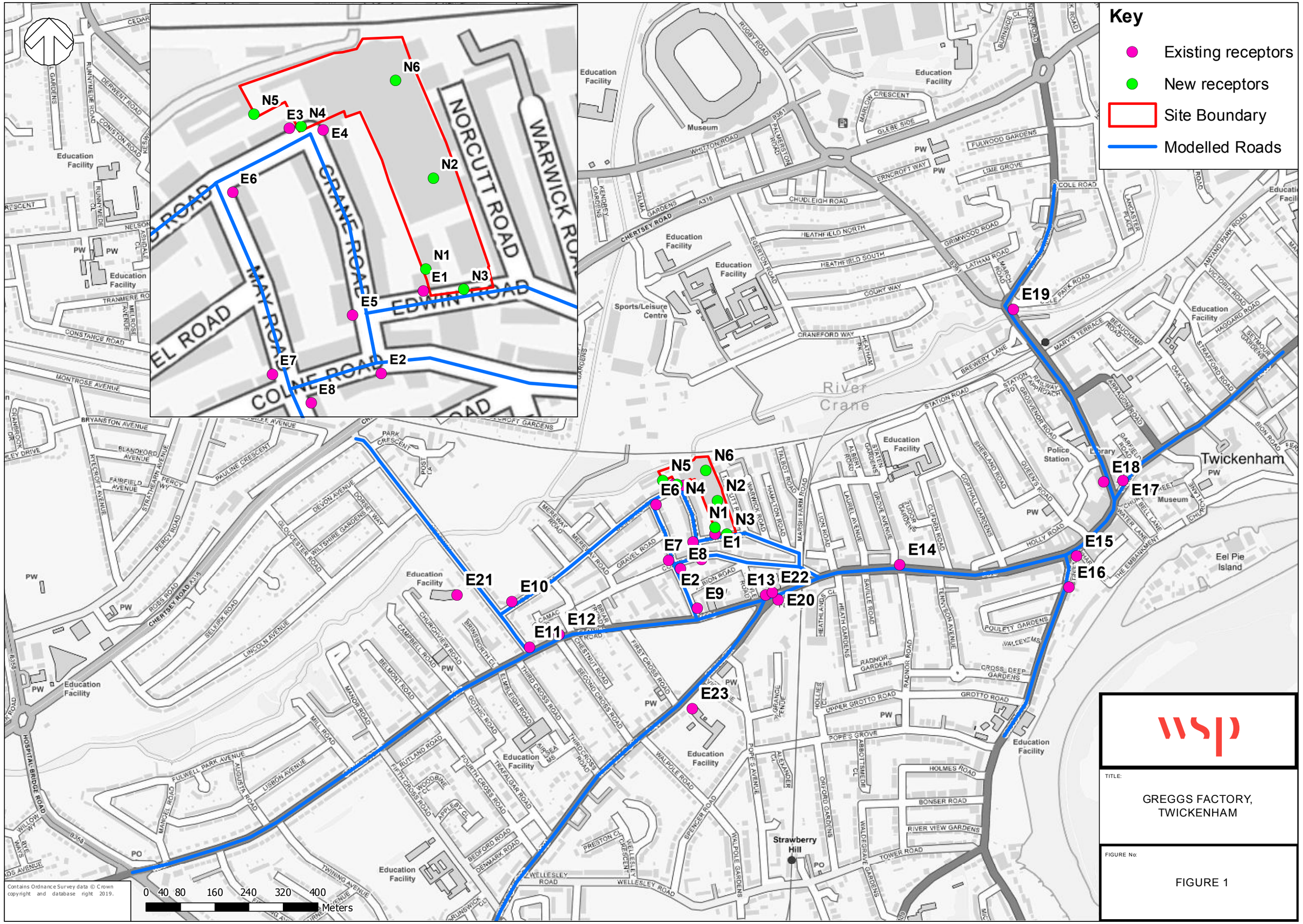
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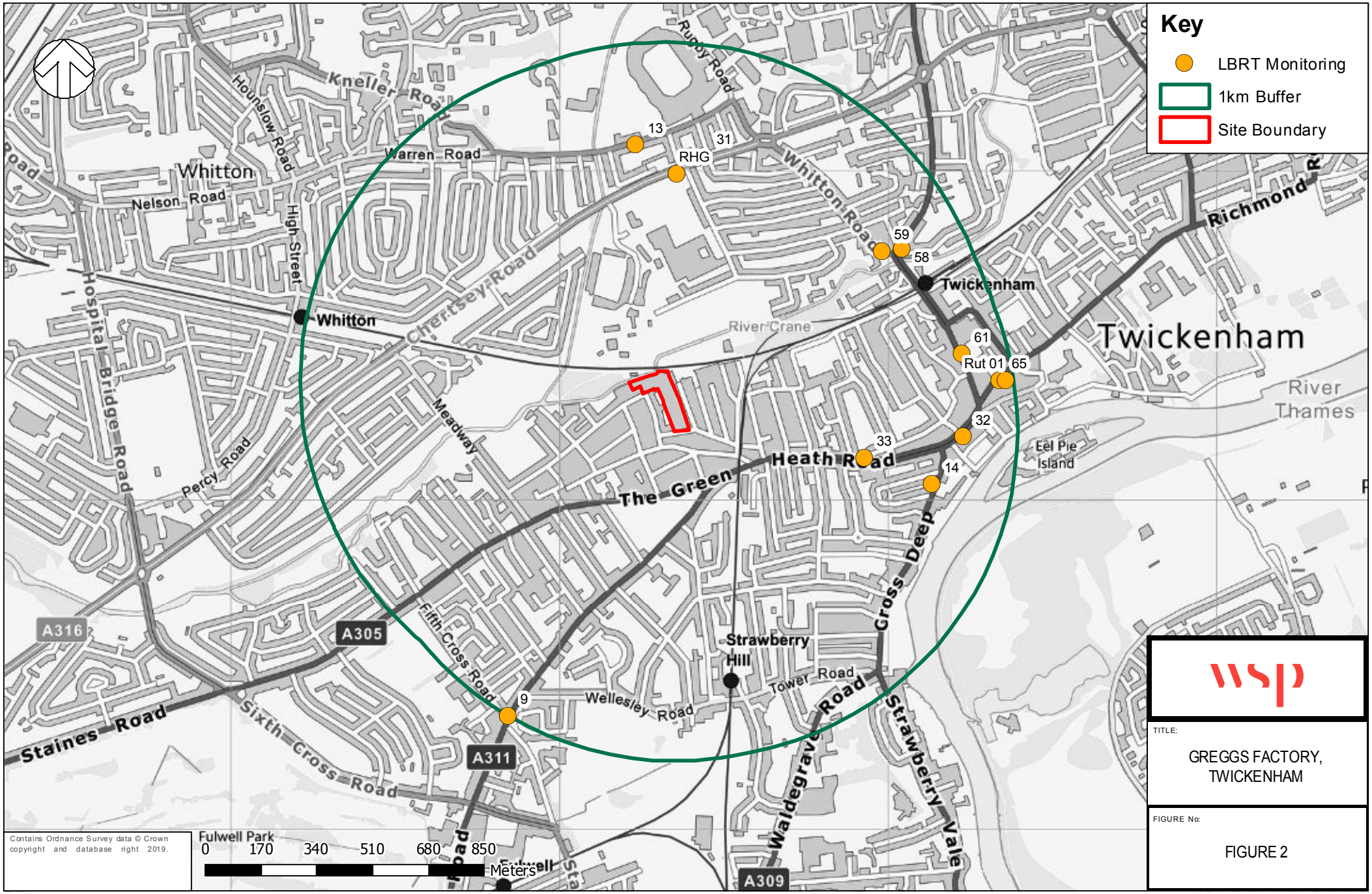
Existing receptors
New receptors
Site Boundary
Modelled Roads
N1
N2
N3
N4
N5
N6
E1
E2
E3
E4
E5
E6
E7
E8
E9
E10
E11
E12
E13
E14
E15
E16
E17
E18
E19
E20
E21
E22
E23
NORCUTT ROAD
WARWICK ROAD
CRANE ROAD
MAY ROAD
EDWIN ROAD
COLNE ROAD
CHERTSEY ROAD
WHITTON ROAD
RUGBY ROAD
COLE ROAD
HEATHFIELD NORTH
HEATHFIELD SOUTH
COURT WAY
CRANEFORD WAY
BREWERY LANE
STATION ROAD
HOLLY ROAD
GRIMWOOD ROAD
CHUDLEIGH ROAD
Museum
Education Facility
Sports/Leisure Centre
River Crane
Twickenham
Eel Pie Island
Strawberry Hill
Police Station
Library
Contains Ordnance Survey data © Crown copyright and database right 2019.
0 40 80 160 240 320 400
Meters
TITLE:
GREGGS FACTORY, TWICKENHAM
FIGURE No:
FIGURE 1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LBRT Monitoring
1km Buffer
Site Boundary
13
31
RHG
59
58
61
Rut 01
65
32
33
14
9
Whitton
Twickenham
Knellier Road
Warren Road
Whitton Road
Richmond
Nelson Road
High Street
Hospital Bridge Road
Chertsey Road
River Crane
Meadway
Percy Road
The Green
Heath Road
Eel Pie Island
River Thames
Gross Deep
Fifth Cross Road
Wellesley Road
Strawberry Hill
Tower Road
Waldegrave Road
Strawberry Vale
Staines Road
Sixth Cross Road
A316
A305
A311
A309
Fulwell Park
Fulwell
0 170 340 510 680 850
Meters
Contains Ordnance Survey data © Crown copyright and database right 2019.
wsp
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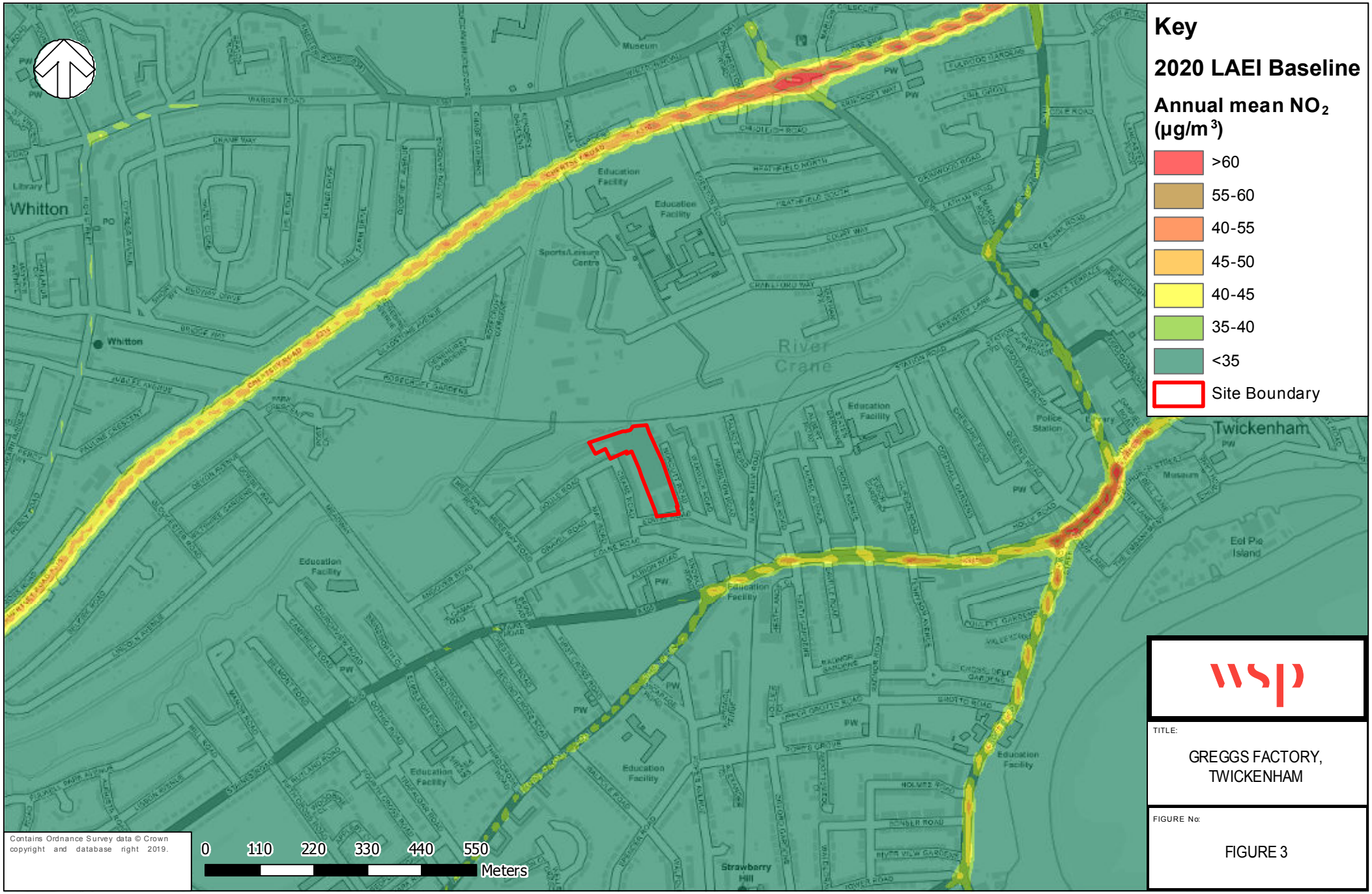
FIGURE No:
FIGURE 2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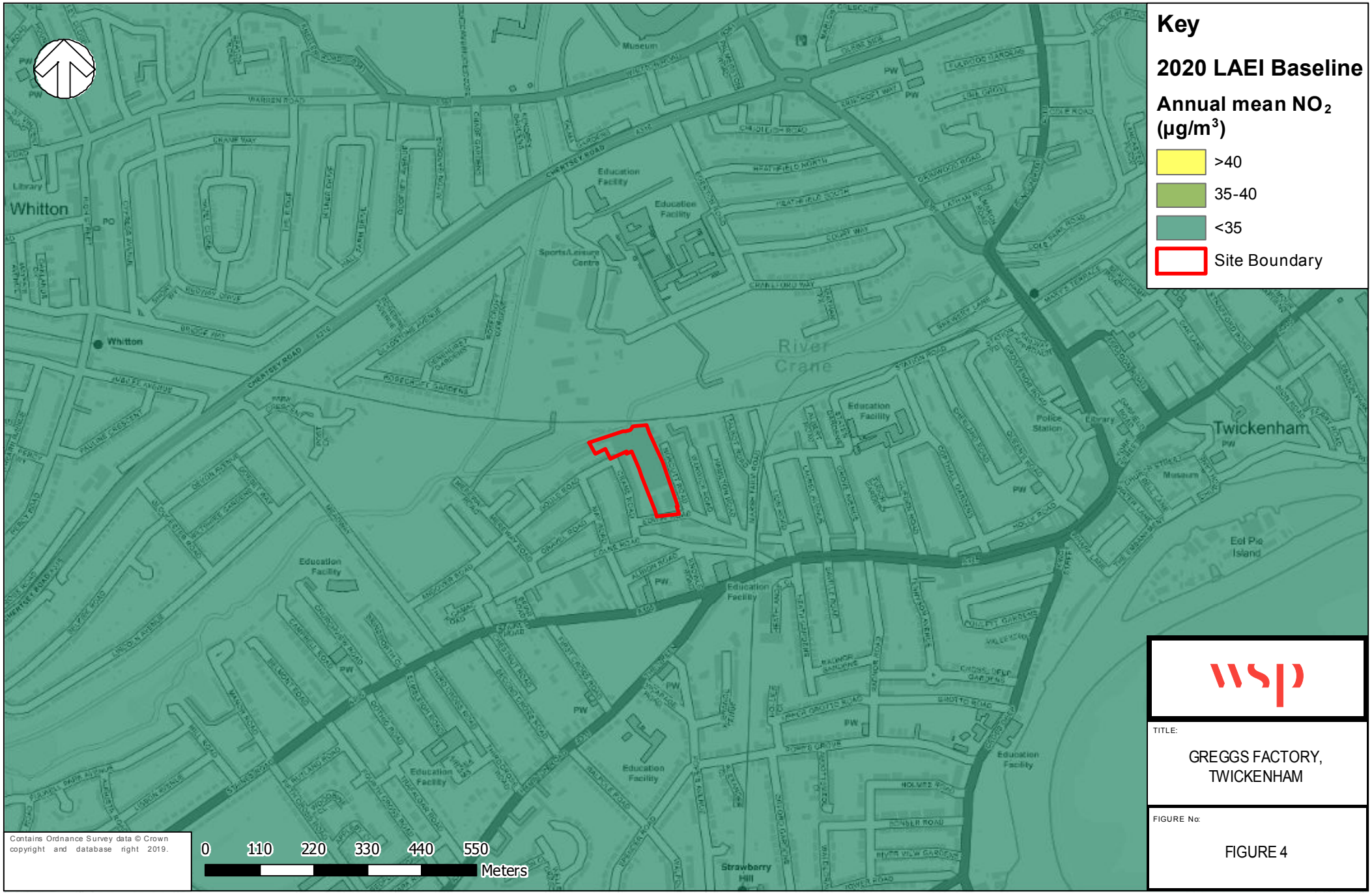
2020 LAEI Baseline
Annual mean NO_2 ($\mu g/m^3$)
>60
55-60
40-55
45-50
40-45
35-40
<35
Site Boundary
Whitton
Twickenham
River Crane
Eel Pie Island
Strawberry Hill
Education Facility
Sports/Leisure Centre
Police Station
Museum
Library
PO
PW
Contains Ordnance Survey data © Crown copyright and database right 2019.
0
110
220
330
440
550
Meters
wsp
TITLE:
GREGGS FACTORY, TWICKENHAM
FIGURE No:
FIGURE 3


Key
2020 LAEI Baseline
Annual mean NO_2 ($\mu g/m^3$)
>40
35-40
<35
Site Boundary
Whitton
Twickenham
River Crane
Eel Pie Island
Strawberry Hill
Education Facility
Sports/Leisure Centre
Police Station
Museum
Library
Contains Ordnance Survey data © Crown copyright and database right 2019.
0 110 220 330 440 550
Meters
TITLE:
GREGGS FACTORY, TWICKENHAM
FIGURE No:
FIGURE 4


Key
2020 LAEI Baseline
Annual mean $PM_{2.5}$ ($\mu g/m^3$)
>25
20-25
15-20
<15
Site Boundary
Whitton
Twickenham
River Crane
Eel Pie Island
Strawberry Hill
Contains Ordnance Survey data © Crown copyright and database right 2019.
0 110 220 330 440 550
Meters
TITLE:
GREGGS FACTORY, TWICKENHAM
FIGURE No:
FIGURE 5

Appendix A

GLOSSARY

Term	Definition
AADT Annual Average Daily Traffic	A daily total traffic flow (24 hrs), expressed as a mean daily flow across all 365 days of the year.
Adjustment	Application of a correction factor to modelled results to account for uncertainties in the model
Air quality objective	Policy target generally expressed as a maximum ambient concentration to be achieved, either without exception or with a permitted number of exceedances within a specific timescale (see also air quality standard).
Air quality standard	The concentrations of pollutants in the atmosphere which can broadly be taken to achieve a certain level of environmental quality. The standards are based on the assessment of the effects of each pollutant on human health including the effects on sensitive sub groups (see also air quality objective).
Ambient air	Outdoor air in the troposphere, excluding workplace air.
Annual mean	The average (mean) of the concentrations measured for each pollutant for one year.
AQMA	Air Quality Management Area.
Defra	Department for Environment, Food and Rural Affairs.
DfT	Department for Transport.
Dust	Dust comprises particles typically in the size range 1-75 micrometres (µm) in aerodynamic diameter and is created through the action of crushing and abrasive forces on materials
Emission rate	The quantity of a pollutant released from a source over a given period of time.
Exceedance	A period of time where the concentrations of a pollutant is greater than the appropriate air quality standard.
HDV/HGV	Heavy Duty Vehicle/Heavy Goods Vehicle.
LAQM	Local Air Quality Management.
LBRT	London Borough of Richmond upon Thames
NO_2	Nitrogen dioxide.
NO_x	Nitrogen oxides.
PM_{10}	Particulate matter with an aerodynamic diameter of less than 10 micrometres.

Term	Definition
$PM_{2.5}$	Particulate matter with an aerodynamic diameter of less than 2.5 micrometres.
Road link	A length of road which is considered to have the same flow of traffic along it. Usually, a link is the road from one junction to the next.
Trackout	The transport of dust and dirt from the construction / demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. This arises when heavy duty vehicles (HDVs) leave the construction / demolition site with dusty materials, which may then spill onto the road, and/or when HDVs transfer dust and dirt onto the road having travelled over muddy ground on site.
microgram per cubic metre ($\mu g/m^3$)	A measure of concentration in terms of mass per unit volume. A concentration of $1ug/m^3$ means that one cubic metre of air contains one microgram (millionth of a gram) of pollutant.
Uncertainty	A measure, associated with the result of a measurement, which characterizes the range of values within which the true value is expected to lie. Uncertainty is usually expressed as the range within which the true value is expected to lie with a 95% probability, where standard statistical and other procedures have been used to evaluate this figure. Uncertainty is more clearly defined than the closely related parameter 'accuracy', and has replaced it on recent European legislation.
Validation (modelling)	Refers to the general comparison of modelled results against monitoring data carried out by model developers.
Verification (modelling)	Comparison of modelled results versus any local monitoring data at relevant locations.

Appendix B

RELEVANT UK AIR QUALITY STRATEGY OBJECTIVES

National Air Quality Objectives and European Directive Limit Values for the protection of human health

Pollutant	Applies to	Objective	Measured as	Date to be achieved by and maintained thereafter	European Obligations	Date to be achieved by and maintained thereafter
Nitrogen dioxide (NO_2)	UK	200µg/m^3 not to be exceeded more than 18 times a year	1 hour mean	31.12.2005	200µg/m^3 not to be exceeded more than 18 times a year	01.01.2010
	UK	40µg/m^3	annual mean	31.12.2005	40µg/m^3	01.01.2010
Particulate Matter (PM_{10}) (gravimetric)[A]	UK (except Scotland)	40µg/m^3	annual mean	31.12.2004	40µg/m^3	01.01.2005
	UK (except Scotland)	50µg/m^3 not to be exceeded more than 35 times a year	24 hour mean	31.12.2004	50µg/m^3 not to be exceeded more than 35 times a year	01.01.2005
Particulate Matter ($PM_{2.5}$)	UK (except Scotland)	25µg/m^3	annual mean	2020	Target value 25µg/m^3	2010

[A] Measured using the European gravimetric transfer sampler or equivalent
µg/m^3= microgram per cubic metre

Appendix C

IAQM CONSTRUCTION ASSESSMENT METHODOLOGY

STEP 1 – SCREENING THE NEED FOR A DETAILED ASSESSMENT

An assessment will normally be required where there are:

- 'Human receptors' within 350m of the site boundary; or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s); and/or
- 'Ecological receptors' within 50m of the site boundary; or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s).

Where the need for a more detailed assessment is screened out, it can be concluded that the level of risk is "negligible".

STEP 2A – DEFINE THE POTENTIAL DUST EMISSION MAGNITUDE

The following are examples of how the potential dust emission magnitude for different activities can be defined. (Note that not all the criteria need to be met for a particular class). Other criteria may be used if justified in the assessment.

Table 2A: Examples of Human Receptor Sensitivity to Construction Phase Impacts

Dust Emission Magnitude	Activity
Large	**Demolition** >50,000m^3 building demolished, dusty material (e.g. concrete), on-site crushing/screening, demolition >20m above ground level
	Earthworks >10,000m^2 site area, dusty soil type (e.g. clay), >10 earth moving vehicles active simultaneously, >8m high bunds formed, >100,000 tonnes material moved
	Construction >100,000m^3 building volume, on site concrete batching, sandblasting
	Trackout >50 HDVs out / day, dusty surface material (e.g. clay), >100m unpaved roads
Medium	**Demolition** 20,000 - 50,000m^3 building demolished, dusty material (e.g. concrete) 10-20m above ground level
	Earthworks 2,500 - 10,000m^2 site area, moderately dusty soil (e.g. silt), 5-10 earth moving vehicles active simultaneously, 4m - 8m high bunds, 20,000 -100,000 tonnes material moved
	Construction 25,000 - 100,000m^3 building volume, dusty material e.g. concrete, on site concrete batching

Dust Emission Magnitude	Activity
	Trackout 10 - 50 HDVs out / day, moderately dusty surface material (e.g. clay), 50 -100m unpaved roads
Small	Demolition <20,000m^3 building demolished, non-dusty material (e.g metal cladding), <10m above ground level, work during wetter months
	Earthworks <2,500m^2 site area, soil with large grain size (e.g. sand), <5 earth moving vehicles active simultaneously, <4m high bunds, <20,000 tonnes material moved, earthworks during wetter months
	Construction <25,000m^3, non-dusty material (e.g. metal cladding or timber)
	Trackout <10 HDVs out / day, non-dusty soil, < 50m unpaved roads

STEP 2B – DEFINE THE SENSITIVITY OF THE AREA

The tables below present the IAQM assessment methodology to determine the sensitivity of the area to dust soiling, human health and ecological impacts respectively. The IAQM guidance provides guidance to allow the sensitivity of individual receptors to dust soiling and health effects to assist in the assessment of the overall sensitivity of the study area.

Table 2Ba: Sensitivity of the Area to Dust Soiling Effects

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<350
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table 2Bb: Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM_{10} Concentration ($\mu g/m^3$)	Number of Receptors	Distance from the Source (m)				
			<20	<50	<100	<200	<350
High	>32	>100	High	High	High	Medium	Low
		10-100	High	High	Medium	Low	Low
		1-10	High	Medium	Low	Low	Low
	28-32	>100	High	High	Medium	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	High	Medium	Low	Low	Low
	24-28	>100	High	Medium	Low	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	<24	>100	Medium	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Medium	>32	>10	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	28-32	>10	Medium	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	24-28	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	<24	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low	Low

Table 2Bc: Sensitivity of the Area to Ecological Impacts

Receptor Sensitivity	Distance from the Sources (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

STEP 2C – DEFINE THE RISK OF IMPACTS

The dust emissions magnitude determined at Step 2A should be combined with the sensitivity of the area determined at Step 2B to determine the risk of impacts without mitigation applied. For those cases where the risk category is 'negligible' no mitigation measures beyond those required by legislation will be required.

Table 2C: Risk of Dust Impacts

Sensitivity of surrounding area	Dust Emission Magnitude		
	Large	Medium	Small
Demolition			
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible
Earthworks and Construction			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible
Trackout			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Low Risk	Negligible
Low	Low Risk	Low Risk	Negligible

STEP 3 –SITE SPECIFIC MITIGATION

Having determined the risk categories for each of the four activities it is possible to determine the site-specific measures to be adopted. These measures will be related to whether the site is considered to be a low, medium or high-risk site. The IAQM guidance details the mitigation measures required for high, medium and low risk sites as determined in Step 2C.

STEP 4 – DETERMINE SIGNIFICANT EFFECTS

Once the risk of dust impacts has been determined in Step 2C and the appropriate dust mitigation measures identified in Step 3, the final step is to determine whether there are significant effects arising from the construction phase. For almost all construction activities, the application of effective mitigation should prevent any significant effects occurring to sensitive receptors and therefore the residual effect will normally be negligible.

Appendix D

TRAFFIC DATA

2017 BASELINE

Road Link	Description	Speed (kph)	AADT	% HDV	NO_x Emission Rate (g/km/s)	PM_{10} Emission Rate (g/km/s)	$PM_{2.5}$ Emission Rate (g/km/s)
0	Gould Road	30	339	1.4	0.00182	0.00015	0.00009
1	May Road	16	224	1.7	0.00158	0.00010	0.00007
2	Edwin Road	30	278	3.5	0.00169	0.00013	0.00008
3	Colne Road	30	958	0.7	0.00490	0.00041	0.00025
4	A305, York Street	48	13898	8.1	0.08051	0.00693	0.00413
5	A305, Staines Road	48	11184	5.4	0.05838	0.00523	0.00313
6	Cross Deep	48	21397	3.6	0.10340	0.00956	0.00573
7	Crane Road	30	358	3.3	0.00215	0.00016	0.00010
8	Meadway	30	3533	2.4	0.02015	0.00159	0.00097
9	A310, London Road	48	11266	5.0	0.05776	0.00521	0.00312
10	A305, Heath Road	48	14856	7.3	0.08361	0.00728	0.00434
11	A311, The Green	48	9094	9.6	0.05557	0.00469	0.00279
12	A305, Kings Street	16	28650	6.7	0.28867	0.01522	0.00958
13	Colne Road	16	958	0.7	0.00620	0.00043	0.00027
14	Colne Road	16	958	0.7	0.00620	0.00043	0.00027
15	Edwin Road	16	278	3.5	0.00227	0.00014	0.00009
16	Edwin Road	30	278	3.5	0.00169	0.00013	0.00008
17	Gould Road	16	339	1.4	0.00234	0.00016	0.00010
18	Crane Road	16	358	3.3	0.00287	0.00017	0.00011
19	Gould Road	16	339	1.4	0.00234	0.00016	0.00010
20	May Road	16	224	1.7	0.00158	0.00010	0.00007
21	May Road	30	224	1.7	0.00122	0.00010	0.00006
22	May Road	16	224	1.7	0.00158	0.00010	0.00007
23	May Road	16	224	1.7	0.00158	0.00010	0.00007

Road Link	Description	Speed (kph)	AADT	% HDV	NO_x Emission Rate (g/km/s)	PM_{10} Emission Rate (g/km/s)	$PM_{2.5}$ Emission Rate (g/km/s)
24	May Road	30	224	1.7	0.00122	0.00010	0.00006
25	Crane Road	16	358	3.3	0.00287	0.00017	0.00011
26	Meadway	16	3533	2.4	0.02649	0.00167	0.00105
27	A305, Staines Road	16	11184	5.4	0.10381	0.00574	0.00361
28	A305, Staines Road	48	11184	5.4	0.05838	0.00523	0.00313
29	A305, Staines Road	48	11184	5.4	0.05838	0.00523	0.00313
30	A305, Staines Road	16	11184	5.4	0.10381	0.00574	0.00361
31	A305, Staines Road	48	11184	5.4	0.05838	0.00523	0.00313
32	A305, Staines Road	16	11184	5.4	0.10381	0.00574	0.00361
33	A305, Staines Road	48	11184	5.4	0.05838	0.00523	0.00313
34	A305, Staines Road	16	11184	5.4	0.10381	0.00574	0.00361
35	A305, Staines Road	16	11184	5.4	0.10381	0.00574	0.00361
36	A305, Heath Road	16	14856	7.3	0.15490	0.00801	0.00504
37	A305, Heath Road	48	14856	7.3	0.08361	0.00728	0.00434
38	A305, Heath Road	48	14856	7.3	0.08361	0.00728	0.00434
39	A305, Heath Road	16	14856	7.3	0.15490	0.00801	0.00504
40	A305, Heath Road	48	14856	7.3	0.08361	0.00728	0.00434
41	A305, Heath Road	16	14856	7.3	0.15490	0.00801	0.00504
42	A305, Heath Road	16	14856	7.3	0.15490	0.00801	0.00504
43	A305, Heath Road	48	14856	7.3	0.08361	0.00728	0.00434
44	A305, Heath Road	16	14856	7.3	0.15490	0.00801	0.00504
45	A305, Kings Street	16	28650	6.7	0.28867	0.01522	0.00958
46	A305, Kings Street	32	28650	6.7	0.19787	0.01428	0.00869
47	A305, York Street	16	13898	8.1	0.15136	0.00764	0.00480
48	A305, York Street	48	13898	8.1	0.08051	0.00693	0.00413

Road Link	Description	Speed (kph)	AADT	% HDV	NO_x Emission Rate (g/km/s)	PM_{10} Emission Rate (g/km/s)	$PM_{2.5}$ Emission Rate (g/km/s)
49	A305, York Street	16	13898	8.1	0.15136	0.00764	0.00480
50	A305, York Street	48	13898	8.1	0.08051	0.00693	0.00413
51	A305, York Street	16	13898	8.1	0.15136	0.00764	0.00480
52	Cross Deep	16	21397	3.6	0.17530	0.01046	0.00659
53	Cross Deep	48	21397	3.6	0.10340	0.00956	0.00573
54	Cross Deep	16	21397	3.6	0.17530	0.01046	0.00659
55	A311, The Green	48	9094	9.6	0.05557	0.00469	0.00279
56	A311, The Green	16	9094	9.6	0.10715	0.00518	0.00326
57	A311, The Green	16	9094	9.6	0.10715	0.00518	0.00326
58	A311, The Green	48	9094	9.6	0.05557	0.00469	0.00279
59	A311, The Green	16	9094	9.6	0.10715	0.00518	0.00326
60	A310, London Road	16	11266	5.0	0.10162	0.00572	0.00360
61	A310, London Road	16	11266	5.0	0.10162	0.00572	0.00360
62	A310, London Road	48	11266	5.0	0.05776	0.00521	0.00312
63	A310, London Road	48	11266	5.0	0.05776	0.00521	0.00312
64	A310, London Road	16	11266	5.0	0.10162	0.00572	0.00360
65	A310, London Road	16	11266	5.0	0.10162	0.00572	0.00360
66	A310, London Road	48	11266	5.0	0.05776	0.00521	0.00312
67	A310, London Road	16	11266	5.0	0.10162	0.00572	0.00360
68	A310, London Road	16	11266	5.0	0.10162	0.00572	0.00360
69	A311, The Green	16	9094	9.6	0.10715	0.00518	0.00326

2022 WITHOUT DEVELOPMENT

Road Link	Description	Speed (kph)	AADT	% HDV	CURED NO_x Emission Rate (g/km/s)	PM_{10} Emission Rate (g/km/s)	$PM_{2.5}$ Emission Rate (g/km/s)
0	Gould Road	30	357	1.4	0.00135	0.00014	0.00008
1	May Road	16	236	1.7	0.00110	0.00010	0.00006
2	Edwin Road	30	293	3.5	0.00110	0.00012	0.00007
3	Colne Road	30	1010	0.7	0.00380	0.00039	0.00022
4	A305, York Street	48	14645	8.1	0.04611	0.00666	0.00374
5	A305, Staines Road	48	11785	5.4	0.03708	0.00502	0.00283
6	Cross Deep	48	22547	3.6	0.07091	0.00917	0.00518
7	Crane Road	30	377	3.3	0.00142	0.00016	0.00009
8	Meadway	30	3723	2.4	0.01402	0.00150	0.00086
9	A310, London Road	48	11872	5.0	0.03735	0.00500	0.00282
10	A305, Heath Road	48	15655	7.3	0.04928	0.00699	0.00393
11	A311, The Green	48	9583	9.6	0.03018	0.00451	0.00253
12	A305, Kings Street	16	30190	6.7	0.14144	0.01401	0.00816
13	Colne Road	16	1010	0.7	0.00471	0.00040	0.00023
14	Colne Road	16	1010	0.7	0.00471	0.00040	0.00023
15	Edwin Road	16	293	3.5	0.00137	0.00012	0.00007
16	Edwin Road	30	293	3.5	0.00110	0.00012	0.00007
17	Gould Road	16	357	1.4	0.00167	0.00014	0.00008
18	Crane Road	16	377	3.3	0.00176	0.00016	0.00009
19	Gould Road	16	357	1.4	0.00167	0.00014	0.00008
20	May Road	16	236	1.7	0.00110	0.00010	0.00006
21	May Road	30	236	1.7	0.00089	0.00009	0.00005
22	May Road	16	236	1.7	0.00110	0.00010	0.00006
23	May Road	16	236	1.7	0.00110	0.00010	0.00006

Road Link	Description	Speed (kph)	AADT	% HDV	CURED NO_x Emission Rate (g/km/s)	PM_{10} Emission Rate (g/km/s)	$PM_{2.5}$ Emission Rate (g/km/s)
24	May Road	30	236	1.7	0.00089	0.00009	0.00005
25	Crane Road	16	377	3.3	0.00176	0.00016	0.00009
26	Meadway	16	3723	2.4	0.01740	0.00154	0.00090
27	A305, Staines Road	16	11785	5.4	0.05517	0.00529	0.00308
28	A305, Staines Road	48	11785	5.4	0.03708	0.00502	0.00283
29	A305, Staines Road	48	11785	5.4	0.03708	0.00502	0.00283
30	A305, Staines Road	16	11785	5.4	0.05517	0.00529	0.00308
31	A305, Staines Road	48	11785	5.4	0.03708	0.00502	0.00283
32	A305, Staines Road	16	11785	5.4	0.05517	0.00529	0.00308
33	A305, Staines Road	48	11785	5.4	0.03708	0.00502	0.00283
34	A305, Staines Road	16	11785	5.4	0.05517	0.00529	0.00308
35	A305, Staines Road	16	11785	5.4	0.05517	0.00529	0.00308
36	A305, Heath Road	16	15655	7.3	0.07336	0.00737	0.00429
37	A305, Heath Road	48	15655	7.3	0.04928	0.00699	0.00393
38	A305, Heath Road	48	15655	7.3	0.04928	0.00699	0.00393
39	A305, Heath Road	16	15655	7.3	0.07336	0.00737	0.00429
40	A305, Heath Road	48	15655	7.3	0.04928	0.00699	0.00393
41	A305, Heath Road	16	15655	7.3	0.07336	0.00737	0.00429
42	A305, Heath Road	16	15655	7.3	0.07336	0.00737	0.00429
43	A305, Heath Road	48	15655	7.3	0.04928	0.00699	0.00393
44	A305, Heath Road	16	15655	7.3	0.07336	0.00737	0.00429
45	A305, Kings Street	16	30190	6.7	0.14144	0.01401	0.00816
46	A305, Kings Street	32	30190	6.7	0.11099	0.01352	0.00769
47	A305, York Street	16	14645	8.1	0.06866	0.00703	0.00409
48	A305, York Street	48	14645	8.1	0.04611	0.00666	0.00374

Road Link	Description	Speed (kph)	AADT	% HDV	CURED NO_x Emission Rate (g/km/s)	PM_{10} Emission Rate (g/km/s)	$PM_{2.5}$ Emission Rate (g/km/s)
49	A305, York Street	16	14645	8.1	0.06866	0.00703	0.00409
50	A305, York Street	48	14645	8.1	0.04611	0.00666	0.00374
51	A305, York Street	16	14645	8.1	0.06866	0.00703	0.00409
52	Cross Deep	16	22547	3.6	0.10544	0.00963	0.00562
53	Cross Deep	48	22547	3.6	0.07091	0.00917	0.00518
54	Cross Deep	16	22547	3.6	0.10544	0.00963	0.00562
55	A311, The Green	48	9583	9.6	0.03018	0.00451	0.00253
56	A311, The Green	16	9583	9.6	0.04497	0.00477	0.00277
57	A311, The Green	16	9583	9.6	0.04497	0.00477	0.00277
58	A311, The Green	48	9583	9.6	0.03018	0.00451	0.00253
59	A311, The Green	16	9583	9.6	0.04497	0.00477	0.00277
60	A310, London Road	16	11872	5.0	0.05556	0.00526	0.00307
61	A310, London Road	16	11872	5.0	0.05556	0.00526	0.00307
62	A310, London Road	48	11872	5.0	0.03735	0.00500	0.00282
63	A310, London Road	48	11872	5.0	0.03735	0.00500	0.00282
64	A310, London Road	16	11872	5.0	0.05556	0.00526	0.00307
65	A310, London Road	16	11872	5.0	0.05556	0.00526	0.00307
66	A310, London Road	48	11872	5.0	0.03735	0.00500	0.00282
67	A310, London Road	16	11872	5.0	0.05556	0.00526	0.00307
68	A310, London Road	16	11872	5.0	0.05556	0.00526	0.00307
69	A311, The Green	16	9583	9.6	0.04497	0.00477	0.00277

2022 WITH DEVELOPMENT

Road Link	Description	Speed (kph)	AADT	% HDV	CURED NO_x Emission Rate (g/km/s)	PM_{10} Emission Rate (g/km/s)	$PM_{2.5}$ Emission Rate (g/km/s)
0	Gould Road	30	604	0.7	0.00227	0.00023	0.00013
1	May Road	16	236	1.7	0.00110	0.00010	0.00006
2	Edwin Road	30	373	2.7	0.00141	0.00015	0.00009
3	Colne Road	30	1091	0.6	0.00410	0.00042	0.00024
4	A305, York Street	48	14685	8.1	0.04624	0.00667	0.00375
5	A305, Staines Road	48	11909	5.3	0.03747	0.00507	0.00286
6	Cross Deep	48	22553	3.6	0.07093	0.00917	0.00518
7	Crane Road	30	458	2.8	0.00172	0.00019	0.00011
8	Meadway	30	3969	2.3	0.01495	0.00159	0.00091
9	A310, London Road	48	11900	4.9	0.03744	0.00501	0.00283
10	A305, Heath Road	48	15729	7.3	0.04952	0.00702	0.00394
11	A311, The Green	48	9589	9.6	0.03020	0.00451	0.00253
12	A305, Kings Street	16	30259	6.7	0.14176	0.01404	0.00818
13	Colne Road	16	1091	0.6	0.00509	0.00043	0.00025
14	Colne Road	16	1091	0.6	0.00509	0.00043	0.00025
15	Edwin Road	16	373	2.7	0.00175	0.00016	0.00009
16	Edwin Road	30	373	2.7	0.00141	0.00015	0.00009
17	Gould Road	16	604	0.7	0.00282	0.00024	0.00014
18	Crane Road	16	458	2.8	0.00214	0.00019	0.00011
19	Gould Road	16	604	0.7	0.00282	0.00024	0.00014
20	May Road	16	236	1.7	0.00110	0.00010	0.00006
21	May Road	30	236	1.7	0.00089	0.00009	0.00005
22	May Road	16	236	1.7	0.00110	0.00010	0.00006
23	May Road	16	236	1.7	0.00110	0.00010	0.00006

Road Link	Description	Speed (kph)	AADT	% HDV	CURED NO_x Emission Rate (g/km/s)	PM_{10} Emission Rate (g/km/s)	$PM_{2.5}$ Emission Rate (g/km/s)
24	May Road	30	236	1.7	0.00089	0.00009	0.00005
25	Crane Road	16	458	2.8	0.00214	0.00019	0.00011
26	Meadway	16	3969	2.3	0.01855	0.00164	0.00095
27	A305, Staines Road	16	11909	5.3	0.05575	0.00533	0.00311
28	A305, Staines Road	48	11909	5.3	0.03747	0.00507	0.00286
29	A305, Staines Road	48	11909	5.3	0.03747	0.00507	0.00286
30	A305, Staines Road	16	11909	5.3	0.05575	0.00533	0.00311
31	A305, Staines Road	48	11909	5.3	0.03747	0.00507	0.00286
32	A305, Staines Road	16	11909	5.3	0.05575	0.00533	0.00311
33	A305, Staines Road	48	11909	5.3	0.03747	0.00507	0.00286
34	A305, Staines Road	16	11909	5.3	0.05575	0.00533	0.00311
35	A305, Staines Road	16	11909	5.3	0.05575	0.00533	0.00311
36	A305, Heath Road	16	15729	7.3	0.07371	0.00740	0.00431
37	A305, Heath Road	48	15729	7.3	0.04952	0.00702	0.00394
38	A305, Heath Road	48	15729	7.3	0.04952	0.00702	0.00394
39	A305, Heath Road	16	15729	7.3	0.07371	0.00740	0.00431
40	A305, Heath Road	48	15729	7.3	0.04952	0.00702	0.00394
41	A305, Heath Road	16	15729	7.3	0.07371	0.00740	0.00431
42	A305, Heath Road	16	15729	7.3	0.07371	0.00740	0.00431
43	A305, Heath Road	48	15729	7.3	0.04952	0.00702	0.00394
44	A305, Heath Road	16	15729	7.3	0.07371	0.00740	0.00431
45	A305, Kings Street	16	30259	6.7	0.14176	0.01404	0.00818
46	A305, Kings Street	32	30259	6.7	0.11124	0.01354	0.00771
47	A305, York Street	16	14685	8.1	0.06885	0.00704	0.00410
48	A305, York Street	48	14685	8.1	0.04624	0.00667	0.00375

Road Link	Description	Speed (kph)	AADT	% HDV	CURED NO_x Emission Rate (g/km/s)	PM_{10} Emission Rate (g/km/s)	$PM_{2.5}$ Emission Rate (g/km/s)
49	A305, York Street	16	14685	8.1	0.06885	0.00704	0.00410
50	A305, York Street	48	14685	8.1	0.04624	0.00667	0.00375
51	A305, York Street	16	14685	8.1	0.06885	0.00704	0.00410
52	Cross Deep	16	22553	3.6	0.10546	0.00964	0.00562
53	Cross Deep	48	22553	3.6	0.07093	0.00917	0.00518
54	Cross Deep	16	22553	3.6	0.10546	0.00964	0.00562
55	A311, The Green	48	9589	9.6	0.03020	0.00451	0.00253
56	A311, The Green	16	9589	9.6	0.04499	0.00477	0.00277
57	A311, The Green	16	9589	9.6	0.04499	0.00477	0.00277
58	A311, The Green	48	9589	9.6	0.03020	0.00451	0.00253
59	A311, The Green	16	9589	9.6	0.04499	0.00477	0.00277
60	A310, London Road	16	11900	4.9	0.05569	0.00528	0.00308
61	A310, London Road	16	11900	4.9	0.05569	0.00528	0.00308
62	A310, London Road	48	11900	4.9	0.03744	0.00501	0.00283
63	A310, London Road	48	11900	4.9	0.03744	0.00501	0.00283
64	A310, London Road	16	11900	4.9	0.05569	0.00528	0.00308
65	A310, London Road	16	11900	4.9	0.05569	0.00528	0.00308
66	A310, London Road	48	11900	4.9	0.03744	0.00501	0.00283
67	A310, London Road	16	11900	4.9	0.05569	0.00528	0.00308
68	A310, London Road	16	11900	4.9	0.05569	0.00528	0.00308
69	A311,The Green	16	9589	9.6	0.04499	0.00477	0.00277

Appendix E

MODEL VERIFICATION

The comparison of modelled concentrations with local monitored concentrations is a process termed 'verification'. Model verification investigates the discrepancies between modelled and measured concentrations, which can arise due to the presence of inaccuracies and/or uncertainties in model input data, modelling and monitoring data assumptions. The following are examples of potential causes of such discrepancy:

a) Estimates of background pollutant concentrations;

b) Meteorological data uncertainties;

c) Traffic data uncertainties;

d) Model input parameters, such as 'roughness length'; and

e) Overall limitations of the dispersion model.

NITROGEN DIOXIDE

Most nitrogen dioxide is produced in the atmosphere by the reaction of nitric oxide (NO) with ozone. It is therefore most appropriate to verify the model in terms of the primary pollutant emissions of nitrogen oxides (NO_x = NO + NO_2), in line with the guidance provided within LAQM.TG(16).

The model has been run to predict the 2017 annual mean road-NO_x contribution at five roadside diffusion tubes within the modelled road network. The model outputs of road-NO_x have been compared with the 'measured' road-NO_x, which was determined from the NO_2 concentrations measured using diffusion tubes at the monitoring locations, utilising the NO_x from NO_2 calculator provided by Defra and the adjusted NO_2 background concentration following AQC's CURED methodology.

The table and figure below present:

- Total monitored and modelled NO_2 before adjustment;
- Data used in the verification and
- Results after verification.

Table E1 – Total monitored and modelled NO_2 before adjustment

Monitoring Site	2017 Background NO_2 (µg/m^3)	2017 Measured Annual Mean NO_2 Concentration (µg/m^3)	Total Annual Mean NO_2 Concentration before adjustment (µg/m^3)	Difference between monitored and modelled NO_2 (µg/m^3)	% Difference between monitored and modelled NO_2
9	22.0	40.0	27.3	-12.7	-31.9
14	24.1	36.0	28.3	-7.7	-21.5
32	24.1	59.0	38.3	-20.7	-35.1
58	24.1	47.0	32.3	-14.7	-31.2
61	24.1	45.0	30.7	-14.3	-31.8

Table E2 – Data used in model verification

Monitoring Site	2017 Measured Annual Mean NO_2 Concentration (µg/m^3)	2017 Background NO_2 (µg/m^3)	Measured Road-NO_x (µg/m^3) (from NO_x to NO_2 calculator)	Modelled Road-NO_x (µg/m^3)	Ratio
9	40.0	22.0	40.2	10.9	3.7
14	36.0	24.1	26	8.8	3.0
32	59.0	24.1	88.5	31.5	2.8
58	47.0	24.1	53.7	17.6	3.1
61	45.0	24.1	48.3	13.9	3.5

The road-NO_x adjustment factor of 3.0 was determined as the slope of the best fit line between the 'measured' road contribution and the model derived road contribution, forced through zero (Figure E1). This factor was then applied to the modelled road-NO_x concentration for each monitoring site to provide adjusted modelled road-NO_x concentrations. The total nitrogen dioxide concentrations were then determined by inputting the adjusted modelled road-NO_x concentrations and the background NO_2 concentration into the NO_x to NO_2 calculator.

Figure E1: Comparison of Measured Road-NO_x with Unadjusted Modelled Road-NO_x

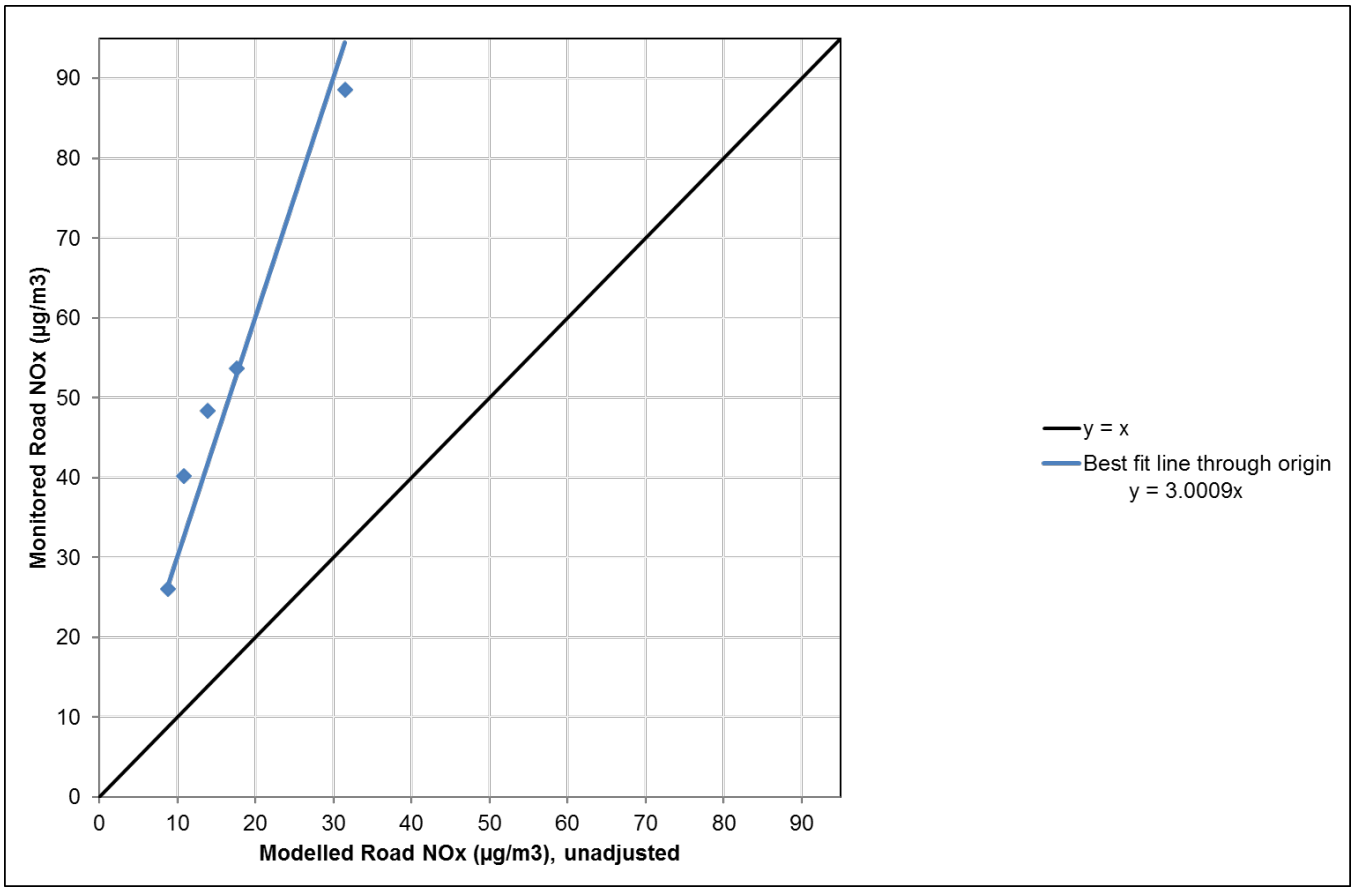
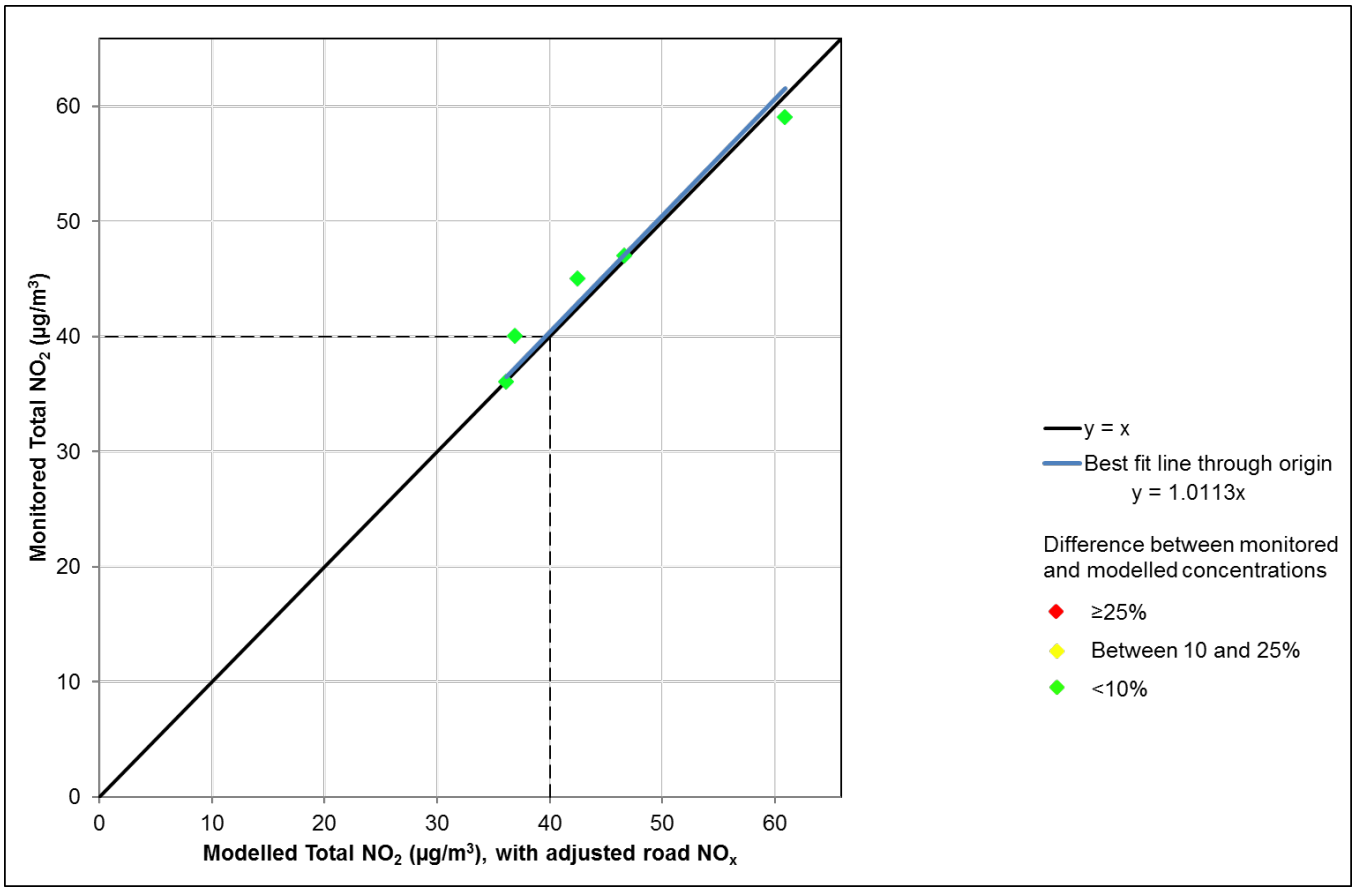


Table E3 – Total NO_2 after verification

Monitoring Site	2017 Measured Annual Mean NO_2 Concentration (µg/m^3)	2017 Background NO_2 (µg/m^3)	Modelled NO_2 after Verification	Difference between monitored and modelled NO_2 (µg/m^3)	% Difference between monitored and modelled NO_2
9	40.0	22.0	36.9	-3.1	-7.8
14	36.0	24.1	36.1	0.1	0.3
32	59.0	24.1	60.9	1.9	3.2
58	47.0	24.1	46.7	-0.3	-0.7
61	45.0	24.1	42.5	-2.5	-5.6

Figure E2 - Comparison of Measured Road-NOx with Adjusted Modelled Road-NO_x



PM_{10} AND $PM_{2.5}$

There are no local PM_{10} or $PM_{2.5}$ monitoring data against which the model could be verified. Consequently, the verification factor determined above for adjusting the road-NO_x contribution has

been applied to the predicted road-PM_{10} and road-$PM_{2.5}$ contributions, consistent with guidance set out in LAQM.TG (16).

MODEL UNCERTAINTY

An evaluation of model performance has been undertaken to establish confidence in model results. LAQM.TG (16) identifies a number of statistical procedures that are appropriate to evaluate model performance and assess the uncertainty. These include:

a) Root mean square error (RMSE);

b) Fractional bias (FB); and

c) Correlation coefficient (CC).

These parameters estimate how the model results agree or diverge from the observations. These calculations can be carried out prior to, and after adjustment, or based on different options for adjustment, and can provide useful information on model improvement. A brief for explanation of each statistic is provided in Table E2, and further details can be found in Box 7.17 of LAQM.TG(16).

Table E4 – Methods for describing model uncertainty

Statistical Parameter	Comments	Value
RMSE	RMSE is used to define the average error or uncertainty of the model. The units of RMSE are the same as the quantities compared. If the RMSE values are higher than 25% of the objective being assessed, it is recommended that the model inputs and verification should be revisited in order to make improvements. For example, if the model predictions are for the annual mean NO_2 objective of 40µg/m^3, if an RMSE of 10µg/m^3 or above is determined for a model it is advised to revisit the model parameters and model verification. Ideally an RMSE within 10% of the air quality objective would be derived, which equates to 4µg/m^3 for the annual mean NO_2 objective.	2.0µg/m^3 14.6µg/m^3 (before verification)
Fractional Bias	It is used to identify if the model shows a systematic tendency to over or under predict. FB values vary between +2 and -2 and has an ideal value of zero. Negative values suggest a model over-prediction and positive values suggest a model under-prediction.	0.017
Correlation Coefficient	It is used to measure the linear relationship between predicted and observed data. A value of zero means no relationship and a value of 1 means absolute relationship.	1.00

Statistical Parameter	Comments	Value
	This statistic can be particularly useful when comparing a large number of model and observed data points.	

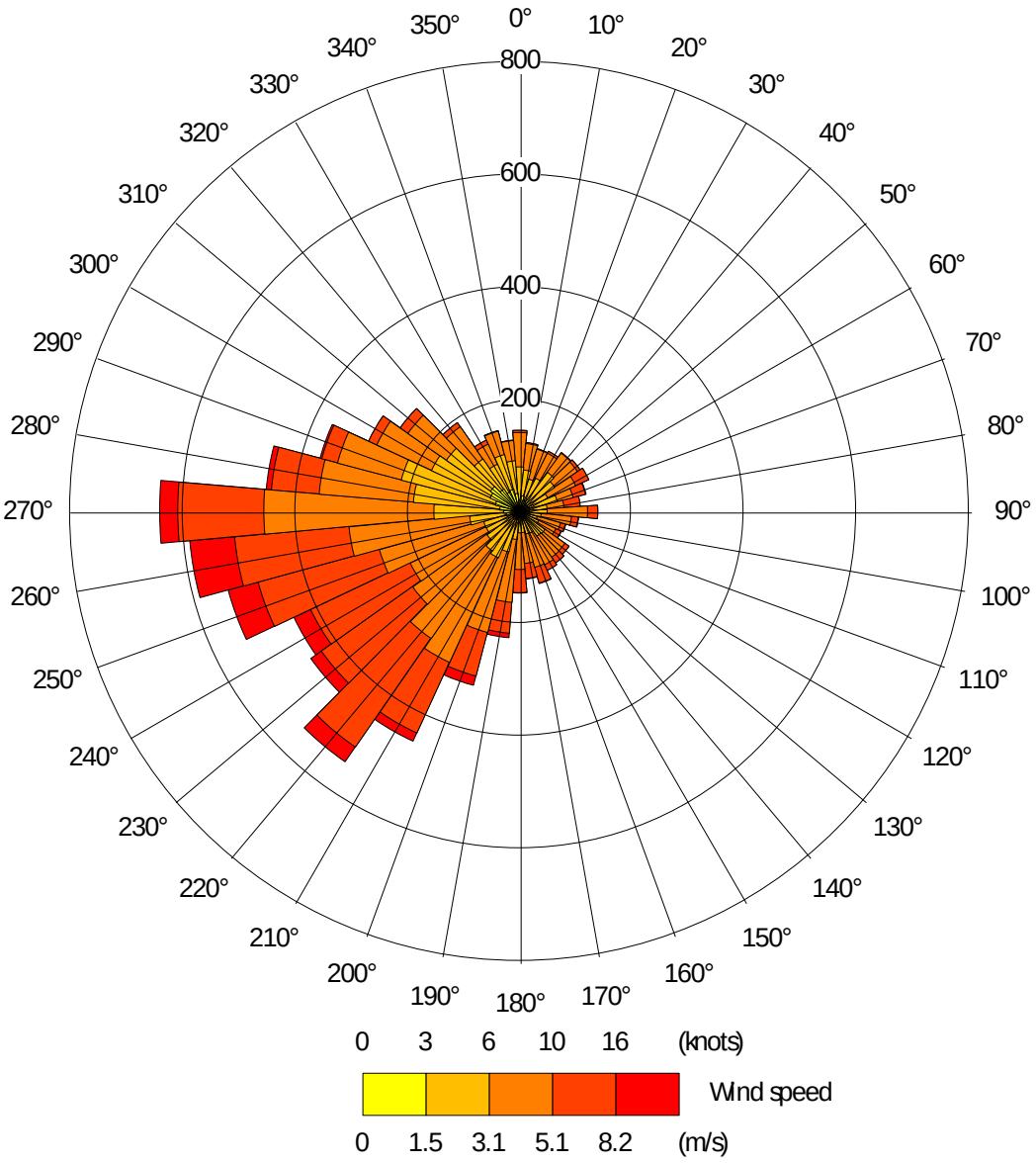
To assess the uncertainty of a model, the RMSE is the simplest parameter to calculate providing an estimate of the average error of the model in the same units as the modelled predictions. It is also often easier to interpret the RMSE than the other statistical parameters and therefore it has been calculated in this assessment to understand the model uncertainty.

The RMSE value calculated after verification was 2.0 and therefore the final predictions are considered to be robust.

Appendix F

METEOROLOGICAL DATA

WIND ROSE FOR 2017 HEATHROW AIRPORT



OTHER PARAMETERS

Parameters	Value
Latitude (º)	51.4
Surface roughness for dispersion site (m)	1
Minimum Monin-Obukhov for dispersion site (m)	30
Surface roughness for met. measurement site (m)	0.5
Minimum Monin-Obukhov for met. measurement site (m)	30

Appendix G

MODEL RESULTS

ANNUAL MEAN NO_2 CONCENTRATIONS ($\mu g/m^3$)

Receptor ID	Height (m)	Annual Mean NO_2 Concentrations ($\mu g/m^3$)					
		2017 Baseline	2022 Without Development	2022 With Development	Change ($\mu g/m^3$)	% Change Relative to Objective	Impact/ APEC
E1	1.5	25.8	21.3	21.4	0.1	<0.1	Negligible
E2	1.5	26.7	22.0	22.1	0.1	<0.1	Negligible
E3	1.5	25.0	20.9	21.0	0.1	<0.1	Negligible
E4	1.5	25.2	21.0	21.1	0.1	<0.1	Negligible
E5	1.5	25.7	21.3	21.3	<0.1	<0.1	Negligible
E6	1.5	25.4	21.1	21.3	0.2	<0.1	Negligible
E7	1.5	25.7	21.3	21.3	<0.1	<0.1	Negligible
E8	1.5	26.3	21.7	21.8	0.1	<0.1	Negligible
E9	1.5	29.3	23.6	23.6	0.0	<0.1	Negligible
E10	1.5	26.3	21.8	21.9	0.1	<0.1	Negligible
E11	1.5	31.5	24.9	25.1	0.2	1.0	Negligible
E12	4.5	28.7	22.5	22.6	0.1	<0.1	Negligible
E13	1.5	43.4	30.7	30.7	<0.1	<0.1	Negligible
E14	4.5	34.3	25.8	25.9	0.1	<0.1	Negligible
E15	4.5	47.2	33.6	33.6	<0.1	<0.1	Negligible
E16	1.5	46.8	35.8	35.8	<0.1	<0.1	Negligible
E17	4.5	37.8	27.8	27.8	<0.1	<0.1	Negligible
E18	4.5	32.9	25.1	25.1	<0.1	<0.1	Negligible
E19	1.5	40.0	29.6	29.6	<0.1	<0.1	Negligible
E20	1.5	43.8	30.9	31.0	0.1	<0.1	Negligible
E21	1.5	25.1	20.9	21.0	0.1	<0.1	Negligible
E22	1.5	42.3	30.0	30.0	<0.1	<0.1	Negligible
E23	1.5	29.2	21.9	21.9	<0.1	<0.1	Negligible
N1	1.5	-	-	21.2	-	-	APEC A

Receptor ID	Height (m)	Annual Mean NO_2 Concentrations ($\mu g/m^3$)					
		2017 Baseline	2022 Without Development	2022 With Development	Change ($\mu g/m^3$)	% Change Relative to Objective	Impact/ APEC
N2	1.5	-	-	20.9	-	-	APEC A
N3	1.5	-	-	21.5	-	-	APEC A
N4	1.5	-	-	21.0	-	-	APEC A
N5	1.5	-	-	20.8	-	-	APEC A
N6	1.5	-	-	20.7	-	-	APEC A

Results rounded to 1.d.p

ANNUAL MEAN PM_{10} CONCENTRATIONS ($\mu g/m^3$)

Receptor ID	Height (m)	Annual Mean PM_{10} Concentrations ($\mu g/m^3$)					
		2017 Baseline	2022 Without Development	2022 With Development	Change ($\mu g/m^3$)	% Change Relative to Objective	Impact/ APEC
E1	1.5	16.0	15.5	15.5	<0.1	<0.1	Negligible
E2	1.5	16.1	15.6	15.6	<0.1	<0.1	Negligible
E3	1.5	15.9	15.4	15.4	<0.1	<0.1	Negligible
E4	1.5	15.9	15.4	15.4	<0.1	<0.1	Negligible
E5	1.5	16.0	15.5	15.5	<0.1	<0.1	Negligible
E6	1.5	15.9	15.4	15.5	<0.1	<0.1	Negligible
E7	1.5	16.0	15.5	15.5	<0.1	<0.1	Negligible
E8	1.5	16.1	15.6	15.6	<0.1	<0.1	Negligible
E9	1.5	16.6	16.1	16.1	<0.1	<0.1	Negligible
E10	1.5	16.1	15.6	15.6	<0.1	<0.1	Negligible
E11	1.5	16.7	16.1	16.2	<0.1	<0.1	Negligible
E12	4.5	16.1	15.6	15.6	<0.1	<0.1	Negligible
E13	1.5	18.2	17.5	17.5	<0.1	<0.1	Negligible
E14	4.5	17.1	16.6	16.6	<0.1	<0.1	Negligible
E15	4.5	19.0	18.3	18.3	<0.1	<0.1	Negligible
E16	1.5	20.2	19.4	19.4	<0.1	<0.1	Negligible
E17	4.5	17.8	17.2	17.2	<0.1	<0.1	Negligible
E18	4.5	17.1	16.5	16.5	<0.1	<0.1	Negligible
E19	1.5	18.0	17.4	17.4	<0.1	<0.1	Negligible
E20	1.5	18.3	17.6	17.6	<0.1	<0.1	Negligible
E21	1.5	15.9	15.4	15.4	<0.1	<0.1	Negligible
E22	1.5	18.0	17.4	17.4	<0.1	<0.1	Negligible
E23	1.5	16.0	15.5	15.5	<0.1	<0.1	Negligible
N1	1.5	-	-	15.4	-	-	APEC A

Receptor ID	Height (m)	Annual Mean PM_{10} Concentrations ($\mu g/m^3$)					
		2017 Baseline	2022 Without Development	2022 With Development	Change ($\mu g/m^3$)	% Change Relative to Objective	Impact/ APEC
N2	1.5	-	-	15.4	-	-	APEC A
N3	1.5	-	-	15.5	-	-	APEC A
N4	1.5	-	-	15.4	-	-	APEC A
N5	1.5	-	-	15.4	-	-	APEC A
N6	1.5	-	-	15.3	-	-	APEC A

Results rounded to 1.d.p

DAILY MEAN PM_{10} (NO. OF DAYS OF EXCEEDANCE)

Receptor ID	Height (m)	Days with PM_{10} Concentrations >50µg/m^3				
		2017 Baseline	2022 Without Development	2022 With Development	Change (days)	Impact
E1	1.5	0	0	0	0	Negligible
E2	1.5	0	0	0	0	Negligible
E3	1.5	0	0	0	0	Negligible
E4	1.5	0	0	0	0	Negligible
E5	1.5	0	0	0	0	Negligible
E6	1.5	0	0	0	0	Negligible
E7	1.5	0	0	0	0	Negligible
E8	1.5	0	0	0	0	Negligible
E9	1.5	1	0	0	0.	Negligible
E10	1.5	0	0	0	0	Negligible
E11	1.5	1	0	0	0	Negligible
E12	4.5	0	0	0	0	Negligible
E13	1.5	2	1	1	0	Negligible
E14	4.5	1	1	1	0	Negligible
E15	4.5	2	2	2	0	Negligible
E16	1.5	4	3	3	0	Negligible
E17	4.5	1	1	1	0	Negligible
E18	4.5	1	1	1	0	Negligible
E19	1.5	1	1	1	0	Negligible
E20	1.5	2	1	1	0	Negligible
E21	1.5	0	0	0	0	Negligible
E22	1.5	1	1	1	0	Negligible
E23	1.5	0	0	0	0	Negligible
N1	1.5	-	-	0	-	-

Receptor ID	Height (m)	Days with PM_{10} Concentrations >50µg/m^3				
		2017 Baseline	2022 Without Development	2022 With Development	Change (days)	Impact
N2	1.5	-	-	0	-	-
N3	1.5	-	-	0	-	-
N4	1.5	-	-	0	-	-
N5	1.5	-	-	0	-	-
N6	1.5	-	-	0	-	-

ANNUAL MEAN $PM_{2.5}$ CONCENTRATIONS ($\mu g/m^3$)

Receptor ID	Height (m)	Annual Mean $PM_{2.5}$ Concentrations ($\mu g/m^3$)					
		2017 Baseline	2022 Without Development	2022 With Development	Change ($\mu g/m^3$)	% Change Relative to Objective	Impact
E1	1.5	10.3	9.8	9.8	<0.1	<0.1	Negligible
E2	1.5	10.4	9.9	9.9	<0.1	<0.1	Negligible
E3	1.5	10.3	9.8	9.8	<0.1	<0.1	Negligible
E4	1.5	10.3	9.8	9.8	<0.1	<0.1	Negligible
E5	1.5	10.3	9.8	9.8	<0.1	<0.1	Negligible
E6	1.5	10.3	9.8	9.8	<0.1	<0.1	Negligible
E7	1.5	10.3	9.8	9.8	<0.1	<0.1	Negligible
E8	1.5	10.4	9.9	9.9	<0.1	<0.1	Negligible
E9	1.5	10.7	10.2	10.2	<0.1	<0.1	Negligible
E10	1.5	10.4	9.9	9.9	<0.1	<0.1	Negligible
E11	1.5	10.8	10.2	10.2	<0.1	<0.1	Negligible
E12	4.5	10.4	9.9	9.9	<0.1	<0.1	Negligible
E13	1.5	11.7	11.0	11.0	<0.1	<0.1	Negligible
E14	4.5	11.0	10.4	10.4	<0.1	<0.1	Negligible
E15	4.5	12.2	11.5	11.5	<0.1	<0.1	Negligible
E16	1.5	12.9	12.1	12.1	<0.1	<0.1	Negligible
E17	4.5	11.5	10.8	10.8	<0.1	<0.1	Negligible
E18	4.5	11.0	10.4	10.4	<0.1	<0.1	Negligible
E19	1.5	11.6	10.9	10.9	<0.1	<0.1	Negligible
E20	1.5	11.8	11.1	11.1	<0.1	<0.1	Negligible
E21	1.5	10.3	9.8	9.8	<0.1	<0.1	Negligible
E22	1.5	11.6	10.9	10.9	<0.1	<0.1	Negligible
E23	1.5	10.4	9.9	9.9	<0.1	<0.1	Negligible
N1	1.5	-	-	9.8	-	-	-

Receptor ID	Height (m)	Annual Mean $PM_{2.5}$ Concentrations ($\mu g/m^3$)					
		2017 Baseline	2022 Without Development	2022 With Development	Change ($\mu g/m^3$)	% Change Relative to Objective	Impact
N2	1.5	-	-	9.8	-	-	-
N3	1.5	-	-	9.8	-	-	-
N4	1.5	-	-	9.8	-	-	-
N5	1.5	-	-	9.7	-	-	-
N6	1.5	-	-	9.7	-	-	-

Results rounded to 1.d.p

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