligible	Not significant
3-C-H036	Old Hall Lane, Tabley	6.2	6.2	< 0.1	Negligible	Negligible	Not significant
3-C-H037	Old Hall Lane, Over Tabley	7.6	7.6	< 0.1	Negligible	Negligible	Not significant
3-C-H038	Chester Road	8.5	8.6	0.1	Negligible	Negligible	Not significant
3-C-H040	Old Hall Lane, Over Tabley	8.0	8.1	0.1	Negligible	Negligible	Not significant
3-C-H041	Old Hall Lane, Tabley	7.1	7.1	< 0.1	Negligible	Negligible	Not significant
3-C-H042	Old Hall Lane, Tabley	7.2	7.2	< 0.1	Negligible	Negligible	Not significant
3-C-H043	Chester Road, Knutsford	7.2	7.3	0.1	Negligible	Negligible	Not significant
3-C-H044	Manchester Road, Mere	7.0	7.0	< 0.1	Negligible	Negligible	Not significant
3-C-H045	Mereside Road, Mere	6.7	6.8	0.1	Negligible	Negligible	Not significant
3-C-H046	Winterbottom Lane, Mere	6.6	6.6	< 0.1	Negligible	Negligible	Not significant
3-C-H047	Warrington Road, Mere	6.7	6.7	< 0.1	Negligible	Negligible	Not significant
3-C-H048	Whitley Lane, High Legh, Knutsford	7.5	7.5	< 0.1	Negligible	Negligible	Not significant
3-C-H049	Mereside Road, Mere	6.7	6.8	0.1	Negligible	Negligible	Not significant

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		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H050	A556, Mere, Knutsford	6.9	6.9	< 0.1	Negligible	Negligible	Not significant
3-C-H051	Chester Road, Mere	6.8	6.9	0.1	Negligible	Negligible	Not significant
3-C-H052	Mereside Road, Mere	6.6	6.6	< 0.1	Negligible	Negligible	Not significant
3-C-H053	Ashley Road, Mere	6.5	6.6	0.1	Negligible	Negligible	Not significant
3-C-H054	Chester Road, Mere	6.9	7.0	0.1	Negligible	Negligible	Not significant
3-C-H055	Chester Road, Mere	7.0	7.1	0.1	Negligible	Negligible	Not significant
3-C-H056	Chester Road, Mere	6.9	6.9	< 0.1	Negligible	Negligible	Not significant
3-C-H057	Chester Road, Mere	7.0	7.1	0.1	Negligible	Negligible	Not significant
3-C-H058	Chester Road, Mere	7.0	7.1	0.1	Negligible	Negligible	Not significant
3-C-H059	Northwich Road, Lower Stretton	7.8	8.0	0.2	Negligible	Negligible	Not significant
3-C-H060	Winterbottom Lane, Mere	6.7	6.7	< 0.1	Negligible	Negligible	Not significant
3-C-H061	Tatton Dale, Knutsford	6.3	6.4	0.1	Negligible	Negligible	Not significant
3-C-H062	Moss Lane, High Legh	9.9	10.0	0.1	Negligible	Negligible	Not significant
3-C-H063	Hoo Green Lane, Knutsford	6.7	6.7	< 0.1	Negligible	Negligible	Not significant
3-C-H064	Warrington Road, Mere, Knutsford	6.9	7.0	0.1	Negligible	Negligible	Not significant
3-C-H067	Warrington Road, Mere, Knutsford	7.1	7.1	< 0.1	Negligible	Negligible	Not significant
3-C-H068	Warrington Road, Mere	6.7	6.8	0.1	Negligible	Negligible	Not significant
3-C-H069	Arley Road, Appleton Thorn	7.4	7.4	< 0.1	Negligible	Negligible	Not significant
3-C-H071	Wrenshot Lane, High Legh	7.2	7.3	0.1	Negligible	Negligible	Not significant
3-C-H072	Wrenshot Lane, High Legh	6.4	6.4	< 0.1	Negligible	Negligible	Not significant
3-C-H073	Chapel Lane, Bucklow Hill	7.0	7.1	0.1	Negligible	Negligible	Not significant
3-C-H074	Swineyard Lane, High Legh	8.1	8.2	0.1	Negligible	Negligible	Not significant



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		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H075	Woodlands Crescent, High Legh	7.2	7.3	0.1	Negligible	Negligible	Not significant
3-C-H076	Withers Lane, High Legh	8.6	8.6	< 0.1	Negligible	Negligible	Not significant
3-C-H077	Barleycastle Lane, Appleton Thorn	8.5	8.5	< 0.1	Negligible	Negligible	Not significant
3-C-H078	Peacock Lane, Mere	6.5	6.5	< 0.1	Negligible	Negligible	Not significant
3-C-H079	Swinyard Lane, High Legh	7.5	7.5	< 0.1	Negligible	Negligible	Not significant
3-C-H080	Crabtree Lane, High Legh	7.3	7.4	0.1	Negligible	Negligible	Not significant
3-C-H081	Withers Lane, High Legh	8.1	8.1	< 0.1	Negligible	Negligible	Not significant
3-C-H082	Swineyard Lane, High Legh	7.5	7.6	0.1	Negligible	Negligible	Not significant
3-C-H083	Swineyard Lane, High Legh	7.6	7.6	< 0.1	Negligible	Negligible	Not significant
3-C-H084	Warrington Road, High Legh	7.7	7.7	< 0.1	Negligible	Negligible	Not significant
3-C-H085	South of Back Lane, Moston	6.4	6.5	0.1	Negligible	Negligible	Not significant
3-C-H086	South of Back Lane, Moston	6.4	6.5	0.1	Negligible	Negligible	Not significant
3-C-H087	Peacock Lane, Knutsford	6.4	6.4	< 0.1	Negligible	Negligible	Not significant
3-C-H088	Peacock Lane, High Legh	6.4	6.4	< 0.1	Negligible	Negligible	Not significant
3-C-H089	Peacock Lane, Knutsford	6.3	6.4	0.1	Negligible	Negligible	Not significant
3-C-H090	Heath Lane, High Legh	8.3	8.4	0.1	Negligible	Negligible	Not significant
3-C-H091	Withers Lane 2, High Legh	8.1	8.1	< 0.1	Negligible	Negligible	Not significant
3-C-H092	Peacock Lane, High Legh	6.4	6.5	0.1	Negligible	Negligible	Not significant
3-C-H093	Primrose Hill, Cliff Lane	8.1	8.2	0.1	Negligible	Negligible	Not significant
3-C-H094	Agden Lane, Agden	6.4	6.5	0.1	Negligible	Negligible	Not significant
3-C-H095	Agden Lane, Agden	6.4	6.5	0.1	Negligible	Negligible	Not significant
3-C-H096	Redbank, Cliff Lane, Lymm	8.0	8.1	0.1	Negligible	Negligible	Not significant

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		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H097	Peacock Lane, High Legh	6.7	6.8	0.1	Negligible	Negligible	Not significant
3-C-H098	Old Cherry Lane, Lymm	8.3	8.4	0.1	Negligible	Negligible	Not significant
3-C-H099	Cliff Lane, Lymm	8.6	8.6	< 0.1	Negligible	Negligible	Not significant
3-C-H100	Agden Lane, Agden	7.2	7.4	0.2	Negligible	Negligible	Not significant
3-C-H101	Froghall Lane, High Leigh	8.1	8.1	< 0.1	Negligible	Negligible	Not significant
3-C-H102	West Lane, High Legh	8.6	8.6	< 0.1	Negligible	Negligible	Not significant
3-C-H103	Agden Lane, Agden	8.6	8.6	< 0.1	Negligible	Negligible	Not significant
3-C-H104	Agden Lane, Agden	7.3	7.3	< 0.1	Negligible	Negligible	Not significant
3-C-H105	Agden Park Lane, Broomedge	7.4	7.5	0.1	Negligible	Negligible	Not significant
3-C-H114 *	Chester Road, Plumley, Knutsford	6.2	6.2	< 0.1	Negligible	N/A	Not significant
3-C-H115 *	Chelford Road, Knutsford	7.9	8.0	0.1	Negligible	N/A	Not significant
3-C-H116 *	Chelford Road, Knutsford	6.8	6.9	0.1	Negligible	N/A	Not significant
3-C-H118 *	Brook Street, Knutsford	8.3	8.4	0.1	Negligible	N/A	Not significant
3-C-H119 *	Brook Street, Knutsford	8.3	8.3	< 0.1	Negligible	N/A	Not significant
3-C-H120 *	Knutsford	7.7	7.7	< 0.1	Negligible	N/A	Not significant
3-C-H121 *	Brook Street, Knutsford	7.8	7.8	< 0.1	Negligible	N/A	Not significant
3-C-H122 *	Hollow Lane, Knutsford	8.1	8.1	< 0.1	Negligible	N/A	Not significant
3-C-H123 *	Northwich Road, Knutsford	7.8	7.8	< 0.1	Negligible	N/A	Not significant
3-C-H124 *	Northwich Road, Knutsford	7.3	7.3	< 0.1	Negligible	N/A	Not significant
3-C-H125 *	Mereheath Lane, Knutsford	6.4	6.5	0.1	Negligible	N/A	Not significant
3-C-H126 *	Cann Lane, Aston By Budworth, Northwich	6.2	6.2	< 0.1	Negligible	N/A	Not significant

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Receptor	Description/location	PM <sub>2.5</sub> concentrations (µg/m <sup>3</sup> )		Change in PM <sub>2.5</sub> concentrations (µg/m <sup>3</sup> )	Impact descriptor	Impact descriptor in main ES	Significance
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme				
3-C-H127 *	Cann Lane, Aston By Budworth, Northwich	6.2	6.3	0.1	Negligible	N/A	Not significant
3-C-H128 *	Mereheath Lane, Knutsford	6.3	6.3	< 0.1	Negligible	N/A	Not significant
3-C-H129 *	Mereheath Lane, Knutsford	6.2	6.3	0.1	Negligible	N/A	Not significant
3-C-H130 *	Mereheath Lane, Mere, Knutsford	6.5	6.5	< 0.1	Negligible	N/A	Not significant
3-C-H131 *	Clamhunger Lane, Knutsford	6.5	6.6	0.1	Negligible	N/A	Not significant
3-C-H132 *	Whitley Lane, High Legh, Knutsford	7.7	7.7	< 0.1	Negligible	N/A	Not significant
3-C-H133 *	Mereside Road 2, Mere	6.6	6.7	0.1	Negligible	N/A	Not significant
3-C-H134 *	Hall Lane, Lower Stretton, Warrington	8.5	8.5	< 0.1	Negligible	N/A	Not significant
3-C-H135 *	Fir Tree Close, Stretton, Warrington	9.5	9.6	0.1	Negligible	N/A	Not significant
3-C-H136 *	Rowley Bank Lane, High Legh, Knutsford	6.8	6.9	0.1	Negligible	N/A	Not significant
3-C-H137 *	Rowley Bank Lane, High Legh, Knutsford	6.9	7.0	0.1	Negligible	N/A	Not significant
3-C-H138 *	Rowley Bank Lane, High Legh, Knutsford	6.7	6.7	< 0.1	Negligible	N/A	Not significant
3-C-H140 *	Reddy Lane, Little Bollington, Altrincham	7.0	7.1	0.1	Negligible	N/A	Not significant
3-C-H148 *	Reddy Lane, Little Bollington, Altrincham	6.4	6.4	< 0.1	Negligible	N/A	Not significant

Note: \* Indicates that receptor is new to the SES1 and AP1 ES

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**Table 15: Predicted annual mean of NOx concentrations at ecological sites (construction phase)**

Ecological site	Distance to road (m)	NOx concentrations ( $\mu\text{g}/\text{m}^3$ )		Change in NOx concentrations ( $\mu\text{g}/\text{m}^3$ )	Comparison against air quality standard ( $30\mu\text{g}/\text{m}^3$ )	Percent change in relation to air quality standard
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme			
The Mere, Mere SSSI and Ramsar Transect 1	193	13.0	13.3	0.3	Within standard	1.0%
	200	13.0	13.2	0.2	Within standard	0.7%
Tabley Mere SSSI Transect 1	108	12.5	12.7	0.2	Within standard	0.7%
	150	11.8	11.9	0.1	Within standard	0.3%
	200	11.3	11.4	0.1	Within standard	0.3%
Tabley Mere SSSI Transect 2	146	11.9	12.0	0.1	Within standard	0.3%
	150	11.8	11.9	0.1	Within standard	0.3%
	200	11.3	11.4	0.1	Within standard	0.3%

**Table 16: Assessment of N deposition at ecological sites (construction phase)**

Ecological site	Distance to road (m)	Dry deposition (kg N/ha/yr)		Change in N deposition (kg N/ha/yr)	Critical load (kg N/ha/yr)	Percent change in relation to lower critical load
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme			
The Mere, Mere SSSI and Ramsar Transect 1	193	24.0	24.0	< 0.1	10	0.2%
	200	24.0	24.0	< 0.1	10	0.2%
Tabley Mere SSSI Transect 1	108	43.5	43.5	< 0.1	10	0.2%
	150	25.7	25.7	< 0.1	10	< 0.1%
	200	25.6	25.6	< 0.1	10	< 0.1%
Tabley Mere SSSI Transect 2	146	43.4	43.4	< 0.1	10	0.2%
	150	25.7	25.7	< 0.1	10	< 0.1%
	200	25.6	25.6	< 0.1	10	< 0.1%

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**Table 17: Assessment of acid deposition at ecological sites (construction phase)**

Ecological site	Distance to road (m)	Dry deposition (k eq/ha/yr)		Change in acid deposition as percent of CLmax	With AP1 revised scheme acid deposition as percent of CLmax
		2025 without the AP1 revised scheme	2025 with the AP1 revised scheme		
The Mere, Mere SSSI and Ramsar Transect 1	193	1.8	1.8	0.2%	314.4%
	200	1.8	1.8	0.2%	314.4%
Tabley Mere SSSI Transect 1	108	3.2	3.2	0.2%	537.2%
	150	1.9	1.9	0.1%	335.2%
	200	1.9	1.9	< 0.1%	335.1%
Tabley Mere SSSI Transect 2	146	3.2	3.2	0.2%	537.1%
	150	1.9	1.9	< 0.1%	335.2%
	200	1.9	1.9	< 0.1%	335.1%

- 3.3.8 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 AP1 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.
- 3.3.9 Negligible or slight adverse impacts are predicted at all human receptors for NO<sub>2</sub>. Negligible impacts are predicted at all human receptors in the area for PM<sub>10</sub> and PM<sub>2.5</sub> concentrations.
- 3.3.10 NO<sub>x</sub> concentrations at The Mere, Mere SSSI and Ramsar and Tabley Mere SSSI are predicted to be within the air quality standard, both without and with the AP1 revised scheme, and the changes in NO<sub>x</sub> concentrations are equal to 1% of the air quality standard or less.
- 3.3.11 The change in nitrogen deposition due to the AP1 revised scheme is predicted to be less than 1% of the lower critical load for these sites.
- 3.3.12 The change in acid deposition due to the AP1 revised scheme is predicted to be less than 1% of the maximum critical load for these sites.

## **Assessment of significance**

- 3.3.13 No significant effects are anticipated at any human receptors in relation to NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations.
- 3.3.14 Since the change in NO<sub>x</sub> concentrations is predicted to be equal to 1% or less of the air quality standard, no significant effects are predicted at The Mere, Mere SSSI and Ramsar due to NO<sub>x</sub> concentrations.
- 3.3.15 Since the change in N deposition is predicted to be less than 1% of the lower critical load, no significant effects are predicted at The Mere, Mere SSSI and Ramsar due to nitrogen deposition.
- 3.3.16 Since the change in acid deposition is predicted to be less than 1% of the maximum critical load, no significant effects are predicted at The Mere, Mere SSSI and Ramsar due to acid deposition.
- 3.3.17 There are no new or different significant effects from construction of the AP1 revised scheme compared to the main ES.

## **3.4 Assessment of operational traffic emissions**

### **Operational traffic model**

- 3.4.1 For the assessment of traffic on the highway network, data for the year 2038 were used as the operational year of the AP1 revised scheme.

## Screening of traffic data

3.4.2 The screening process identified a total of 27 roads in the Pickmere to Agden and Hulseheath area (MA03) exceeding the thresholds for changes in AADT or daily HDV flows and/or changes in road alignment by 5m or more. These roads include:

- the M6 junction 19 to junction 20;
- the M56 junction 8 to junction 10;
- the A556 Chester Road; and
- the A50 Warrington Road.

3.4.3 Further roads have been included in the assessment to account for their emissions at nearby receptors.

## Receptors assessed and background concentrations

3.4.4 Details of the assessed receptors and the background concentrations used in the assessment remain as reported within the main ES Volume 5, Appendix: AQ-001-0MA03. Twenty-four receptors have been removed and four receptors have been added due to changes in the study area. The additional human receptors are shown in Table 18.

3.4.5 APIS does not provide site-specific critical levels and loads for NO<sub>x</sub>, nitrogen deposition or acidity for The Mere, Mere SSSI and Ramsar. Consequently, this air quality assessment has adopted values from the nearest, and most ecologically similar SSSIs/Ramsar sites. For The Mere, Mere, values were taken from Oak Mere SSSI (a component of the Phase Two Ramsar site) 20km to the south-west. As a precautionary measure, in each case the lowest values in the range were applied for the most fragile corresponding community present. Table 19 shows the background concentrations for NO<sub>x</sub>, background nitrogen deposition and critical loads. Table 20 shows the background acid deposition and critical loads. Acid deposition was not previously assessed in the main ES.

3.4.6 The location of all receptors is shown in the accompanying SES1 and AP1 ES, Volume 5, Air quality Map Book: Map Series AQ-01.

3.4.7 One designated ecological site has been identified within 200m of the screened in roads, The Mere, Mere SSSI, located east of the AP1 revised scheme in Mere.

**Table 18: Modelled human receptors and background concentrations (operational phase)**

Receptor	Description/location	Ordnance Survey coordinates	Background concentrations in 2038 (µg/m <sup>3</sup> )			
			NO <sub>x</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
3-O-H054	Mereside Road, Mere	373602, 381483	9.4	7.3	9.6	6.2
3-O-H055	Mereside Road, Mere	373514, 382204	9.5	7.4	9.6	6.1
3-O-H056	Mereside Road, Mere	373258, 382767	9.5	7.4	9.6	6.1

Receptor	Description/location	Ordnance Survey coordinates	Background concentrations in 2038 ( $\mu\text{g}/\text{m}^3$ )			
			NOx	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
3-O-H057	Chapel Lane, Bucklow Hill	372795, 383436	10.7	8.3	11.1	6.8

**Table 19: Modelled ecological receptor backgrounds, APIS data and critical loads (operational phase)**

Receptor	Sensitive habitat	2038 NOx background concentration ( $\mu\text{g}/\text{m}^3$ )	APIS data <sup>5</sup> of average total N deposition (kg N/ha/yr)	Critical load (kg N/ha/yr)
The Mere, Mere SSSI and Ramsar Transect 2	Poor fen	9.5	23.8	10

**Table 20: Modelled ecological receptor acid deposition backgrounds, APIS data and critical loads (operation phase)**

Receptor	Sensitive habitat	APIS data <sup>6</sup> of average total acid deposition (k eq/ha/yr)	Critical load (k eq/ha/yr) (min)	Critical load (k eq/ha/yr) (max)
The Mere, Mere SSSI and Ramsar Transect 2	Poor fen	1.8	0.2	0.6

## Assessment results

3.4.8 Table 21, Table 22 and Table 23 provide the summary of the modelled pollutant concentrations for the assessed human receptors. The magnitude of change and impact descriptor are also derived following the Institute of Air Quality Management (IAQM)/Environmental Protection UK (EPUK) methodology<sup>6</sup>. Table 24 to Table 26 provide the summary of the assessment for ecological receptors.

<sup>5</sup> UK Centre for Ecology and Hydrology (2021), *Air Pollution Information System*. Available online at: <http://www.apis.ac.uk/>.

<sup>6</sup> Institute of Air Quality Management (2017), *Land-Use Planning and Development Control: Planning For Air Quality*.



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**Table 21: Predicted annual mean NO<sub>2</sub> concentrations and impacts (operation phase)**

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	Significance
		2038 without the AP1 revised scheme	2038 with the AP1 revised scheme				
3-O-H003	School Lane, Tabley	6.8	6.8	< 0.1	Negligible	Negligible	Not significant
3-O-H004	School Lane, Pickmere	6.7	6.6	-0.1	Negligible	Negligible	Not significant
3-O-H005	Frog Lane, Pickmere	6.7	6.6	-0.1	Negligible	Negligible	Not significant
3-O-H006	Pickmere Lane, Tabley	7.1	7.2	0.1	Negligible	Negligible	Not significant
3-O-H007	Budworth Road, Tabley	7.0	6.9	-0.1	Negligible	Negligible	Not significant
3-O-H008	Pickmere Lane, Tabley	8.8	8.8	< 0.1	Negligible	Negligible	Not significant
3-O-H009	Budworth Road, Tabley	8.6	8.4	-0.2	Negligible	Negligible	Not significant
3-O-H010	Budworth Road, Pickmere	6.6	6.5	-0.1	Negligible	Negligible	Not significant
3-O-H013	Budworth Road, Aston by Budworth	6.7	6.5	-0.2	Negligible	Negligible	Not significant
3-O-H016	Old Hall Lane, Tabley	9.7	9.8	0.1	Negligible	Negligible	Not significant
3-O-H028	Hoo Green Lane, Knutsford	8.2	7.7	-0.5	Negligible	Negligible	Not significant
3-O-H029	Warrington Road, Mere, Knutsford	9.0	8.9	-0.1	Negligible	Negligible	Not significant
3-O-H030	Warrington Road, Mere, Knutsford	9.5	9.2	-0.3	Negligible	Negligible	Not significant
3-O-H031	Warrington Road, Mere	8.7	8.6	-0.1	Negligible	Negligible	Not significant
3-O-H032	Arley Road, Appleton Thorn	10.6	10.6	< 0.1	Negligible	Negligible	Not significant
3-O-H033	Barleycastle Lane, Appleton Thorn	15.1	15.1	< 0.1	Negligible	Negligible	Not significant
3-O-H034	Peacock Lane, Mere	8.1	8.0	-0.1	Negligible	Negligible	Not significant
3-O-H035	Withers Lane, High Legh	12.2	12.2	< 0.1	Negligible	Negligible	Not significant
3-O-H036	House south of Back Lane, Moston	7.9	8.3	0.4	Negligible	Negligible	Not significant
3-O-H037	Peacock Lane, Knutsford	8.0	7.9	-0.1	Negligible	Negligible	Not significant
3-O-H038	Peacock Lane, High Legh	7.9	7.9	< 0.1	Negligible	Negligible	Not significant
3-O-H039	Moss Farm, Peacock Lane, Knutsford	7.8	7.8	< 0.1	Negligible	Negligible	Not significant

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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	Significance
		2038 without the AP1 revised scheme	2038 with the AP1 revised scheme				
3-O-H041	Agden Lane, Agden	8.1	8.2	0.1	Negligible	Negligible	Not significant
3-O-H044	Agden Lane, Agden	8.9	9.2	0.3	Negligible	Negligible	Not significant
3-O-H045	Froghall Lane, High Leigh	12.6	12.7	0.1	Negligible	Negligible	Not significant
3-O-H046	West Lane, High Legh	14.7	14.7	< 0.1	Negligible	Negligible	Not significant
3-O-H047	Agden Lane, Agden	14.4	14.6	0.2	Negligible	Negligible	Not significant
3-O-H048	Agden Park Lane, Broomedge	9.7	10.1	0.4	Negligible	Negligible	Not significant
3-O-H054*	Mereside Road, Mere	8.8	8.9	0.1	Negligible	N/A	Not significant
3-O-H055*	Mereside Road, Mere	8.6	8.8	0.2	Negligible	N/A	Not significant
3-O-H056*	Mereside Road, Mere	8.0	8.1	0.1	Negligible	N/A	Not significant
3-O-H057*	Chapel Lane, Bucklow Hill	9.2	9.3	0.1	Negligible	N/A	Not significant

Note: \* Indicates that receptor is new to the SES1 and AP1 ES

**Table 22: Predicted annual mean PM<sub>10</sub> concentrations and impacts (operation phase)**

Receptor	Description/location	PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )		Change in PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )	Impact descriptor	Impact descriptor in the main ES	Significance
		2038 without the AP1 revised scheme	2038 with the AP1 revised scheme				
3-O-H003	School Lane, Tabley	9.8	9.8	< 0.1	Negligible	Negligible	Not significant
3-O-H004	School Lane, Pickmere	9.8	9.7	-0.1	Negligible	Negligible	Not significant
3-O-H005	Frog Lane, Pickmere	9.7	9.7	< 0.1	Negligible	Negligible	Not significant
3-O-H006	Pickmere Lane, Tabley	9.9	10.0	0.1	Negligible	Negligible	Not significant
3-O-H007	Budworth Road, Tabley	9.7	9.7	< 0.1	Negligible	Negligible	Not significant
3-O-H008	Pickmere Lane, Tabley	11.6	11.6	< 0.1	Negligible	Negligible	Not significant
3-O-H009	Budworth Road, Tabley	11.5	11.4	-0.1	Negligible	Negligible	Not significant

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Receptor	Description/location	PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )		Change in PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )	Impact descriptor	Impact descriptor in the main ES	Significance
		2038 without the AP1 revised scheme	2038 with the AP1 revised scheme				
3-O-H010	Budworth Road, Pickmere	9.9	9.9	< 0.1	Negligible	Negligible	Not significant
3-O-H013	Budworth Road, Aston by Budworth	9.8	9.8	< 0.1	Negligible	Negligible	Not significant
3-O-H016	Old Hall Lane, Tabley	11.4	11.4	< 0.1	Negligible	Negligible	Not significant
3-O-H028	Hoo Green Lane, Knutsford	10.8	10.6	-0.2	Negligible	Negligible	Not significant
3-O-H029	Warrington Road, Mere, Knutsford	11.2	11.2	< 0.1	Negligible	Negligible	Not significant
3-O-H030	Warrington Road, Mere, Knutsford	11.4	11.3	-0.1	Negligible	Negligible	Not significant
3-O-H031	Warrington Road, Mere	10.6	10.5	-0.1	Negligible	Negligible	Not significant
3-O-H032	Arley Road, Appleton Thorn	11.9	11.9	< 0.1	Negligible	Negligible	Not significant
3-O-H033	Barleycastle Lane, Appleton Thorn	13.8	13.8	< 0.1	Negligible	Negligible	Not significant
3-O-H034	Peacock Lane, Mere	10.2	10.1	-0.1	Negligible	Negligible	Not significant
3-O-H035	Withers Lane, High Legh	13.4	13.4	< 0.1	Negligible	Negligible	Not significant
3-O-H036	House south of Back Lane, Moston	9.9	10.1	0.2	Negligible	Negligible	Not significant
3-O-H037	Peacock Lane, Knutsford	10.0	9.9	-0.1	Negligible	Negligible	Not significant
3-O-H038	Peacock Lane, High Legh	9.9	9.9	< 0.1	Negligible	Negligible	Not significant
3-O-H039	Moss Farm, Peacock Lane, Knutsford	9.9	9.9	< 0.1	Negligible	Negligible	Not significant
3-O-H041	Agden Lane, Agden	10.0	10.1	0.1	Negligible	Negligible	Not significant
3-O-H044	Agden Lane, Agden	11.5	11.7	0.2	Negligible	Negligible	Not significant
3-O-H045	Froghall Lane, High Leigh	12.9	12.9	< 0.1	Negligible	Negligible	Not significant
3-O-H046	West Lane, High Legh	13.5	13.5	< 0.1	Negligible	Negligible	Not significant
3-O-H047	Agden Lane, Agden	13.6	13.7	0.1	Negligible	Negligible	Not significant
3-O-H048	Agden Park Lane, Broomedge	11.6	11.8	0.2	Negligible	Negligible	Not significant
3-O-H054*	Mereside Road, Mere	10.2	10.2	< 0.1	Negligible	N/A	Not significant
3-O-H055*	Mereside Road, Mere	10.1	10.1	< 0.1	Negligible	N/A	Not significant

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Receptor	Description/location	PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )		Change in PM <sub>10</sub> concentrations (µg/m <sup>3</sup> )	Impact descriptor	Impact descriptor in the main ES	Significance
		2038 without the AP1 revised scheme	2038 with the AP1 revised scheme				
3-O-H056*	Mereside Road, Mere	9.8	9.8	< 0.1	Negligible	N/A	Not significant
3-O-H057*	Chapel Lane, Bucklow Hill	11.4	11.5	0.1	Negligible	N/A	Not significant

Note: \* Indicates that receptor is new to the SES1 and AP1 ES

**Table 23: Predicted annual mean PM<sub>2.5</sub> concentrations and impacts (operation phase)**

Receptor	Description/location	PM <sub>2.5</sub> concentrations (µg/m <sup>3</sup> )		Change in PM <sub>2.5</sub> concentrations (µg/m <sup>3</sup> )	Impact descriptor	Impact descriptor in the main ES	Significance
		2038 without the AP1 revised scheme	2038 with the AP1 revised scheme				
3-O-H003	School Lane, Tabley	6.1	6.1	< 0.1	Negligible	Negligible	Not significant
3-O-H004	School Lane, Pickmere	6.1	6.1	< 0.1	Negligible	Negligible	Not significant
3-O-H005	Frog Lane, Pickmere	6.1	6.1	< 0.1	Negligible	Negligible	Not significant
3-O-H006	Pickmere Lane, Tabley	6.2	6.2	< 0.1	Negligible	Negligible	Not significant
3-O-H007	Budworth Road, Tabley	6.1	6.1	< 0.1	Negligible	Negligible	Not significant
3-O-H008	Pickmere Lane, Tabley	7.2	7.1	-0.1	Negligible	Negligible	Not significant
3-O-H009	Budworth Road, Tabley	7.1	7.1	< 0.1	Negligible	Negligible	Not significant
3-O-H010	Budworth Road, Pickmere	6.1	6.1	< 0.1	Negligible	Negligible	Not significant
3-O-H013	Budworth Road, Aston by Budworth	6.1	6.1	< 0.1	Negligible	Negligible	Not significant
3-O-H016	Old Hall Lane, Tabley	7.1	7.1	< 0.1	Negligible	Negligible	Not significant
3-O-H028	Hoo Green Lane, Knutsford	6.6	6.5	-0.1	Negligible	Negligible	Not significant
3-O-H029	Warrington Road, Mere, Knutsford	6.8	6.8	< 0.1	Negligible	Negligible	Not significant
3-O-H030	Warrington Road, Mere, Knutsford	6.9	6.9	< 0.1	Negligible	Negligible	Not significant
3-O-H031	Warrington Road, Mere	6.6	6.6	< 0.1	Negligible	Negligible	Not significant
3-O-H032	Arley Road, Appleton Thorn	7.3	7.3	< 0.1	Negligible	Negligible	Not significant

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Receptor	Description/location	PM <sub>2.5</sub> concentrations (µg/m <sup>3</sup> )		Change in PM <sub>2.5</sub> concentrations (µg/m <sup>3</sup> )	Impact descriptor	Impact descriptor in the main ES	Significance
		2038 without the AP1 revised scheme	2038 with the AP1 revised scheme				
3-O-H033	Barleycastle Lane, Appleton Thorn	8.4	8.4	< 0.1	Negligible	Negligible	Not significant
3-O-H034	Peacock Lane, Mere	6.4	6.4	< 0.1	Negligible	Negligible	Not significant
3-O-H035	Withers Lane, High Legh	7.9	7.9	< 0.1	Negligible	Negligible	Not significant
3-O-H036	House south of Back Lane, Moston	6.3	6.4	0.1	Negligible	Negligible	Not significant
3-O-H037	Peacock Lane, Knutsford	6.3	6.3	< 0.1	Negligible	Negligible	Not significant
3-O-H038	Peacock Lane, High Legh	6.3	6.3	< 0.1	Negligible	Negligible	Not significant
3-O-H039	Moss Farm, Peacock Lane, Knutsford	6.3	6.3	< 0.1	Negligible	Negligible	Not significant
3-O-H041	Agden Lane, Agden	6.3	6.4	0.1	Negligible	Negligible	Not significant
3-O-H044	Agden Lane, Agden	7.1	7.2	0.1	Negligible	Negligible	Not significant
3-O-H045	Froghall Lane, High Leigh	8.0	8.0	< 0.1	Negligible	Negligible	Not significant
3-O-H046	West Lane, High Legh	8.4	8.4	< 0.1	Negligible	Negligible	Not significant
3-O-H047	Agden Lane, Agden	8.4	8.4	< 0.1	Negligible	Negligible	Not significant
3-O-H048	Agden Park Lane, Broomedge	7.3	7.3	< 0.1	Negligible	Negligible	Not significant
3-O-H054*	Mereside Road, Mere	6.5	6.5	< 0.1	Negligible	N/A	Not significant
3-O-H055*	Mereside Road, Mere	6.4	6.5	0.1	Negligible	N/A	Not significant
3-O-H056*	Mereside Road, Mere	6.3	6.3	< 0.1	Negligible	N/A	Not significant
3-O-H057*	Chapel Lane, Bucklow Hill	7.0	7.0	< 0.1	Negligible	N/A	Not significant

Note: \* Indicates that receptor is new to the SES1 and AP1 ES

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**Table 24: Predicted annual mean of NOx concentrations at ecological sites (operation phase)**

Ecological site	Distance to road (m)	NOx concentrations (µg/m³)		Change in NOx concentrations (µg/m³)	Comparison against air quality standard (30µg/m³)	Percent change in relation to air quality standard
		2038 without the AP1 revised scheme	2038 with the AP1 revised scheme			
The Mere, Mere SSSI and Ramsar Transect 2	9	11.3	11.6	0.3	Within standard	1.0%
	10	11.2	11.4	0.2	Within standard	0.7%
	20	10.7	10.9	0.2	Within standard	0.7%
	30	10.5	10.7	0.2	Within standard	0.7%
	40	10.4	10.5	0.1	Within standard	0.3%
	50	10.3	10.4	0.1	Within standard	0.3%
	75	10.1	10.2	0.1	Within standard	0.3%
	100	10.0	10.1	0.1	Within standard	0.3%
	150	9.9	9.9	< 0.1	Within standard	< 0.1%
200	9.8	9.8	< 0.1	Within standard	< 0.1%	

**Table 25: Assessment of N deposition at ecological sites (operation phase)**

Ecological site	Distance to road (m)	Dry deposition (kg N/ha/yr)		Change in N deposition (kg N/ha/yr)	Critical load (kg N/ha/yr)	Percent change in relation to lower critical load
		2038 without the AP1 revised scheme	2038 with the AP1 revised scheme			
The Mere, Mere SSSI and Ramsar Transect 2	9	23.9	24.0	0.1	10	0.2%
	10	23.9	24.0	0.1	10	0.2%
	20	23.9	23.9	< 0.1	10	0.2%
	30	23.9	23.9	< 0.1	10	0.1%
	40	23.9	23.9	< 0.1	10	0.1%
	50	23.9	23.9	< 0.1	10	< 0.1%
	75	23.8	23.8	< 0.1	10	< 0.1%
	100	23.8	23.8	< 0.1	10	< 0.1%

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Ecological site	Distance to road (m)	Dry deposition (kg N/ha/yr)		Change in N deposition (kg N/ha/yr)	Critical load (kg N/ha/yr)	Percent change in relation to lower critical load
		2038 without the AP1 revised scheme	2038 with the AP1 revised scheme			
	150	23.8	23.8	< 0.1	10	< 0.1%
	200	23.8	23.8	< 0.1	10	< 0.1%

**Table 26: Assessment of acid deposition at ecological sites (operation phase)**

Ecological site	Distance to road (m)	Dry deposition (keq/ha/yr)		Change in acid deposition as % of CLmax	With AP1 revised scheme acid deposition as percent of CLmax
		2038 without the AP1 revised scheme	2038 with the AP1 revised scheme		
The Mere, Mere SSSI and Ramsar Transect 2	9	1.8	1.8	0.3%	314.5%
	10	1.8	1.8	0.2%	314.5%
	20	1.8	1.8	0.2%	314.4%
	30	1.8	1.8	0.1%	314.4%
	40	1.8	1.8	0.1%	314.4%
	50	1.8	1.8	0.1%	314.3%
	75	1.8	1.8	< 0.1%	314.3%
	100	1.8	1.8	< 0.1%	314.3%
	150	1.8	1.8	< 0.1%	314.3%
	200	1.8	1.8	< 0.1%	314.3%

- 3.4.9 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 operation of the AP1 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.
- 3.4.10 Negligible impacts are predicted at all human receptors for annual mean NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations.
- 3.4.11 NO<sub>x</sub> concentrations at The Mere, Mere SSSI and Ramsar are predicted to be within the air quality standard, both without and with the AP1 revised scheme, and the changes in NO<sub>x</sub> concentrations are equal to 1% of the critical level or less.
- 3.4.12 The change in N deposition due to the AP1 revised scheme is predicted to be less than 1% of the lower critical load for this site.
- 3.4.13 The change in acid deposition due to the AP1 revised scheme is predicted to be less than 1% of the maximum critical load for this site.

## **Assessment of significance**

- 3.4.14 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.
- 3.4.15 Since the change in NO<sub>x</sub> concentrations are predicted to be equal to 1% or less of the air quality standard, no significant effects are predicted at The Mere, Mere SSSI and Ramsar due to NO<sub>x</sub> concentrations.
- 3.4.16 Since the change in N deposition is predicted to be less than 1% of the lower critical load, no significant effects are predicted at The Mere, Mere SSSI and Ramsar due to N deposition.
- 3.4.17 Since the change in acid deposition is predicted to be less than 1% of the maximum critical load, no significant effects are predicted at The Mere, Mere SSSI and Ramsar due to acid deposition.
- 3.4.18 There are no new or different significant effects from operation of the AP1 revised scheme compared to the main ES.





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