



Appendix H-3 –Air Dispersion Modelling Results

Introduction

The predicted changes in NO₂ and PM₁₀ concentrations from the assessment of the Scheme are presented for all selected worst-case receptors. Predicted NO_x concentrations are also presented for ecological designated sites.

Modelled Results

Table 1 and Table 2 below present the modelled annual NO₂ and PM₁₀ concentrations, and modelled NO_x concentrations in correspondence of relevant ecological receptors, for both the Base, DM and DS scenarios, highlighting out any exceedances of the applicable AQS Objectives. The magnitude of impacts has also been defined and presented accordingly.

Figure 1 shows the human and ecological receptors considered in the assessment of the proposed Scheme. Figure 2 indicates the verified modelled results within 200 m of the proposed Scheme for the Base, Do Minimum (DM) and Do-Something (DS) scenarios.

Figure 3 and Figure 4 presents the overall NO₂ and PM₁₀ concentrations significance change within 200 m of the proposed Scheme. Figures indicating the magnitude change at each considered receptor (as provided in Table 1) is presented within the main body of the report. and the magnitude of impacts in correspondence of each receptor.

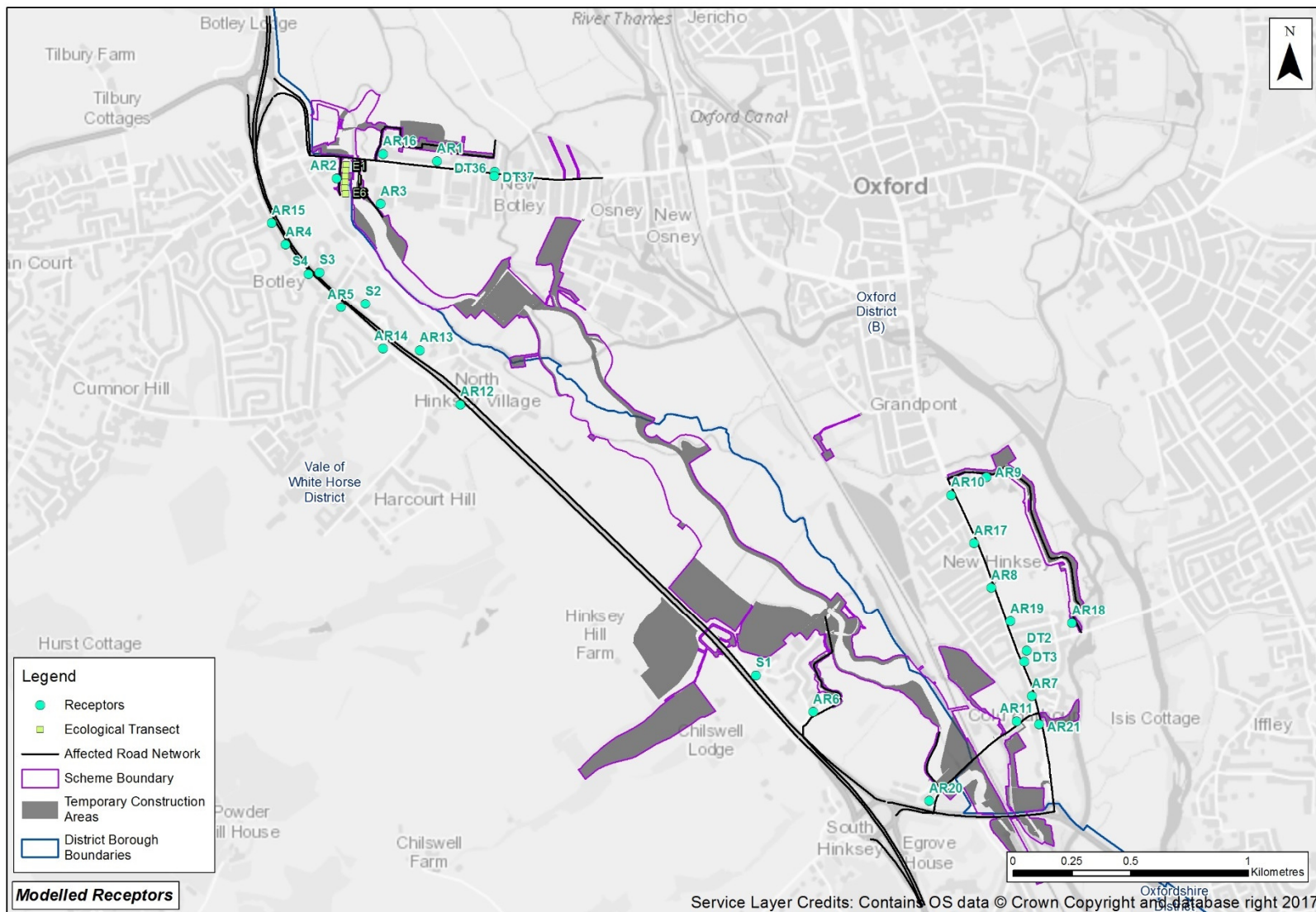


Figure 1: Oxford Flood Alleviation Scheme – Modelled Receptors



Table 1: Local Air Quality Predicted Annual NO₂ and PM₁₀ Concentrations at worst-case receptors

ID	Annual Mean NO ₂ Concentrations (µg/m ³)					Annual Mean PM ₁₀ Concentrations (µg/m ³)				
	Base	DM	DS	Difference between DS-DM	Magnitude of Change	Base	DM	DS	Difference between DS-DM	Magnitude of Change
S1	30.30	27.55	27.78	0.23	IMPERCEPTIBLE	17.72	17.65	17.65	0.00	IMPERCEPTIBLE
S2	35.40	28.16	28.46	0.30	IMPERCEPTIBLE	19.01	18.42	18.44	0.01	IMPERCEPTIBLE
S3	53.40	41.05	41.55	0.50	SMALL INCREASE	22.66	21.49	21.51	0.02	IMPERCEPTIBLE
S4	37.93	30.25	30.60	0.35	IMPERCEPTIBLE	19.12	18.53	18.55	0.02	IMPERCEPTIBLE
DT2	27.51	24.57	24.84	0.27	IMPERCEPTIBLE	15.44	15.40	15.41	0.01	IMPERCEPTIBLE
DT3	38.00	32.65	33.12	0.47	SMALL INCREASE	17.01	16.94	16.95	0.02	IMPERCEPTIBLE
DT36	24.84	23.80	23.83	0.03	IMPERCEPTIBLE	16.24	16.26	16.26	0.00	IMPERCEPTIBLE
DT37	29.54	28.18	28.25	0.07	IMPERCEPTIBLE	17.19	17.23	17.23	0.00	IMPERCEPTIBLE
AR1	22.81	21.70	21.85	0.15	IMPERCEPTIBLE	15.86	15.86	15.86	0.01	IMPERCEPTIBLE
AR2	16.75	15.26	15.70	0.44	SMALL INCREASE	17.44	17.35	17.37	0.01	IMPERCEPTIBLE
AR3	16.62	15.49	15.84	0.35	IMPERCEPTIBLE	14.70	14.63	14.64	0.01	IMPERCEPTIBLE
AR4	40.29	32.20	32.59	0.39	IMPERCEPTIBLE	19.65	19.04	19.06	0.02	IMPERCEPTIBLE
AR5	32.98	26.72	27.00	0.28	IMPERCEPTIBLE	18.51	18.04	18.06	0.01	IMPERCEPTIBLE
AR6	21.13	20.02	20.54	0.52	SMALL INCREASE	16.70	16.68	16.69	0.02	IMPERCEPTIBLE
AR7	34.37	29.79	29.91	0.12	IMPERCEPTIBLE	16.46	16.39	16.35	-0.04	IMPERCEPTIBLE
AR8	31.94	27.92	28.31	0.39	IMPERCEPTIBLE	16.08	16.02	16.03	0.02	IMPERCEPTIBLE
AR9	19.13	18.30	18.86	0.56	SMALL INCREASE	14.29	14.28	14.30	0.02	IMPERCEPTIBLE
AR10	29.47	26.03	26.40	0.37	IMPERCEPTIBLE	15.71	15.66	15.67	0.02	IMPERCEPTIBLE
AR11	25.25	22.65	18.76	-3.89	MEDIUM DECREASE	17.25	17.21	16.45	-0.76	SMALL DECREASE
AR12	26.27	24.00	24.17	0.17	IMPERCEPTIBLE	16.81	16.74	16.74	0.00	IMPERCEPTIBLE
AR13	40.21	31.64	31.99	0.35	IMPERCEPTIBLE	19.97	19.24	19.25	0.01	IMPERCEPTIBLE
AR14	25.85	21.72	21.91	0.19	IMPERCEPTIBLE	17.12	16.83	16.84	0.01	IMPERCEPTIBLE
AR15	34.94	28.06	28.39	0.33	IMPERCEPTIBLE	20.87	20.37	20.39	0.01	IMPERCEPTIBLE
AR16	22.28	21.05	21.45	0.40	IMPERCEPTIBLE	15.76	15.74	15.75	0.01	IMPERCEPTIBLE
AR17	30.48	26.80	27.16	0.36	IMPERCEPTIBLE	15.86	15.80	15.82	0.02	IMPERCEPTIBLE
AR18	18.06	17.28	17.71	0.43	SMALL INCREASE	13.97	13.96	13.97	0.01	IMPERCEPTIBLE
AR19	38.41	32.93	33.44	0.51	SMALL INCREASE	17.06	16.98	17.00	0.02	IMPERCEPTIBLE
AR20	33.40	28.70	29.40	0.6	SMALL INCREASE	18.88	18.80	18.87	0.07	IMPERCEPTIBLE
AR21	30.50	26.40	28.10	1.6	SMALL INCREASE	17.01	16.95	17.16	0.21	IMPERCEPTIBLE

* Values shown in **bold** indicate exceedances with the applicable limit.



Table 2: Annual Mean NO_x Concentrations Predicted along Transects in each of the Designated Sites for the Scheme in the Base, Do-Minimum and Do-Something Scenarios

ID	Distance from the Scheme (m)	NO _x Concentrations (µg/m ³)							Magnitude of Change	Potentially Significant?
		2016 Baseline	2021 DM	2021 DS	Change (DS-DM)	Critical Level	Change as % of critical level	Total NO _x as a % of critical level		
E1	25	34.31	31.50	32.46	0.96	30	3.20%	108.19%	SMALL INCREASE	Yes
E2	50	30.41	27.78	28.66	0.88	30	2.93%	95.54%	SMALL INCREASE	No
E3	80	29.04	26.43	27.26	0.84	30	2.79%	90.88%	SMALL INCREASE	No
E4	100	28.46	25.80	26.59	0.79	30	2.63%	88.63%	SMALL INCREASE	No
E5	150	28.23	25.50	26.23	0.72	30	2.41%	87.42%	SMALL INCREASE	No
E6	200	28.08	25.30	25.78	0.48	30	1.59%	85.94%	SMALL INCREASE	No

*Values show in **bold** indicate exceedances with the applicable limit.

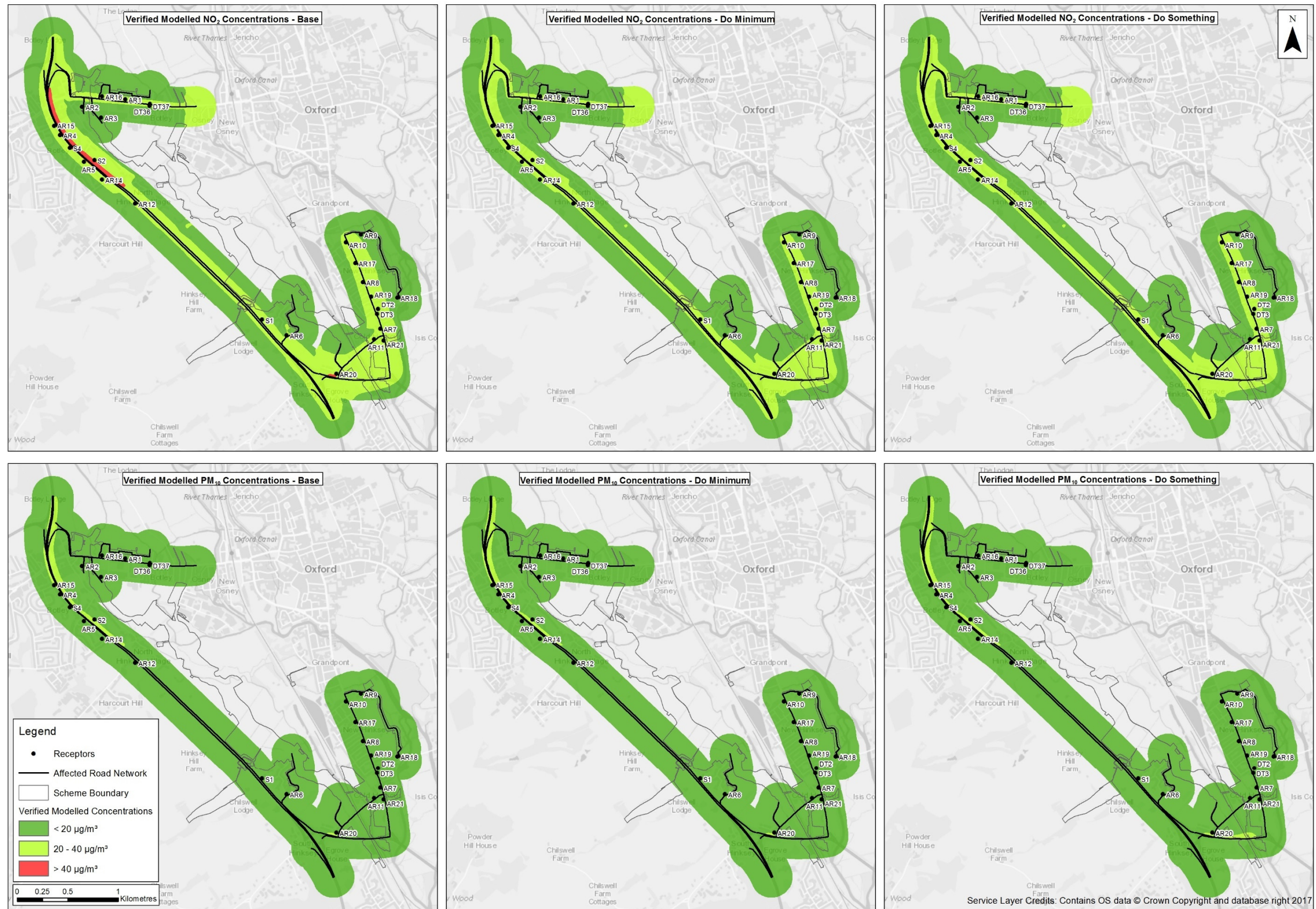


Figure 2: Verified Modelled Results for Base, DM and DS Scenarios

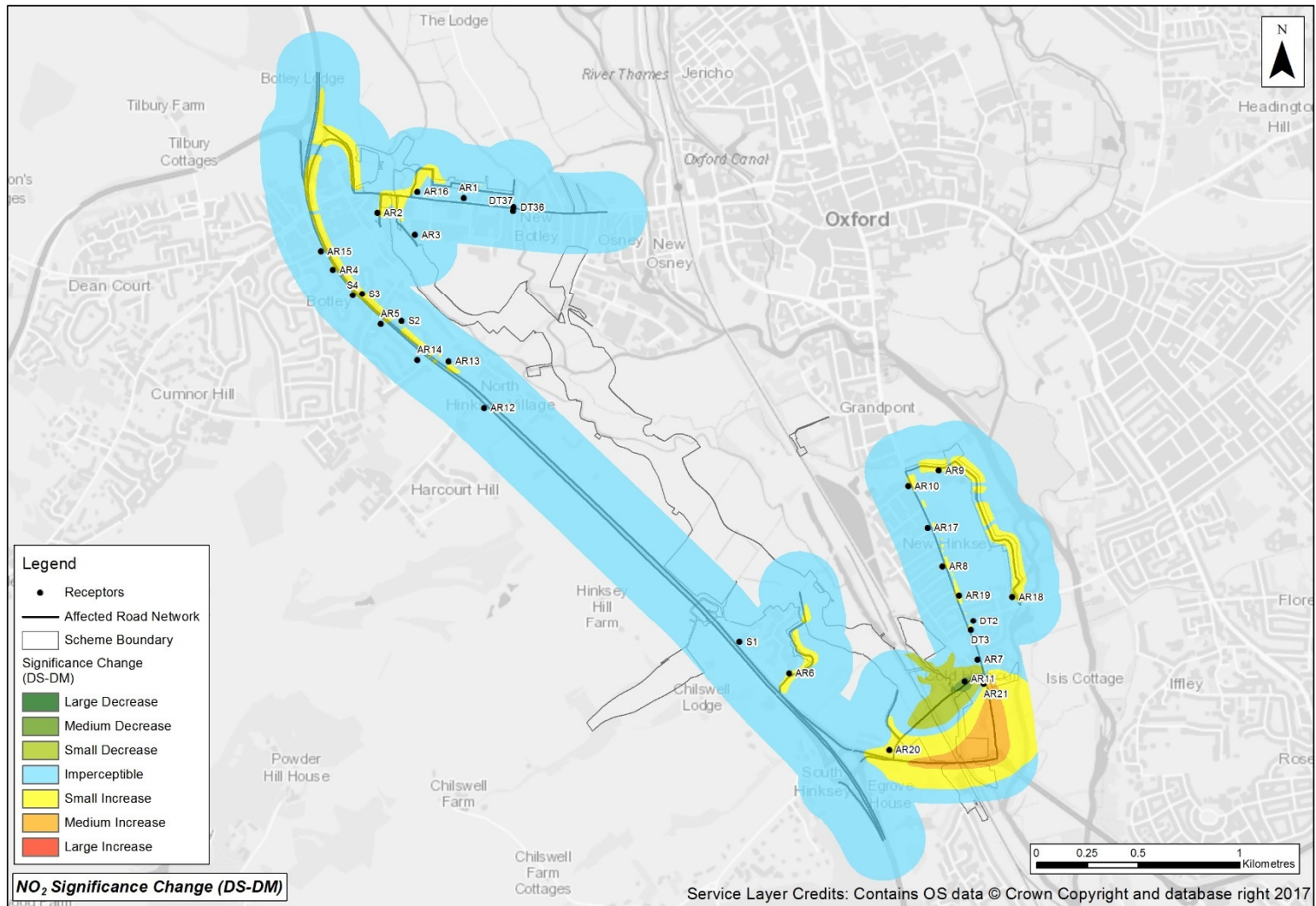


Figure 3: NO₂ Concentration Significance Change

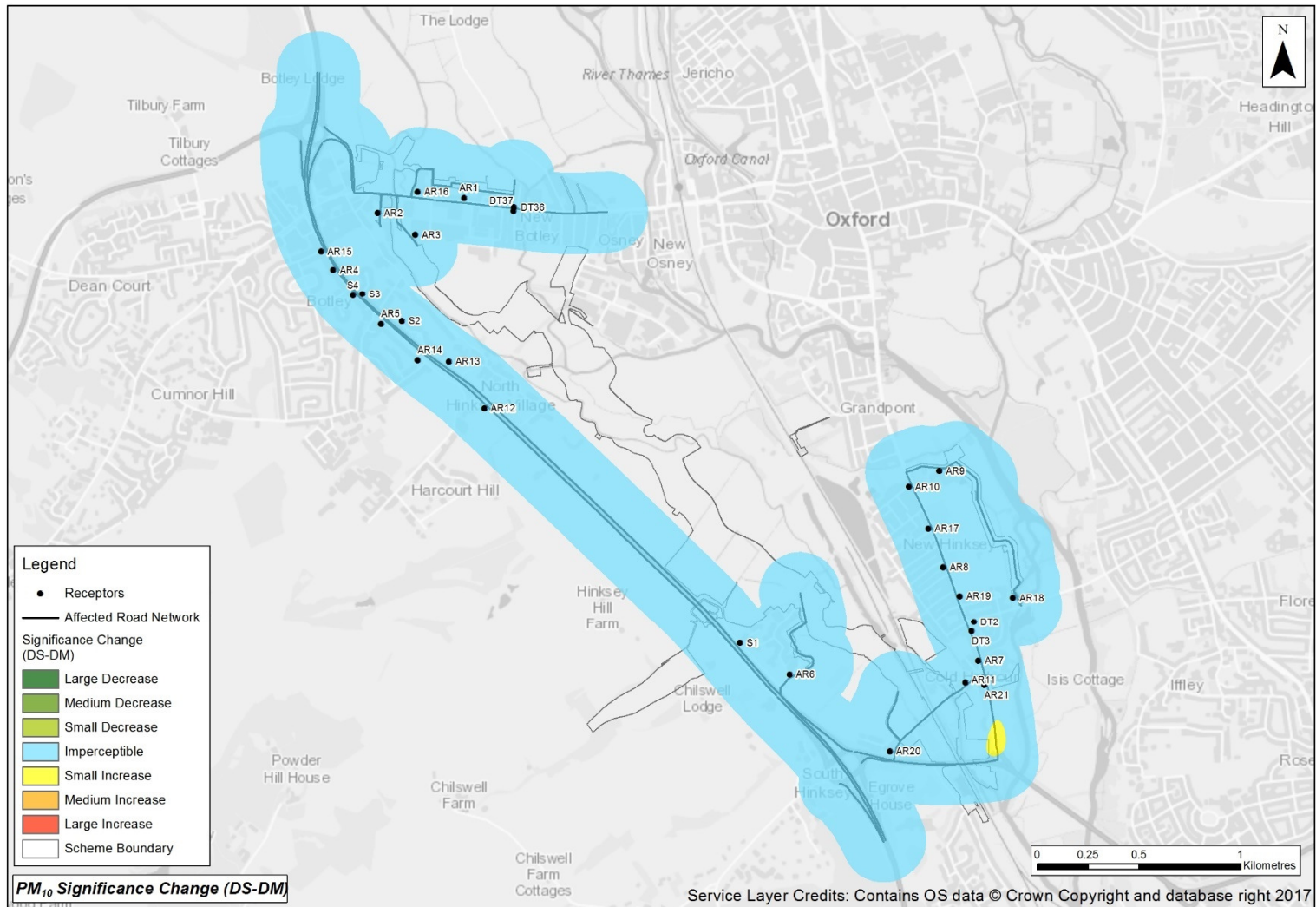


Figure 4: PM₁₀ Concentration Significance Change