

**A57 Link Roads
TR010034**

**6.5 Environmental Statement
Appendix 5.4 Air Quality Baseline**

APFP Regulation 5(2)(a)

Planning Act 2008 Infrastructure Planning (Applications: Prescribed
Forms and Procedure) Regulations 2009

Table of contents

Chapter	Pages
1. Air Quality Baseline	3
1.1 Air Quality Baseline - PCM Model Data	3
1.2 Air Quality Baseline - Scheme Specific Air Quality Monitoring Data	4

Tables

Table A-1: Defra PCM Roadside Annual Mean NO ₂ data for PCM Links in Air Quality Study Area (µg/m ³)....	3
Table A-2: TPU Monitoring Survey 2019 Raw Data - NO ₂ Concentrations (µg/m ³).....	5
Table A-3: TPU Monitoring Survey 2018 Raw Data - NO ₂ Concentrations (µg/m ³).....	7
Table A-4: TPU Monitoring Survey 2020 Raw Data - NO ₂ Concentrations (µg/m ³).....	8

1. Air Quality Baseline

1.1 Air Quality Baseline - PCM Model Data

1.1.1 DEFRA PCM model data for links within the air quality study area are shown in Table A-1.

Table A-1: Defra PCM Roadside Annual Mean NO₂ data for PCM Links in Air Quality Study Area (µg/m³)

PCM Link ID	Road Name	PCM Roadside 2018 NO ₂ (µg/m ³)	PCM Roadside 2025 NO ₂ (µg/m ³)
802077877	A560 Stockport Road	15.2	10.7
802048026	A560 Stockport Road East	23.1	16.1
802027296	A560 Stockport Road West	36.1	24.7
802077828	A57 Dinting Vale	21.3	14.1
802077314	A57 High Street East / Sheffield Road	14.7	10.2
802056586	A57 Hyde Road	27.6	19.1
802046583	A57 Hyde Road / Mottram Moor	32.3	20.7
802081169	A57 Manchester Road (Denton)	27.0	18.8
802060027	A57 Manchester Road / Market Street (Hyde)	23.3	16.1
802081159	A57 Manchester Road North / South	31.2	21.1
802026575	A57 Mottram Moor	33.2	21.3
802058255	A57 Mottram Road	20.0	14.1
802081172	A57 Roundabout at M60 J24	26.1	17.9
802006564	A57 Woolley Bridge / Brookfield	23.2	15.5
802007958	A6017 Stockport Road	29.5	20.4
802077878	A6018 Back Moor	22.2	14.9
802007727	A6018 Mottram Road	23.0	15.5
802018257	A627 Clark Way	30.9	21.0
802028694	A627 Clark Way	22.7	16.1
802077829	A628 Manchester Road	20.6	13.5
802073379	A628 Market Street / Manchester Road	24.5	15.4

PCM Link ID	Road Name	PCM Roadside 2018 NO ₂ (µg/m ³)	PCM Roadside 2025 NO ₂ (µg/m ³)
802099611	M60 J24-J23 and slip roads	38.1	25.3
802073973	M60 J24-J25	34.8	23.7
802027854	M60 J24-M67 J1 and slip roads	35.8	24.3
802047903	M67 J1-J2	32.1	21.8
802007807	M67 J2-3 and slip roads	32.2	21.9
802073381	Woolley Lane	25.9	17.1

1.2 Air Quality Baseline - Scheme Specific Air Quality Monitoring Data

1.2.1 A Scheme specific diffusion tube monitoring survey (TPU survey) undertaken on behalf of the Applicant has been ongoing since July 2018, with the exception of the period between March 2020 and September 2020 when the survey was paused due to COVID-19 restrictions.

1.2.2 Monthly monitoring data for the 2019 period for all sites included in the TPU survey are presented in Table A-2 and for the 2018 period in Table A-3. The 2019 data was bias adjusted and annualised to 2018 to use for model verification. The 2019 survey data was used in preference to the 2018 survey data as the annual data capture was higher and more locations had been included in the survey. TPU survey data for 2020 is presented in Table A-4 for information. However, due to COVID-19 restrictions monitoring for this year is considered atypical and is for information only.

1.2.3 The following TPU sites are comparable to the earlier Mottram Moor Link Road (MMLR) survey locations:

- TPU 1 (MMLR 27)
- TPU 29 (MMLR 50)
- TPU 28 (MMLR 26)
- TPU 30 (MMLR 51)
- TPU 31 (MMLR 25)
- TPU 32 (MMLR 54)
- TPU 34 (MMLR 64)
- TPU 35 (MMLR 13)

Table A-2: TPU Monitoring Survey 2019 Raw Data - NO₂ Concentrations (µg/m³)

Site ID	X	Y	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Survey Year Data Capture	Survey Period Mean (Bias Adjusted) ^ (µg/m ³)	2018 Annual Mean* (Annualised) (µg/m ³)
TPU1	401756	394528	52.7	45.3	49.1	39.7	45.0	48.5	46.9	48.8	53.3	50.3	53.7	48.6	100%	45.1	43.0
TPU2	402059	394350	45.0	37.5	34.9	43.0	31.0	33.3	32.7	29.0	34.5	37.7	-	36.0	92%	33.4	33.6
TPU3	402144	394272	49.2	43.9	41.2	35.1	33.6	35.9	40.0	37.4	42.6	53.4	46.9	42.2	100%	38.9	37.3
TPU4	402359	394182	31.6	38.5	34.8	37.2	29.9	31.1	28.8	28.0	33.8	35.5	42.9	33.6	100%	31.4	30.0
TPU5	402323	394155	45.9	41.1	37.0	34.3	32.7	36.0	37.2	37.5	39.8	39.4	41.3	38.5	100%	35.7	34.0
TPU6	402324	394139	36.9	35.2	32.5	28.9	28.8	31.8	31.8	33.3	33.2	36.4	38.3	30.5	100%	30.8	29.3
TPU7	402375	394201	48.8	46.8	44.9	32.5	35.0	37.8	39.5	42.7	46.2	-	51.1	42.8	92%	39.6	38.3
TPU8	402633	394120	50.0	43.1	38.0	30.6	31.2	35.5	37.0	38.4	39.9	41.2	48.3	36.6	100%	36.4	34.7
TPU9	402430	394219	50.2	46.3	40.0	30.1	31.2	32.1	34.9	30.5	38.6	37.9	48.2	35.5	100%	35.3	33.9
TPU10	402458	394219	48.6	35.2	40.8	28.1	30.6	30.9	33.7	29.6	37.4	46.0	-	38.4	92%	33.8	34.3
TPU11	402489	394210	48.5	44.5	36.6	27.7	29.3	34.2	34.6	31.8	38.4	39.5	-	34.8	92%	33.8	34.0
TPU12	402515	394195	46.3	46.7	37.7	30.3	28.5	33.6	35.2	34.1	39.1	37.8	-	39.4	92%	34.6	34.7
TPU13	402551	394176	44.8	36.3	35.2	29.8	27.5	33.4	34.0	31.0	37.3	39.4	-	35.3	92%	32.5	32.6
TPU14	402577	394150	48.7	45.8	41.0	24.1	29.1	32.5	36.8	37.0	38.4	40.1	43.6	42.1	100%	35.6	34.1
TPU15	402691	394098	42.6	43.0	39.8	31.7	31.5	37.0	35.8	38.8	39.1	43.8	45.9	35.6	100%	36.0	34.3
TPU16	401764	394507	40.9	37.0	41.4	38.3	35.3	39.1	35.9	37.4	43.2	43.8	46.3	40.6	100%	37.1	35.5
TPU17	401796	394509	52.0	52.7	48.9	41.9	44.7	49.6	47.9	-	44.9	46.9	-	43.3	83%	44.0	43.5
TPU18	402614	394144	39.8	37.2	37.3	35.0	29.3	32.6	29.3	25.3	35.4	36.3	46.1	30.1	100%	32.0	30.8
TPU19	402816	394072	52.6	44.3	40.8	28.8	34.3	35.4	38.4	37.4	40.7	40.5	48.1	35.7	100%	37.0	35.3
TPU20	401823	394503	42.7	44.1	46.3	39.9	43.1	43.6	45.2	52.4	50.7	-	58.7	43.9	92%	43.1	41.4
TPU21	402736	397458	75.3	73.5	56.0	-	55.8	59.8	65.1	62.2	68.5	54.5	63.3	55.9	92%	58.3	55.0
TPU22	402695	397443	56.6	48.7	48.4	-	-	42.3	52.4	47.6	50.7	46.0	48.9	45.6	83%	45.3	41.4

Site ID	X	Y	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Survey Year Data Capture	Survey Period Mean (Bias Adjusted) [^] ($\mu\text{g}/\text{m}^3$)	2018 Annual Mean* (Annualised) ($\mu\text{g}/\text{m}^3$)
TPU23	402600	397392	-	56.4	-	-	-	61.6	65.8	80.1	78.9	69.3	69.5	49.6	67%	61.7	58.1
TPU24	379413	394013	42.8	46.9	33.9	24.3	25.4	29.1	28.4	28.6	29.2	34.9	42.9	34.5	100%	31.1	29.8
TPU25	381890	388212	55.8	64.9	51.3	60.4	46.6	61.3	44.8	59.8	62.3	68.8	70.9	59.3	100%	54.7	51.8
TPU26	402045	396061	-	-	-	-	-	-	-	19.6	25.2	27.2	31.6	25.8	42%	24.0	21.1
TPU27	402269	396002	-	-	-	-	-	-	-	21.0	24.7	25.4	28.0	23.8	42%	22.9	19.9
TPU28	400944	395801	-	-	-	-	-	-	-	-	-	-	-	40.2	8%	37.4	-
TPU29	400744	395787	-	-	-	-	-	-	-	-	-	35.4	38.4	31.9	25%	32.8	25.9
TPU30	400493	395918	-	-	-	-	-	-	-	-	-	-	55.3	39.1	17%	43.9	-
TPU31	400368	396012	-	-	-	-	-	-	-	-	-	49.1	65.5	45.9	25%	49.7	39.0
TPU32	400032	395915	-	-	-	-	-	-	-	-	-	43.9	45.3	41.8	25%	40.6	32.2
TPU33	399168	395938	-	-	-	-	-	-	-	-	-	30.9	41.4	26.3	25%	30.6	23.9
TPU34	399415	395741	-	-	-	-	-	-	-	-	-	73.5	70.7	48.8	25%	59.8	47.2
TPU35	399289	395635	-	-	-	-	-	-	-	-	-	52.9	53.5	51.5	25%	49.0	38.9
TPU36	399321	395427	-	-	-	-	-	-	-	-	-	30.1	35.6	34.9	25%	31.2	24.7
TPU38	401656	395107	-	-	-	-	-	-	-	-	-	20.1	33.7	21.3	25%	23.3	18.1
TPU39	403287	394788	-	-	-	-	-	-	-	-	-	-	26.6	12.4	17%	18.1	-
TPU40	402536	397346	-	-	-	-	-	-	-	-	-	52.3	57.0	45.5	25%	48.0	37.9
TPU41	402076	394319	-	-	-	-	-	-	-	-	-	41.2	47.5	41.3	25%	40.3	31.8
TPU42	401930	394439	-	-	-	-	-	-	-	-	-	36.1	36.0	39.0	25%	34.4	27.4

[^]National bias adjustment factor applied = 0.93. *Annualisation Factor = 0.77 – 1.0.

Values in **bold** exceed the AQS objective. A dash '-' indicates no data.

Table A-3: TPU Monitoring Survey 2018 Raw Data - NO₂ Concentrations (µg/m³)

Site ID	X	Y	Aug-18	Sept-18	Oct-18	Nov-18	Dec-18	Survey Year Data Capture
TPU1	401756	394528	48.8	51.3	48.6	45.1	43.6	42%
TPU2	402059	394350	34.8	33.6	36.6	34.9	39.0	42%
TPU3	402144	394272	39.7	39.6	43.2	43.2	40.6	42%
TPU4	402359	394182	33.6	32.6	32.5	38.0	44.4	42%
TPU5	402323	394155	39.4	39.6	38.9	41.0	40.1	42%
TPU6	402324	394139	35.7	33.6	35.1	33.5	32.2	42%
TPU7	402375	394201	42.9	42.8	44.6	43.2	44.8	42%
TPU8	402633	394120	39.7	42.1	41.8	40.8	-	33%
TPU9	402430	394219	37.3	40.1	40.7	41.6	42	42%
TPU10	402458	394219	34.5	35.6	36.3	36.8	44	42%
TPU11	402489	394210	36.9	37.1	41.3	38.8	41.5	42%
TPU12	402515	394195	37.0	38.0	41.2	40	42.4	42%
TPU13	402551	394176	34.6	36.8	39.9	36.6	38.6	42%
TPU14	402577	394150	39.2	42.1	43.0	36.4	41.1	42%
TPU15	402691	394098	41.2	38.7	40.0	41.4	40.1	42%
TPU16	401764	394507	37.1	37.3	39.1	-	36.5	33%
TPU17	401796	394509	51.1	47.3	48.5	50.6	42.0	42%
TPU18	402614	394144	32.1	33.1	33.9	35.9	38.6	42%
TPU19	402816	394072	39.9	40.9	40.3	37.6	39.3	42%
TPU20	401823	394503	47.4	44.8	47.1	42.2	45.6	42%
TPU21	402736	397458	-	66.1	74.0	-	51.4	25%
TPU22	402695	397443	-	52.4	57.4	-	47.5	25%
TPU23	402600	397392	-	59.4	66.1	-	41.8	25%
TPU24	379413	394013	-	-	-	34.4	40.5	17%
TPU25	381890	388212	-	-	-	54.2	65.0	17%

Table A-4: TPU Monitoring Survey 2020 Raw Data - NO₂ Concentrations (µg/m³)

Site ID	X	Y	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Survey Year Data Capture	Survey Period Mean (µg/m ³)
TPU1	401756	394528	55.7	48.2	-	-	-	-	-	-	50.1	44.9	47.2	44.1	50%	48.4
TPU2	402059	394350	38.6	29.0	-	-	-	-	-	-	34.8	31.3	34.9	32.3	50%	33.5
TPU3	402144	394272	45.3	39.5	-	-	-	-	-	-	41.0	39.5	43.9	39.5	50%	41.4
TPU4	402359	394182	35.4	29.6	-	-	-	-	-	-	-	-	-	-	17%	32.5
TPU5	402323	394155	41.9	33.9	-	-	-	-	-	-	-	-	-	-	17%	37.9
TPU6	402324	394139	34.8	26.4	-	-	-	-	-	-	34.0	30.1	30.9	25.6	50%	30.3
TPU7	402375	394201	49.2	42.0	-	-	-	-	-	-	44.9	-	42.8	39.5	42%	43.7
TPU8	402633	394120	47.4	39.7	-	-	-	-	-	-	40.5	-	-	-	25%	42.5
TPU9	402430	394219	43.1	34.1	-	-	-	-	-	-	-	-	-	-	17%	38.6
TPU10	402458	394219	39.5	34.3	-	-	-	-	-	-	-	-	-	-	17%	36.9
TPU11	402489	394210	40.3	35.1	-	-	-	-	-	-	-	-	-	-	17%	37.7
TPU12	402515	394195	42.9	-	-	-	-	-	-	-	-	-	-	-	8%	42.9
TPU13	402551	394176	38.0	28.3	-	-	-	-	-	-	-	-	-	-	17%	33.1
TPU14	402577	394150	42.8	43.9	-	-	-	-	-	-	-	-	-	-	17%	43.3
TPU15	402691	394098	44.3	44.8	-	-	-	-	-	-	-	37.8	39.9	34.8	42%	40.3
TPU16	401764	394507	46.2	41.5	-	-	-	-	-	-	33.7	38.4	35.0	34.9	50%	38.3
TPU17	401796	394509	47.9	-	-	-	-	-	-	-	42.9	-	38.1	-	25%	42.9
TPU18	402614	394144	35.5	26.0	-	-	-	-	-	-	-	-	-	-	17%	30.8
TPU19	402816	394072	46.3	39.3	-	-	-	-	-	-	35.7	34.1	38.4	36.2	50%	38.3
TPU20	401823	394503	54.4	48.6	-	-	-	-	-	-	-	-	-	-	17%	51.5
TPU21	402736	397458	74.3	81.2	-	-	-	-	-	-	55.3	53.7	54.1	44.9	50%	60.6

Site ID	X	Y	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Survey Year Data Capture	Survey Period Mean (µg/m ³)
TPU22	402695	397443	54.3	48.2	-	-	-	-	-	-	39.7	34.3	41.0	38.2	50%	42.6
TPU23	402600	397392	69.5	73.8	-	-	-	-	-	-	62.6	57.4	59.0	42.1	50%	60.7
TPU24	379413	394013	39.8	30.3	-	-	-	-	-	-	-	-	-	-	17%	35.1
TPU25	381890	388212	58.7	47.1	-	-	-	-	-	-	-	-	-	-	17%	52.9
TPU26	402045	396061	29.9	19.9	-	-	-	-	-	-	-	21.7	28.5	22.0	42%	24.4
TPU27	402269	396002	32.5	26.9	-	-	-	-	-	-	-	21.8	26.4	22.5	42%	26.0
TPU28	400944	395801	50.4	39.3	-	-	-	-	-	-	42.8	39.7	40.0	37.5	50%	41.6
TPU29	400744	395787	37.1	37.1	-	-	-	-	-	-	31.3	29.7	32.1	31.7	50%	33.1
TPU30	400493	395918	48.5	39.6	-	-	-	-	-	-	43.8	39.0	42.0	37.7	50%	41.8
TPU31	400368	396012	55.8	54.7	-	-	-	-	-	-	46.8	48.4	42.4	32.1	50%	46.7
TPU32	400032	395915	49.0	42.6	-	-	-	-	-	-	37.4	39.7	37.8	35.6	50%	40.4
TPU33	399168	395938	36.8	26.1	-	-	-	-	-	-	29.1	26.4	33.1	21.8	50%	28.9
TPU34	399415	395741	63.5	53.8	-	-	-	-	-	-	88.2	57.2	60.7	52.4	50%	62.6
TPU35	399289	395635	58.4	50.0	-	-	-	-	-	-	49.2	47.5	49.2	44.6	50%	49.8
TPU36	399321	395427	41.8	37.4	-	-	-	-	-	-	27.3	29.6	35.3	27.0	50%	33.1
TPU37	399713	395804	-	-	-	-	-	-	-	-	-	-	-	-	0%	-
TPU38	401656	395107	26.6	17.6	-	-	-	-	-	-	-	22.5	25.8	20.5	42%	22.6
TPU39	403287	394788	23.6	16.5	-	-	-	-	-	-	-	15.8	18.9	-	33%	18.7
TPU40	402536	397346	53.0	48.3	-	-	-	-	-	-	-	-	-	-	17%	50.7
TPU41	402076	394319	43.7	37.5	-	-	-	-	-	-	22.4	36.1	37.8	41.2	50%	36.5
TPU42	401930	394439	41.7	38.2	-	-	-	-	-	-	27.0	32.4	31.0	29.3	50%	33.3
TPU43	402072	394338	-	-	-	-	-	-	-	-	39.1	37.9	37.8	-	25%	38.3

Site ID	X	Y	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Survey Year Data Capture	Survey Period Mean (µg/m ³)
TPU44	399311	395658	-	-	-	-	-	-	-	-	33.6	31.2	32.9	31.6	33%	32.3
TPU45	399315	395639	-	-	-	-	-	-	-	-	84.0	70.3	61.6	69.4	33%	71.3
TPU46	399381	395754	-	-	-	-	-	-	-	-	22.7	17.7	24.0	-	25%	21.5
TPU47	399213	396102	-	-	-	-	-	-	-	-	10.8	12.8	17.9	15.8	33%	14.3
TPU48	399652	395814	-	-	-	-	-	-	-	-	38.9	39.1	38.9	30.2	33%	36.8
TPU49	399910	395875	-	-	-	-	-	-	-	-	-	42.2	38.6	-	17%	40.4
TPU50	401042	395586	-	-	-	-	-	-	-	-	31.7	27.3	30.2	30.1	33%	29.8
TPU51	400491	396117	-	-	-	-	-	-	-	-	-	35.5	36.5	32.1	25%	34.7
TPU52	400576	396201	-	-	-	-	-	-	-	-	35.9	34.5	34.8	28.9	33%	33.5
TPU53	400769	396346	-	-	-	-	-	-	-	-	37.0	-	-	-	8%	37.0
TPU54	400935	396418	-	-	-	-	-	-	-	-	37.5	39.2	36.1	32.6	33%	36.3
TPU55	402539	397353	-	-	-	-	-	-	-	-	22.7	23.1	28.7	15.3	33%	22.5

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Highways England Company Limited registered in England and Wales number 09346363