

High Speed Rail (Crewe – Manchester) Environmental Statement

Volume 5: Appendix AQ-001-0MA08

Air quality

MA08: Manchester Piccadilly Station

Air quality report

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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

- 1.1.1 The report is an appendix to the air quality assessment for the Proposed Scheme in relation to the Manchester Piccadilly Station area (MA08).
- 1.1.2 This appendix comprises:
- baseline air quality data;
 - construction dust assessment;
 - assessment of road traffic emissions; and
 - assessment of combustion plant emissions.
- 1.1.3 Maps referred to throughout this appendix are contained in the Volume 5, Air quality Map Book: map AQ-01-308.
- 1.1.4 Additional data used for the air quality assessment, including traffic data, are set out in Background Information and Data (BID) (BID AQ-002-0MA08) ¹.
- 1.1.5 The assessment scope, key assumptions and limitations, and the methodology for determining significance of effects for air quality are set out in Volume 1, Introduction and Methodology, Section 9, and the Environmental Impact Assessment Scope and Methodology Report (SMR) (see Volume 5: Appendix CT-001-00001).
- 1.1.6 The air quality standards relevant to this assessment are:
- 40µg/m³ as an annual mean for nitrogen dioxide (NO₂) and fine particulate matter (PM₁₀);
 - 200µg/m³ one-hour mean for NO₂ not to be exceeded more than 18 times a year (equivalent to the 99.8th percentile of the one-hour mean);
 - 50µg/m³ 24-hour mean for PM₁₀ not to be exceeded more than 35 times a year (equivalent to the 90.4th percentile of the 24-hour mean); and
 - 25µg/m³ as an annual mean for fine particulate matter (PM_{2.5}).

¹ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Background Information and Data, Additional data used in the air quality assessment*, BID AQ-002-0MA08. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement>.

2 Baseline air quality data

2.1 Existing air quality

Local authority review and assessment information

- 2.1.1 The administrative area of Manchester City Council (MCC) covers most of the Manchester Piccadilly Station area, with parts of the areas of Salford City Council (SCC). The air quality assessment has also included sensitive receptors in Bury Metropolitan Borough Council (BuMBC); Bolton Metropolitan Borough Council (BoMBC) and Rochdale Borough Council (RoBC). All councils review air quality throughout the area following the local air quality management (LAQM) regime from the Department for Environment, Food and Rural Affairs (Defra)².
- 2.1.2 There is one Air Quality Management Area (AQMA) within the Manchester Piccadilly Station area (the Greater Manchester Combined Authority AQMA) which is designated for exceedances of the annual mean NO₂ standard. The Greater Manchester Combined Authority AQMA encompasses the entirety of Manchester City Centre, along with other areas in the 10 districts of Greater Manchester, including arterial routes, district centres and the airport. The AQMA was declared in May 2016, combining the existing AQMAs of all 10 Greater Manchester local authorities.

Local air quality monitoring data

- 2.1.3 Monitoring sites within the study area that are relevant for this assessment are shown in the accompanying map AQ-01-308. The following sections provide a summary of the recorded pollutant concentrations at these sites. Further details on monitoring data are presented in BID (BID AQ-002-0MA08)¹.

Continuous monitoring

- 2.1.4 There are two continuous air quality monitoring sites within the Manchester Piccadilly Station area. These are located at Manchester Piccadilly and Manchester Oxford Road. The Manchester Piccadilly monitoring site measures concentrations of NO₂, PM₁₀ and PM_{2.5}. The Manchester Oxford Road monitoring site measures NO₂ and PM₁₀.
- 2.1.5 Measurements of annual mean NO₂ concentrations were within the air quality standard at the Manchester Piccadilly site and above the standard at the Manchester Oxford Road site in

² Department for Environment, Food and Rural Affairs (Defra) (2020), *Defra Background Pollutant Concentration Maps*. Available online at: <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018>.

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2018. Measurements of PM₁₀ were within the air quality standard in 2018 at both monitoring sites. Measurements of PM_{2.5} were within the air quality standard in 2018 at the Manchester Piccadilly Station site.

Diffusion tubes

- 2.1.6 The local authorities in this area undertake air quality monitoring with the use of passive diffusion tubes as part of their LAQM process. There are 27 diffusion tube sites within the Manchester Piccadilly Station area.
- 2.1.7 HS2 Ltd has undertaken additional monitoring for the purpose of validating the air quality assessment at four locations in this area.
- 2.1.8 Measurements of NO₂ were above the standard at 12 diffusion tube sites in 2018, mostly adjacent to roads within the Greater Manchester Combined Authority AQMA. At the remaining locations, annual mean NO₂ concentrations were within the air quality standard in 2018.

Background pollutant concentrations

- 2.1.9 Estimates of background air quality were obtained from the Defra maps². Background pollutant concentrations are within the air quality standards throughout the study area. Table 1 presents the range of background pollutant concentrations within the Manchester Piccadilly Station area for the existing and future baseline.
- 2.1.10 Background pollutant concentrations for the operational year of 2038 have been taken from the Defra background maps for 2030, which is the latest available year of data. The 2030 background maps have been used as representative of the future baseline conditions during operation of the Proposed Scheme.

Table 1: Range of background pollutant concentrations

Pollutant	Background concentrations (µg/m ³)		
	2018	2025	2038
Annual mean NO _x	23.9µg/m ³ to 49.4µg/m ³	17.7µg/m ³ to 36.9µg/m ³	15.8µg/m ³ to 33.9µg/m ³
Annual mean NO ₂	17.0µg/m ³ to 30.4µg/m ³	13.1µg/m ³ to 24.1µg/m ³	11.8µg/m ³ to 22.3µg/m ³
Annual mean PM ₁₀	12.1µg/m ³ to 14.7µg/m ³	11.1µg/m ³ to 13.5µg/m ³	11.0µg/m ³ to 13.4µg/m ³
Annual mean PM _{2.5}	8.2µg/m ³ to 9.8µg/m ³	7.5µg/m ³ to 9.0µg/m ³	7.4µg/m ³ to 8.9µg/m ³

3 Construction dust assessment

3.1.1 This section provides details of the assessment of dust emissions during construction of the Proposed Scheme. Due to the linear nature of the Proposed Scheme and its associated dust generating activities, the construction dust assessment has been undertaken in detail for distinct assessment areas in the Manchester Piccadilly Station area.

3.2 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 residential dwellings located within 20m of demolition, earthworks, construction and trackout³ activities in the area around Manchester Piccadilly Station.

3.2.2 Table 2 presents the sensitivity of the area to dust soiling and human health effects.

Table 2: Sensitivity of area to dust soiling and human health effects

Effect	Demolition	Earthworks	Construction	Trackout
Area around Manchester Piccadilly Station				
Dust soiling	High	High	High	High
Human health	Medium	Medium	Medium	Medium

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

Area	Demolition	Earthworks	Construction	Trackout
Area around Manchester Piccadilly Station	Large	Large	Large	Large

Risk of impacts

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

³ 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.

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Table 4: Risk of dust soiling and human health effects

Effect	Demolition	Earthworks	Construction	Trackout
Area around Manchester Piccadilly Station				
Dust soiling	High risk	High risk	High risk	High risk
Human health	High risk	Medium risk	Medium risk	Medium risk

3.3 Ecological effects

3.3.1 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 the construction site boundary.

3.4 Summary of risks

3.4.1 The summary of risks identified within the Manchester Piccadilly Station area is shown in Table 5. As there are several construction locations in this area, a range of risks is shown which depend on the location of sensitive receptors and the magnitude of dust generating activities.

Table 5: Summary of risks for construction dust assessment

Activity	Dust soiling	Human health	Ecological effects
Demolition	High	High	Not applicable
Earthworks	High	Medium	Not applicable
Construction	High	Medium	Not applicable
Trackout	High	Medium	Not applicable

4 Assessment of road traffic emissions

4.1 Overall assessment approach

- 4.1.1 The air quality assessment for road traffic emissions has used the approach described in the SMR (see Volume 5: Appendix CT-001-00001). Pollutant concentrations have been predicted at sensitive human and ecological receptors where these are located within 200m of the affected road network. Where ecological sites have been assessed, the change in nitrogen (N) deposition has been predicted for comparison against the lower critical load for the site.

4.2 Model inputs and verification

Model parameters

- 4.2.1 The ADMS-Roads model was used to predict pollutant concentrations from changes in road traffic emissions. A surface roughness of 1.0m was used for the centre of Manchester City, within the bounds of and including: the A57(M) Mancunian Way, A6 Ardwick Green South, A665 Chancellor Lane (north)/Pin Mill Brow/Great Ancoats Street, A6042 New Bridge Street/Trinity Way and A57 Dawson Street. A surface roughness of 0.5m was used outside this area, due to a difference in urban density in the Manchester Piccadilly Station area.
- 4.2.2 A surface roughness of 0.2m was used for the meteorological site. A minimum Monin-Obukhov length of 30m and latitude of 53 degrees were used in the assessment. Meteorological data from the Manchester Airport site were used for the year 2018.

Model verification

- 4.2.3 Verification was undertaken for the year 2018 comparing monitored and modelled NO₂ concentrations. The traffic data provided was assumed to be representative of 2018. The results of this comparison are shown in Table 6.
- 4.2.4 Model verification was undertaken 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.
- 4.2.5 Some of the monitoring locations were not considered suitable for model verification, due to missing traffic or other spatial considerations. A total of 25 monitoring sites, including five sites adjacent in the centre of Manchester City, were included in the model verification exercise.

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Table 6: Comparison of monitored and modelled NO₂ concentrations

Site	Monitored concentration (µg/m ³)	Modelled concentration (µg/m ³)	Difference [(modelled – monitored) / monitored]
MA06.2	28.7	20.9	-27.2%
MA06.4	31.3	32.8	4.8%
MA06.5	32.0	35.2	10.0%
MA06.6	37.7	30.5	-19.1%
SK12	38.0	36.2	-4.7%
STK7	37.0	36.1	-2.4%
(89a 89b)	30.6	28.2	-7.8%
(86a 86b)	32.0	26.0	-18.8%
MA07.1	45.7	35.2	-23.0%
MA07.3	30.2	22.9	-24.2%
MA08.4	41.3	31.6	-23.5%
TM13	41.8	40.5	-3.1%
TM24	32.1	22.9	-28.7%
TM56	42.8	35.4	-17.3%
SK20	41.9	40.9	-2.4%
SA27#	34.1	34.4	0.9%
M-24#	40.3	33.6	-16.6%
M-88#	46.8	42.5	-9.2%
M-71#	46.1	38.5	-16.5%
M-36	33.1	26.8	-19.0%
MA08.2#	47.8	35.4	-25.9%
SA62	31.4	30.4	-3.2%
SA26	33.9	28.4	-16.2%
SA44	35.3	37.4	5.9%
SA59	33.3	27.2	-18.3%

Note: # indicates that site is located in the centre of Manchester City.

4.2.6 The majority of modelled NO₂ concentrations were within ±25% of the monitored concentrations, but there was systematic under prediction and therefore modelled concentrations were adjusted. A factor of 1.7 has been applied to modelled NO_x concentrations in the centre of Manchester City and a factor of 1.4 has been applied to modelled NO_x concentrations outside of the centre of Manchester City. The final adjusted modelled NO₂ concentrations are presented within Table 7. Modelled concentrations of PM₁₀ and PM_{2.5} have not been adjusted.

Table 7: Comparison of monitored and adjusted modelled NO₂ concentrations

Site	Monitored concentration (µg/m ³)	Modelled concentration (µg/m ³)	Difference [(modelled – monitored) / monitored]
MA06.2	28.7	23.4	-18.5%

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Site	Monitored concentration ($\mu\text{g}/\text{m}^3$)	Modelled concentration ($\mu\text{g}/\text{m}^3$)	Difference [(modelled - monitored) / monitored]
MA06.4	31.3	35.2	12.5%
MA06.5	32.0	37.6	17.5%
MA06.6	37.7	32.8	-13.0%
SK12	38.0	41.3	8.7%
STK7	37.0	41.1	11.1%
(89a 89b)	30.6	31.0	1.3%
(86a 86b)	32.0	28.2	-11.9%
MA07.1	45.7	39.1	-14.4%
MA07.3	30.2	24.1	-20.2%
MA08.4	41.3	35.4	-14.3%
TM13	41.8	45.3	8.4%
TM24	32.1	24.6	-23.4%
TM56	42.8	38.6	-9.8%
SK20	41.9	45.2	7.9%
SA27#	34.1	37.8	10.9%
M-24#	40.3	36.6	-9.2%
M-88#	46.8	50.0	6.8%
M-71#	46.1	47.2	2.4%
M-36	33.1	28.5	-13.9%
MA08.2#	47.8	41.7	-12.8%
SA62	31.4	33.2	5.7%
SA26	33.9	30.7	-9.4%
SA44	35.3	41.9	18.7%
SA59	33.3	29.1	-12.6%

Note: # indicates that site is located in the centre of Manchester City.

4.3 Assessment of construction traffic emissions

4.3.1 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). Vehicle emissions and background concentrations have been taken for the first construction year in 2025 as a worst case. Three construction scenarios have been assessed 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 Proposed Scheme.

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- 4.3.2 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 Proposed Scheme. The screening criteria are detailed in the SMR and are largely based on the Design Manual for Roads and Bridges (DMRB) thresholds for changes in annual average daily traffic (AADT), changes in daily heavy duty vehicles (HDV) flows and/or changes in road alignment by 5m or more.
- 4.3.3 Traffic data for construction vehicles using the site haul routes 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

- 4.3.4 Sensitive receptors have been selected from the OS AddressBase Premium database. The receptors consist of residential properties, schools, hospitals and/or care homes within 200m of the screened in roads and represent worst-case exposure locations. The location of all receptors is shown in accompanying map AQ-01-308.
- 4.3.5 One designated ecological receptor was identified within 200m of the screened in roads within the Manchester Piccadilly Station area during construction of the Proposed Scheme, the Rochdale Canal Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC).
- 4.3.6 Details of the assessed receptors and the background concentrations used in the assessment are shown in Table 8 for human and Table 9 for ecological receptors.

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

Receptor	Description/Location	Ordnance survey coordinates	Background concentrations in 2025 ($\mu\text{g}/\text{m}^3$)			
			NO _x	NO ₂	PM ₁₀	PM _{2.5}
8-C-H001	Central Manchester University Hospital, Hathersage Road, Manchester	385199 396198	22.0	15.8	12.0	8.0
8-C-H002	Grafton Street, Manchester	385084 396403	22.0	15.8	12.0	8.0
8-C-H003	Grafton Street, Manchester	385091 396433	22.0	15.8	12.0	8.0
8-C-H004	Upper Brook Street, Manchester	384953 396629	27.7	19.1	11.5	7.5
8-C-H005	Manchester University, Schuster Building, Upper Brook Street, Manchester	384844 396735	27.7	19.1	11.5	7.5
8-C-H006	Stockport Road, Manchester	385406 396837	22.0	15.8	12.0	8.0
8-C-H007	Polygon Street, Manchester	385294 397054	26.1	18.2	12.3	8.0
8-C-H008	Conmere Square, Manchester	384007 397071	29.6	20.2	13.4	8.5

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Receptor	Description/Location	Ordnance survey coordinates	Background concentrations in 2025 ($\mu\text{g}/\text{m}^3$)			
			NO _x	NO ₂	PM ₁₀	PM _{2.5}
8-C-H009	Rockdove Avenue, Manchester	383648 397091	28.1	19.4	12.6	8.1
8-C-H010	Medlock Primary School, Ardwick Green South, Manchester	385194 397098	26.1	18.2	12.3	8.0
8-C-H011	Chester Street, Manchester	383864 397101	28.1	19.4	12.6	8.1
8-C-H012	Manchester University, Grosvenor Street, Manchester	384584 397109	29.6	20.2	13.4	8.5
8-C-H013	Jackson Crescent, Manchester	383099 397125	28.1	19.4	12.6	8.1
8-C-H014	Jackson Crescent, Manchester	383251 397128	28.1	19.4	12.6	8.1
8-C-H015	Medlock Primary School, Ardwick Green South, Manchester	385152 397142	26.1	18.2	12.3	8.0
8-C-H016	River Street, Manchester	383590 397146	28.1	19.4	12.6	8.1
8-C-H017	Manchester Metropolitan University, Grosvenor Square, Manchester	384162 397153	29.6	20.2	13.4	8.5
8-C-H018	Beattock Close, Manchester	382961 397204	21.8	15.7	12.3	7.9
8-C-H019	Manchester Metropolitan University, Ormond Building, Lower Ormond Street, Manchester	384260 397206	29.6	20.2	13.4	8.5
8-C-H020	Manchester Metropolitan University, Oxford Road, Manchester	384316 397226	29.6	20.2	13.4	8.5
8-C-H021	Grosvenor Street, Manchester	384410 397229	29.6	20.2	13.4	8.5
8-C-H022	Ardwick Green South, Manchester	385058 397238	26.1	18.2	12.3	8.0
8-C-H023	Higher Ardwick, Manchester	385445 397239	26.1	18.2	12.3	8.0
8-C-H024	Higher Ardwick, Manchester	385427 397247	26.1	18.2	12.3	8.0
8-C-H025	Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester	384248 397247	29.6	20.2	13.4	8.5
8-C-H026	Higher Ardwick, Manchester	385468 397260	26.1	18.2	12.3	8.0
8-C-H027	Union Street, Ardwick, Manchester	385440 397267	26.1	18.2	12.3	8.0
8-C-H028	Downing Street, Manchester	384951 397315	29.6	20.2	13.4	8.5
8-C-H029	Lockton Close, Manchester	384718 397406	29.6	20.2	13.4	8.5
8-C-H030	Cotter Street, Manchester	385302 397415	26.1	18.2	12.3	8.0

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Receptor	Description/Location	Ordnance survey coordinates	Background concentrations in 2025 ($\mu\text{g}/\text{m}^3$)			
			NO _x	NO ₂	PM ₁₀	PM _{2.5}
8-C-H031	Blantyre Street, Manchester	382865 397437	21.8	15.7	12.3	7.9
8-C-H032	The University of Manchester, Ferranti Building, Sackville Street, Manchester	384700 397454	29.6	20.2	13.4	8.5
8-C-H033	The University of Manchester, Ferranti Building, Sackville Street, Manchester	384751 397484	29.6	20.2	13.4	8.5
8-C-H034	Berry Street, Manchester	384941 397522	29.6	20.2	13.4	8.5
8-C-H035	Wilfred Road, Manchester	375330 397600	17.1	12.7	12.8	8.3
8-C-H036	Regent Road, Manchester	382694 397638	21.8	15.7	12.3	7.9
8-C-H037	Laburnum Avenue, Manchester	375310 397663	17.1	12.7	12.8	8.3
8-C-H038	Fairfield Street, Manchester	384997 397727	29.6	20.2	13.4	8.5
8-C-H039	The University of Manchester, Sackville Street, Manchester	384458 397743	29.6	20.2	13.4	8.5
8-C-H040	London Road, Manchester	384732 397764	29.6	20.2	13.4	8.5
8-C-H041	Whitworth Street, Manchester	384511 397792	29.6	20.2	13.4	8.5
8-C-H042	Liverpool Road, Manchester	375369 397797	17.1	12.7	12.8	8.3
8-C-H043	Liverpool Road, Eccles	375357 397836	17.1	12.7	12.8	8.3
8-C-H044	Portland Street, Manchester	384159 397910	29.6	20.2	13.4	8.5
8-C-H045	Piccadilly Place, Manchester	384554 397914	29.6	20.2	13.4	8.5
8-C-H046	Bloom Street, Manchester	384392 397931	29.6	20.2	13.4	8.5
8-C-H047	Ancoats Grove, Manchester	385769 397944	26.1	18.2	12.3	8.0
8-C-H048	Ancotes Grove, Manchester	385751 397952	26.1	18.2	12.3	8.0
8-C-H049	Every Street, Manchester	385573 397967	26.1	18.2	12.3	8.0
8-C-H050	Chapelton Street, Manchester	384958 397967	29.6	20.2	13.4	8.5
8-C-H051	Portland Street, Manchester	384226 397976	29.6	20.2	13.4	8.5
8-C-H052	Chapelton Street, Manchester	385002 397989	26.1	18.2	12.3	8.0
8-C-H053	Chapelton Street, Manchester	385088 398016	26.7	18.6	11.7	7.7
8-C-H054	Every Street, Manchester	385651 398021	26.7	18.6	11.7	7.7
8-C-H055	Every Street, Manchester	385685 398097	26.7	18.6	11.7	7.7
8-C-H056	Great Ancoats Street, Manchester	385303 398098	26.7	18.6	11.7	7.7

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Receptor	Description/Location	Ordnance survey coordinates	Background concentrations in 2025 (µg/m ³)			
			NO _x	NO ₂	PM ₁₀	PM _{2.5}
8-C-H057	Ducie Street, Manchester	384726 398104	34.7	22.9	12.7	8.1
8-C-H058	Wharf Close, Manchester	384972 398105	34.7	22.9	12.7	8.1
8-C-H059	Chapelton Street, Manchester	385283 398121	26.7	18.6	11.7	7.7
8-C-H060	Every Street, Manchester	385724 398121	26.7	18.6	11.7	7.7
8-C-H061	Pollard Street, Manchester	385401 398139	26.7	18.6	11.7	7.7
8-C-H062	Piccadilly, Manchester	384586 398157	34.7	22.9	12.7	8.1
8-C-H063	Paton Street, Manchester	384610 398164	34.7	22.9	12.7	8.1
8-C-H064	Ducie Street, Manchester	384918 398195	34.7	22.9	12.7	8.1
8-C-H065	Dale Street, Manchester	384677 398206	34.7	22.9	12.7	8.1
8-C-H066	Tariff Street, Manchester	384903 398206	34.7	22.9	12.7	8.1
8-C-H067	Store Street, Manchester	385203 398217	26.7	18.6	11.7	7.7
8-C-H068	Store Street, Manchester	385187 398222	26.7	18.6	11.7	7.7
8-C-H069	Ducie Street, Manchester	385033 398248	26.7	18.6	11.7	7.7
8-C-H070	Old Mill Street, Manchester	385220 398249	26.7	18.6	11.7	7.7
8-C-H071	Blisworth Close, Manchester	385828 398281	26.7	18.6	11.7	7.7
8-C-H072	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	385732 398312	26.7	18.6	11.7	7.7
8-C-H073	Old Mill Street, Manchester	385298 398317	26.7	18.6	11.7	7.7
8-C-H074	Little Learning Ladder Nursery, Lampwick Lane, Manchester	385429 398318	26.7	18.6	11.7	7.7
8-C-H075	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	385678 398341	26.7	18.6	11.7	7.7
8-C-H076	Tiddlywinks Day Nursery, Taunton Street, Manchester	385970 398358	26.7	18.6	11.7	7.7
8-C-H077	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	385707 398373	26.7	18.6	11.7	7.7
8-C-H078	Old Mill Street, Manchester	385364 398403	26.7	18.6	11.7	7.7
8-C-H079	Munday Street, Manchester	385695 398404	26.7	18.6	11.7	7.7
8-C-H080	Hackleton Close, Manchester	385772 398408	26.7	18.6	11.7	7.7
8-C-H081	Towcester Close, Manchester	385925 398416	26.7	18.6	11.7	7.7

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			NO _x	NO ₂	PM ₁₀	PM _{2.5}
8-C-H082	Pollard Street, Manchester	385733 398417	26.7	18.6	11.7	7.7
8-C-H083	Houldsworth Street, Manchester	384862 398484	34.7	22.9	12.7	8.1
8-C-H084	Tavery Close, Manchester	385492 398494	26.7	18.6	11.7	7.7
8-C-H085	Pickford Street, Ancoats	384889 398496	34.7	22.9	12.7	8.1
8-C-H086	A6 Crescent, Salford	382532 398517	23.5	16.7	11.7	7.6
8-C-H087	Gore Street, Manchester	383023 398522	33.1	22.1	12.2	7.8
8-C-H088	Chapel Street, Salford	382988 398524	23.5	16.7	11.7	7.6
8-C-H089	Chapel Street, Salford	382985 398529	23.5	16.7	11.7	7.6
8-C-H090	Salford Royal NHS Foundation Trust, A6 Crescent, Salford	382532 398551	23.5	16.7	11.7	7.6
8-C-H091	Old Mill Street, Manchester	385609 398554	26.7	18.6	11.7	7.7
8-C-H092	Chapel Street, Salford	383039 398557	33.1	22.1	12.2	7.8
8-C-H093	Ancoats, Manchester	384755 398581	34.7	22.9	12.7	8.1
8-C-H094	St. Mary Street, Salford	383015 398595	33.1	22.1	12.2	7.8
8-C-H095	Old Mill Street, Manchester	385699 398622	26.7	18.6	11.7	7.7
8-C-H096	A6 Crescent, Salford	381992 398647	24.8	17.5	12.6	8.2
8-C-H097	Great Ancoats Street, Manchester	384666 398660	34.7	22.9	12.7	8.1
8-C-H098	Chapel Street, Salford	383087 398670	33.1	22.1	12.2	7.8
8-C-H099	Blackfriars Street, Salford	383554 398688	33.1	22.1	12.2	7.8
8-C-H100	Chapel Street, Salford	383530 398695	33.1	22.1	12.2	7.8
8-C-H101	Oldham Road, Manchester	384668 398699	34.7	22.9	12.7	8.1
8-C-H102	Ring Road, Manchester	384622 398724	34.7	22.9	12.7	8.1
8-C-H103	Salford Approach, Salford	383541 398724	33.1	22.1	12.2	7.8
8-C-H104	Bevill Square, Salford	383073 398734	33.1	22.1	12.2	7.8
8-C-H105	Addington Street, Manchester	384728 398749	34.7	22.9	12.7	8.1
8-C-H106	Oldham Road, Manchester	384786 398787	34.7	22.9	12.7	8.1
8-C-H107	Oldham Road, Manchester	384742 398797	34.7	22.9	12.7	8.1
8-C-H108	Bradford Road, Manchester	385922 398804	26.7	18.6	11.7	7.7
8-C-H109	Vernon Avenue, Eccles, Salford	377533 398808	23.1	16.5	12.8	8.4

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			NO _x	NO ₂	PM ₁₀	PM _{2.5}
8-C-H110	Bradford Road, Manchester	385990 398845	26.7	18.6	11.7	7.7
8-C-H111	Cranfield Close, Manchester	385970 398861	26.7	18.6	11.7	7.7
8-C-H112	Swan Street, Manchester	384470 398872	34.7	22.9	12.7	8.1
8-C-H113	Albert Road, Eccles, Salford	377667 398891	23.1	16.5	12.8	8.4
8-C-H114	Blackfriars Road, Salford	383271 398907	33.1	22.1	12.2	7.8
8-C-H115	Oldham Road, Manchester	385019 398926	26.7	18.6	11.7	7.7
8-C-H116	Angel Street, Manchester	384479 398933	34.7	22.9	12.7	8.1
8-C-H117	Trafalgar Road, Salford	378240 398934	23.5	16.7	13.4	8.6
8-C-H118	Wellington Road, Eccles, Salford	378112 398942	23.5	16.7	13.4	8.6
8-C-H119	Angel Street, Manchester	384485 398960	34.7	22.9	12.7	8.1
8-C-H120	Blackfriars Road, Salford	383219 398961	33.1	22.1	12.2	7.8
8-C-H121	Butler Street, Manchester	385380 399010	23.3	16.6	11.5	7.6
8-C-H122	Blackfriars Road, Salford	383185 399021	24.4	17.2	11.6	7.6
8-C-H123	Butler Street, Manchester	385258 399024	23.3	16.6	11.5	7.6
8-C-H124	Butler Street, Manchester	385453 399033	23.3	16.6	11.5	7.6
8-C-H125	St Stephen Street, Salford	383065 399037	24.4	17.2	11.6	7.6
8-C-H126	Richmond Street, Salford	383124 399061	24.4	17.2	11.6	7.6
8-C-H127	Greengate, Salford	383568 399069	24.4	17.2	11.6	7.6
8-C-H128	Trinity Way, Manchester	383452 399070	24.4	17.2	11.6	7.6
8-C-H129	Mirabel Street, Cheetham Hill	383783 399097	24.4	17.2	11.6	7.6
8-C-H130	Leander Close, Eccles, Salford	376314 399176	19.5	14.3	12.7	8.4
8-C-H131	Scott Avenue, Eccles, Salford	376435 399222	19.5	14.3	12.7	8.4
8-C-H132	Bray Avenue, Eccles, Salford	375958 399253	18.3	13.5	12.8	8.4
8-C-H133	Frederick Road, Salford	381580 399260	24.0	17.0	12.0	8.0
8-C-H134	Grange Road, Eccles	374924 399267	16.2	12.2	12.6	7.9
8-C-H135	Nichols Street, Salford	381550 399278	24.0	17.0	12.0	8.0
8-C-H136	King William Street, Eccles, Salford	375463 399287	18.3	13.5	12.8	8.4
8-C-H137	Old Parrin Lane, Eccles, Salford	375661 399293	18.3	13.5	12.8	8.4

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			NO _x	NO ₂	PM ₁₀	PM _{2.5}
8-C-H138	Trevor Road, Eccles, Salford	375889 399331	18.3	13.5	12.8	8.4
8-C-H139	Abbott Community School, Sudell Street, Manchester	385012 399368	23.3	16.6	11.5	7.6
8-C-H140	Brookhill Street, Manchester	386503 399403	23.5	16.6	11.8	7.7
8-C-H141	Mitcheson Gardens, Salford	380666 399503	23.3	16.6	12.5	8.4
8-C-H142	Turnpike Green, Salford	380842 399521	23.3	16.6	12.5	8.4
8-C-H143	Grange Road, Eccles	374938 399521	16.2	12.2	12.6	7.9
8-C-H144	Halton Bank, Salford	380763 399542	23.3	16.6	12.5	8.4
8-C-H145	Cheetham Hill, Manchester	384139 399550	24.1	17.1	11.7	7.6
8-C-H146	Fredrick Road, Salford	382011 399663	21.1	15.2	11.5	7.6
8-C-H147	Seaford Road, Salford	382020 399694	21.1	15.2	11.5	7.6
8-C-H148	Hulme Hall Lane, Manchester	386149 399896	23.5	16.6	11.8	7.7
8-C-H149	Farm Lane, Worsley	374628 399995	16.2	12.2	12.6	7.9
8-C-H150	Barton Road, Worsley	374817 400365	16.8	12.5	12.6	8.0
8-C-H151	St. Chads Roman Catholic Primary School, Balmfield Street, Manchester	384362 400426	19.8	14.4	11.7	7.8
8-C-H152	Queens Road, Manchester	384452 400434	19.8	14.4	11.7	7.8
8-C-H153	Cheetham Hill Road, Manchester	384425 400527	19.8	14.4	11.7	7.8
8-C-H154	Smedley Street, Manchester	384461 400627	19.8	14.4	11.7	7.8
8-C-H155	Tazbiyah Nurseries, Smedley Lane, Manchester	384511 400889	19.8	14.4	11.7	7.8
8-C-H156	St. Marks Church of England Primary School, Aviary Road, Worsley, Manchester	374736 400898	16.8	12.5	12.6	8.0
8-C-H157	Cheetman Hill Road, Manchester	384409 400958	19.8	14.4	11.7	7.8
8-C-H158	Shirley Road, Manchester	384261 401142	20.2	14.6	12.1	8.1
8-C-H159	Cheetham Hill Road, Manchester	384192 401162	20.2	14.6	12.1	8.1
8-C-H160	Walkden Road, Worsley	374412 401255	18.9	13.9	12.3	7.9
8-C-H161	Hawthorne Drive, Worsley	375434 401437	26.3	18.7	12.9	8.3
8-C-H162	Manthorpe Avenue, Manchester	375383 401525	26.3	18.7	12.9	8.3
8-C-H163	Crawford Avenue, Worsley	374984 401923	18.9	13.9	12.3	7.9

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			NO _x	NO ₂	PM ₁₀	PM _{2.5}
8-C-H164	Old Clough Lane, Worsley	374662 401939	18.9	13.9	12.3	7.9
8-C-H165	Walken High School, Old Clough Lane, Worsley	374545 401940	18.9	13.9	12.3	7.9
8-C-H166	Wardley Hall, Wardley Hall Road, Worsley	375713 402276	17.8	13.2	12.6	8.1
8-C-H167	Manchester Road, Wardley, Swinton	375882 402597	17.8	13.2	12.6	8.1
8-C-H168	Manchester Road, Wardley, Swinton	375646 402752	17.8	13.2	12.6	8.1
8-C-H169	Sindley Road, Wardley, Swinton	376744 403021	31.0	21.6	12.8	8.2
8-C-H170	Clifton Primary School, Wroe Street, Clifton	377678 403094	18.2	13.4	12.4	8.0
8-C-H171	Manchester Road, Manchester	377819 403291	18.2	13.4	12.4	8.0
8-C-H172	Manchester Road, Newton	377691 403417	18.2	13.4	12.4	8.0
8-C-H173	Moss Lane, Kearsley	375676 403820	28.2	19.9	12.6	8.1
8-C-H174	Sidley Avenue, Charlestown	386961 403908	18.2	13.4	11.9	8.0
8-C-H175	Philips Park Road, Whitefield	379086 403983	17.6	13.0	12.2	7.9
8-C-H176	Mossway, Middleton	386590 404056	18.5	13.6	12.7	8.4
8-C-H177	Philips Park, Whitefield	379666 404091	17.4	12.9	12.8	8.2
8-C-H178	Nutbank Lane, Manchester	386238 404507	18.5	13.6	12.7	8.4
8-C-H179	Charnwood Road, Manchester	386112 404509	18.5	13.6	12.7	8.4
8-C-H180	Prestwick Hospital, Sedgley Avenue, Prestwich	380693 404529	18.3	13.5	12.6	8.2
8-C-H181	Sedgley Avenue, Prestwich	380783 404533	18.3	13.5	12.6	8.2
8-C-H182	Glenmere Close, Prestwich	380898 404648	18.3	13.5	12.6	8.2
8-C-H183	Philips Park Road East, Prestwich	380656 404659	18.3	13.5	12.6	8.2
8-C-H184	Our Lady of Grace Roman Catholic Primary School, Willow Road, Prestwich	381133 404681	21.6	15.6	13.3	8.7
8-C-H185	Stanley Avenue North, Prestwich	381136 404821	21.6	15.6	13.3	8.7
8-C-H186	Hardmans Road, Prestwich	380997 404840	18.3	13.5	12.6	8.2
8-C-H187	Lark Hill, Boothroyden Road	385133 404871	21.7	15.7	12.5	8.2
8-C-H188	Bonny Brow Street, Middleton	384902 405000	18.4	13.6	11.6	7.6
8-C-H189	Warwich Avenue, Whitefield	381594 405222	19.2	14.1	13.3	8.7

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Receptor	Description/Location	Ordnance survey coordinates	Background concentrations in 2025 ($\mu\text{g}/\text{m}^3$)			
			NO _x	NO ₂	PM ₁₀	PM _{2.5}
8-C-H190	Kensington Street, Whitefield	381489 405226	19.2	14.1	13.3	8.7
8-C-H191	St Margaret's Church of England Primary School, Heywood Road, Prestwich	382515 405526	25.9	18.4	13.1	8.4
8-C-H192	Egypt Lane, Prestwich	383370 406307	22.7	16.5	12.5	8.0
8-C-H193	Egypt Lane, Prestwich	383256 406357	22.7	16.5	12.5	8.0
8-C-H194	Whittle Lane, Heywood	384251 407650	15.4	11.6	12.5	7.9
8-C-H195	Lodge View, Heywood	385378 408231	15.2	11.5	12.4	7.8
8-C-H196	Manchester Road, Manchester	385848 408537	15.2	11.5	12.4	7.8
8-C-H197	Meadowview Care Home, Manchester Road, Manchester	388445 409765	15.6	11.7	12.2	7.8
8-C-H198	Manchester Road, Rochdale	388510 409858	15.6	11.7	12.2	7.8
8-C-H199	Trows Lane, Rochdale	388503 409933	15.6	11.7	12.2	7.8

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

Receptor	Sensitive habitat	2025 NO _x background concentration ($\mu\text{g}/\text{m}^3$)	APIS data ⁴ of average total N deposition (kg N/ha/yr)	Critical load (kg N/ha/yr)
Rochdale Canal SSSI and SAC	Fen, marsh and swamp (B)	15.6	23.4	3

Assessment results

4.3.7 Table 10 presents the predicted NO₂ impacts across all assessed scenarios for each assessed receptor. All impacts are predicted to be negligible for PM₁₀ and PM_{2.5}. Table 11, Table 12 and Table 13 provide the summary of the modelled pollutant concentrations for the assessed receptors for the worst case construction traffic scenario. The magnitude of change and impact descriptor are also derived following the IAQM/Environmental Protection UK (EPUK) methodology⁵. Table 14 and Table 15 provide the summary of the assessment for the ecological receptors for the worst case construction traffic scenario.

⁴ Air Pollution Information System. Available online at: <http://www.apis.ac.uk/>.

⁵ Institute of Air Quality Management (2017), *Land-Use Planning & Development Control: Planning For Air Quality*. Available online at: <http://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf>.

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Table 10: Comparison of impact descriptors across construction scenarios

Receptor	Impact descriptors for annual mean NO ₂ concentrations		
	Scenario 1	Scenario 2	Scenario 3
8-C-H001	Negligible	Negligible	Negligible
8-C-H002	Negligible	Negligible	Negligible
8-C-H003	Negligible	Negligible	Negligible
8-C-H004	Negligible	Negligible	Negligible
8-C-H005	Negligible	Negligible	Negligible
8-C-H006	Negligible	Negligible	Negligible
8-C-H007	Negligible	Negligible	Negligible
8-C-H008	Negligible	Negligible	Negligible
8-C-H009	Negligible	Negligible	Negligible
8-C-H010	Negligible	Negligible	Negligible
8-C-H011	Moderate beneficial	Substantial beneficial	Substantial beneficial
8-C-H012	Negligible	Negligible	Negligible
8-C-H013	Negligible	Negligible	Negligible
8-C-H014	Negligible	Negligible	Negligible
8-C-H015	Negligible	Negligible	Negligible
8-C-H016	Negligible	Slight beneficial	Negligible
8-C-H017	Negligible	Negligible	Negligible
8-C-H018	Negligible	Negligible	Negligible
8-C-H019	Negligible	Slight beneficial	Negligible
8-C-H020	Negligible	Slight beneficial	Negligible
8-C-H021	Negligible	Negligible	Negligible
8-C-H022	Negligible	Negligible	Negligible
8-C-H023	Negligible	Negligible	Negligible
8-C-H024	Negligible	Negligible	Negligible
8-C-H025	Negligible	Moderate beneficial	Slight beneficial
8-C-H026	Negligible	Negligible	Negligible
8-C-H027	Negligible	Negligible	Negligible
8-C-H028	Negligible	Negligible	Negligible
8-C-H029	Negligible	Negligible	Negligible
8-C-H030	Negligible	Negligible	Negligible
8-C-H031	Negligible	Slight beneficial	Negligible
8-C-H032	Negligible	Slight beneficial	Negligible
8-C-H033	Negligible	Slight beneficial	Negligible
8-C-H034	Negligible	Negligible	Negligible
8-C-H035	Negligible	Negligible	Negligible
8-C-H036	Negligible	Negligible	Negligible
8-C-H037	Negligible	Negligible	Negligible

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Receptor	Impact descriptors for annual mean NO ₂ concentrations		
	Scenario 1	Scenario 2	Scenario 3
8-C-H038	Negligible	Negligible	Negligible
8-C-H039	Negligible	Negligible	Negligible
8-C-H040	Slight beneficial	Slight beneficial	Negligible
8-C-H041	Negligible	Negligible	Negligible
8-C-H042	Negligible	Negligible	Negligible
8-C-H043	Negligible	Negligible	Negligible
8-C-H044	Negligible	Negligible	Negligible
8-C-H045	Negligible	Negligible	Negligible
8-C-H046	Negligible	Negligible	Negligible
8-C-H047	Negligible	Negligible	Negligible
8-C-H048	Negligible	Negligible	Negligible
8-C-H049	Slight adverse	Negligible	Negligible
8-C-H050	Negligible	Slight adverse	Moderate adverse
8-C-H051	Negligible	Negligible	Negligible
8-C-H052	Negligible	Slight adverse	Negligible
8-C-H053	Negligible	Negligible	Negligible
8-C-H054	Negligible	Negligible	Negligible
8-C-H055	Negligible	Negligible	Negligible
8-C-H056	Negligible	Negligible	Negligible
8-C-H057	Slight adverse	Negligible	Slight adverse
8-C-H058	Negligible	Negligible	Negligible
8-C-H059	Negligible	Negligible	Negligible
8-C-H060	Negligible	Negligible	Negligible
8-C-H061	Negligible	Negligible	Negligible
8-C-H062	Negligible	Negligible	Negligible
8-C-H063	Negligible	Negligible	Negligible
8-C-H064	Negligible	Negligible	Negligible
8-C-H065	Negligible	Negligible	Negligible
8-C-H066	Negligible	Negligible	Negligible
8-C-H067	Negligible	Slight beneficial	Slight beneficial
8-C-H068	Negligible	Negligible	Negligible
8-C-H069	Slight adverse	Negligible	Negligible
8-C-H070	Negligible	Slight beneficial	Slight beneficial
8-C-H071	Negligible	Negligible	Negligible
8-C-H072	Negligible	Negligible	Negligible
8-C-H073	Negligible	Negligible	Negligible
8-C-H074	Negligible	Negligible	Negligible
8-C-H075	Negligible	Negligible	Negligible

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Receptor	Impact descriptors for annual mean NO ₂ concentrations		
	Scenario 1	Scenario 2	Scenario 3
8-C-H076	Negligible	Negligible	Negligible
8-C-H077	Negligible	Negligible	Negligible
8-C-H078	Negligible	Negligible	Negligible
8-C-H079	Negligible	Negligible	Negligible
8-C-H080	Negligible	Negligible	Negligible
8-C-H081	Negligible	Negligible	Negligible
8-C-H082	Negligible	Negligible	Negligible
8-C-H083	Negligible	Negligible	Negligible
8-C-H084	Negligible	Negligible	Negligible
8-C-H085	Negligible	Slight beneficial	Slight beneficial
8-C-H086	Negligible	Negligible	Negligible
8-C-H087	Negligible	Negligible	Negligible
8-C-H088	Negligible	Negligible	Negligible
8-C-H089	Negligible	Negligible	Negligible
8-C-H090	Negligible	Negligible	Negligible
8-C-H091	Negligible	Negligible	Negligible
8-C-H092	Negligible	Negligible	Negligible
8-C-H093	Negligible	Negligible	Negligible
8-C-H094	Negligible	Negligible	Negligible
8-C-H095	Negligible	Negligible	Negligible
8-C-H096	Negligible	Negligible	Negligible
8-C-H097	Negligible	Slight beneficial	Negligible
8-C-H098	Negligible	Negligible	Negligible
8-C-H099	Negligible	Negligible	Negligible
8-C-H100	Negligible	Negligible	Negligible
8-C-H101	Slight beneficial	Moderate beneficial	Slight beneficial
8-C-H102	Negligible	Slight beneficial	Negligible
8-C-H103	Negligible	Negligible	Negligible
8-C-H104	Negligible	Negligible	Negligible
8-C-H105	Negligible	Negligible	Negligible
8-C-H106	Negligible	Negligible	Negligible
8-C-H107	Negligible	Negligible	Negligible
8-C-H108	Negligible	Negligible	Negligible
8-C-H109	Negligible	Negligible	Negligible
8-C-H110	Negligible	Negligible	Negligible
8-C-H111	Negligible	Negligible	Negligible
8-C-H112	Negligible	Negligible	Negligible
8-C-H113	Negligible	Negligible	Negligible

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Receptor	Impact descriptors for annual mean NO ₂ concentrations		
	Scenario 1	Scenario 2	Scenario 3
8-C-H114	Negligible	Negligible	Negligible
8-C-H115	Negligible	Negligible	Negligible
8-C-H116	Negligible	Negligible	Negligible
8-C-H117	Negligible	Negligible	Negligible
8-C-H118	Negligible	Negligible	Negligible
8-C-H119	Negligible	Slight beneficial	Negligible
8-C-H120	Negligible	Negligible	Negligible
8-C-H121	Negligible	Negligible	Negligible
8-C-H122	Negligible	Negligible	Negligible
8-C-H123	Negligible	Negligible	Negligible
8-C-H124	Negligible	Negligible	Negligible
8-C-H125	Negligible	Negligible	Negligible
8-C-H126	Negligible	Negligible	Negligible
8-C-H127	Negligible	Negligible	Negligible
8-C-H128	Negligible	Slight adverse	Negligible
8-C-H129	Negligible	Negligible	Negligible
8-C-H130	Negligible	Negligible	Negligible
8-C-H131	Negligible	Negligible	Negligible
8-C-H132	Negligible	Negligible	Negligible
8-C-H133	Negligible	Negligible	Negligible
8-C-H134	Negligible	Negligible	Negligible
8-C-H135	Negligible	Negligible	Negligible
8-C-H136	Negligible	Negligible	Negligible
8-C-H137	Negligible	Negligible	Negligible
8-C-H138	Negligible	Negligible	Negligible
8-C-H139	Negligible	Negligible	Negligible
8-C-H140	Negligible	Negligible	Negligible
8-C-H141	Negligible	Negligible	Negligible
8-C-H142	Negligible	Negligible	Negligible
8-C-H143	Negligible	Negligible	Negligible
8-C-H144	Negligible	Negligible	Negligible
8-C-H145	Negligible	Negligible	Negligible
8-C-H146	Negligible	Negligible	Negligible
8-C-H147	Negligible	Negligible	Negligible
8-C-H148	Negligible	Negligible	Negligible
8-C-H149	Moderate adverse	Moderate adverse	Moderate adverse
8-C-H150	Negligible	Negligible	Negligible
8-C-H151	Negligible	Negligible	Negligible

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Receptor	Impact descriptors for annual mean NO ₂ concentrations		
	Scenario 1	Scenario 2	Scenario 3
8-C-H152	Negligible	Negligible	Negligible
8-C-H153	Negligible	Negligible	Negligible
8-C-H154	Negligible	Negligible	Negligible
8-C-H155	Negligible	Negligible	Negligible
8-C-H156	Negligible	Negligible	Negligible
8-C-H157	Negligible	Negligible	Negligible
8-C-H158	Negligible	Negligible	Negligible
8-C-H159	Negligible	Negligible	Negligible
8-C-H160	Negligible	Negligible	Negligible
8-C-H161	Negligible	Negligible	Negligible
8-C-H162	Negligible	Negligible	Negligible
8-C-H163	Negligible	Negligible	Negligible
8-C-H164	Negligible	Negligible	Negligible
8-C-H165	Negligible	Negligible	Negligible
8-C-H166	Negligible	Negligible	Negligible
8-C-H167	Negligible	Negligible	Negligible
8-C-H168	Negligible	Negligible	Negligible
8-C-H169	Negligible	Negligible	Negligible
8-C-H170	Negligible	Negligible	Negligible
8-C-H171	Negligible	Negligible	Negligible
8-C-H172	Negligible	Negligible	Negligible
8-C-H173	Negligible	Negligible	Negligible
8-C-H174	Negligible	Negligible	Negligible
8-C-H175	Negligible	Negligible	Negligible
8-C-H176	Negligible	Negligible	Negligible
8-C-H177	Negligible	Negligible	Negligible
8-C-H178	Negligible	Negligible	Negligible
8-C-H179	Negligible	Negligible	Negligible
8-C-H180	Negligible	Negligible	Negligible
8-C-H181	Negligible	Negligible	Negligible
8-C-H182	Negligible	Negligible	Negligible
8-C-H183	Negligible	Negligible	Negligible
8-C-H184	Negligible	Negligible	Negligible
8-C-H185	Negligible	Negligible	Negligible
8-C-H186	Negligible	Negligible	Negligible
8-C-H187	Negligible	Negligible	Negligible
8-C-H188	Negligible	Negligible	Negligible
8-C-H189	Negligible	Negligible	Negligible

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Receptor	Impact descriptors for annual mean NO ₂ concentrations		
	Scenario 1	Scenario 2	Scenario 3
8-C-H190	Negligible	Negligible	Negligible
8-C-H191	Negligible	Negligible	Negligible
8-C-H192	Negligible	Negligible	Negligible
8-C-H193	Negligible	Negligible	Negligible
8-C-H194	Negligible	Negligible	Negligible
8-C-H195	Negligible	Negligible	Negligible
8-C-H196	Negligible	Negligible	Negligible
8-C-H197	Negligible	Negligible	Negligible
8-C-H198	Negligible	Negligible	Negligible
8-C-H199	Negligible	Negligible	Negligible

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Table 11: Predicted annual mean NO₂ concentrations and impacts (construction phase)

Receptor	Description/Location	NO ₂ concentrations (µg/m ³)		Change in NO ₂ concentrations (µg/m ³)	Impact descriptor	Significance
		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H001	Central Manchester University Hospital, Hathersage Road, Manchester	17.1	17.0	-0.1	Negligible	Not significant
8-C-H002	Grafton Street, Manchester	21.1	21.0	-0.1	Negligible	Not significant
8-C-H003	Grafton Street, Manchester	24.2	24.1	-0.1	Negligible	Not significant
8-C-H004	Upper Brook Street, Manchester	27.5	27.4	-0.1	Negligible	Not significant
8-C-H005	Manchester University, Schuster Building, Upper Brook Street, Manchester	24.7	24.6	-0.1	Negligible	Not significant
8-C-H006	Stockport Road, Manchester	18.9	18.8	-0.1	Negligible	Not significant
8-C-H007	Polygon Street, Manchester	29.2	29.7	0.5	Negligible	Not significant
8-C-H008	Conmere Square, Manchester	31.0	31.0	< 0.1	Negligible	Not significant
8-C-H009	Rockdove Avenue, Manchester	34.1	34.0	-0.1	Negligible	Not significant
8-C-H010	Medlock Primary School, Ardwick Green South, Manchester	21.0	21.0	< 0.1	Negligible	Not significant
8-C-H011	Chester Street, Manchester	44.8	44.5	-0.3	Moderate beneficial	Significant
8-C-H012	Manchester University, Grosvenor Street, Manchester	23.6	23.6	< 0.1	Negligible	Not significant
8-C-H013	Jackson Crescent, Manchester	22.6	22.6	< 0.1	Negligible	Not significant
8-C-H014	Jackson Crescent, Manchester	25.1	25.1	< 0.1	Negligible	Not significant
8-C-H015	Medlock Primary School, Ardwick Green South, Manchester	20.7	20.8	0.1	Negligible	Not significant
8-C-H016	River Street, Manchester	39.8	39.7	-0.1	Negligible	Not significant
8-C-H017	Manchester Metropolitan University, Grosvenor Square, Manchester	31.0	30.8	-0.2	Negligible	Not significant
8-C-H018	Beattock Close, Manchester	23.7	23.6	-0.1	Negligible	Not significant

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Receptor	Description/Location	NO ₂ concentrations (µg/m ³)		Change in NO ₂ concentrations (µg/m ³)	Impact descriptor	Significance
		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H019	Manchester Metropolitan University, Ormond Building, Lower Ormond Street, Manchester	33.0	32.9	-0.1	Negligible	Not significant
8-C-H020	Manchester Metropolitan University, Oxford Road, Manchester	34.1	34.0	-0.1	Negligible	Not significant
8-C-H021	Grosvenor Street, Manchester	27.8	27.7	-0.1	Negligible	Not significant
8-C-H022	Ardwick Green South, Manchester	25.7	26.5	0.8	Negligible	Not significant
8-C-H023	Higher Ardwick, Manchester	22.9	22.8	-0.1	Negligible	Not significant
8-C-H024	Higher Ardwick, Manchester	23.4	23.2	-0.2	Negligible	Not significant
8-C-H025	Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester	38.5	38.4	-0.1	Negligible	Not significant
8-C-H026	Higher Ardwick, Manchester	23.3	23.9	0.6	Negligible	Not significant
8-C-H027	Union Street, Ardwick, Manchester	22.8	22.4	-0.4	Negligible	Not significant
8-C-H028	Downing Street, Manchester	32.1	32.5	0.4	Negligible	Not significant
8-C-H029	Lockton Close, Manchester	29.0	28.9	-0.1	Negligible	Not significant
8-C-H030	Cotter Street, Manchester	24.9	24.8	-0.1	Negligible	Not significant
8-C-H031	Blantyre Street, Manchester	39.6	39.6	< 0.1	Negligible	Not significant
8-C-H032	The University of Manchester, Ferranti Building, Sackville Street, Manchester	33.5	33.4	-0.1	Negligible	Not significant
8-C-H033	The University of Manchester, Ferranti Building, Sackville Street, Manchester	34.1	33.9	-0.2	Negligible	Not significant
8-C-H034	Berry Street, Manchester	29.0	28.8	-0.2	Negligible	Not significant
8-C-H035	Wilfred Road, Manchester	26.5	26.7	0.2	Negligible	Not significant
8-C-H036	Regent Road, Manchester	26.6	26.6	< 0.1	Negligible	Not significant
8-C-H037	Laburnum Avenue, Manchester	26.0	26.2	0.2	Negligible	Not significant

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Receptor	Description/Location	NO ₂ concentrations (µg/m ³)		Change in NO ₂ concentrations (µg/m ³)	Impact descriptor	Significance
		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H038	Fairfield Street, Manchester	25.2	26.5	1.3	Negligible	Not significant
8-C-H039	The University of Manchester, Sackville Street, Manchester	29.3	29.0	-0.3	Negligible	Not significant
8-C-H040	London Road, Manchester	30.4	30.1	-0.3	Negligible	Not significant
8-C-H041	Whitworth Street, Manchester	30.1	29.5	-0.6	Negligible	Not significant
8-C-H042	Liverpool Road, Manchester	28.2	28.5	0.3	Negligible	Not significant
8-C-H043	Liverpool Road, Eccles	31.1	31.4	0.3	Negligible	Not significant
8-C-H044	Portland Street, Manchester	31.7	31.5	-0.2	Negligible	Not significant
8-C-H045	Piccadilly Place, Manchester	27.3	26.9	-0.4	Negligible	Not significant
8-C-H046	Bloom Street, Manchester	26.3	26.4	0.1	Negligible	Not significant
8-C-H047	Ancoats Grove, Manchester	20.2	20.0	-0.2	Negligible	Not significant
8-C-H048	Ancotes Grove, Manchester	20.4	20.3	-0.1	Negligible	Not significant
8-C-H049	Every Street, Manchester	34.3	36.3	2.0	Slight adverse	Not significant
8-C-H050	Chapelton Street, Manchester	22.7	27.4	4.7	Moderate adverse	Significant
8-C-H051	Portland Street, Manchester	31.2	30.9	-0.3	Negligible	Not significant
8-C-H052	Chapelton Street, Manchester	20.5	22.9	2.4	Slight adverse	Not significant
8-C-H053	Chapelton Street, Manchester	20.8	22.5	1.7	Negligible	Not significant
8-C-H054	Every Street, Manchester	24.0	24.5	0.5	Negligible	Not significant
8-C-H055	Every Street, Manchester	24.8	25.1	0.3	Negligible	Not significant
8-C-H056	Great Ancoats Street, Manchester	27.9	28.3	0.4	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H057	Ducie Street, Manchester	30.9	32.2	1.3	Slight adverse	Not significant
8-C-H058	Wharf Close, Manchester	27.8	27.9	0.1	Negligible	Not significant
8-C-H059	Chapelton Street, Manchester	29.2	30.1	0.9	Negligible	Not significant
8-C-H060	Every Street, Manchester	21.5	21.7	0.2	Negligible	Not significant
8-C-H061	Pollard Street, Manchester	24.9	24.4	-0.5	Negligible	Not significant
8-C-H062	Piccadilly, Manchester	26.5	26.9	0.4	Negligible	Not significant
8-C-H063	Paton Street, Manchester	26.8	27.4	0.6	Negligible	Not significant
8-C-H064	Ducie Street, Manchester	26.5	28.0	1.5	Negligible	Not significant
8-C-H065	Dale Street, Manchester	30.2	30.4	0.2	Negligible	Not significant
8-C-H066	Tariff Street, Manchester	27.4	29.6	2.2	Negligible	Not significant
8-C-H067	Store Street, Manchester	31.1	31.4	0.3	Negligible	Not significant
8-C-H068	Store Street, Manchester	27.4	27.6	0.2	Negligible	Not significant
8-C-H069	Ducie Street, Manchester	23.5	25.7	2.2	Slight adverse	Not significant
8-C-H070	Old Mill Street, Manchester	31.8	32.1	0.3	Negligible	Not significant
8-C-H071	Blisworth Close, Manchester	22.2	22.3	0.1	Negligible	Not significant
8-C-H072	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	20.1	20.1	< 0.1	Negligible	Not significant
8-C-H073	Old Mill Street, Manchester	23.9	23.6	-0.3	Negligible	Not significant
8-C-H074	Little Learning Ladder Nursery, Lampwick Lane, Manchester	19.7	19.6	-0.1	Negligible	Not significant
8-C-H075	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	20.3	20.2	-0.1	Negligible	Not significant

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Receptor	Description/Location	NO ₂ concentrations (µg/m ³)		Change in NO ₂ concentrations (µg/m ³)	Impact descriptor	Significance
		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H076	Tiddlywinks Day Nursery, Taunton Street, Manchester	19.7	19.7	< 0.1	Negligible	Not significant
8-C-H077	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	20.5	20.5	< 0.1	Negligible	Not significant
8-C-H078	Old Mill Street, Manchester	21.9	21.7	-0.2	Negligible	Not significant
8-C-H079	Munday Street, Manchester	21.6	21.3	-0.3	Negligible	Not significant
8-C-H080	Hackleton Close, Manchester	20.6	20.6	< 0.1	Negligible	Not significant
8-C-H081	Towcester Close, Manchester	21.4	21.2	-0.2	Negligible	Not significant
8-C-H082	Pollard Street, Manchester	21.8	21.6	-0.2	Negligible	Not significant
8-C-H083	Houldsworth Street, Manchester	30.1	30.3	0.2	Negligible	Not significant
8-C-H084	Tavery Close, Manchester	23.7	23.2	-0.5	Negligible	Not significant
8-C-H085	Pickford Street, Ancoats	34.9	35.0	0.1	Negligible	Not significant
8-C-H086	A6 Crescent, Salford	22.4	22.7	0.3	Negligible	Not significant
8-C-H087	Gore Street, Manchester	33.7	33.9	0.2	Negligible	Not significant
8-C-H088	Chapel Street, Salford	29.9	30.1	0.2	Negligible	Not significant
8-C-H089	Chapel Street, Salford	29.4	29.6	0.2	Negligible	Not significant
8-C-H090	Salford Royal NHS Foundation Trust, A6 Crescent, Salford	28.1	28.6	0.5	Negligible	Not significant
8-C-H091	Old Mill Street, Manchester	23.0	22.7	-0.3	Negligible	Not significant
8-C-H092	Chapel Street, Salford	35.9	36.1	0.2	Negligible	Not significant
8-C-H093	Ancoats, Manchester	30.6	30.7	0.1	Negligible	Not significant
8-C-H094	St. Mary Street, Salford	34.0	34.4	0.4	Negligible	Not significant
8-C-H095	Old Mill Street, Manchester	21.7	21.4	-0.3	Negligible	Not significant
8-C-H096	A6 Crescent, Salford	21.0	21.1	0.1	Negligible	Not significant

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Receptor	Description/Location	NO ₂ concentrations (µg/m ³)		Change in NO ₂ concentrations (µg/m ³)	Impact descriptor	Significance
		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H097	Great Ancoats Street, Manchester	31.2	31.2	< 0.1	Negligible	Not significant
8-C-H098	Chapel Street, Salford	27.9	28.2	0.3	Negligible	Not significant
8-C-H099	Blackfriars Street, Salford	27.9	28.2	0.3	Negligible	Not significant
8-C-H100	Chapel Street, Salford	28.4	28.3	-0.1	Negligible	Not significant
8-C-H101	Oldham Road, Manchester	38.0	37.7	-0.3	Slight beneficial	Not significant
8-C-H102	Ring Road, Manchester	33.3	33.0	-0.3	Negligible	Not significant
8-C-H103	Salford Approach, Salford	32.2	32.4	0.2	Negligible	Not significant
8-C-H104	Bevill Square, Salford	28.5	28.8	0.3	Negligible	Not significant
8-C-H105	Addington Street, Manchester	30.2	30.2	< 0.1	Negligible	Not significant
8-C-H106	Oldham Road, Manchester	28.0	28.2	0.2	Negligible	Not significant
8-C-H107	Oldham Road, Manchester	31.2	31.5	0.3	Negligible	Not significant
8-C-H108	Bradford Road, Manchester	22.7	22.4	-0.3	Negligible	Not significant
8-C-H109	Vernon Avenue, Eccles, Salford	21.8	21.9	0.1	Negligible	Not significant
8-C-H110	Bradford Road, Manchester	23.5	23.5	< 0.1	Negligible	Not significant
8-C-H111	Cranfield Close, Manchester	23.6	23.4	-0.2	Negligible	Not significant
8-C-H112	Swan Street, Manchester	30.0	29.8	-0.2	Negligible	Not significant
8-C-H113	Albert Road, Eccles, Salford	29.2	29.4	0.2	Negligible	Not significant
8-C-H114	Blackfriars Road, Salford	31.0	31.6	0.6	Negligible	Not significant
8-C-H115	Oldham Road, Manchester	21.9	22.3	0.4	Negligible	Not significant
8-C-H116	Angel Street, Manchester	32.2	32.0	-0.2	Negligible	Not significant
8-C-H117	Trafalgar Road, Salford	25.5	25.6	0.1	Negligible	Not significant

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Receptor	Description/Location	NO ₂ concentrations (µg/m ³)		Change in NO ₂ concentrations (µg/m ³)	Impact descriptor	Significance
		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H118	Wellington Road, Eccles, Salford	29.7	30.0	0.3	Negligible	Not significant
8-C-H119	Angel Street, Manchester	36.2	35.8	-0.4	Negligible	Not significant
8-C-H120	Blackfriars Road, Salford	29.2	29.8	0.6	Negligible	Not significant
8-C-H121	Butler Street, Manchester	18.5	18.4	-0.1	Negligible	Not significant
8-C-H122	Blackfriars Road, Salford	24.1	25.0	0.9	Negligible	Not significant
8-C-H123	Butler Street, Manchester	18.2	18.2	< 0.1	Negligible	Not significant
8-C-H124	Butler Street, Manchester	19.5	19.3	-0.2	Negligible	Not significant
8-C-H125	St Stephen Street, Salford	18.8	18.8	< 0.1	Negligible	Not significant
8-C-H126	Richmond Street, Salford	21.2	21.6	0.4	Negligible	Not significant
8-C-H127	Greengate, Salford	22.6	23.2	0.6	Negligible	Not significant
8-C-H128	Trinity Way, Manchester	30.1	31.0	0.9	Slight adverse	Not significant
8-C-H129	Mirabel Street, Cheetham Hill	26.5	27.3	0.8	Negligible	Not significant
8-C-H130	Leander Close, Eccles, Salford	22.2	22.3	0.1	Negligible	Not significant
8-C-H131	Scott Avenue, Eccles, Salford	27.2	27.5	0.3	Negligible	Not significant
8-C-H132	Bray Avenue, Eccles, Salford	24.0	24.2	0.2	Negligible	Not significant
8-C-H133	Frederick Road, Salford	22.0	22.4	0.4	Negligible	Not significant
8-C-H134	Grange Road, Eccles	18.3	18.4	0.1	Negligible	Not significant
8-C-H135	Nichols Street, Salford	20.9	21.2	0.3	Negligible	Not significant
8-C-H136	King William Street, Eccles, Salford	25.9	26.1	0.2	Negligible	Not significant
8-C-H137	Old Parrin Lane, Eccles, Salford	24.0	24.2	0.2	Negligible	Not significant
8-C-H138	Trevor Road, Eccles, Salford	27.8	28.0	0.2	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H139	Abbott Community School, Sudell Street, Manchester	18.7	18.5	-0.2	Negligible	Not significant
8-C-H140	Brookhill Street, Manchester	20.6	20.4	-0.2	Negligible	Not significant
8-C-H141	Mitcheson Gardens, Salford	19.6	19.7	0.1	Negligible	Not significant
8-C-H142	Turnpike Green, Salford	20.1	20.1	< 0.1	Negligible	Not significant
8-C-H143	Grange Road, Eccles	30.6	30.9	0.3	Negligible	Not significant
8-C-H144	Halton Bank, Salford	21.9	22.1	0.2	Negligible	Not significant
8-C-H145	Cheetham Hill, Manchester	23.8	23.6	-0.2	Negligible	Not significant
8-C-H146	Fredrick Road, Salford	19.1	19.3	0.2	Negligible	Not significant
8-C-H147	Seaford Road, Salford	23.1	23.6	0.5	Negligible	Not significant
8-C-H148	Hulme Hall Lane, Manchester	24.1	23.9	-0.2	Negligible	Not significant
8-C-H149	Farm Lane, Worsley	43.5	43.9	0.4	Moderate adverse	Significant
8-C-H150	Barton Road, Worsley	22.7	22.3	-0.4	Negligible	Not significant
8-C-H151	St. Chads Roman Catholic Primary School, Balmfield Street, Manchester	16.6	16.6	< 0.1	Negligible	Not significant
8-C-H152	Queens Road, Manchester	20.3	20.3	< 0.1	Negligible	Not significant
8-C-H153	Cheetham Hill Road, Manchester	19.4	19.3	-0.1	Negligible	Not significant
8-C-H154	Smedley Street, Manchester	18.6	18.5	-0.1	Negligible	Not significant
8-C-H155	Tazbiyah Nurseries, Smedley Lane, Manchester	16.7	16.7	< 0.1	Negligible	Not significant
8-C-H156	St. Marks Church of England Primary School, Aviary Road, Worsley, Manchester	20.1	20.2	0.1	Negligible	Not significant
8-C-H157	Cheetman Hill Road, Manchester	17.9	17.7	-0.2	Negligible	Not significant
8-C-H158	Shirley Road, Manchester	20.3	20.0	-0.3	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H159	Cheetham Hill Road, Manchester	17.0	16.9	-0.1	Negligible	Not significant
8-C-H160	Walkden Road, Worsley	19.9	19.7	-0.2	Negligible	Not significant
8-C-H161	Hawthorne Drive, Worsley	28.9	29.0	0.1	Negligible	Not significant
8-C-H162	Manthorpe Avenue, Manchester	32.2	32.5	0.3	Negligible	Not significant
8-C-H163	Crawford Avenue, Worsley	19.3	19.1	-0.2	Negligible	Not significant
8-C-H164	Old Clough Lane, Worsley	22.3	22.3	< 0.1	Negligible	Not significant
8-C-H165	Walken High School, Old Clough Lane, Worsley	18.8	18.7	-0.1	Negligible	Not significant
8-C-H166	Wardley Hall, Wardley Hall Road, Worsley	19.4	19.4	< 0.1	Negligible	Not significant
8-C-H167	Manchester Road, Wardley, Swinton	19.6	19.6	< 0.1	Negligible	Not significant
8-C-H168	Manchester Road, Wardley, Swinton	22.0	22.1	0.1	Negligible	Not significant
8-C-H169	Sindley Road, Wardley, Swinton	23.4	23.4	< 0.1	Negligible	Not significant
8-C-H170	Clifton Primary School, Wroe Street, Clifton	15.5	15.5	< 0.1	Negligible	Not significant
8-C-H171	Manchester Road, Manchester	23.0	23.0	< 0.1	Negligible	Not significant
8-C-H172	Manchester Road, Newton	31.8	31.8	< 0.1	Negligible	Not significant
8-C-H173	Moss Lane, Kearsley	23.9	23.9	< 0.1	Negligible	Not significant
8-C-H174	Sidley Avenue, Charlestown	19.6	19.7	0.1	Negligible	Not significant
8-C-H175	Philips Park Road, Whitefield	21.3	21.4	0.1	Negligible	Not significant
8-C-H176	Mossway, Middleton	24.6	24.7	0.1	Negligible	Not significant
8-C-H177	Philips Park, Whitefield	15.5	15.5	< 0.1	Negligible	Not significant
8-C-H178	Nutbank Lane, Manchester	21.5	21.6	0.1	Negligible	Not significant
8-C-H179	Charnwood Road, Manchester	20.4	20.5	0.1	Negligible	Not significant
8-C-H180	Prestwick Hospital, Sedgley Avenue, Prestwich	18.9	19.0	0.1	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H181	Sedgley Avenue, Prestwich	17.8	17.9	0.1	Negligible	Not significant
8-C-H182	Glenmere Close, Prestwich	25.0	25.1	0.1	Negligible	Not significant
8-C-H183	Philips Park Road East, Prestwich	30.9	31.1	0.2	Negligible	Not significant
8-C-H184	Our Lady of Grace Roman Catholic Primary School, Willow Road, Prestwich	19.4	19.4	< 0.1	Negligible	Not significant
8-C-H185	Stanley Avenue North, Prestwich	25.3	25.3	< 0.1	Negligible	Not significant
8-C-H186	Hardmans Road, Prestwich	32.5	32.7	0.2	Negligible	Not significant
8-C-H187	Lark Hill, Boothroyden Road	20.9	20.9	< 0.1	Negligible	Not significant
8-C-H188	Bonny Brow Street, Middleton	16.7	16.8	0.1	Negligible	Not significant
8-C-H189	Warwich Avenue, Whitefield	26.9	27.0	0.1	Negligible	Not significant
8-C-H190	Kensington Street, Whitefield	38.6	38.8	0.2	Negligible	Not significant
8-C-H191	St Margaret's Church of England Primary School, Heywood Road, Prestwich	19.9	19.9	< 0.1	Negligible	Not significant
8-C-H192	Egypt Lane, Prestwich	22.9	23.0	0.1	Negligible	Not significant
8-C-H193	Egypt Lane, Prestwich	25.1	25.1	< 0.1	Negligible	Not significant
8-C-H194	Whittle Lane, Heywood	17.0	17.0	< 0.1	Negligible	Not significant
8-C-H195	Lodge View, Heywood	22.1	22.2	0.1	Negligible	Not significant
8-C-H196	Manchester Road, Manchester	29.0	29.1	0.1	Negligible	Not significant
8-C-H197	Meadowview Care Home, Manchester Road, Manchester	16.0	16.0	< 0.1	Negligible	Not significant
8-C-H198	Manchester Road, Rochdale	29.2	29.3	0.1	Negligible	Not significant
8-C-H199	Trows Lane, Rochdale	30.5	30.6	0.1	Negligible	Not significant

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Table 12: Predicted annual mean PM10 concentrations and impacts (construction phase)

Receptor	Description/Location	PM ₁₀ concentrations (µg/m ³)		Change in PM ₁₀ concentrations (µg/m ³)	Impact descriptor	Significance
		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H001	Central Manchester University Hospital, Hathersage Road, Manchester	12.3	12.3	< 0.1	Negligible	Not significant
8-C-H002	Grafton Street, Manchester	13.2	13.2	< 0.1	Negligible	Not significant
8-C-H003	Grafton Street, Manchester	13.8	13.9	0.1	Negligible	Not significant
8-C-H004	Upper Brook Street, Manchester	13.4	13.5	0.1	Negligible	Not significant
8-C-H005	Manchester University, Schuster Building, Upper Brook Street, Manchester	12.7	12.7	< 0.1	Negligible	Not significant
8-C-H006	Stockport Road, Manchester	12.6	12.6	< 0.1	Negligible	Not significant
8-C-H007	Polygon Street, Manchester	14.2	14.2	< 0.1	Negligible	Not significant
8-C-H008	Conmere Square, Manchester	15.1	15.1	< 0.1	Negligible	Not significant
8-C-H009	Rockdove Avenue, Manchester	14.8	14.8	< 0.1	Negligible	Not significant
8-C-H010	Medlock Primary School, Ardwick Green South, Manchester	12.8	12.8	< 0.1	Negligible	Not significant
8-C-H011	Chester Street, Manchester	16.7	16.6	-0.1	Negligible	Not significant
8-C-H012	Manchester University, Grosvenor Street, Manchester	14.2	14.2	< 0.1	Negligible	Not significant
8-C-H013	Jackson Crescent, Manchester	13.0	13.0	< 0.1	Negligible	Not significant
8-C-H014	Jackson Crescent, Manchester	13.3	13.3	< 0.1	Negligible	Not significant
8-C-H015	Medlock Primary School, Ardwick Green South, Manchester	12.7	12.7	< 0.1	Negligible	Not significant
8-C-H016	River Street, Manchester	15.2	15.2	< 0.1	Negligible	Not significant
8-C-H017	Manchester Metropolitan University, Grosvenor Square, Manchester	14.8	14.9	0.1	Negligible	Not significant
8-C-H018	Beattock Close, Manchester	13.6	13.6	< 0.1	Negligible	Not significant
8-C-H019	Manchester Metropolitan University, Ormond Building, Lower Ormond Street, Manchester	15.2	15.2	< 0.1	Negligible	Not significant

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Receptor	Description/Location	PM ₁₀ concentrations (µg/m ³)		Change in PM ₁₀ concentrations (µg/m ³)	Impact descriptor	Significance
		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H020	Manchester Metropolitan University, Oxford Road, Manchester	15.3	15.3	< 0.1	Negligible	Not significant
8-C-H021	Grosvenor Street, Manchester	14.4	14.4	< 0.1	Negligible	Not significant
8-C-H022	Ardwick Green South, Manchester	13.7	13.9	0.2	Negligible	Not significant
8-C-H023	Higher Ardwick, Manchester	13.1	13.1	< 0.1	Negligible	Not significant
8-C-H024	Higher Ardwick, Manchester	13.2	13.2	< 0.1	Negligible	Not significant
8-C-H025	Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester	16.1	16.1	< 0.1	Negligible	Not significant
8-C-H026	Higher Ardwick, Manchester	13.2	13.3	0.1	Negligible	Not significant
8-C-H027	Union Street, Ardwick, Manchester	13.1	13.0	-0.1	Negligible	Not significant
8-C-H028	Downing Street, Manchester	15.8	15.8	< 0.1	Negligible	Not significant
8-C-H029	Lockton Close, Manchester	14.8	14.9	0.1	Negligible	Not significant
8-C-H030	Cotter Street, Manchester	13.1	13.1	< 0.1	Negligible	Not significant
8-C-H031	Blantyre Street, Manchester	15.3	15.3	< 0.1	Negligible	Not significant
8-C-H032	The University of Manchester, Ferranti Building, Sackville Street, Manchester	15.2	15.2	< 0.1	Negligible	Not significant
8-C-H033	The University of Manchester, Ferranti Building, Sackville Street, Manchester	15.3	15.3	< 0.1	Negligible	Not significant
8-C-H034	Berry Street, Manchester	14.6	14.6	< 0.1	Negligible	Not significant
8-C-H035	Wilfred Road, Manchester	14.7	14.7	< 0.1	Negligible	Not significant
8-C-H036	Regent Road, Manchester	13.5	13.5	< 0.1	Negligible	Not significant
8-C-H037	Laburnum Avenue, Manchester	14.6	14.6	< 0.1	Negligible	Not significant
8-C-H038	Fairfield Street, Manchester	14.3	14.5	0.2	Negligible	Not significant
8-C-H039	The University of Manchester, Sackville Street, Manchester	15.0	14.9	-0.1	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H040	London Road, Manchester	15.2	15.1	-0.1	Negligible	Not significant
8-C-H041	Whitworth Street, Manchester	15.2	15.0	-0.2	Negligible	Not significant
8-C-H042	Liverpool Road, Manchester	15.1	15.1	< 0.1	Negligible	Not significant
8-C-H043	Liverpool Road, Eccles	15.6	15.7	0.1	Negligible	Not significant
8-C-H044	Portland Street, Manchester	15.4	15.3	-0.1	Negligible	Not significant
8-C-H045	Piccadilly Place, Manchester	14.7	14.6	-0.1	Negligible	Not significant
8-C-H046	Bloom Street, Manchester	14.5	14.5	< 0.1	Negligible	Not significant
8-C-H047	Ancoats Grove, Manchester	12.7	12.7	< 0.1	Negligible	Not significant
8-C-H048	Ancotes Grove, Manchester	12.8	12.7	-0.1	Negligible	Not significant
8-C-H049	Every Street, Manchester	15.2	15.5	0.3	Negligible	Not significant
8-C-H050	Chapelton Street, Manchester	13.9	14.3	0.4	Negligible	Not significant
8-C-H051	Portland Street, Manchester	15.4	15.3	-0.1	Negligible	Not significant
8-C-H052	Chapelton Street, Manchester	12.7	13.0	0.3	Negligible	Not significant
8-C-H053	Chapelton Street, Manchester	12.1	12.4	0.3	Negligible	Not significant
8-C-H054	Every Street, Manchester	12.9	13.0	0.1	Negligible	Not significant
8-C-H055	Every Street, Manchester	13.2	13.3	0.1	Negligible	Not significant
8-C-H056	Great Ancoats Street, Manchester	13.3	13.4	0.1	Negligible	Not significant
8-C-H057	Ducie Street, Manchester	14.2	14.3	0.1	Negligible	Not significant
8-C-H058	Wharf Close, Manchester	13.6	13.6	< 0.1	Negligible	Not significant
8-C-H059	Chapelton Street, Manchester	13.6	13.8	0.2	Negligible	Not significant
8-C-H060	Every Street, Manchester	12.4	12.4	< 0.1	Negligible	Not significant
8-C-H061	Pollard Street, Manchester	12.8	12.7	-0.1	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H062	Piccadilly, Manchester	13.3	13.4	0.1	Negligible	Not significant
8-C-H063	Paton Street, Manchester	13.4	13.4	< 0.1	Negligible	Not significant
8-C-H064	Ducie Street, Manchester	13.3	13.6	0.3	Negligible	Not significant
8-C-H065	Dale Street, Manchester	14.1	14.1	< 0.1	Negligible	Not significant
8-C-H066	Tariff Street, Manchester	13.5	13.9	0.4	Negligible	Not significant
8-C-H067	Store Street, Manchester	13.9	13.9	< 0.1	Negligible	Not significant
8-C-H068	Store Street, Manchester	13.2	13.3	0.1	Negligible	Not significant
8-C-H069	Ducie Street, Manchester	12.6	13.0	0.4	Negligible	Not significant
8-C-H070	Old Mill Street, Manchester	14.1	14.2	0.1	Negligible	Not significant
8-C-H071	Blisworth Close, Manchester	12.6	12.6	< 0.1	Negligible	Not significant
8-C-H072	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	12.0	12.0	< 0.1	Negligible	Not significant
8-C-H073	Old Mill Street, Manchester	12.7	12.6	-0.1	Negligible	Not significant
8-C-H074	Little Learning Ladder Nursery, Lampwick Lane, Manchester	11.9	11.9	< 0.1	Negligible	Not significant
8-C-H075	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	12.1	12.0	-0.1	Negligible	Not significant
8-C-H076	Tiddlywinks Day Nursery, Taunton Street, Manchester	11.9	11.9	< 0.1	Negligible	Not significant
8-C-H077	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	12.1	12.1	< 0.1	Negligible	Not significant
8-C-H078	Old Mill Street, Manchester	12.5	12.4	-0.1	Negligible	Not significant
8-C-H079	Munday Street, Manchester	12.4	12.3	-0.1	Negligible	Not significant
8-C-H080	Hackleton Close, Manchester	12.2	12.1	-0.1	Negligible	Not significant
8-C-H081	Towcester Close, Manchester	12.3	12.3	< 0.1	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H082	Pollard Street, Manchester	12.4	12.3	-0.1	Negligible	Not significant
8-C-H083	Houldsworth Street, Manchester	14.0	14.0	< 0.1	Negligible	Not significant
8-C-H084	Tavery Close, Manchester	12.8	12.7	-0.1	Negligible	Not significant
8-C-H085	Pickford Street, Ancoats	14.9	14.9	< 0.1	Negligible	Not significant
8-C-H086	A6 Crescent, Salford	12.9	12.9	< 0.1	Negligible	Not significant
8-C-H087	Gore Street, Manchester	14.3	14.3	< 0.1	Negligible	Not significant
8-C-H088	Chapel Street, Salford	14.0	14.0	< 0.1	Negligible	Not significant
8-C-H089	Chapel Street, Salford	13.9	13.9	< 0.1	Negligible	Not significant
8-C-H090	Salford Royal NHS Foundation Trust, A6 Crescent, Salford	14.0	14.1	0.1	Negligible	Not significant
8-C-H091	Old Mill Street, Manchester	12.7	12.6	-0.1	Negligible	Not significant
8-C-H092	Chapel Street, Salford	14.7	14.7	< 0.1	Negligible	Not significant
8-C-H093	Ancoats, Manchester	14.0	14.0	< 0.1	Negligible	Not significant
8-C-H094	St. Mary Street, Salford	14.4	14.4	< 0.1	Negligible	Not significant
8-C-H095	Old Mill Street, Manchester	12.4	12.3	-0.1	Negligible	Not significant
8-C-H096	A6 Crescent, Salford	13.3	13.3	< 0.1	Negligible	Not significant
8-C-H097	Great Ancoats Street, Manchester	14.1	14.1	< 0.1	Negligible	Not significant
8-C-H098	Chapel Street, Salford	13.2	13.3	0.1	Negligible	Not significant
8-C-H099	Blackfriars Street, Salford	13.2	13.2	< 0.1	Negligible	Not significant
8-C-H100	Chapel Street, Salford	13.3	13.3	< 0.1	Negligible	Not significant
8-C-H101	Oldham Road, Manchester	15.4	15.3	-0.1	Negligible	Not significant
8-C-H102	Ring Road, Manchester	14.6	14.6	< 0.1	Negligible	Not significant
8-C-H103	Salford Approach, Salford	14.0	14.0	< 0.1	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H104	Bevill Square, Salford	13.4	13.4	< 0.1	Negligible	Not significant
8-C-H105	Addington Street, Manchester	14.0	13.9	-0.1	Negligible	Not significant
8-C-H106	Oldham Road, Manchester	13.6	13.6	< 0.1	Negligible	Not significant
8-C-H107	Oldham Road, Manchester	14.2	14.2	< 0.1	Negligible	Not significant
8-C-H108	Bradford Road, Manchester	12.7	12.6	-0.1	Negligible	Not significant
8-C-H109	Vernon Avenue, Eccles, Salford	13.6	13.6	< 0.1	Negligible	Not significant
8-C-H110	Bradford Road, Manchester	12.9	12.9	< 0.1	Negligible	Not significant
8-C-H111	Cranfield Close, Manchester	12.9	12.8	-0.1	Negligible	Not significant
8-C-H112	Swan Street, Manchester	13.9	13.9	< 0.1	Negligible	Not significant
8-C-H113	Albert Road, Eccles, Salford	14.8	14.8	< 0.1	Negligible	Not significant
8-C-H114	Blackfriars Road, Salford	13.8	13.9	0.1	Negligible	Not significant
8-C-H115	Oldham Road, Manchester	12.5	12.6	0.1	Negligible	Not significant
8-C-H116	Angel Street, Manchester	14.2	14.2	< 0.1	Negligible	Not significant
8-C-H117	Trafalgar Road, Salford	14.8	14.9	0.1	Negligible	Not significant
8-C-H118	Wellington Road, Eccles, Salford	15.3	15.4	0.1	Negligible	Not significant
8-C-H119	Angel Street, Manchester	15.0	14.9	-0.1	Negligible	Not significant
8-C-H120	Blackfriars Road, Salford	13.4	13.6	0.2	Negligible	Not significant
8-C-H121	Butler Street, Manchester	12.0	11.9	-0.1	Negligible	Not significant
8-C-H122	Blackfriars Road, Salford	13.1	13.3	0.2	Negligible	Not significant
8-C-H123	Butler Street, Manchester	11.9	11.9	< 0.1	Negligible	Not significant
8-C-H124	Butler Street, Manchester	12.2	12.1	-0.1	Negligible	Not significant
8-C-H125	St Stephen Street, Salford	11.9	11.9	< 0.1	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H126	Richmond Street, Salford	12.5	12.6	0.1	Negligible	Not significant
8-C-H127	Greengate, Salford	12.5	12.6	0.1	Negligible	Not significant
8-C-H128	Trinity Way, Manchester	14.0	14.1	0.1	Negligible	Not significant
8-C-H129	Mirabel Street, Cheetham Hill	13.2	13.3	0.1	Negligible	Not significant
8-C-H130	Leander Close, Eccles, Salford	13.8	13.8	< 0.1	Negligible	Not significant
8-C-H131	Scott Avenue, Eccles, Salford	14.4	14.4	< 0.1	Negligible	Not significant
8-C-H132	Bray Avenue, Eccles, Salford	14.2	14.2	< 0.1	Negligible	Not significant
8-C-H133	Frederick Road, Salford	13.1	13.2	0.1	Negligible	Not significant
8-C-H134	Grange Road, Eccles	13.5	13.5	< 0.1	Negligible	Not significant
8-C-H135	Nichols Street, Salford	12.8	12.9	0.1	Negligible	Not significant
8-C-H136	King William Street, Eccles, Salford	14.5	14.6	0.1	Negligible	Not significant
8-C-H137	Old Parrin Lane, Eccles, Salford	14.3	14.3	< 0.1	Negligible	Not significant
8-C-H138	Trevor Road, Eccles, Salford	14.7	14.8	0.1	Negligible	Not significant
8-C-H139	Abbott Community School, Sudell Street, Manchester	12.0	11.9	-0.1	Negligible	Not significant
8-C-H140	Brookhill Street, Manchester	12.7	12.7	< 0.1	Negligible	Not significant
8-C-H141	Mitcheson Gardens, Salford	13.2	13.2	< 0.1	Negligible	Not significant
8-C-H142	Turnpike Green, Salford	13.2	13.2	< 0.1	Negligible	Not significant
8-C-H143	Grange Road, Eccles	15.4	15.5	0.1	Negligible	Not significant
8-C-H144	Halton Bank, Salford	13.7	13.7	< 0.1	Negligible	Not significant
8-C-H145	Cheetham Hill, Manchester	13.2	13.2	< 0.1	Negligible	Not significant
8-C-H146	Fredrick Road, Salford	12.3	12.3	< 0.1	Negligible	Not significant
8-C-H147	Seaford Road, Salford	13.1	13.2	0.1	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H148	Hulme Hall Lane, Manchester	13.5	13.4	-0.1	Negligible	Not significant
8-C-H149	Farm Lane, Worsley	17.7	17.8	0.1	Negligible	Not significant
8-C-H150	Barton Road, Worsley	14.7	14.6	-0.1	Negligible	Not significant
8-C-H151	St. Chads Roman Catholic Primary School, Balmfield Street, Manchester	12.2	12.2	< 0.1	Negligible	Not significant
8-C-H152	Queens Road, Manchester	13.0	13.0	< 0.1	Negligible	Not significant
8-C-H153	Cheetham Hill Road, Manchester	12.9	12.9	< 0.1	Negligible	Not significant
8-C-H154	Smedley Street, Manchester	12.7	12.7	< 0.1	Negligible	Not significant
8-C-H155	Tazbiyah Nurseries, Smedley Lane, Manchester	12.2	12.2	< 0.1	Negligible	Not significant
8-C-H156	St. Marks Church of England Primary School, Aviary Road, Worsley, Manchester	13.7	13.7	< 0.1	Negligible	Not significant
8-C-H157	Cheetman Hill Road, Manchester	12.5	12.5	< 0.1	Negligible	Not significant
8-C-H158	Shirley Road, Manchester	13.4	13.4	< 0.1	Negligible	Not significant
8-C-H159	Cheetham Hill Road, Manchester	12.6	12.6	< 0.1	Negligible	Not significant
8-C-H160	Walkden Road, Worsley	13.6	13.6	< 0.1	Negligible	Not significant
8-C-H161	Hawthorne Drive, Worsley	14.4	14.4	< 0.1	Negligible	Not significant
8-C-H162	Manthorpe Avenue, Manchester	14.9	15.0	0.1	Negligible	Not significant
8-C-H163	Crawford Avenue, Worsley	13.1	13.1	< 0.1	Negligible	Not significant
8-C-H164	Old Clough Lane, Worsley	13.5	13.5	< 0.1	Negligible	Not significant
8-C-H165	Walken High School, Old Clough Lane, Worsley	13.0	13.0	< 0.1	Negligible	Not significant
8-C-H166	Wardley Hall, Wardley Hall Road, Worsley	13.6	13.6	< 0.1	Negligible	Not significant
8-C-H167	Manchester Road, Wardley, Swinton	13.7	13.7	< 0.1	Negligible	Not significant
8-C-H168	Manchester Road, Wardley, Swinton	14.3	14.3	< 0.1	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H169	Sindley Road, Wardley, Swinton	13.1	13.1	< 0.1	Negligible	Not significant
8-C-H170	Clifton Primary School, Wroe Street, Clifton	12.7	12.8	0.1	Negligible	Not significant
8-C-H171	Manchester Road, Manchester	14.1	14.1	< 0.1	Negligible	Not significant
8-C-H172	Manchester Road, Newton	16.1	16.1	< 0.1	Negligible	Not significant
8-C-H173	Moss Lane, Kearsley	13.1	13.1	< 0.1	Negligible	Not significant
8-C-H174	Sidley Avenue, Charlestown	12.7	12.7	< 0.1	Negligible	Not significant
8-C-H175	Philips Park Road, Whitefield	13.3	13.4	0.1	Negligible	Not significant
8-C-H176	Mossway, Middleton	14.2	14.2	< 0.1	Negligible	Not significant
8-C-H177	Philips Park, Whitefield	13.1	13.1	< 0.1	Negligible	Not significant
8-C-H178	Nutbank Lane, Manchester	13.8	13.8	< 0.1	Negligible	Not significant
8-C-H179	Charnwood Road, Manchester	13.7	13.7	< 0.1	Negligible	Not significant
8-C-H180	Prestwick Hospital, Sedgley Avenue, Prestwich	13.5	13.5	< 0.1	Negligible	Not significant
8-C-H181	Sedgley Avenue, Prestwich	13.3	13.3	< 0.1	Negligible	Not significant
8-C-H182	Glenmere Close, Prestwich	14.7	14.7	< 0.1	Negligible	Not significant
8-C-H183	Philips Park Road East, Prestwich	15.4	15.4	< 0.1	Negligible	Not significant
8-C-H184	Our Lady of Grace Roman Catholic Primary School, Willow Road, Prestwich	13.9	13.9	< 0.1	Negligible	Not significant
8-C-H185	Stanley Avenue North, Prestwich	14.8	14.8	< 0.1	Negligible	Not significant
8-C-H186	Hardmans Road, Prestwich	15.9	15.9	< 0.1	Negligible	Not significant
8-C-H187	Lark Hill, Boothroyden Road	13.2	13.2	< 0.1	Negligible	Not significant
8-C-H188	Bonny Brow Street, Middleton	12.0	12.0	< 0.1	Negligible	Not significant
8-C-H189	Warwich Avenue, Whitefield	15.3	15.4	0.1	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H190	Kensington Street, Whitefield	17.6	17.6	< 0.1	Negligible	Not significant
8-C-H191	St Margaret's Church of England Primary School, Heywood Road, Prestwich	13.3	13.3	< 0.1	Negligible	Not significant
8-C-H192	Egypt Lane, Prestwich	13.5	13.5	< 0.1	Negligible	Not significant
8-C-H193	Egypt Lane, Prestwich	13.8	13.8	< 0.1	Negligible	Not significant
8-C-H194	Whittle Lane, Heywood	13.3	13.3	< 0.1	Negligible	Not significant
8-C-H195	Lodge View, Heywood	14.0	14.0	< 0.1	Negligible	Not significant
8-C-H196	Manchester Road, Manchester	15.1	15.1	< 0.1	Negligible	Not significant
8-C-H197	Meadowview Care Home, Manchester Road, Manchester	12.8	12.8	< 0.1	Negligible	Not significant
8-C-H198	Manchester Road, Rochdale	15.5	15.5	< 0.1	Negligible	Not significant
8-C-H199	Trows Lane, Rochdale	15.4	15.4	< 0.1	Negligible	Not significant

Table 13: Predicted annual mean PM_{2.5} concentrations and impacts (construction phase)

Receptor	Description/Location	PM _{2.5} concentrations (µg/m ³)		Change in PM _{2.5} concentrations (µg/m ³)	Impact descriptor	Significance
		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H001	Central Manchester University Hospital, Hathersage Road, Manchester	8.1	8.1	< 0.1	Negligible	Not significant
8-C-H002	Grafton Street, Manchester	8.6	8.6	< 0.1	Negligible	Not significant
8-C-H003	Grafton Street, Manchester	9.0	9.0	< 0.1	Negligible	Not significant
8-C-H004	Upper Brook Street, Manchester	8.6	8.6	< 0.1	Negligible	Not significant
8-C-H005	Manchester University, Schuster Building, Upper Brook Street, Manchester	8.2	8.2	< 0.1	Negligible	Not significant

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Receptor	Description/Location	PM _{2.5} concentrations (µg/m ³)		Change in PM _{2.5} concentrations (µg/m ³)	Impact descriptor	Significance
		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H006	Stockport Road, Manchester	8.3	8.3	< 0.1	Negligible	Not significant
8-C-H007	Polygon Street, Manchester	9.0	9.1	0.1	Negligible	Not significant
8-C-H008	Conmere Square, Manchester	9.4	9.4	< 0.1	Negligible	Not significant
8-C-H009	Rockdove Avenue, Manchester	9.4	9.4	< 0.1	Negligible	Not significant
8-C-H010	Medlock Primary School, Ardwick Green South, Manchester	8.3	8.3	< 0.1	Negligible	Not significant
8-C-H011	Chester Street, Manchester	10.5	10.4	-0.1	Negligible	Not significant
8-C-H012	Manchester University, Grosvenor Street, Manchester	8.9	8.9	< 0.1	Negligible	Not significant
8-C-H013	Jackson Crescent, Manchester	8.3	8.3	< 0.1	Negligible	Not significant
8-C-H014	Jackson Crescent, Manchester	8.5	8.5	< 0.1	Negligible	Not significant
8-C-H015	Medlock Primary School, Ardwick Green South, Manchester	8.2	8.2	< 0.1	Negligible	Not significant
8-C-H016	River Street, Manchester	9.7	9.7	< 0.1	Negligible	Not significant
8-C-H017	Manchester Metropolitan University, Grosvenor Square, Manchester	9.3	9.3	< 0.1	Negligible	Not significant
8-C-H018	Beattock Close, Manchester	8.7	8.7	< 0.1	Negligible	Not significant
8-C-H019	Manchester Metropolitan University, Ormond Building, Lower Ormond Street, Manchester	9.5	9.5	< 0.1	Negligible	Not significant
8-C-H020	Manchester Metropolitan University, Oxford Road, Manchester	9.6	9.6	< 0.1	Negligible	Not significant
8-C-H021	Grosvenor Street, Manchester	9.1	9.1	< 0.1	Negligible	Not significant
8-C-H022	Ardwick Green South, Manchester	8.8	8.9	0.1	Negligible	Not significant
8-C-H023	Higher Ardwick, Manchester	8.5	8.5	< 0.1	Negligible	Not significant
8-C-H024	Higher Ardwick, Manchester	8.5	8.5	< 0.1	Negligible	Not significant
8-C-H025	Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester	10.1	10.1	< 0.1	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H026	Higher Ardwick, Manchester	8.5	8.6	0.1	Negligible	Not significant
8-C-H027	Union Street, Ardwick, Manchester	8.5	8.4	-0.1	Negligible	Not significant
8-C-H028	Downing Street, Manchester	9.8	9.8	< 0.1	Negligible	Not significant
8-C-H029	Lockton Close, Manchester	9.3	9.3	< 0.1	Negligible	Not significant
8-C-H030	Cotter Street, Manchester	8.5	8.5	< 0.1	Negligible	Not significant
8-C-H031	Blantyre Street, Manchester	9.8	9.8	< 0.1	Negligible	Not significant
8-C-H032	The University of Manchester, Ferranti Building, Sackville Street, Manchester	9.6	9.6	< 0.1	Negligible	Not significant
8-C-H033	The University of Manchester, Ferranti Building, Sackville Street, Manchester	9.6	9.6	< 0.1	Negligible	Not significant
8-C-H034	Berry Street, Manchester	9.2	9.2	< 0.1	Negligible	Not significant
8-C-H035	Wilfred Road, Manchester	9.4	9.5	0.1	Negligible	Not significant
8-C-H036	Regent Road, Manchester	8.7	8.7	< 0.1	Negligible	Not significant
8-C-H037	Laburnum Avenue, Manchester	9.4	9.4	< 0.1	Negligible	Not significant
8-C-H038	Fairfield Street, Manchester	8.9	9.1	0.2	Negligible	Not significant
8-C-H039	The University of Manchester, Sackville Street, Manchester	9.3	9.3	< 0.1	Negligible	Not significant
8-C-H040	London Road, Manchester	9.5	9.4	-0.1	Negligible	Not significant
8-C-H041	Whitworth Street, Manchester	9.4	9.4	< 0.1	Negligible	Not significant
8-C-H042	Liverpool Road, Manchester	9.6	9.7	0.1	Negligible	Not significant
8-C-H043	Liverpool Road, Eccles	10.0	10.0	< 0.1	Negligible	Not significant
8-C-H044	Portland Street, Manchester	9.6	9.5	-0.1	Negligible	Not significant
8-C-H045	Piccadilly Place, Manchester	9.2	9.1	-0.1	Negligible	Not significant
8-C-H046	Bloom Street, Manchester	9.1	9.1	< 0.1	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H047	Ancoats Grove, Manchester	8.2	8.2	< 0.1	Negligible	Not significant
8-C-H048	Ancotes Grove, Manchester	8.3	8.2	-0.1	Negligible	Not significant
8-C-H049	Every Street, Manchester	9.6	9.8	0.2	Negligible	Not significant
8-C-H050	Chapelton Street, Manchester	8.7	8.9	0.2	Negligible	Not significant
8-C-H051	Portland Street, Manchester	9.5	9.5	< 0.1	Negligible	Not significant
8-C-H052	Chapelton Street, Manchester	8.2	8.4	0.2	Negligible	Not significant
8-C-H053	Chapelton Street, Manchester	7.9	8.1	0.2	Negligible	Not significant
8-C-H054	Every Street, Manchester	8.4	8.4	< 0.1	Negligible	Not significant
8-C-H055	Every Street, Manchester	8.5	8.6	0.1	Negligible	Not significant
8-C-H056	Great Ancoats Street, Manchester	8.6	8.7	0.1	Negligible	Not significant
8-C-H057	Ducie Street, Manchester	8.9	9.0	0.1	Negligible	Not significant
8-C-H058	Wharf Close, Manchester	8.6	8.6	< 0.1	Negligible	Not significant
8-C-H059	Chapelton Street, Manchester	8.8	8.9	0.1	Negligible	Not significant
8-C-H060	Every Street, Manchester	8.1	8.1	< 0.1	Negligible	Not significant
8-C-H061	Pollard Street, Manchester	8.3	8.3	< 0.1	Negligible	Not significant
8-C-H062	Piccadilly, Manchester	8.5	8.5	< 0.1	Negligible	Not significant
8-C-H063	Paton Street, Manchester	8.5	8.5	< 0.1	Negligible	Not significant
8-C-H064	Ducie Street, Manchester	8.5	8.6	0.1	Negligible	Not significant
8-C-H065	Dale Street, Manchester	8.9	8.9	< 0.1	Negligible	Not significant
8-C-H066	Tariff Street, Manchester	8.6	8.8	0.2	Negligible	Not significant
8-C-H067	Store Street, Manchester	8.9	9.0	0.1	Negligible	Not significant
8-C-H068	Store Street, Manchester	8.6	8.6	< 0.1	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H069	Ducie Street, Manchester	8.2	8.4	0.2	Negligible	Not significant
8-C-H070	Old Mill Street, Manchester	9.1	9.1	< 0.1	Negligible	Not significant
8-C-H071	Blisworth Close, Manchester	8.2	8.2	< 0.1	Negligible	Not significant
8-C-H072	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	7.9	7.9	< 0.1	Negligible	Not significant
8-C-H073	Old Mill Street, Manchester	8.2	8.2	< 0.1	Negligible	Not significant
8-C-H074	Little Learning Ladder Nursery, Lampwick Lane, Manchester	7.8	7.8	< 0.1	Negligible	Not significant
8-C-H075	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	7.9	7.9	< 0.1	Negligible	Not significant
8-C-H076	Tiddlywinks Day Nursery, Taunton Street, Manchester	7.8	7.8	< 0.1	Negligible	Not significant
8-C-H077	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	7.9	7.9	< 0.1	Negligible	Not significant
8-C-H078	Old Mill Street, Manchester	8.1	8.1	< 0.1	Negligible	Not significant
8-C-H079	Munday Street, Manchester	8.1	8.0	-0.1	Negligible	Not significant
8-C-H080	Hackleton Close, Manchester	8.0	7.9	-0.1	Negligible	Not significant
8-C-H081	Towcester Close, Manchester	8.1	8.0	-0.1	Negligible	Not significant
8-C-H082	Pollard Street, Manchester	8.1	8.1	< 0.1	Negligible	Not significant
8-C-H083	Houldsworth Street, Manchester	8.8	8.9	0.1	Negligible	Not significant
8-C-H084	Tavery Close, Manchester	8.3	8.3	< 0.1	Negligible	Not significant
8-C-H085	Pickford Street, Ancoats	9.3	9.3	< 0.1	Negligible	Not significant
8-C-H086	A6 Crescent, Salford	8.3	8.3	< 0.1	Negligible	Not significant
8-C-H087	Gore Street, Manchester	9.0	9.0	< 0.1	Negligible	Not significant
8-C-H088	Chapel Street, Salford	8.9	8.9	< 0.1	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H089	Chapel Street, Salford	8.8	8.9	0.1	Negligible	Not significant
8-C-H090	Salford Royal NHS Foundation Trust, A6 Crescent, Salford	8.9	9.0	0.1	Negligible	Not significant
8-C-H091	Old Mill Street, Manchester	8.3	8.2	-0.1	Negligible	Not significant
8-C-H092	Chapel Street, Salford	9.2	9.3	0.1	Negligible	Not significant
8-C-H093	Ancoats, Manchester	8.9	8.9	< 0.1	Negligible	Not significant
8-C-H094	St. Mary Street, Salford	9.1	9.1	< 0.1	Negligible	Not significant
8-C-H095	Old Mill Street, Manchester	8.1	8.0	-0.1	Negligible	Not significant
8-C-H096	A6 Crescent, Salford	8.6	8.6	< 0.1	Negligible	Not significant
8-C-H097	Great Ancoats Street, Manchester	8.9	8.9	< 0.1	Negligible	Not significant
8-C-H098	Chapel Street, Salford	8.4	8.4	< 0.1	Negligible	Not significant
8-C-H099	Blackfriars Street, Salford	8.4	8.4	< 0.1	Negligible	Not significant
8-C-H100	Chapel Street, Salford	8.4	8.4	< 0.1	Negligible	Not significant
8-C-H101	Oldham Road, Manchester	9.6	9.6	< 0.1	Negligible	Not significant
8-C-H102	Ring Road, Manchester	9.2	9.2	< 0.1	Negligible	Not significant
8-C-H103	Salford Approach, Salford	8.9	8.9	< 0.1	Negligible	Not significant
8-C-H104	Bevill Square, Salford	8.5	8.5	< 0.1	Negligible	Not significant
8-C-H105	Addington Street, Manchester	8.8	8.8	< 0.1	Negligible	Not significant
8-C-H106	Oldham Road, Manchester	8.6	8.6	< 0.1	Negligible	Not significant
8-C-H107	Oldham Road, Manchester	9.0	9.0	< 0.1	Negligible	Not significant
8-C-H108	Bradford Road, Manchester	8.3	8.2	-0.1	Negligible	Not significant
8-C-H109	Vernon Avenue, Eccles, Salford	8.9	8.9	< 0.1	Negligible	Not significant
8-C-H110	Bradford Road, Manchester	8.3	8.3	< 0.1	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H111	Cranfield Close, Manchester	8.4	8.3	-0.1	Negligible	Not significant
8-C-H112	Swan Street, Manchester	8.8	8.8	< 0.1	Negligible	Not significant
8-C-H113	Albert Road, Eccles, Salford	9.6	9.6	< 0.1	Negligible	Not significant
8-C-H114	Blackfriars Road, Salford	8.7	8.8	0.1	Negligible	Not significant
8-C-H115	Oldham Road, Manchester	8.2	8.2	< 0.1	Negligible	Not significant
8-C-H116	Angel Street, Manchester	9.0	9.0	< 0.1	Negligible	Not significant
8-C-H117	Trafalgar Road, Salford	9.4	9.4	< 0.1	Negligible	Not significant
8-C-H118	Wellington Road, Eccles, Salford	9.7	9.8	0.1	Negligible	Not significant
8-C-H119	Angel Street, Manchester	9.4	9.4	< 0.1	Negligible	Not significant
8-C-H120	Blackfriars Road, Salford	8.5	8.6	0.1	Negligible	Not significant
8-C-H121	Butler Street, Manchester	7.9	7.8	-0.1	Negligible	Not significant
8-C-H122	Blackfriars Road, Salford	8.4	8.6	0.2	Negligible	Not significant
8-C-H123	Butler Street, Manchester	7.8	7.8	< 0.1	Negligible	Not significant
8-C-H124	Butler Street, Manchester	8.0	8.0	< 0.1	Negligible	Not significant
8-C-H125	St Stephen Street, Salford	7.8	7.8	< 0.1	Negligible	Not significant
8-C-H126	Richmond Street, Salford	8.1	8.1	< 0.1	Negligible	Not significant
8-C-H127	Greengate, Salford	8.1	8.2	0.1	Negligible	Not significant
8-C-H128	Trinity Way, Manchester	8.9	9.0	0.1	Negligible	Not significant
8-C-H129	Mirabel Street, Cheetham Hill	8.5	8.6	0.1	Negligible	Not significant
8-C-H130	Leander Close, Eccles, Salford	9.0	9.0	< 0.1	Negligible	Not significant
8-C-H131	Scott Avenue, Eccles, Salford	9.4	9.4	< 0.1	Negligible	Not significant
8-C-H132	Bray Avenue, Eccles, Salford	9.2	9.2	< 0.1	Negligible	Not significant

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Receptor	Description/Location	PM _{2.5} concentrations (µg/m ³)		Change in PM _{2.5} concentrations (µg/m ³)	Impact descriptor	Significance
		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H133	Frederick Road, Salford	8.6	8.7	0.1	Negligible	Not significant
8-C-H134	Grange Road, Eccles	8.5	8.5	< 0.1	Negligible	Not significant
8-C-H135	Nichols Street, Salford	8.5	8.5	< 0.1	Negligible	Not significant
8-C-H136	King William Street, Eccles, Salford	9.4	9.4	< 0.1	Negligible	Not significant
8-C-H137	Old Parrin Lane, Eccles, Salford	9.3	9.3	< 0.1	Negligible	Not significant
8-C-H138	Trevor Road, Eccles, Salford	9.5	9.5	< 0.1	Negligible	Not significant
8-C-H139	Abbott Community School, Sudell Street, Manchester	7.9	7.8	-0.1	Negligible	Not significant
8-C-H140	Brookhill Street, Manchester	8.2	8.2	< 0.1	Negligible	Not significant
8-C-H141	Mitcheson Gardens, Salford	8.8	8.8	< 0.1	Negligible	Not significant
8-C-H142	Turnpike Green, Salford	8.8	8.8	< 0.1	Negligible	Not significant
8-C-H143	Grange Road, Eccles	9.7	9.7	< 0.1	Negligible	Not significant
8-C-H144	Halton Bank, Salford	9.1	9.1	< 0.1	Negligible	Not significant
8-C-H145	Cheetham Hill, Manchester	8.5	8.5	< 0.1	Negligible	Not significant
8-C-H146	Fredrick Road, Salford	8.1	8.1	< 0.1	Negligible	Not significant
8-C-H147	Seaford Road, Salford	8.5	8.6	0.1	Negligible	Not significant
8-C-H148	Hulme Hall Lane, Manchester	8.6	8.6	< 0.1	Negligible	Not significant
8-C-H149	Farm Lane, Worsley	11.1	11.1	< 0.1	Negligible	Not significant
8-C-H150	Barton Road, Worsley	9.3	9.2	-0.1	Negligible	Not significant
8-C-H151	St. Chads Roman Catholic Primary School, Balmfield Street, Manchester	8.1	8.1	< 0.1	Negligible	Not significant
8-C-H152	Queens Road, Manchester	8.5	8.5	< 0.1	Negligible	Not significant
8-C-H153	Cheetham Hill Road, Manchester	8.5	8.4	-0.1	Negligible	Not significant

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		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H154	Smedley Street, Manchester	8.4	8.3	-0.1	Negligible	Not significant
8-C-H155	Tazbiyah Nurseries, Smedley Lane, Manchester	8.1	8.1	< 0.1	Negligible	Not significant
8-C-H156	St. Marks Church of England Primary School, Aviary Road, Worsley, Manchester	8.7	8.7	< 0.1	Negligible	Not significant
8-C-H157	Cheetman Hill Road, Manchester	8.3	8.2	-0.1	Negligible	Not significant
8-C-H158	Shirley Road, Manchester	8.9	8.9	< 0.1	Negligible	Not significant
8-C-H159	Cheetham Hill Road, Manchester	8.5	8.4	-0.1	Negligible	Not significant
8-C-H160	Walkden Road, Worsley	8.6	8.6	< 0.1	Negligible	Not significant
8-C-H161	Hawthorne Drive, Worsley	9.2	9.2	< 0.1	Negligible	Not significant
8-C-H162	Manthorpe Avenue, Manchester	9.5	9.6	0.1	Negligible	Not significant
8-C-H163	Crawford Avenue, Worsley	8.4	8.4	< 0.1	Negligible	Not significant
8-C-H164	Old Clough Lane, Worsley	8.6	8.6	< 0.1	Negligible	Not significant
8-C-H165	Walken High School, Old Clough Lane, Worsley	8.4	8.4	< 0.1	Negligible	Not significant
8-C-H166	Wardley Hall, Wardley Hall Road, Worsley	8.7	8.7	< 0.1	Negligible	Not significant
8-C-H167	Manchester Road, Wardley, Swinton	8.8	8.8	< 0.1	Negligible	Not significant
8-C-H168	Manchester Road, Wardley, Swinton	9.1	9.1	< 0.1	Negligible	Not significant
8-C-H169	Sindley Road, Wardley, Swinton	8.4	8.4	< 0.1	Negligible	Not significant
8-C-H170	Clifton Primary School, Wroe Street, Clifton	8.2	8.2	< 0.1	Negligible	Not significant
8-C-H171	Manchester Road, Manchester	9.0	9.0	< 0.1	Negligible	Not significant
8-C-H172	Manchester Road, Newton	10.2	10.2	< 0.1	Negligible	Not significant
8-C-H173	Moss Lane, Kearsley	8.5	8.5	< 0.1	Negligible	Not significant
8-C-H174	Sidley Avenue, Charlestown	8.5	8.5	< 0.1	Negligible	Not significant

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Receptor	Description/Location	PM _{2.5} concentrations (µg/m ³)		Change in PM _{2.5} concentrations (µg/m ³)	Impact descriptor	Significance
		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H175	Philips Park Road, Whitefield	8.6	8.6	< 0.1	Negligible	Not significant
8-C-H176	Mossway, Middleton	9.3	9.3	< 0.1	Negligible	Not significant
8-C-H177	Philips Park, Whitefield	8.4	8.4	< 0.1	Negligible	Not significant
8-C-H178	Nutbank Lane, Manchester	9.0	9.0	< 0.1	Negligible	Not significant
8-C-H179	Charnwood Road, Manchester	9.0	9.0	< 0.1	Negligible	Not significant
8-C-H180	Prestwick Hospital, Sedgley Avenue, Prestwich	8.7	8.7	< 0.1	Negligible	Not significant
8-C-H181	Sedgley Avenue, Prestwich	8.6	8.6	< 0.1	Negligible	Not significant
8-C-H182	Glenmere Close, Prestwich	9.4	9.4	< 0.1	Negligible	Not significant
8-C-H183	Philips Park Road East, Prestwich	9.9	9.9	< 0.1	Negligible	Not significant
8-C-H184	Our Lady of Grace Roman Catholic Primary School, Willow Road, Prestwich	9.1	9.1	< 0.1	Negligible	Not significant
8-C-H185	Stanley Avenue North, Prestwich	9.7	9.7	< 0.1	Negligible	Not significant
8-C-H186	Hardmans Road, Prestwich	10.2	10.2	< 0.1	Negligible	Not significant
8-C-H187	Lark Hill, Boothroyden Road	8.6	8.6	< 0.1	Negligible	Not significant
8-C-H188	Bonny Brow Street, Middleton	7.9	7.9	< 0.1	Negligible	Not significant
8-C-H189	Warwich Avenue, Whitefield	10.0	10.0	< 0.1	Negligible	Not significant
8-C-H190	Kensington Street, Whitefield	11.4	11.4	< 0.1	Negligible	Not significant
8-C-H191	St Margaret's Church of England Primary School, Heywood Road, Prestwich	8.5	8.5	< 0.1	Negligible	Not significant
8-C-H192	Egypt Lane, Prestwich	8.6	8.6	< 0.1	Negligible	Not significant
8-C-H193	Egypt Lane, Prestwich	8.8	8.8	< 0.1	Negligible	Not significant
8-C-H194	Whittle Lane, Heywood	8.4	8.4	< 0.1	Negligible	Not significant
8-C-H195	Lodge View, Heywood	8.8	8.8	< 0.1	Negligible	Not significant

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Receptor	Description/Location	PM _{2.5} concentrations (µg/m ³)		Change in PM _{2.5} concentrations (µg/m ³)	Impact descriptor	Significance
		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
8-C-H196	Manchester Road, Manchester	9.5	9.5	< 0.1	Negligible	Not significant
8-C-H197	Meadowview Care Home, Manchester Road, Manchester	8.2	8.2	< 0.1	Negligible	Not significant
8-C-H198	Manchester Road, Rochdale	9.8	9.8	< 0.1	Negligible	Not significant
8-C-H199	Trows Lane, Rochdale	9.8	9.8	< 0.1	Negligible	Not significant

Table 14: Predicted annual mean of NO_x concentrations at ecological sites (construction phase)

Ecological site	Distance to road (m)	NO _x concentrations (µg/m ³)		Change in NO _x concentrations (µg/m ³)	Comparison against air quality standard (30µg/m ³)
		2025 without the Proposed Scheme	2025 with the Proposed Scheme		
Rochdale Canal SSSI and SAC transect 6	43m	26.6	26.7	0.1	Within standard
	50m	25.5	25.5	< 0.1	Within standard
	75m	22.4	22.5	0.1	Within standard
	100m	20.7	20.8	0.1	Within standard
	150m	19.0	19.0	< 0.1	Within standard
	200m	18.1	18.1	< 0.1	Within standard
Rochdale Canal SSSI and SAC transect 7	36m	40.9	41.1	0.2	Above standard
	40m	39.1	39.3	0.2	Above standard
	50m	35.5	35.6	0.1	Above standard

Note: Data for the Ecology Assessment is presented within the boundary of the relevant designations, therefore data from Rochdale Canal SSSI and SAC transect 6 is presented from 43m, Rochdale Canal SSSI and SAC transect 7 is presented from 36m to 50m.

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Table 15: 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)	Change in relation to lower critical load
		2025 without the Proposed Scheme	2025 with the Proposed Scheme			
Rochdale Canal SSSI and SAC transect 6	43m	24.2	24.2	<0.1	3	0.2%
	50m	24.1	24.1	<0.1	3	0.2%
	75m	23.9	23.9	<0.1	3	0.1%
	100m	23.8	23.8	<0.1	3	<0.1%
	150m	23.6	23.6	<0.1	3	<0.1%
	200m	23.6	23.6	<0.1	3	<0.1%
Rochdale Canal SSSI and SAC transect 7	36m	25.3	25.3	<0.1	3	0.4%
	40m	25.1	25.1	<0.1	3	0.3%
	50m	24.9	24.9	<0.1	3	0.3%

Note: Data for the Ecology Assessment is presented within the boundary of the relevant designations, therefore data from Rochdale Canal SSSI and SAC transect 6 is presented from 43m, Rochdale Canal SSSI and SAC transect 7 is presented from 36m to 50m.

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- 4.3.8 NO₂ annual mean concentrations are predicted to be above the air quality standard at two human receptors, with and without construction of the Proposed Scheme. These human receptors are located on Chester Street, Manchester and Farm Lane, Worsley, adjacent to the M60. At the remaining locations, annual mean NO₂ concentrations are predicted to be within the air quality standard. Annual mean PM₁₀ and PM_{2.5} concentrations are predicted to be within the air quality standards.
- 4.3.9 Since the annual mean NO₂ concentrations are predicted to be below 60µg/m³, the hourly mean standard is also expected to be met. Similarly, since the annual mean PM₁₀ concentrations are predicted to be below 35µg/m³, the daily mean standard is also expected to be met.
- 4.3.10 Moderate adverse impacts for NO₂ are predicted at two human receptors, located at on Chapeltown Street, Manchester and Farm Lane, Worsley, adjacent to the M60. Slight adverse impacts for NO₂ are predicted at five human receptors, located on Ducie Street, Chapeltown Street, Every Street and Trinity Way.
- 4.3.11 A moderate beneficial impact for NO₂ is predicted at one human receptor adjacent to Chester Street, Manchester. A slight beneficial impact was predicted at one human receptor on Oldham Road, Manchester.
- 4.3.12 Negligible impacts are predicted at all remaining human receptors for annual mean NO₂ and for all PM₁₀ and PM_{2.5} concentrations. NO_x concentrations at the Rochdale Canal SSSI and SAC are predicted to be above the air quality standard, both without and with the Proposed Scheme, at one of the two transects modelled. The change in N deposition due to the Proposed Scheme is predicted to be less than 1% of the lower critical load for this site.

Assessment of significance

- 4.3.13 A significant adverse effect for NO₂ concentrations is anticipated at two human receptors at Chapeltown Street, Manchester and Farm Lane, Worsley, adjacent to the M60. A significant beneficial effect for NO₂ concentrations is also anticipated at one human receptor on Chester Street, Manchester. No significant effects are predicted in relation to annual mean PM₁₀ and PM_{2.5} concentrations.
- 4.3.14 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 Rochdale Canal SSSI and SAC in the Manchester Piccadilly Station area.

4.4 Assessment of operational traffic emissions

Operational traffic model

4.4.1 Operational traffic data used in this assessment is detailed in BID (BID AQ-002-0MA08)¹. For the assessment of traffic on the highway network, data for the year 2038 was used as the operational year of the Proposed Scheme.

Screening of traffic data

4.4.2 The screening process identified a total of 168 roads in the Manchester Piccadilly Station area exceeding the DMRB thresholds for changes in AADT or daily HDV flows, peak or average daily speed changes and/or changes in road alignment by 5m or more. These roads include:

- the A6 Ardwick Green South/Piccadilly/Downing Street/London Road;
- the A57(M) Mancunian Way;
- the A665 Chancellor Lane/Great Ancoats Street/Mancunian Way/Pin Mill Brow/Swan Street/Cheetham Hill Road;
- the A6042 Trinity Way;
- the A662 Ashton New Road; and
- the A62 Oldham Street.

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

Receptors assessed and background concentrations

4.4.4 Sensitive receptors have been selected from the OS AddressBase Premium database. The receptors consist of residential properties, schools and care homes within 200m of the screened in roads and represent worst-case exposure locations (Table 16). The location of all receptors is shown on accompanying map AQ-01-308.

4.4.5 No designated ecological receptors were identified within 200m of the screened in roads within the Manchester Piccadilly Station area during operation of the Proposed Scheme.

4.4.6 Details of the assessed receptors and the background concentrations used in the assessment are shown in Table 16 for human receptors.

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Table 16: Modelled human receptors and background concentrations (operational phase)

Receptor	Description/Location	Ordnance survey coordinates	Background concentrations in 2038 ($\mu\text{g}/\text{m}^3$)			
			NO _x	NO ₂	PM ₁₀	PM _{2.5}
8-O-H001	Polygon Street, Manchester	385294, 397054	23.9	16.8	12.2	7.9
8-O-H002	Brunswick Street Manchester	385258, 397063	23.9	16.8	12.2	7.9
8-O-H003	Conmere Square, Manchester	384007, 397071	27.4	18.8	13.4	8.4
8-O-H004	Rockdove Avenue, Manchester	383648, 397091	25.3	17.7	12.5	8.0
8-O-H005	Medlock Primary School, Ardwick Green South, Manchester	385194, 397098	23.9	16.8	12.2	7.9
8-O-H006	Chester Street, Manchester	383864, 397101	25.3	17.7	12.5	8.0
8-O-H007	Jackson Crescent, Manchester	383099, 397125	25.3	17.7	12.5	8.0
8-O-H008	Jackson Crescent, Manchester	383251, 397128	25.3	17.7	12.5	8.0
8-O-H009	Medlock Primary School, Ardwick Green South, Manchester	385152, 397142	23.9	16.8	12.2	7.9
8-O-H010	River Street, Manchester	383590, 397146	25.3	17.7	12.5	8.0
8-O-H011	Beattock Close, Manchester	382961, 397204	21.5	15.4	12.3	7.9
8-O-H012	Manchester Metropolitan University, Ormond Building, Lower Ormond Street, Manchester	384260, 397206	27.4	18.8	13.4	8.4
8-O-H013	Manchester Metropolitan University, Oxford Road, Manchester	384316, 397226	27.4	18.8	13.4	8.4
8-O-H014	Ardwick Green South, Manchester	385058, 397238	23.9	16.8	12.2	7.9
8-O-H015	Higher Ardwick, Manchester	385445, 397239	23.9	16.8	12.2	7.9
8-O-H016	Higher Ardwick, Manchester	385427, 397247	23.9	16.8	12.2	7.9
8-O-H017	Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester	384248, 397247	27.4	18.8	13.4	8.4
8-O-H018	Higher Ardwick, Manchester	385468, 397260	23.9	16.8	12.2	7.9
8-O-H019	Union Street, Ardwick, Manchester	385440, 397267	23.9	16.8	12.2	7.9
8-O-H020	Downing Street, Manchester	384951, 397315	27.4	18.8	13.4	8.4
8-O-H021	Lockton Close, Manchester	384718, 397406	27.4	18.8	13.4	8.4
8-O-H022	Cotter Street, Manchester	385302, 397415	23.9	16.8	12.2	7.9
8-O-H023	The University of Manchester, Ferranti Building, Sackville Street, Manchester	384751, 397484	27.4	18.8	13.4	8.4
8-O-H024	Berry Street, Manchester	384941, 397522	27.4	18.8	13.4	8.4
8-O-H025	Fairfield Street, Manchester	384997, 397727	27.4	18.8	13.4	8.4

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Receptor	Description/Location	Ordnance survey coordinates	Background concentrations in 2038 ($\mu\text{g}/\text{m}^3$)			
			NOx	NO ₂	PM ₁₀	PM _{2.5}
8-O-H026	The University of Manchester, Sackville Street, Manchester	384458, 397743	27.4	18.8	13.4	8.4
8-O-H027	London Road, Manchester	384732, 397764	27.4	18.8	13.4	8.4
8-O-H028	Whitworth Street, Manchester	384511, 397792	27.4	18.8	13.4	8.4
8-O-H029	London Road, Manchester	384687, 397874	27.4	18.8	13.4	8.4
8-O-H030	Every Street, Manchester	385573, 397967	23.9	16.8	12.2	7.9
8-O-H031	Chapelton Street, Manchester	384958, 397967	27.4	18.8	13.4	8.4
8-O-H032	Portland Street, Manchester	384226, 397976	27.4	18.8	13.4	8.4
8-O-H033	Chapelton Street, Manchester	385002, 397989	23.9	16.8	12.2	7.9
8-O-H034	Chapelton Street, Manchester	385088, 398016	24.5	17.2	11.6	7.7
8-O-H035	Every Street, Manchester	385651, 398021	24.5	17.2	11.6	7.7
8-O-H036	Every Street, Manchester	385685, 398097	24.5	17.2	11.6	7.7
8-O-H037	Great Ancoats Street, Manchester	385303, 398098	24.5	17.2	11.6	7.7
8-O-H038	Ducie Street, Manchester	384726, 398104	32.5	21.5	12.6	8.1
8-O-H039	Wharf Close, Manchester	384972, 398105	32.5	21.5	12.6	8.1
8-O-H040	Chapelton Street, Manchester	385283, 398121	24.5	17.2	11.6	7.7
8-O-H041	Every Street, Manchester	385724, 398121	24.5	17.2	11.6	7.7
8-O-H042	Pollard Street, Manchester	385401, 398139	24.5	17.2	11.6	7.7
8-O-H043	Piccadilly, Manchester	384586, 398157	32.5	21.5	12.6	8.1
8-O-H044	Paton Street, Manchester	384610, 398164	32.5	21.5	12.6	8.1
8-O-H045	Ducie Street, Manchester	384918, 398195	32.5	21.5	12.6	8.1
8-O-H046	Dale Street, Manchester	384677, 398206	32.5	21.5	12.6	8.1
8-O-H047	Tariff Street, Manchester	384903, 398206	32.5	21.5	12.6	8.1
8-O-H048	Store Street, Manchester	385203, 398217	24.5	17.2	11.6	7.7
8-O-H049	Store Street, Manchester	385187, 398223	24.5	17.2	11.6	7.7
8-O-H050	Old Mill Street, Manchester	385220, 398249	24.5	17.2	11.6	7.7
8-O-H051	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	385732, 398312	24.5	17.2	11.6	7.7
8-O-H052	Old Mill Street, Manchester	385298, 398317	24.5	17.2	11.6	7.7

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Receptor	Description/Location	Ordnance survey coordinates	Background concentrations in 2038 (µg/m ³)			
			NOx	NO ₂	PM ₁₀	PM _{2.5}
8-O-H053	Little Learning Ladder Nursery, Lampwick Lane, Manchester	385429, 398318	24.5	17.2	11.6	7.7
8-O-H054	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	385678, 398341	24.5	17.2	11.6	7.7
8-O-H055	Tiddlywinks Day Nursery, Taunton Street, Manchester	385970, 398358	24.5	17.2	11.6	7.7
8-O-H056	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	385707, 398373	24.5	17.2	11.6	7.7
8-O-H057	Hilton Street, Manchester	384687, 398375	32.5	21.5	12.6	8.1
8-O-H058	Old Mill Street, Manchester	385364, 398403	24.5	17.2	11.6	7.7
8-O-H059	Munday Street, Manchester	385695, 398404	24.5	17.2	11.6	7.7
8-O-H060	Hackleton Close, Manchester	385772, 398408	24.5	17.2	11.6	7.7
8-O-H061	Towcester Close, Manchester	385925, 398416	24.5	17.2	11.6	7.7
8-O-H062	Pollard Street, Manchester	385733, 398417	24.5	17.2	11.6	7.7
8-O-H063	Houldsworth Street, Manchester	384862, 398484	32.5	21.5	12.6	8.1
8-O-H064	Tavery Close, Manchester	385492, 398494	24.5	17.2	11.6	7.7
8-O-H065	Pickford Street, Ancoats	384889, 398496	32.5	21.5	12.6	8.1
8-O-H066	Gore Street, Manchester	383023, 398522	30.8	20.7	12.1	7.8
8-O-H067	Chapel Street, Salford	382988, 398524	22.2	15.8	11.6	7.6
8-O-H068	Chapel Street, Salford	382985, 398529	22.2	15.8	11.6	7.6
8-O-H069	Old Mill Street, Manchester	385609, 398554	24.5	17.2	11.6	7.7
8-O-H070	Chapel Street, Salford	383039, 398557	30.8	20.7	12.1	7.8
8-O-H071	Ancoats, Manchester	384755, 398581	32.5	21.5	12.6	8.1
8-O-H072	St. Mary Street, Salford	383015, 398595	30.8	20.7	12.1	7.8
8-O-H073	Old Mill Street, Manchester	385699, 398622	24.5	17.2	11.6	7.7
8-O-H074	Great Ancoats Street, Manchester	384666, 398660	32.5	21.5	12.6	8.1
8-O-H075	Chapel Street, Salford	383087, 398670	30.8	20.7	12.1	7.8
8-O-H076	Blackfriars Street, Salford	383554, 398688	30.8	20.7	12.1	7.8
8-O-H077	Chapel Street, Salford	383530, 398695	30.8	20.7	12.1	7.8
8-O-H078	Oldham Road, Manchester	384668, 398699	32.5	21.5	12.6	8.1
8-O-H079	Thomas Street, Manchester	384292, 398719	32.5	21.5	12.6	8.1

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Receptor	Description/Location	Ordnance survey coordinates	Background concentrations in 2038 (µg/m ³)			
			NOx	NO ₂	PM ₁₀	PM _{2.5}
8-O-H080	Ring Road, Manchester	384622, 398724	32.5	21.5	12.6	8.1
8-O-H081	Salford Approach, Salford	383541, 398724	30.8	20.7	12.1	7.8
8-O-H082	Bevill Square, Salford	383073, 398734	30.8	20.7	12.1	7.8
8-O-H083	Addington Street, Manchester	384728, 398749	32.5	21.5	12.6	8.1
8-O-H084	Oldham Road, Manchester	384742, 398797	32.5	21.5	12.6	8.1
8-O-H085	Hanover Street, Manchester	384356, 398801	32.5	21.5	12.6	8.1
8-O-H086	Bradford Road, Manchester	385922, 398804	24.5	17.2	11.6	7.7
8-O-H087	Bradford Road, Manchester	385990, 398845	24.5	17.2	11.6	7.7
8-O-H088	Cranfield Close, Manchester	385970, 398861	24.5	17.2	11.6	7.7
8-O-H089	Swan Street, Manchester	384470, 398872	32.5	21.5	12.6	8.1
8-O-H090	Blackfriars Road, Salford	383271, 398907	30.8	20.7	12.1	7.8
8-O-H091	Angel Street, Manchester	384479, 398933	32.5	21.5	12.6	8.1
8-O-H092	Angel Street, Manchester	384485, 398960	32.5	21.5	12.6	8.1
8-O-H093	Blackfriars Road, Salford	383219, 398961	30.8	20.7	12.1	7.8
8-O-H094	Butler Street, Manchester	385380, 399010	20.9	15.0	11.5	7.6
8-O-H095	Blackfriars Road, Salford	383185, 399021	22.0	15.7	11.5	7.5
8-O-H096	Butler Street, Manchester	385258, 399024	20.9	15.0	11.5	7.6
8-O-H097	Butler Street, Manchester	385453, 399033	20.9	15.0	11.5	7.6
8-O-H098	Corporation Street, Manchester	384190, 399064	22.0	15.7	11.6	7.6
8-O-H099	Greengate, Salford	383568, 399069	22.0	15.7	11.5	7.5
8-O-H100	Trinity Way, Manchester	383452, 399070	22.0	15.7	11.5	7.5
8-O-H101	Mirabel Street, Cheetham Hill	383783, 399097	22.0	15.7	11.5	7.5
8-O-H102	Aspin Lane, Manchester	384316, 399132	22.0	15.7	11.6	7.6
8-O-H103	Brookhill Street, Manchester	386503, 399403	21.6	15.4	11.8	7.7
8-O-H104	Cheetham Hill, Manchester	384139, 399550	22.0	15.7	11.6	7.6
8-O-H105	Hulme Hall Lane, Manchester	386149, 399896	21.6	15.4	11.8	7.7
8-O-H106	Beckford Street, Manchester	386339, 400071	18.4	13.4	11.5	7.6
8-O-H107	Philips Park Road, Whitefield	379086, 403983	15.3	11.4	12.1	7.8

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Receptor	Description/Location	Ordnance survey coordinates	Background concentrations in 2038 ($\mu\text{g}/\text{m}^3$)			
			NOx	NO ₂	PM ₁₀	PM _{2.5}
8-O-H108	Philips Park, Whitefield	379666, 404091	15.0	11.2	12.7	8.1

Assessment results

4.4.7 Table 17, Table 18 and Table 19 provides the summary of the modelled pollutant concentrations for the assessed receptors. The magnitude of change and impact descriptor are also derived following the IAQM/ EPUK methodology⁵.

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Table 17: Predicted annual mean NO₂ concentrations and impacts (operation phase)

Receptor	Description/Location	NO ₂ concentrations (µg/m ³)		Change in NO ₂ concentrations (µg/m ³)	Impact descriptor	Significance
		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H001	Polygon Street, Manchester	22.2	22.1	-0.1	Negligible	Not significant
8-O-H002	Brunswick Street Manchester	20.8	20.7	-0.1	Negligible	Not significant
8-O-H003	Conmere Square, Manchester	23.3	23.3	< 0.1	Negligible	Not significant
8-O-H004	Rockdove Avenue, Manchester	23.8	23.7	-0.1	Negligible	Not significant
8-O-H005	Medlock Primary School, Ardwick Green South, Manchester	18.1	18.1	< 0.1	Negligible	Not significant
8-O-H006	Chester Street, Manchester	28.7	28.3	-0.4	Negligible	Not significant
8-O-H007	Jackson Crescent, Manchester	18.9	18.9	< 0.1	Negligible	Not significant
8-O-H008	Jackson Crescent, Manchester	19.9	19.8	-0.1	Negligible	Not significant
8-O-H009	Medlock Primary School, Ardwick Green South, Manchester	17.9	18.0	0.1	Negligible	Not significant
8-O-H010	River Street, Manchester	26.0	25.9	-0.1	Negligible	Not significant
8-O-H011	Beattock Close, Manchester	18.8	18.7	-0.1	Negligible	Not significant
8-O-H012	Manchester Metropolitan University, Ormond Building, Lower Ormond Street, Manchester	24.2	24.0	-0.2	Negligible	Not significant
8-O-H013	Manchester Metropolitan University, Oxford Road, Manchester	24.6	24.4	-0.2	Negligible	Not significant
8-O-H014	Ardwick Green South, Manchester	20.4	20.7	0.3	Negligible	Not significant
8-O-H015	Higher Ardwick, Manchester	18.9	18.9	< 0.1	Negligible	Not significant
8-O-H016	Higher Ardwick, Manchester	19.2	19.0	-0.2	Negligible	Not significant
8-O-H017	Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester	26.7	26.5	-0.2	Negligible	Not significant

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Receptor	Description/Location	NO ₂ concentrations (µg/m ³)		Change in NO ₂ concentrations (µg/m ³)	Impact descriptor	Significance
		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H018	Higher Ardwick, Manchester	19.1	19.4	0.3	Negligible	Not significant
8-O-H019	Union Street, Ardwick, Manchester	18.9	18.7	-0.2	Negligible	Not significant
8-O-H020	Downing Street, Manchester	24.4	24.6	0.2	Negligible	Not significant
8-O-H021	Lockton Close, Manchester	22.5	22.5	< 0.1	Negligible	Not significant
8-O-H022	Cotter Street, Manchester	19.6	19.5	-0.1	Negligible	Not significant
8-O-H023	The University of Manchester, Ferranti Building, Sackville Street, Manchester	24.5	24.3	-0.2	Negligible	Not significant
8-O-H024	Berry Street, Manchester	22.4	22.3	-0.1	Negligible	Not significant
8-O-H025	Fairfield Street, Manchester	21.0	21.8	0.8	Negligible	Not significant
8-O-H026	The University of Manchester, Sackville Street, Manchester	22.8	22.7	-0.1	Negligible	Not significant
8-O-H027	London Road, Manchester	23.6	23.5	-0.1	Negligible	Not significant
8-O-H028	Whitworth Street, Manchester	23.3	23.0	-0.3	Negligible	Not significant
8-O-H029	London Road, Manchester	22.6	22.5	-0.1	Negligible	Not significant
8-O-H030	Every Street, Manchester	24.3	24.2	-0.1	Negligible	Not significant
8-O-H031	Chapelton Street, Manchester	19.9	21.6	1.7	Negligible	Not significant
8-O-H032	Portland Street, Manchester	24.6	24.5	-0.1	Negligible	Not significant
8-O-H033	Chapelton Street, Manchester	17.8	18.3	0.5	Negligible	Not significant
8-O-H034	Chapelton Street, Manchester	18.1	18.6	0.5	Negligible	Not significant
8-O-H035	Every Street, Manchester	19.6	19.4	-0.2	Negligible	Not significant
8-O-H036	Every Street, Manchester	20.0	19.7	-0.3	Negligible	Not significant
8-O-H037	Great Ancoats Street, Manchester	21.3	21.4	0.1	Negligible	Not significant
8-O-H038	Ducie Street, Manchester	25.1	25.1	< 0.1	Negligible	Not significant

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Receptor	Description/Location	NO ₂ concentrations (µg/m ³)		Change in NO ₂ concentrations (µg/m ³)	Impact descriptor	Significance
		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H039	Wharf Close, Manchester	23.7	23.0	-0.7	Negligible	Not significant
8-O-H040	Chapelton Street, Manchester	21.9	21.9	< 0.1	Negligible	Not significant
8-O-H041	Every Street, Manchester	18.5	18.3	-0.2	Negligible	Not significant
8-O-H042	Pollard Street, Manchester	20.0	20.0	< 0.1	Negligible	Not significant
8-O-H043	Piccadilly, Manchester	23.3	23.5	0.2	Negligible	Not significant
8-O-H044	Paton Street, Manchester	23.4	23.7	0.3	Negligible	Not significant
8-O-H045	Ducie Street, Manchester	23.1	23.3	0.2	Negligible	Not significant
8-O-H046	Dale Street, Manchester	24.8	24.6	-0.2	Negligible	Not significant
8-O-H047	Tariff Street, Manchester	23.5	23.7	0.2	Negligible	Not significant
8-O-H048	Store Street, Manchester	22.8	22.4	-0.4	Negligible	Not significant
8-O-H049	Store Street, Manchester	21.1	20.7	-0.4	Negligible	Not significant
8-O-H050	Old Mill Street, Manchester	23.2	23.0	-0.2	Negligible	Not significant
8-O-H051	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	17.8	17.8	< 0.1	Negligible	Not significant
8-O-H052	Old Mill Street, Manchester	19.5	19.6	0.1	Negligible	Not significant
8-O-H053	Little Learning Ladder Nursery, Lampwick Lane, Manchester	17.6	17.6	< 0.1	Negligible	Not significant
8-O-H054	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	17.9	17.8	-0.1	Negligible	Not significant
8-O-H055	Tiddywinks Day Nursery, Taunton Street, Manchester	17.6	17.6	< 0.1	Negligible	Not significant
8-O-H056	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	18.0	17.9	-0.1	Negligible	Not significant
8-O-H057	Hilton Street, Manchester	23.4	23.5	0.1	Negligible	Not significant

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Receptor	Description/Location	NO ₂ concentrations (µg/m ³)		Change in NO ₂ concentrations (µg/m ³)	Impact descriptor	Significance
		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H058	Old Mill Street, Manchester	18.6	18.5	-0.1	Negligible	Not significant
8-O-H059	Munday Street, Manchester	18.5	18.4	-0.1	Negligible	Not significant
8-O-H060	Hackleton Close, Manchester	18.1	18.0	-0.1	Negligible	Not significant
8-O-H061	Towcester Close, Manchester	18.4	18.3	-0.1	Negligible	Not significant
8-O-H062	Pollard Street, Manchester	18.6	18.4	-0.2	Negligible	Not significant
8-O-H063	Houldsworth Street, Manchester	24.7	24.6	-0.1	Negligible	Not significant
8-O-H064	Tavery Close, Manchester	19.4	19.2	-0.2	Negligible	Not significant
8-O-H065	Pickford Street, Ancoats	27.1	26.6	-0.5	Negligible	Not significant
8-O-H066	Gore Street, Manchester	25.9	25.9	< 0.1	Negligible	Not significant
8-O-H067	Chapel Street, Salford	21.8	21.8	< 0.1	Negligible	Not significant
8-O-H068	Chapel Street, Salford	21.6	21.6	< 0.1	Negligible	Not significant
8-O-H069	Old Mill Street, Manchester	19.2	19.0	-0.2	Negligible	Not significant
8-O-H070	Chapel Street, Salford	26.8	26.8	< 0.1	Negligible	Not significant
8-O-H071	Ancoats, Manchester	24.8	24.5	-0.3	Negligible	Not significant
8-O-H072	St. Mary Street, Salford	26.0	26.1	0.1	Negligible	Not significant
8-O-H073	Old Mill Street, Manchester	18.6	18.4	-0.2	Negligible	Not significant
8-O-H074	Great Ancoats Street, Manchester	25.4	25.1	-0.3	Negligible	Not significant
8-O-H075	Chapel Street, Salford	23.2	23.3	0.1	Negligible	Not significant
8-O-H076	Blackfriars Street, Salford	23.5	23.6	0.1	Negligible	Not significant
8-O-H077	Chapel Street, Salford	23.6	23.6	< 0.1	Negligible	Not significant
8-O-H078	Oldham Road, Manchester	28.7	28.3	-0.4	Negligible	Not significant
8-O-H079	Thomas Street, Manchester	24.9	24.9	< 0.1	Negligible	Not significant

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Receptor	Description/Location	NO ₂ concentrations (µg/m ³)		Change in NO ₂ concentrations (µg/m ³)	Impact descriptor	Significance
		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H080	Ring Road, Manchester	26.3	26.0	-0.3	Negligible	Not significant
8-O-H081	Salford Approach, Salford	25.4	25.5	0.1	Negligible	Not significant
8-O-H082	Bevill Square, Salford	23.5	23.5	< 0.1	Negligible	Not significant
8-O-H083	Addington Street, Manchester	24.9	24.8	-0.1	Negligible	Not significant
8-O-H084	Oldham Road, Manchester	25.4	25.3	-0.1	Negligible	Not significant
8-O-H085	Hanover Street, Manchester	24.8	24.5	-0.3	Negligible	Not significant
8-O-H086	Bradford Road, Manchester	19.0	18.8	-0.2	Negligible	Not significant
8-O-H087	Bradford Road, Manchester	19.4	19.3	-0.1	Negligible	Not significant
8-O-H088	Cranfield Close, Manchester	19.4	19.3	-0.1	Negligible	Not significant
8-O-H089	Swan Street, Manchester	24.9	24.8	-0.1	Negligible	Not significant
8-O-H090	Blackfriars Road, Salford	24.7	24.8	0.1	Negligible	Not significant
8-O-H091	Angel Street, Manchester	26.1	25.9	-0.2	Negligible	Not significant
8-O-H092	Angel Street, Manchester	27.9	27.6	-0.3	Negligible	Not significant
8-O-H093	Blackfriars Road, Salford	23.9	24.0	0.1	Negligible	Not significant
8-O-H094	Butler Street, Manchester	15.9	15.8	-0.1	Negligible	Not significant
8-O-H095	Blackfriars Road, Salford	18.9	19.1	0.2	Negligible	Not significant
8-O-H096	Butler Street, Manchester	15.7	15.7	< 0.1	Negligible	Not significant
8-O-H097	Butler Street, Manchester	16.4	16.2	-0.2	Negligible	Not significant
8-O-H098	Corporation Street, Manchester	21.6	21.4	-0.2	Negligible	Not significant
8-O-H099	Greengate, Salford	18.1	18.2	0.1	Negligible	Not significant
8-O-H100	Trinity Way, Manchester	21.5	21.8	0.3	Negligible	Not significant
8-O-H101	Mirabel Street, Cheetham Hill	19.9	20.1	0.2	Negligible	Not significant

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Receptor	Description/Location	NO ₂ concentrations (µg/m ³)		Change in NO ₂ concentrations (µg/m ³)	Impact descriptor	Significance
		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H102	Aspin Lane, Manchester	22.0	21.7	-0.3	Negligible	Not significant
8-O-H103	Brookhill Street, Manchester	17.2	17.1	-0.1	Negligible	Not significant
8-O-H104	Cheetham Hill, Manchester	18.8	18.6	-0.2	Negligible	Not significant
8-O-H105	Hulme Hall Lane, Manchester	19.0	18.7	-0.3	Negligible	Not significant
8-O-H106	Beckford Street, Manchester	15.2	15.1	-0.1	Negligible	Not significant
8-O-H107	Philips Park Road, Whitefield	14.5	14.5	< 0.1	Negligible	Not significant
8-O-H108	Philips Park, Whitefield	12.0	12.0	< 0.1	Negligible	Not significant

Table 18: Predicted annual mean PM₁₀ concentrations and impacts (operation phase)

Receptor	Description/Location	PM ₁₀ concentrations (µg/m ³)		Change in PM ₁₀ concentrations (µg/m ³)	Impact descriptor	Significance
		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H001	Polygon Street, Manchester	14.3	14.2	-0.1	Negligible	Not significant
8-O-H002	Brunswick Street Manchester	13.9	13.8	-0.1	Negligible	Not significant
8-O-H003	Conmere Square, Manchester	15.0	15.0	< 0.1	Negligible	Not significant
8-O-H004	Rockdove Avenue, Manchester	14.7	14.7	< 0.1	Negligible	Not significant
8-O-H005	Medlock Primary School, Ardwick Green South, Manchester	12.7	12.7	< 0.1	Negligible	Not significant
8-O-H006	Chester Street, Manchester	16.6	16.4	-0.2	Negligible	Not significant
8-O-H007	Jackson Crescent, Manchester	12.9	12.9	< 0.1	Negligible	Not significant
8-O-H008	Jackson Crescent, Manchester	13.2	13.2	< 0.1	Negligible	Not significant
8-O-H009	Medlock Primary School, Ardwick Green South, Manchester	12.7	12.7	< 0.1	Negligible	Not significant
8-O-H010	River Street, Manchester	15.1	15.0	-0.1	Negligible	Not significant
8-O-H011	Beattock Close, Manchester	13.5	13.5	< 0.1	Negligible	Not significant

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Receptor	Description/Location	PM ₁₀ concentrations (µg/m ³)		Change in PM ₁₀ concentrations (µg/m ³)	Impact descriptor	Significance
		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H012	Manchester Metropolitan University, Ormond Building, Lower Ormond Street, Manchester	15.1	15.0	-0.1	Negligible	Not significant
8-O-H013	Manchester Metropolitan University, Oxford Road, Manchester	15.2	15.2	< 0.1	Negligible	Not significant
8-O-H014	Ardwick Green South, Manchester	13.7	13.9	0.2	Negligible	Not significant
8-O-H015	Higher Ardwick, Manchester	13.1	13.1	< 0.1	Negligible	Not significant
8-O-H016	Higher Ardwick, Manchester	13.2	13.1	-0.1	Negligible	Not significant
8-O-H017	Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester	16.0	15.9	-0.1	Negligible	Not significant
8-O-H018	Higher Ardwick, Manchester	13.2	13.3	0.1	Negligible	Not significant
8-O-H019	Union Street, Ardwick, Manchester	13.1	13.0	-0.1	Negligible	Not significant
8-O-H020	Downing Street, Manchester	15.8	15.8	< 0.1	Negligible	Not significant
8-O-H021	Lockton Close, Manchester	14.8	14.8	< 0.1	Negligible	Not significant
8-O-H022	Cotter Street, Manchester	13.0	13.0	< 0.1	Negligible	Not significant
8-O-H023	The University of Manchester, Ferranti Building, Sackville Street, Manchester	15.2	15.2	< 0.1	Negligible	Not significant
8-O-H024	Berry Street, Manchester	14.5	14.5	< 0.1	Negligible	Not significant
8-O-H025	Fairfield Street, Manchester	14.2	14.4	0.2	Negligible	Not significant
8-O-H026	The University of Manchester, Sackville Street, Manchester	14.9	14.8	-0.1	Negligible	Not significant
8-O-H027	London Road, Manchester	15.1	15.1	< 0.1	Negligible	Not significant
8-O-H028	Whitworth Street, Manchester	15.1	15.0	-0.1	Negligible	Not significant
8-O-H029	London Road, Manchester	14.8	14.8	< 0.1	Negligible	Not significant
8-O-H030	Every Street, Manchester	15.2	15.0	-0.2	Negligible	Not significant

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Receptor	Description/Location	PM ₁₀ concentrations (µg/m ³)		Change in PM ₁₀ concentrations (µg/m ³)	Impact descriptor	Significance
		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H031	Chapelton Street, Manchester	13.8	14.1	0.3	Negligible	Not significant
8-O-H032	Portland Street, Manchester	15.3	15.2	-0.1	Negligible	Not significant
8-O-H033	Chapelton Street, Manchester	12.6	12.7	0.1	Negligible	Not significant
8-O-H034	Chapelton Street, Manchester	12.0	12.0	< 0.1	Negligible	Not significant
8-O-H035	Every Street, Manchester	12.8	12.7	-0.1	Negligible	Not significant
8-O-H036	Every Street, Manchester	13.1	13.0	-0.1	Negligible	Not significant
8-O-H037	Great Ancoats Street, Manchester	13.3	13.2	-0.1	Negligible	Not significant
8-O-H038	Ducie Street, Manchester	14.1	14.1	< 0.1	Negligible	Not significant
8-O-H039	Wharf Close, Manchester	13.5	13.1	-0.4	Negligible	Not significant
8-O-H040	Chapelton Street, Manchester	13.6	13.4	-0.2	Negligible	Not significant
8-O-H041	Every Street, Manchester	12.3	12.2	-0.1	Negligible	Not significant
8-O-H042	Pollard Street, Manchester	12.8	12.7	-0.1	Negligible	Not significant
8-O-H043	Piccadilly, Manchester	13.3	13.3	< 0.1	Negligible	Not significant
8-O-H044	Paton Street, Manchester	13.3	13.4	0.1	Negligible	Not significant
8-O-H045	Ducie Street, Manchester	13.2	13.3	0.1	Negligible	Not significant
8-O-H046	Dale Street, Manchester	14.0	13.9	-0.1	Negligible	Not significant
8-O-H047	Tariff Street, Manchester	13.4	13.5	0.1	Negligible	Not significant
8-O-H048	Store Street, Manchester	13.8	13.5	-0.3	Negligible	Not significant
8-O-H049	Store Street, Manchester	13.2	12.9	-0.3	Negligible	Not significant
8-O-H050	Old Mill Street, Manchester	14.1	13.9	-0.2	Negligible	Not significant
8-O-H051	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	12.0	11.9	-0.1	Negligible	Not significant

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Receptor	Description/Location	PM ₁₀ concentrations (µg/m ³)		Change in PM ₁₀ concentrations (µg/m ³)	Impact descriptor	Significance
		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H052	Old Mill Street, Manchester	12.6	12.5	-0.1	Negligible	Not significant
8-O-H053	Little Learning Ladder Nursery, Lampwick Lane, Manchester	11.9	11.8	-0.1	Negligible	Not significant
8-O-H054	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	12.0	12.0	< 0.1	Negligible	Not significant
8-O-H055	Tiddlywinks Day Nursery, Taunton Street, Manchester	11.9	11.9	< 0.1	Negligible	Not significant
8-O-H056	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	12.1	12.0	-0.1	Negligible	Not significant
8-O-H057	Hilton Street, Manchester	13.4	13.4	< 0.1	Negligible	Not significant
8-O-H058	Old Mill Street, Manchester	12.4	12.3	-0.1	Negligible	Not significant
8-O-H059	Munday Street, Manchester	12.3	12.2	-0.1	Negligible	Not significant
8-O-H060	Hackleton Close, Manchester	12.1	12.0	-0.1	Negligible	Not significant
8-O-H061	Towcester Close, Manchester	12.3	12.2	-0.1	Negligible	Not significant
8-O-H062	Pollard Street, Manchester	12.3	12.2	-0.1	Negligible	Not significant
8-O-H063	Houldsworth Street, Manchester	13.9	13.8	-0.1	Negligible	Not significant
8-O-H064	Tavery Close, Manchester	12.7	12.6	-0.1	Negligible	Not significant
8-O-H065	Pickford Street, Ancoats	14.8	14.7	-0.1	Negligible	Not significant
8-O-H066	Gore Street, Manchester	14.2	14.2	< 0.1	Negligible	Not significant
8-O-H067	Chapel Street, Salford	13.9	13.9	< 0.1	Negligible	Not significant
8-O-H068	Chapel Street, Salford	13.8	13.8	< 0.1	Negligible	Not significant
8-O-H069	Old Mill Street, Manchester	12.6	12.5	-0.1	Negligible	Not significant
8-O-H070	Chapel Street, Salford	14.5	14.5	< 0.1	Negligible	Not significant
8-O-H071	Ancoats, Manchester	13.9	13.8	-0.1	Negligible	Not significant
8-O-H072	St. Mary Street, Salford	14.3	14.3	< 0.1	Negligible	Not significant

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		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H073	Old Mill Street, Manchester	12.3	12.2	-0.1	Negligible	Not significant
8-O-H074	Great Ancoats Street, Manchester	14.0	13.9	-0.1	Negligible	Not significant
8-O-H075	Chapel Street, Salford	13.1	13.2	0.1	Negligible	Not significant
8-O-H076	Blackfriars Street, Salford	13.2	13.2	< 0.1	Negligible	Not significant
8-O-H077	Chapel Street, Salford	13.2	13.2	< 0.1	Negligible	Not significant
8-O-H078	Oldham Road, Manchester	15.4	15.2	-0.2	Negligible	Not significant
8-O-H079	Thomas Street, Manchester	13.8	13.7	-0.1	Negligible	Not significant
8-O-H080	Ring Road, Manchester	14.6	14.4	-0.2	Negligible	Not significant
8-O-H081	Salford Approach, Salford	14.0	14.0	< 0.1	Negligible	Not significant
8-O-H082	Bevill Square, Salford	13.3	13.3	< 0.1	Negligible	Not significant
8-O-H083	Addington Street, Manchester	13.9	13.8	-0.1	Negligible	Not significant
8-O-H084	Oldham Road, Manchester	14.1	14.1	< 0.1	Negligible	Not significant
8-O-H085	Hanover Street, Manchester	13.8	13.7	-0.1	Negligible	Not significant
8-O-H086	Bradford Road, Manchester	12.6	12.5	-0.1	Negligible	Not significant
8-O-H087	Bradford Road, Manchester	12.8	12.7	-0.1	Negligible	Not significant
8-O-H088	Cranfield Close, Manchester	12.8	12.7	-0.1	Negligible	Not significant
8-O-H089	Swan Street, Manchester	13.8	13.8	< 0.1	Negligible	Not significant
8-O-H090	Blackfriars Road, Salford	13.7	13.8	0.1	Negligible	Not significant
8-O-H091	Angel Street, Manchester	14.2	14.1	-0.1	Negligible	Not significant
8-O-H092	Angel Street, Manchester	15.0	14.8	-0.2	Negligible	Not significant
8-O-H093	Blackfriars Road, Salford	13.4	13.5	0.1	Negligible	Not significant
8-O-H094	Butler Street, Manchester	11.9	11.9	< 0.1	Negligible	Not significant

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		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H095	Blackfriars Road, Salford	13.2	13.3	0.1	Negligible	Not significant
8-O-H096	Butler Street, Manchester	11.8	11.8	< 0.1	Negligible	Not significant
8-O-H097	Butler Street, Manchester	12.2	12.1	-0.1	Negligible	Not significant
8-O-H098	Corporation Street, Manchester	14.1	14.0	-0.1	Negligible	Not significant
8-O-H099	Greengate, Salford	12.5	12.6	0.1	Negligible	Not significant
8-O-H100	Trinity Way, Manchester	13.9	14.0	0.1	Negligible	Not significant
8-O-H101	Mirabel Street, Cheetham Hill	13.1	13.2	0.1	Negligible	Not significant
8-O-H102	Aspin Lane, Manchester	14.0	13.9	-0.1	Negligible	Not significant
8-O-H103	Brookhill Street, Manchester	12.7	12.6	-0.1	Negligible	Not significant
8-O-H104	Cheetham Hill, Manchester	13.2	13.1	-0.1	Negligible	Not significant
8-O-H105	Hulme Hall Lane, Manchester	13.5	13.4	-0.1	Negligible	Not significant
8-O-H106	Beckford Street, Manchester	12.4	12.4	< 0.1	Negligible	Not significant
8-O-H107	Philips Park Road, Whitefield	13.2	13.2	< 0.1	Negligible	Not significant
8-O-H108	Philips Park, Whitefield	13.0	13.0	< 0.1	Negligible	Not significant

Table 19: Predicted annual mean PM_{2.5} concentrations and impacts (operation phase)

Receptor	Description/Location	PM _{2.5} concentrations (µg/m ³)		Change in PM _{2.5} concentrations (µg/m ³)	Impact descriptor	Significance
		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H001	Polygon Street, Manchester	9.1	9.0	-0.1	Negligible	Not significant
8-O-H002	Brunswick Street Manchester	8.8	8.8	< 0.1	Negligible	Not significant
8-O-H003	Conmere Square, Manchester	9.3	9.3	< 0.1	Negligible	Not significant
8-O-H004	Rockdove Avenue, Manchester	9.3	9.2	-0.1	Negligible	Not significant

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Receptor	Description/Location	PM _{2.5} concentrations (µg/m ³)		Change in PM _{2.5} concentrations (µg/m ³)	Impact descriptor	Significance
		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H005	Medlock Primary School, Ardwick Green South, Manchester	8.2	8.2	< 0.1	Negligible	Not significant
8-O-H006	Chester Street, Manchester	10.4	10.3	-0.1	Negligible	Not significant
8-O-H007	Jackson Crescent, Manchester	8.2	8.2	< 0.1	Negligible	Not significant
8-O-H008	Jackson Crescent, Manchester	8.4	8.4	< 0.1	Negligible	Not significant
8-O-H009	Medlock Primary School, Ardwick Green South, Manchester	8.2	8.2	< 0.1	Negligible	Not significant
8-O-H010	River Street, Manchester	9.5	9.5	< 0.1	Negligible	Not significant
8-O-H011	Beattock Close, Manchester	8.6	8.6	< 0.1	Negligible	Not significant
8-O-H012	Manchester Metropolitan University, Ormond Building, Lower Ormond Street, Manchester	9.4	9.4	< 0.1	Negligible	Not significant
8-O-H013	Manchester Metropolitan University, Oxford Road, Manchester	9.5	9.5	< 0.1	Negligible	Not significant
8-O-H014	Ardwick Green South, Manchester	8.8	8.8	< 0.1	Negligible	Not significant
8-O-H015	Higher Ardwick, Manchester	8.4	8.4	< 0.1	Negligible	Not significant
8-O-H016	Higher Ardwick, Manchester	8.5	8.4	-0.1	Negligible	Not significant
8-O-H017	Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester	10.0	9.9	-0.1	Negligible	Not significant
8-O-H018	Higher Ardwick, Manchester	8.5	8.5	< 0.1	Negligible	Not significant
8-O-H019	Union Street, Ardwick, Manchester	8.4	8.4	< 0.1	Negligible	Not significant
8-O-H020	Downing Street, Manchester	9.7	9.8	0.1	Negligible	Not significant
8-O-H021	Lockton Close, Manchester	9.2	9.2	< 0.1	Negligible	Not significant
8-O-H022	Cotter Street, Manchester	8.4	8.4	< 0.1	Negligible	Not significant
8-O-H023	The University of Manchester, Ferranti Building, Sackville Street, Manchester	9.5	9.5	< 0.1	Negligible	Not significant

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Receptor	Description/Location	PM _{2.5} concentrations (µg/m ³)		Change in PM _{2.5} concentrations (µg/m ³)	Impact descriptor	Significance
		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H024	Berry Street, Manchester	9.1	9.1	< 0.1	Negligible	Not significant
8-O-H025	Fairfield Street, Manchester	8.9	9.0	0.1	Negligible	Not significant
8-O-H026	The University of Manchester, Sackville Street, Manchester	9.3	9.2	-0.1	Negligible	Not significant
8-O-H027	London Road, Manchester	9.4	9.4	< 0.1	Negligible	Not significant
8-O-H028	Whitworth Street, Manchester	9.4	9.3	-0.1	Negligible	Not significant
8-O-H029	London Road, Manchester	9.2	9.2	< 0.1	Negligible	Not significant
8-O-H030	Every Street, Manchester	9.6	9.5	-0.1	Negligible	Not significant
8-O-H031	Chapelton Street, Manchester	8.7	8.8	0.1	Negligible	Not significant
8-O-H032	Portland Street, Manchester	9.5	9.4	-0.1	Negligible	Not significant
8-O-H033	Chapelton Street, Manchester	8.2	8.2	< 0.1	Negligible	Not significant
8-O-H034	Chapelton Street, Manchester	7.9	7.9	< 0.1	Negligible	Not significant
8-O-H035	Every Street, Manchester	8.3	8.2	-0.1	Negligible	Not significant
8-O-H036	Every Street, Manchester	8.5	8.4	-0.1	Negligible	Not significant
8-O-H037	Great Ancoats Street, Manchester	8.6	8.5	-0.1	Negligible	Not significant
8-O-H038	Ducie Street, Manchester	8.9	8.9	< 0.1	Negligible	Not significant
8-O-H039	Wharf Close, Manchester	8.6	8.4	-0.2	Negligible	Not significant
8-O-H040	Chapelton Street, Manchester	8.7	8.6	-0.1	Negligible	Not significant
8-O-H041	Every Street, Manchester	8.0	8.0	< 0.1	Negligible	Not significant
8-O-H042	Pollard Street, Manchester	8.3	8.2	-0.1	Negligible	Not significant
8-O-H043	Piccadilly, Manchester	8.4	8.4	< 0.1	Negligible	Not significant
8-O-H044	Paton Street, Manchester	8.4	8.5	0.1	Negligible	Not significant
8-O-H045	Ducie Street, Manchester	8.4	8.4	< 0.1	Negligible	Not significant

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Receptor	Description/Location	PM _{2.5} concentrations (µg/m ³)		Change in PM _{2.5} concentrations (µg/m ³)	Impact descriptor	Significance
		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H046	Dale Street, Manchester	8.8	8.8	< 0.1	Negligible	Not significant
8-O-H047	Tariff Street, Manchester	8.5	8.5	< 0.1	Negligible	Not significant
8-O-H048	Store Street, Manchester	8.9	8.7	-0.2	Negligible	Not significant
8-O-H049	Store Street, Manchester	8.5	8.4	-0.1	Negligible	Not significant
8-O-H050	Old Mill Street, Manchester	9.0	8.9	-0.1	Negligible	Not significant
8-O-H051	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	7.8	7.8	< 0.1	Negligible	Not significant
8-O-H052	Old Mill Street, Manchester	8.2	8.2	< 0.1	Negligible	Not significant
8-O-H053	Little Learning Ladder Nursery, Lampwick Lane, Manchester	7.8	7.8	< 0.1	Negligible	Not significant
8-O-H054	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	7.9	7.8	-0.1	Negligible	Not significant
8-O-H055	Tiddlywinks Day Nursery, Taunton Street, Manchester	7.8	7.8	< 0.1	Negligible	Not significant
8-O-H056	St Anne's Roman Catholic Primary School, Carruthers Street, Manchester	7.9	7.9	< 0.1	Negligible	Not significant
8-O-H057	Hilton Street, Manchester	8.5	8.5	< 0.1	Negligible	Not significant
8-O-H058	Old Mill Street, Manchester	8.1	8.0	-0.1	Negligible	Not significant
8-O-H059	Munday Street, Manchester	8.0	8.0	< 0.1	Negligible	Not significant
8-O-H060	Hackleton Close, Manchester	7.9	7.9	< 0.1	Negligible	Not significant
8-O-H061	Towcester Close, Manchester	8.0	8.0	< 0.1	Negligible	Not significant
8-O-H062	Pollard Street, Manchester	8.0	8.0	< 0.1	Negligible	Not significant
8-O-H063	Houldsworth Street, Manchester	8.8	8.7	-0.1	Negligible	Not significant
8-O-H064	Tavery Close, Manchester	8.3	8.2	-0.1	Negligible	Not significant
8-O-H065	Pickford Street, Ancoats	9.3	9.2	-0.1	Negligible	Not significant

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		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H066	Gore Street, Manchester	8.9	8.9	< 0.1	Negligible	Not significant
8-O-H067	Chapel Street, Salford	8.8	8.8	< 0.1	Negligible	Not significant
8-O-H068	Chapel Street, Salford	8.8	8.8	< 0.1	Negligible	Not significant
8-O-H069	Old Mill Street, Manchester	8.2	8.2	< 0.1	Negligible	Not significant
8-O-H070	Chapel Street, Salford	9.1	9.1	< 0.1	Negligible	Not significant
8-O-H071	Ancoats, Manchester	8.8	8.7	-0.1	Negligible	Not significant
8-O-H072	St. Mary Street, Salford	9.0	9.0	< 0.1	Negligible	Not significant
8-O-H073	Old Mill Street, Manchester	8.0	8.0	< 0.1	Negligible	Not significant
8-O-H074	Great Ancoats Street, Manchester	8.9	8.8	-0.1	Negligible	Not significant
8-O-H075	Chapel Street, Salford	8.3	8.4	0.1	Negligible	Not significant
8-O-H076	Blackfriars Street, Salford	8.4	8.4	< 0.1	Negligible	Not significant
8-O-H077	Chapel Street, Salford	8.4	8.4	< 0.1	Negligible	Not significant
8-O-H078	Oldham Road, Manchester	9.6	9.5	-0.1	Negligible	Not significant
8-O-H079	Thomas Street, Manchester	8.7	8.7	< 0.1	Negligible	Not significant
8-O-H080	Ring Road, Manchester	9.1	9.1	< 0.1	Negligible	Not significant
8-O-H081	Salford Approach, Salford	8.8	8.8	< 0.1	Negligible	Not significant
8-O-H082	Bevill Square, Salford	8.4	8.4	< 0.1	Negligible	Not significant
8-O-H083	Addington Street, Manchester	8.8	8.7	-0.1	Negligible	Not significant
8-O-H084	Oldham Road, Manchester	8.9	8.9	< 0.1	Negligible	Not significant
8-O-H085	Hanover Street, Manchester	8.7	8.7	< 0.1	Negligible	Not significant
8-O-H086	Bradford Road, Manchester	8.2	8.1	-0.1	Negligible	Not significant
8-O-H087	Bradford Road, Manchester	8.3	8.3	< 0.1	Negligible	Not significant

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		2038 without the Proposed Scheme	2038 with the Proposed Scheme			
8-O-H088	Cranfield Close, Manchester	8.3	8.3	< 0.1	Negligible	Not significant
8-O-H089	Swan Street, Manchester	8.7	8.7	< 0.1	Negligible	Not significant
8-O-H090	Blackfriars Road, Salford	8.7	8.7	< 0.1	Negligible	Not significant
8-O-H091	Angel Street, Manchester	9.0	8.9	-0.1	Negligible	Not significant
8-O-H092	Angel Street, Manchester	9.4	9.3	-0.1	Negligible	Not significant
8-O-H093	Blackfriars Road, Salford	8.5	8.5	< 0.1	Negligible	Not significant
8-O-H094	Butler Street, Manchester	7.8	7.8	< 0.1	Negligible	Not significant
8-O-H095	Blackfriars Road, Salford	8.4	8.5	0.1	Negligible	Not significant
8-O-H096	Butler Street, Manchester	7.8	7.8	< 0.1	Negligible	Not significant
8-O-H097	Butler Street, Manchester	8.0	7.9	-0.1	Negligible	Not significant
8-O-H098	Corporation Street, Manchester	8.9	8.9	< 0.1	Negligible	Not significant
8-O-H099	Greengate, Salford	8.1	8.1	< 0.1	Negligible	Not significant
8-O-H100	Trinity Way, Manchester	8.9	8.9	< 0.1	Negligible	Not significant
8-O-H101	Mirabel Street, Cheetham Hill	8.4	8.5	0.1	Negligible	Not significant
8-O-H102	Aspin Lane, Manchester	8.9	8.8	-0.1	Negligible	Not significant
8-O-H103	Brookhill Street, Manchester	8.2	8.2	< 0.1	Negligible	Not significant
8-O-H104	Cheetham Hill, Manchester	8.4	8.4	< 0.1	Negligible	Not significant
8-O-H105	Hulme Hall Lane, Manchester	8.6	8.6	< 0.1	Negligible	Not significant
8-O-H106	Beckford Street, Manchester	8.1	8.1	< 0.1	Negligible	Not significant
8-O-H107	Philips Park Road, Whitefield	8.5	8.5	< 0.1	Negligible	Not significant
8-O-H108	Philips Park, Whitefield	8.3	8.3	< 0.1	Negligible	Not significant

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- 4.4.8 The annual mean NO₂, PM₁₀ and PM_{2.5} concentrations are predicted to be within the air quality standards with and without operation of the Proposed Scheme. Since the annual mean NO₂ concentrations are predicted to be below 60µg/m³, the hourly mean standard is also expected to be met. Similarly, since the annual mean PM₁₀ concentrations are predicted to be below 35µg/m³, the daily mean standard is also expected to be met.
- 4.4.9 Negligible impacts are predicted at all human receptors for annual mean NO₂, PM₁₀ and PM_{2.5} concentrations.

Assessment of significance

- 4.4.10 No significant effects are anticipated at any receptor in relation to annual mean NO₂, PM₁₀ and PM_{2.5} concentrations.

5 Assessment of combustion plant emissions

5.1 Overall assessment approach

5.1.1 The current Piccadilly Station design includes centralised heating plant, incorporating gas-fired low temperature hot water boilers. Emissions from the proposed boiler plant have been assessed using the ADMS-Roads model. The proposed plant will run on natural gas and therefore only NO_x emissions have been assessed.

5.2 Modelling assessment

- 5.2.1 It is currently expected that the plant will comprise three duty boilers and two standby boilers of approximately 1MWth input each. In this assessment it has been conservatively assumed that all five boilers will operate at maximum plant load all year. Specific boiler types will be considered further during subsequent design stages.
- 5.2.2 Table 20 presents the combustion plant information used in the assessment. Boiler data from a representative manufacturer has been used. As required by the HS2 Air Quality Strategy⁶, the boilers should achieve a NO_x rating of less than 40 mg/kWh.
- 5.2.3 The boiler flues will be located together and will discharge approximately 3m above the highest nearby structure. Five individual flues have been modelled, with locations based on current design drawings.
- 5.2.4 Impacts from boiler emissions on annual mean concentrations have been modelled at the same receptor locations as for operation phase traffic emissions. These receptors are representative of worst case impacts from traffic and combustion plant emissions combined.

Table 20: Combustion plant information

Parameter	Value per boiler
Flue internal diameter (m)	0.2
Flue location (x,y)	385281, 397802
Flue height (m)	15.7
NO _x emission concentration (mg/Nm ³) ¹	47.0
NO _x emission rate (g/s)	0.012
Exhaust gas velocity (m/s)	15.7
Exhaust gas volumetric flow (Nm ³ /s) ¹	0.3
Exhaust gas volumetric flow (Am ³ /s)	0.5
Exhaust gas temperature (°C)	69.0

¹at 0% oxygen, dry, 0°C, standard atmospheric pressure

⁶ High Speed Two Ltd (2017), *Air Quality Strategy*.

5.3 Assessment of significance

- 5.3.1 Table 17 presents the combined impacts of operation phase road traffic emissions and combustion plant emissions. No significant effects are anticipated at any receptor in relation to annual mean NO₂ concentrations.

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