



# ENVIRONMENTAL STATEMENT: 6.3 APPENDIX 5-3: DETAILED MODEL POLLUTANT RESULTS

DECARBONISATION

**Cory Decarbonisation Project**

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## 1. INTRODUCTION

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- 1.1.1. This appendix presents the variation in modelled pollutant concentrations across the 5 years of meteorological data used in the assessment of impacts. This appendix supports **Chapter 5: Air Quality (Volume 1)**.

## 2. STACK(S) MODELLING

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### 2.1. HUMAN RECEPTORS

- 2.1.1. The maximum process contribution (PC) for all pollutants in the Baseline scenario for each of the modelled meteorological years (2018-2022) is shown in **Table 1**.
- 2.1.2. The maximum PC for all pollutants in the Proposed Scheme scenario for each of the modelled meteorological years (2018-2022) is shown in **Table 2**.
- 2.1.3. The maximum impact (Proposed Scheme PC – Baseline PC) for all pollutants with the Proposed Scheme for each of the modelled meteorological years (2018-2022) is shown in **Table 3**.
- 2.1.4. The data shown represent the maximum impacts anywhere within the model domain, irrespective of the presence of receptors at that location.
- 2.1.5. The maximum ground level impacts stated in **Table 3** are presented as a percentage of Environmental Assessment Levels (EAL)/air quality standards for the protection of human health.

**Table 1: Maximum Ground Level Concentrations of Pollutants Across the Receptor Grid for Each Modelled Meteorological Year in the Baseline Scenario**

Pollutant	Averaging Period	Unit	Max PC 2018	Max PC 2019	Max PC 2020	Max PC 2021	Max PC 2022
Nitrogen dioxide (NO <sub>2</sub> )	1hr	µg/m <sup>3</sup>	50.6	50.5	50.8	49.4	50.4
	Annual	µg/m <sup>3</sup>	2.4	2.8	3.2	2.4	2.4
PM <sub>10</sub>	24hr	µg/m <sup>3</sup>	0.6	0.7	0.7	0.6	0.6
	Annual	µg/m <sup>3</sup>	0.2	0.2	0.2	0.2	0.2
PM <sub>2.5</sub>	Annual	µg/m <sup>3</sup>	0.2	0.2	0.2	0.2	0.2
Sulphur Dioxide (SO <sub>2</sub> )	15 minutes	µg/m <sup>3</sup>	103.4	103.7	100.9	100.4	102.0
	1hr	µg/m <sup>3</sup>	71.3	70.3	71.0	69.4	69.9
	24hr	µg/m <sup>3</sup>	6.5	6.2	6.7	6.9	6.4
Carbon Monoxide (CO)	8hr	µg/m <sup>3</sup>	53.5	49.1	54.0	49.8	47.1
Hafnium (HF)	1hr	µg/m <sup>3</sup>	0.4	0.4	0.4	0.4	0.4
Hydrogen Chloride (HCl)	1hr	µg/m <sup>3</sup>	26.0	26.6	25.1	26.0	25.0
	Annual	µg/m <sup>3</sup>	0.2	0.3	0.3	0.2	0.2
Ammonia (NH <sub>3</sub> )	1hr	µg/m <sup>3</sup>	2.6	2.7	4.2	2.9	2.6
	Annual	µg/m <sup>3</sup>	0.4	0.4	0.5	0.4	0.4
Arsenic	Annual	µg/m <sup>3</sup>	0.0005	0.0006	0.0007	0.0005	0.0006
Cadmium	Annual	µg/m <sup>3</sup>	0.0007	0.0009	0.0009	0.0007	0.0007

Pollutant	Averaging Period	Unit	Max PC 2018	Max PC 2019	Max PC 2020	Max PC 2021	Max PC 2022
Lead	Annual	µg/m <sup>3</sup>	0.0011	0.0013	0.0014	0.0011	0.0011
Nickel	Annual	µg/m <sup>3</sup>	0.0047	0.0057	0.0061	0.0048	0.0049
Antimony	1hr	µg/m <sup>3</sup>	0.0030	0.0031	0.0029	0.0030	0.0029
	Annual	µg/m <sup>3</sup>	0.0002	0.0003	0.0003	0.0002	0.0003
Chromium III	1hr	µg/m <sup>3</sup>	0.0239	0.0245	0.0231	0.0239	0.0230
	Annual	µg/m <sup>3</sup>	0.0020	0.0024	0.0026	0.0020	0.0020
Chromium VI	Annual	µg/m <sup>3</sup>	0.000003	0.000004	0.000004	0.000003	0.000003
Copper	1hr	µg/m <sup>3</sup>	0.0075	0.0077	0.0073	0.0075	0.0073
	Annual	µg/m <sup>3</sup>	0.0006	0.0007	0.0008	0.0006	0.0006
Manganese	1hr	µg/m <sup>3</sup>	0.0156	0.0160	0.0150	0.0156	0.0150
	Annual	µg/m <sup>3</sup>	0.0013	0.0015	0.0017	0.0013	0.0013
Mercury	1hr	µg/m <sup>3</sup>	0.0087	0.0089	0.0084	0.0087	0.0083
	Annual	µg/m <sup>3</sup>	0.0007	0.0009	0.0009	0.0007	0.0007
Vanadium	24hr	µg/m <sup>3</sup>	0.0009	0.0009	0.0012	0.0010	0.0009
Amine 1	1hr	ng/m <sup>3</sup>	-	-	-	-	-
	24hr	ng/m <sup>3</sup>	-	-	-	-	-
Amine 2	1hr	ng/m <sup>3</sup>	-	-	-	-	-

Pollutant	Averaging Period	Unit	Max PC 2018	Max PC 2019	Max PC 2020	Max PC 2021	Max PC 2022
	24hr	ng/m <sup>3</sup>	-	-	-	-	-
Total Amine	1hr	ng/m <sup>3</sup>	-	-	-	-	-
	24hr	ng/m <sup>3</sup>	-	-	-	-	-
Nitrosamine	Annual	ng/m <sup>3</sup>	-	-	-	-	-
Nitramine	Annual	ng/m <sup>3</sup>	-	-	-	-	-
Total Nitrosamine and Nitramine	Annual	ng/m <sup>3</sup>	-	-	-	-	-
Aldehyde	1hr	µg/m <sup>3</sup>	-	-	-	-	-
	Annual	µg/m <sup>3</sup>	-	-	-	-	-



**Table 2: Maximum Ground Level Concentrations of Pollutants Across the Receptor Grid for Each Modelled Meteorological Year in the Proposed Scheme Scenario**

Pollutant	Averaging Period	Unit	Max PC 2018	Max PC 2019	Max PC 2020	Max PC 2021	Max PC 2022
NO <sub>2</sub>	1hr	µg/m <sup>3</sup>	98.6	100.7	99.2	101.2	103.0
	Annual	µg/m <sup>3</sup>	1.9	2.2	2.4	2.0	1.9
PM <sub>10</sub>	24hr	µg/m <sup>3</sup>	0.4	0.4	0.4	0.4	0.4
	Annual	µg/m <sup>3</sup>	0.1	0.1	0.1	0.1	0.1
PM <sub>2.5</sub>	Annual	µg/m <sup>3</sup>	0.1	0.1	0.1	0.1	0.1
SO <sub>2</sub>	15 minutes	µg/m <sup>3</sup>	198.8	198.7	215.0	201.9	209.1
	1hr	µg/m <sup>3</sup>	138.1	140.5	139.0	143.3	144.7
	24hr	µg/m <sup>3</sup>	5.7	7.8	10.6	6.8	6.4
CO	8hr	µg/m <sup>3</sup>	83.8	80.9	82.1	78.7	90.8
HF	1hr	µg/m <sup>3</sup>	0.9	0.9	0.9	0.9	1.1
HCl	1hr	µg/m <sup>3</sup>	53.1	54.8	51.8	57.0	66.4
	Annual	µg/m <sup>3</sup>	0.2	0.2	0.2	0.2	0.2
NH <sub>3</sub>	1hr	µg/m <sup>3</sup>	2.7	3.4	4.4	2.9	2.9
	Annual	µg/m <sup>3</sup>	0.3	0.3	0.3	0.3	0.3
Arsenic	Annual	µg/m <sup>3</sup>	0.0003	0.0004	0.0004	0.0003	0.0003
Cadmium	Annual	µg/m <sup>3</sup>	0.0004	0.0005	0.0006	0.0005	0.0004
Lead	Annual	µg/m <sup>3</sup>	0.0007	0.0008	0.0008	0.0007	0.0007

Pollutant	Averaging Period	Unit	Max PC 2018	Max PC 2019	Max PC 2020	Max PC 2021	Max PC 2022
Nickel	Annual	µg/m <sup>3</sup>	0.0029	0.0034	0.0037	0.0030	0.0029
Antimony	1hr	µg/m <sup>3</sup>	0.0061	0.0063	0.0060	0.0066	0.0076
	Annual	µg/m <sup>3</sup>	0.0002	0.0002	0.0002	0.0002	0.0002
Chromium III	1hr	µg/m <sup>3</sup>	0.0489	0.0504	0.0477	0.0524	0.0611
	Annual	µg/m <sup>3</sup>	0.0012	0.0014	0.0015	0.0012	0.0012
Chromium VI	Annual	µg/m <sup>3</sup>	0.000002	0.000002	0.000002	0.000002	0.000002
Copper	1hr	µg/m <sup>3</sup>	0.0154	0.0159	0.0150	0.0165	0.0193
	Annual	µg/m <sup>3</sup>	0.0004	0.0004	0.0005	0.0004	0.0004
Manganese	1hr	µg/m <sup>3</sup>	0.0319	0.0329	0.0311	0.0342	0.0398
	Annual	µg/m <sup>3</sup>	0.0008	0.0009	0.0010	0.0008	0.0008
Mercury	1hr	µg/m <sup>3</sup>	0.0177	0.0183	0.0173	0.0190	0.0221
	Annual	µg/m <sup>3</sup>	0.0004	0.0005	0.0006	0.0005	0.0004
Vanadium	24hr	µg/m <sup>3</sup>	0.0008	0.0009	0.0012	0.0008	0.0008
Amine 1	1hr	ng/m <sup>3</sup>	1.64	1.73	1.67	1.68	2.11
	24hr	ng/m <sup>3</sup>	0.43	0.51	0.69	0.45	0.44
Amine 2	1hr	ng/m <sup>3</sup>	1.67	1.75	1.68	1.73	2.14
	24hr	ng/m <sup>3</sup>	0.43	0.51	0.69	0.45	0.45

Pollutant	Averaging Period	Unit	Max PC 2018	Max PC 2019	Max PC 2020	Max PC 2021	Max PC 2022
Total Amine	1hr	ng/m <sup>3</sup>	3.30	3.48	3.35	3.41	4.25
	24hr	ng/m <sup>3</sup>	0.86	1.02	1.39	0.89	0.89
Nitrosamine	Annual	ng/m <sup>3</sup>	0.011	0.013	0.013	0.012	0.012
Nitramine	Annual	ng/m <sup>3</sup>	0.012	0.013	0.015	0.012	0.009
Total Nitrosamine and Nitramine	Annual	ng/m <sup>3</sup>	0.021	0.022	0.025	0.021	0.020
Aldehyde	1hr	µg/m <sup>3</sup>	8.86	9.13	8.64	9.50	11.07
	Annual	µg/m <sup>3</sup>	0.11	0.13	0.14	0.11	0.11

**Table 3: Maximum Ground Level Pollutant Impacts Across the Receptor Grid for Each Modelled Meteorological Year with the Proposed Scheme Scenario**

Pollutant	Averaging Period	Unit	Max Impact 2018	Max Impact 2019	Max Impact 2020	Max Impact 2021	Max Impact 2022	Air Quality Standard	Impact as % of Standard
NO <sub>2</sub>	1hr	µg/m <sup>3</sup>	74.6	75.9	78.5	76.6	81.8	200	40.9%
	Annual	µg/m <sup>3</sup>	1.0	1.2	1.3	1.1	1.1	40	3.3%
PM <sub>10</sub>	24hr	µg/m <sup>3</sup>	0.2	0.2	0.2	0.3	0.2	50	0.5%
	Annual	µg/m <sup>3</sup>	0.0	0.1	0.1	0.1	0.0	40	0.1%
PM <sub>2.5</sub>	Annual	µg/m <sup>3</sup>	0.0	0.1	0.1	0.1	0.0	20	0.3%
SO <sub>2</sub>	15 minutes	µg/m <sup>3</sup>	150.1	148.1	167.7	151.1	164.4	266	63.1%
	1hr	µg/m <sup>3</sup>	105.1	107.5	109.3	109.4	114.8	350	32.8%
	24hr	µg/m <sup>3</sup>	3.6	5.8	8.2	5.5	5.0	125	6.6%
CO	8hr	µg/m <sup>3</sup>	48.0	61.4	59.6	63.8	76.5	10,000	0.8%
HF	1hr	µg/m <sup>3</sup>	0.7	0.7	0.6	0.7	1.0	160	0.6%
HCl	1hr	µg/m <sup>3</sup>	41.8	42.0	37.8	41.6	58.4	750	7.8%
	Annual	µg/m <sup>3</sup>	0.1	0.1	0.1	0.1	0.1	16	0.6%
NH <sub>3</sub>	1hr	µg/m <sup>3</sup>	1.5	2.7	3.6	2.4	2.3	2,500	0.1%
	Annual	µg/m <sup>3</sup>	0.1	0.1	0.2	0.1	0.1	180	0.1%
Arsenic	Annual	µg/m <sup>3</sup>	0.0001	0.0002	0.0002	0.0002	0.0001	0.006	3.0%
Cadmium	Annual	µg/m <sup>3</sup>	0.0002	0.0002	0.0002	0.0002	0.0002	0.005	4.8%

Pollutant	Averaging Period	Unit	Max Impact 2018	Max Impact 2019	Max Impact 2020	Max Impact 2021	Max Impact 2022	Air Quality Standard	Impact as % of Standard
Lead	Annual	µg/m <sup>3</sup>	0.0002	0.0003	0.0004	0.0003	0.0003	0.25	0.1%
Nickel	Annual	µg/m <sup>3</sup>	0.0011	0.0014	0.0016	0.0014	0.0013	0.02	7.9%
Antimony	1hr	µg/m <sup>3</sup>	0.0048	0.0048	0.0043	0.0048	0.0067	150	0.004%
	Annual	µg/m <sup>3</sup>	0.0001	0.0001	0.0001	0.0001	0.0001	5	0.002%
Chromium III	1hr	µg/m <sup>3</sup>	0.0384	0.0386	0.0348	0.0383	0.0537	150	0.036%
	Annual	µg/m <sup>3</sup>	0.0004	0.0006	0.0007	0.0006	0.0005	5	0.013%
Chromium VI	Annual	µg/m <sup>3</sup>	0.000001	0.000001	0.000001	0.000001	0.000001	0.00025	0.4%
Copper	Annual	µg/m <sup>3</sup>	0.0121	0.0122	0.0110	0.0121	0.0169	200	0.008%
	1hr	µg/m <sup>3</sup>	0.0001	0.0002	0.0002	0.0002	0.0002	10	0.002%
Manganese	1hr	µg/m <sup>3</sup>	0.0251	0.0252	0.0227	0.0250	0.0350	1500	0.002%
	Annual	µg/m <sup>3</sup>	0.0003	0.0004	0.0004	0.0004	0.0003	0.15	0.3%
Mercury	1hr	µg/m <sup>3</sup>	0.0139	0.0140	0.0126	0.0139	0.0195	7.5	0.3%
	Annual	µg/m <sup>3</sup>	0.0002	0.0002	0.0002	0.0002	0.0002	0.06	0.4%
Vanadium	24hr	µg/m <sup>3</sup>	0.0004	0.0007	0.0010	0.0006	0.0007	1	0.1%
Amine 1	1hr	ng/m <sup>3</sup>	1.64	1.73	1.67	1.68	2.11	400	0.5%
	24hr	ng/m <sup>3</sup>	0.43	0.51	0.69	0.45	0.44	100	0.7%
Amine 2	1hr	ng/m <sup>3</sup>	1.67	1.75	1.68	1.73	2.14	400	0.5%
	24hr	ng/m <sup>3</sup>	0.43	0.51	0.69	0.45	0.45	100	0.7%

Pollutant	Averaging Period	Unit	Max Impact 2018	Max Impact 2019	Max Impact 2020	Max Impact 2021	Max Impact 2022	Air Quality Standard	Impact as % of Standard
Total Amine	1hr	ng/m <sup>3</sup>	3.30	3.48	3.35	3.41	4.25	400	1.1%
	24hr	ng/m <sup>3</sup>	0.86	1.02	1.39	0.89	0.89	100	1.4%
Nitrosamine	Annual	ng/m <sup>3</sup>	0.011	0.013	0.013	0.012	0.012	0.2	6.5%
Nitramine	Annual	ng/m <sup>3</sup>	0.012	0.013	0.015	0.012	0.009	0.2	7.7%
Total Nitrosamine and Nitramine	Annual	ng/m <sup>3</sup>	0.021	0.022	0.025	0.021	0.020	0.2	12.5%
Aldehyde	1hr	µg/m <sup>3</sup>	8.86	9.13	8.64	9.50	11.07	100	11.1%
	Annual	µg/m <sup>3</sup>	0.11	0.13	0.14	0.11	0.11	5	2.8%

## 2.2. ECOLOGICAL RECEPTORS

- 2.2.1. The maximum PC for annual mean NO<sub>x</sub> in the Baseline and Proposed Scheme scenarios for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 4**.
- 2.2.2. The maximum PC for daily NO<sub>x</sub> in the Baseline and Proposed Scheme scenarios for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 5**.
- 2.2.3. The maximum PC for annual mean NH<sub>3</sub> in the Baseline and Proposed Scheme scenarios for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 6**.
- 2.2.4. The maximum PC for annual mean SO<sub>2</sub> in the Baseline and Proposed Scheme scenarios for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 7**.
- 2.2.5. The maximum PC for nitrogen deposition in the Baseline and Proposed Scheme scenarios for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 8**.
- 2.2.6. The maximum PC for acid deposition in the Baseline and Proposed Scheme scenarios for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 9**.
- 2.2.7. For NO<sub>x</sub>, NH<sub>3</sub>, SO<sub>2</sub>, nitrogen and acid deposition at each designated ecological site, the maximum impact (Proposed Scheme PC – Baseline PC) with the Proposed Scheme each of the modelled meteorological years (2018-2022) is shown within **Table 4** to **Table 9** respectively.
- 2.2.8. The maximum impact at each site has also been presented as a percentage of the pollutant and site-specific critical level/load (CL).
- 2.2.9. The assessment standards for the designated ecological sites can be found in **Table 5-5** within the **Chapter 5: Air Quality (Volume 1)**. Local Nature Reserves within 2km of the Proposed Scheme are included in **Table 4** to **Table 9**.

**Table 4: Modelled Maximum Baseline and Proposed Scheme PC and Impacts at Ecological Receptors for Annual Mean NO<sub>x</sub>**

<b>Ecological Site</b>	<b>Scenario (PC)</b>	<b>Max PC 2018 (µg/m<sup>3</sup>)</b>	<b>Max PC 2019 (µg/m<sup>3</sup>)</b>	<b>Max PC 2020 (µg/m<sup>3</sup>)</b>	<b>Max PC 2021 (µg/m<sup>3</sup>)</b>	<b>Max PC 2022 (µg/m<sup>3</sup>)</b>
<b>Epping Forest - Special Area of Conservation (SAC), Site of Special Scientific Interest (SSSI)</b>	<b>Baseline</b>	0.06	0.05	0.04	0.04	0.07
	<b>Proposed Scheme</b>	0.07	0.05	0.05	0.05	0.08
	<b>Impact</b>	0.01	0.01	0.01	0.01	0.02
	<b>Impact as % of CL</b>	0.03%	0.02%	0.03%	0.03%	0.05%
<b>Ingrebourne Marshes - SSSI</b>	<b>Baseline</b>	0.93	1.14	1.10	1.09	1.02
	<b>Proposed Scheme</b>	1.00	1.21	1.16	1.20	1.09
	<b>Impact</b>	0.07	0.08	0.06	0.11	0.08
	<b>Impact as % of CL</b>	0.24%	0.25%	0.21%	0.37%	0.26%
<b>Inner Thames Marshes - SSSI</b>	<b>Baseline</b>	1.46	1.69	2.02	1.36	1.47
	<b>Proposed Scheme</b>	1.63	1.91	2.19	1.59	1.67
	<b>Impact</b>	0.24	0.28	0.32	0.24	0.24
	<b>Impact as % of CL</b>	0.80%	0.93%	1.07%	0.80%	0.79%
<b>Oxleas Woodlands - SSSI</b>	<b>Baseline</b>	0.21	0.15	0.20	0.25	0.22
	<b>Proposed Scheme</b>	0.25	0.17	0.24	0.30	0.26
	<b>Impact</b>	0.04	0.03	0.04	0.05	0.05
	<b>Impact as % of CL</b>	0.14%	0.10%	0.13%	0.17%	0.15%
<b>West Thurrock Lagoon and Marshes - SSSI</b>	<b>Baseline</b>	0.17	0.22	0.19	0.19	0.20
	<b>Proposed Scheme</b>	0.17	0.23	0.20	0.20	0.21



Ecological Site	Scenario (PC)	Max PC 2018 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2019 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2020 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2021 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2022 ( $\mu\text{g}/\text{m}^3$ )
	Impact	0.01	0.01	0.01	0.01	0.02
	Impact as % of CL	0.02%	0.02%	0.03%	0.04%	0.05%
Crossness - Local Nature Reserve (LNR)	Baseline	1.15	0.58	1.08	1.03	0.90
	Proposed Scheme	0.95	0.62	0.94	1.18	0.95
	Impact	0.23	0.21	0.19	0.39	0.34
	Impact as % of CL	0.77%	0.72%	0.62%	1.31%	1.13%
Lesnes Abbey Woods - LNR	Baseline	0.30	0.18	0.26	0.38	0.32
	Proposed Scheme	0.42	0.26	0.37	0.54	0.44
	Impact	0.12	0.09	0.11	0.18	0.14
	Impact as % of CL	0.40%	0.29%	0.36%	0.59%	0.47%
Rainham Marshes - LNR	Baseline	1.46	1.69	2.02	1.36	1.47
	Proposed Scheme	1.63	1.91	2.19	1.59	1.67
	Impact	0.24	0.28	0.32	0.24	0.24
	Impact as % of CL	0.80%	0.93%	1.07%	0.80%	0.79%

**Table 5: Modelled Maximum Baseline and Proposed PC and Impacts at Ecological Receptors for Daily Mean NO<sub>x</sub> (µg/m<sup>3</sup>)**

Ecological Site	Scenario (PC)	Max PC 2018 (µg/m <sup>3</sup> )	Max PC 2019 (µg/m <sup>3</sup> )	Max PC 2020 (µg/m <sup>3</sup> )	Max PC 2021 (µg/m <sup>3</sup> )	Max PC 2022 (µg/m <sup>3</sup> )
Epping Forest - SAC, SSSI	Baseline	1.10	0.67	0.83	0.90	1.25
	Proposed Scheme	1.48	0.77	0.92	1.36	1.45
	Impact	0.38	0.18	0.30	0.48	0.25
	Impact as % of CL	0.19%	0.09%	0.15%	0.24%	0.13%
Ingrebourne Marshes - SSSI	Baseline	5.92	5.86	5.04	5.72	6.32
	Proposed Scheme	6.82	6.34	5.51	7.01	7.01
	Impact	1.01	0.56	0.52	1.30	0.69
	Impact as % of CL	0.50%	0.28%	0.26%	0.65%	0.35%
Inner Thames Marshes - SSSI	Baseline	10.03	10.20	11.38	9.77	10.55
	Proposed Scheme	10.33	10.08	11.08	9.91	10.43
	Impact	1.59	1.34	1.94	2.03	1.52
	Impact as % of CL	0.79%	0.67%	0.97%	1.02%	0.76%
Oxleas Woodlands - SSSI	Baseline	2.13	2.86	2.32	3.42	2.73
	Proposed Scheme	2.47	3.28	2.60	3.81	3.26
	Impact	0.34	0.44	0.42	0.39	0.54
	Impact as % of CL	0.17%	0.22%	0.21%	0.20%	0.27%
West Thurrock Lagoon and Marshes - SSSI	Baseline	2.48	2.42	2.30	2.22	2.26
	Proposed Scheme	2.43	2.54	2.21	2.02	2.42

Ecological Site	Scenario (PC)	Max PC 2018 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2019 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2020 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2021 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2022 ( $\mu\text{g}/\text{m}^3$ )
	Impact	0.06	0.13	0.09	-0.11	0.24
	Impact as % of CL	0.03%	0.06%	0.04%	-0.05%	0.12%
Crossness - LNR	Baseline	27.24	15.80	26.20	19.20	17.10
	Proposed Scheme	15.83	18.73	19.03	26.99	19.19
	Impact	5.39	8.40	5.66	12.89	8.95
	Impact as % of CL	2.70%	4.20%	2.83%	6.45%	4.47%
Lesnes Abbey Woods - LNR	Baseline	5.58	4.21	3.61	6.68	4.23
	Proposed Scheme	8.50	5.85	6.11	9.61	5.96
	Impact	3.24	1.88	2.64	2.99	2.14
	Impact as % of CL	1.62%	0.94%	1.32%	1.49%	1.07%
Rainham Marshes - LNR	Baseline	10.03	10.20	11.03	9.77	10.55
	Proposed Scheme	10.33	9.97	10.99	9.91	10.20
	Impact	1.59	1.33	1.94	2.03	1.52
	Impact as % of CL	0.79%	0.66%	0.97%	1.02%	0.76%

**Table 6: Modelled Maximum Baseline and Proposed Scheme PC and Impacts at Ecological Receptors for Annual Mean NH<sub>3</sub> (µg/m<sup>3</sup>)**

Ecological Site	Scenario (PC)	Max PC 2018 (µg/m <sup>3</sup> )	Max PC 2019 (µg/m <sup>3</sup> )	Max PC 2020 (µg/m <sup>3</sup> )	Max PC 2021 (µg/m <sup>3</sup> )	Max PC 2022 (µg/m <sup>3</sup> )
Epping Forest - SAC, SSSI	Baseline	0.01	0.00	0.00	0.00	0.01
	Proposed Scheme	0.01	0.01	0.01	0.00	0.01
	Impact	0.00	0.00	0.00	0.00	0.00
	Impact as % of CL	0.10%	0.07%	0.08%	0.09%	0.14%
Ingrebourne Marshes - SSSI	Baseline	0.09	0.11	0.11	0.11	0.10
	Proposed Scheme	0.10	0.12	0.11	0.12	0.11
	Impact	0.01	0.01	0.01	0.01	0.01
	Impact as % of CL	0.60%	0.65%	0.56%	0.91%	0.64%
Inner Thames Marshes - SSSI	Baseline	0.14	0.16	0.19	0.13	0.14
	Proposed Scheme	0.16	0.18	0.21	0.15	0.16
	Impact	0.03	0.03	0.03	0.03	0.02
	Impact as % of CL	0.84%	0.99%	1.13%	0.85%	0.83%
Oxleas Woodlands - SSSI	Baseline	0.02	0.01	0.02	0.02	0.02
	Proposed Scheme	0.02	0.02	0.02	0.03	0.03
	Impact	0.00	0.00	0.00	0.00	0.00
	Impact as % of CL	0.39%	0.29%	0.39%	0.49%	0.45%
West Thurrock Lagoon and Marshes - SSSI	Baseline	0.02	0.02	0.02	0.02	0.02
	Proposed Scheme	0.02	0.02	0.02	0.02	0.02

Ecological Site	Scenario (PC)	Max PC 2018 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2019 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2020 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2021 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2022 ( $\mu\text{g}/\text{m}^3$ )
	Impact	0.00	0.00	0.00	0.00	0.00
	Impact as % of CL	0.01%	0.01%	0.02%	0.03%	0.04%
Crossness - LNR	Baseline	0.11	0.05	0.10	0.10	0.09
	Proposed Scheme	0.10	0.06	0.10	0.12	0.10
	Impact	0.03	0.02	0.03	0.05	0.04
	Impact as % of CL	2.80%	2.33%	2.68%	4.79%	3.98%
Lesnes Abbey Woods - LNR	Baseline	0.03	0.02	0.03	0.04	0.03
	Proposed Scheme	0.04	0.03	0.04	0.05	0.04
	Impact	0.01	0.01	0.01	0.02	0.01
	Impact as % of CL	1.17%	0.88%	1.11%	1.76%	1.40%
Rainham Marshes - LNR	Baseline	0.14	0.16	0.19	0.13	0.14
	Proposed Scheme	0.16	0.18	0.21	0.15	0.16
	Impact	0.03	0.03	0.03	0.02	0.02
	Impact as % of CL	0.84%	0.99%	1.13%	0.83%	0.83%

**Table 7: Modelled Maximum Baseline and Proposed Scheme PC and Impacts at Ecological Receptors for Annual Mean SO<sub>2</sub> (µg/m<sup>3</sup>)**

Ecological Site	Scenario (PC)	Max PC 2018 (µg/m <sup>3</sup> )	Max PC 2019 (µg/m <sup>3</sup> )	Max PC 2020 (µg/m <sup>3</sup> )	Max PC 2021 (µg/m <sup>3</sup> )	Max PC 2022 (µg/m <sup>3</sup> )
Epping Forest - SAC, SSSI	Baseline	0.02	0.01	0.01	0.01	0.02
	Proposed Scheme	0.02	0.01	0.01	0.01	0.02
	Impact	0.00	0.00	0.00	0.00	0.00
	Impact as % of CL	0.03%	0.02%	0.02%	0.03%	0.04%
Ingrebourne Marshes - SSSI	Baseline	0.26	0.32	0.31	0.31	0.28
	Proposed Scheme	0.28	0.33	0.32	0.33	0.30
	Impact	0.02	0.02	0.02	0.02	0.02
	Impact as % of CL	0.16%	0.18%	0.15%	0.24%	0.18%
Inner Thames Marshes - SSSI	Baseline	0.38	0.44	0.53	0.36	0.38
	Proposed Scheme	0.44	0.51	0.59	0.43	0.45
	Impact	0.07	0.09	0.10	0.07	0.07
	Impact as % of CL	0.36%	0.43%	0.49%	0.36%	0.35%
Oxleas Woodlands - SSSI	Baseline	0.06	0.04	0.05	0.07	0.06
	Proposed Scheme	0.07	0.05	0.06	0.08	0.07
	Impact	0.01	0.01	0.01	0.01	0.01
	Impact as % of CL	0.11%	0.08%	0.11%	0.14%	0.12%

Ecological Site	Scenario (PC)	Max PC 2018 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2019 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2020 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2021 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2022 ( $\mu\text{g}/\text{m}^3$ )
Crossness - LNR	Baseline	0.29	0.15	0.28	0.28	0.24
	Proposed Scheme	0.28	0.17	0.28	0.34	0.27
	Impact	0.08	0.07	0.08	0.14	0.12
	Impact as % of CL	0.83%	0.68%	0.81%	1.41%	1.17%
Lesnes Abbey Woods - LNR	Baseline	0.08	0.05	0.07	0.10	0.09
	Proposed Scheme	0.11	0.07	0.10	0.15	0.12
	Impact	0.03	0.02	0.03	0.05	0.04
	Impact as % of CL	0.33%	0.25%	0.31%	0.50%	0.40%
Rainham Marshes - LNR	Baseline	0.38	0.44	0.53	0.36	0.38
	Proposed Scheme	0.44	0.51	0.59	0.43	0.45
	Impact	0.07	0.09	0.10	0.07	0.07
	Impact as % of CL	0.36%	0.43%	0.49%	0.35%	0.35%

**Table 8: Modelled Maximum Baseline and Proposed Scheme PC and Impacts at Ecological Receptors for Annual Mean Nitrogen Deposition (kg/N/ha/yr)**

Ecological Site	Scenario (PC)	Max PC 2018 (kg/N/ha/yr)	Max PC 2019 (kg/N/ha/yr)	Max PC 2020 (kg/N/ha/yr)	Max PC 2021 (kg/N/ha/yr)	Max PC 2022 (kg/N/ha/yr)
Epping Forest - SAC, SSSI	Baseline	0.06	0.05	0.04	0.04	0.06
	Proposed Scheme	0.08	0.06	0.06	0.07	0.08
	Impact	0.03	0.02	0.03	0.04	0.03
	Impact as % of CL	0.57%	0.39%	0.52%	0.70%	0.67%
Ingrebourne Marshes - SSSI	Baseline	0.58	0.71	0.68	0.68	0.63
	Proposed Scheme	0.63	0.76	0.73	0.75	0.69
	Impact	0.06	0.06	0.06	0.08	0.06
	Impact as % of CL	0.39%	0.40%	0.37%	0.55%	0.43%
Inner Thames Marshes - SSSI	Baseline	0.86	1.00	1.19	0.81	0.87
	Proposed Scheme	1.02	1.19	1.37	0.99	1.04
	Impact	0.20	0.24	0.27	0.20	0.20
	Impact as % of CL	2.00%	2.38%	2.69%	1.98%	2.01%
Oxleas Woodlands - SSSI	Baseline	0.21	0.15	0.19	0.25	0.21
	Proposed Scheme	0.28	0.20	0.26	0.34	0.29
	Impact	0.09	0.06	0.09	0.11	0.09
	Impact as % of CL	0.62%	0.38%	0.60%	0.73%	0.62%
	Baseline	0.10	0.14	0.12	0.11	0.12



Ecological Site	Scenario (PC)	Max PC 2018 (kg/N/ha/yr)	Max PC 2019 (kg/N/ha/yr)	Max PC 2020 (kg/N/ha/yr)	Max PC 2021 (kg/N/ha/yr)	Max PC 2022 (kg/N/ha/yr)
West Thurrock Lagoon and Marshes - SSSI	Proposed Scheme	0.12	0.15	0.13	0.13	0.14
	Impact	0.02	0.02	0.02	0.03	0.03
	Impact as % of CL	0.21%	0.15%	0.20%	0.28%	0.27%
Crossness - LNR	Baseline	0.67	0.34	0.63	0.63	0.53
	Proposed Scheme	0.65	0.43	0.65	0.77	0.64
	Impact	0.20	0.18	0.21	0.32	0.28
	Impact as % of CL	2.04%	1.80%	2.06%	3.21%	2.76%
Lesnes Abbey Woods - LNR	Baseline	0.29	0.17	0.25	0.37	0.31
	Proposed Scheme	0.46	0.33	0.44	0.58	0.49
	Impact	0.19	0.18	0.21	0.23	0.21
	Impact as % of CL	1.91%	1.78%	2.14%	2.33%	2.06%
Rainham Marshes - LNR	Baseline	0.86	1.00	1.19	0.81	0.87
	Proposed Scheme	1.02	1.19	1.37	0.99	1.04
	Impact	0.20	0.24	0.27	0.20	0.20
	Impact as % of CL	2.00%	2.38%	2.69%	1.98%	2.01%

**Table 9: Modelled Maximum Baseline and Proposed Scheme PC and Impacts at Ecological Receptors for Annual Mean Acid Deposition**

Ecological Site	Scenario (PC)	Max PC 2018 (keq/ha/yr)	Max PC 2019 (keq/ha/yr)	Max PC 2020 (keq/ha/yr)	Max PC 2021 (keq/ha/yr)	Max PC 2022 (keq/ha/yr)
<b>Epping Forest - SAC, SSSI</b>	<b>Baseline</b>	0.01	0.01	0.01	0.01	0.01
	<b>Proposed Scheme</b>	0.01	0.01	0.01	0.01	0.01
	<b>Impact</b>	0.00	0.00	0.00	0.00	0.00
	<b>Impact as % of CL</b>	0.23%	0.16%	0.21%	0.29%	0.27%
<b>Oxleas Woodlands - SSSI</b>	<b>Baseline</b>	0.03	0.02	0.03	0.03	0.03
	<b>Proposed Scheme</b>	0.04	0.03	0.04	0.05	0.04
	<b>Impact</b>	0.01	0.01	0.01	0.02	0.01
	<b>Impact as % of CL</b>	0.48%	0.29%	0.47%	0.57%	0.48%

### 3. MARINE VESSEL MODELLING

#### 3.1. CONSTRUCTION PHASE

##### HUMAN RECEPTORS

- 3.1.1. The maximum PC from marine vessels during construction for all pollutants for each of the modelled meteorological years (2018-2022) is shown in **Table 10**.
- 3.1.2. The data shown represent the maximum impacts anywhere within the model domain, irrespective of the presence of receptors at that location.

**Table 10: Maximum Ground Level Pollutant Impacts across the Receptor Grid for Each Modelled Meteorological Year from Marine Vessels during Construction**

Pollutant	Averaging Period	Max PC 2018 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2019 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2020 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2021 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2022 ( $\mu\text{g}/\text{m}^3$ )
NO <sub>2</sub>	1hr	9.32	9.43	9.80	10.17	10.20
PM <sub>10</sub>	24hr	0.10	0.08	0.11	0.09	0.12
SO <sub>2</sub>	15 minutes	0.81	0.80	0.88	0.84	0.92
	1hr	0.70	0.73	0.76	0.80	0.81
	24hr	0.13	0.14	0.16	0.14	0.15

## ECOLOGICAL RECEPTORS

3.1.3. The maximum PC from marine vessels during construction for daily NO<sub>x</sub> for each of the modelled meteorological years (2018-2022) at each of the designated is shown in **Table 11**. The maximum impact at each site has also been presented as a percentage of the critical level (CL).

**Table 11: Modelled Maximum Marine Vessel Impacts at Ecological Receptors for Daily Mean NO<sub>x</sub> during Construction**

Ecological Site	Scenario	Max PC 2018 (µg/m <sup>3</sup> )	Max PC 2019 (µg/m <sup>3</sup> )	Max PC 2020 (µg/m <sup>3</sup> )	Max PC 2021 (µg/m <sup>3</sup> )	Max PC 2022 (µg/m <sup>3</sup> )
Epping Forest - SAC, SSSI	Impact	0.09	0.05	0.10	0.07	0.12
	Impact as % of CL	0.04%	0.02%	0.05%	0.04%	0.06%
Ingrebourne Marshes - SSSI	Impact	0.72	0.73	0.76	0.69	0.78
	Impact as % of CL	0.36%	0.36%	0.38%	0.34%	0.39%
Inner Thames Marshes - SSSI	Impact	1.20	1.22	1.38	1.54	1.94
	Impact as % of CL	0.60%	0.61%	0.69%	0.77%	0.97%
Oxleas Woodlands - SSSI	Impact	0.17	0.17	0.23	0.22	0.18
	Impact as % of CL	0.09%	0.08%	0.11%	0.11%	0.09%
West Thurrock Lagoon and Marshes - SSSI	Impact	0.55	0.43	0.51	0.36	0.64
	Impact as % of CL	0.27%	0.21%	0.25%	0.18%	0.32%
Crossness - LNR	Impact	4.03	3.62	4.77	4.45	4.47
	Impact as % of CL	2.01%	1.81%	2.39%	2.23%	2.23%
Lesnes Abbey Woods - LNR	Impact	0.46	0.36	0.42	0.46	0.45
	Impact as % of CL	0.23%	0.18%	0.21%	0.23%	0.23%
Rainham Marshes - LNR	Impact	1.20	1.22	1.38	1.54	1.94
	Impact as % of CL	0.60%	0.61%	0.69%	0.77%	0.97%

## 3.2. OPERATION PHASE

### HUMAN RECEPTORS

- 3.2.1. The maximum PC from marine vessels during operation for all pollutants for each of the modelled meteorological years (2018-2022) is shown in **Table 12**.
- 3.2.2. The data shown represent the maximum impacts anywhere within the model domain, irrespective of the presence of receptors at that location.

**Table 12: Maximum Ground Level Pollutant Impacts across the Receptor Grid for Each Modelled Meteorological Year from Marine Vessels during Operation**

Pollutant	Averaging Period	Max PC 2018 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2019 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2020 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2021 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2022 ( $\mu\text{g}/\text{m}^3$ )
NO <sub>2</sub>	1hr	4.81	4.92	5.09	4.93	4.95
	Annual	0.53	0.62	0.64	0.58	0.56
PM <sub>10</sub>	24hr	0.46	0.47	0.46	0.46	0.46
	Annual	0.07	0.08	0.08	0.07	0.07
PM <sub>2.5</sub>	Annual	0.07	0.08	0.08	0.07	0.07
SO <sub>2</sub>	15 minutes	1.55	1.57	1.66	1.71	1.69
	1hr	1.07	1.13	1.13	1.13	1.18
	24hr	0.68	0.70	0.70	0.67	0.69

## ECOLOGICAL RECEPTORS

- 3.2.3. The maximum PC from marine vessels during operation for annual mean NO<sub>x</sub> for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 13**.
- 3.2.4. The maximum PC from marine vessels during operation for daily NO<sub>x</sub> for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 14**.
- 3.2.5. The maximum PC from marine vessels during operation for annual mean SO<sub>2</sub> for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 15**.
- 3.2.6. The maximum PC from marine vessels during operation for nitrogen deposition for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 16**.  
The maximum PC from marine vessels during operation for acid deposition for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 17**.
- 3.2.7. The maximum impact at each site has also been presented as a percentage of the pollutant and site-specific critical level/load (CL).

**Table 13: Modelled Maximum Marine Vessel Impacts at Ecological Receptors for Annual Mean NO<sub>x</sub> during Operation**

Ecological Site	Scenario	Max PC 2018 (µg/m <sup>3</sup> )	Max PC 2019 (µg/m <sup>3</sup> )	Max PC 2020 (µg/m <sup>3</sup> )	Max PC 2021 (µg/m <sup>3</sup> )	Max PC 2022 (µg/m <sup>3</sup> )
Epping Forest - SAC, SSSI	Impact	0.002	0.002	0.002	0.001	0.002
	Impact as % of CL	0.005%	0.004%	0.004%	0.004%	0.005%
Ingrebourne Marshes - SSSI	Impact	0.042	0.049	0.048	0.051	0.047
	Impact as % of CL	0.105%	0.122%	0.119%	0.128%	0.118%
Inner Thames Marshes - SSSI	Impact	0.082	0.093	0.102	0.093	0.094
	Impact as % of CL	0.206%	0.233%	0.255%	0.233%	0.234%
Oxleas Woodlands - SSSI	Impact	0.008	0.007	0.008	0.010	0.009
	Impact as % of CL	0.020%	0.017%	0.019%	0.024%	0.023%
West Thurrock Lagoon and Marshes - SSSI	Impact	0.021	0.026	0.025	0.025	0.026
	Impact as % of CL	0.052%	0.064%	0.062%	0.062%	0.064%
Crossness - LNR	Impact	0.155	0.133	0.130	0.153	0.143
	Impact as % of CL	0.388%	0.332%	0.325%	0.382%	0.356%
Lesnes Abbey Woods - LNR	Impact	0.022	0.019	0.020	0.026	0.024
	Impact as % of CL	0.056%	0.048%	0.050%	0.064%	0.061%
Rainham Marshes - LNR	Impact	0.082	0.093	0.102	0.093	0.090
	Impact as % of CL	0.206%	0.233%	0.255%	0.233%	0.226%

**Table 14: Modelled Maximum Marine Vessel Impacts at Ecological Receptors for Daily Mean NO<sub>x</sub> during Operation**

Ecological Site	Scenario	Max PC 2018 (µg/m <sup>3</sup> )	Max PC 2019 (µg/m <sup>3</sup> )	Max PC 2020 (µg/m <sup>3</sup> )	Max PC 2021 (µg/m <sup>3</sup> )	Max PC 2022 (µg/m <sup>3</sup> )
Epping Forest - SAC, SSSI	Impact	0.072	0.042	0.053	0.060	0.068
	Impact as % of CL	0.04%	0.02%	0.03%	0.03%	0.03%
Ingrebourne Marshes - SSSI	Impact	0.403	0.412	0.424	0.387	0.448
	Impact as % of CL	0.20%	0.21%	0.21%	0.19%	0.22%
Inner Thames Marshes - SSSI	Impact	0.636	0.578	0.632	0.652	0.689
	Impact as % of CL	0.32%	0.29%	0.32%	0.33%	0.34%
Oxleas Woodlands - SSSI	Impact	0.106	0.118	0.155	0.150	0.127
	Impact as % of CL	0.05%	0.06%	0.08%	0.07%	0.06%
West Thurrock Lagoon and Marshes - SSSI	Impact	0.355	0.275	0.332	0.237	0.410
	Impact as % of CL	0.18%	0.14%	0.17%	0.12%	0.20%
Crossness - LNR	Impact	2.292	1.899	1.906	1.888	2.040
	Impact as % of CL	1.15%	0.95%	0.95%	0.94%	1.02%
Lesnes Abbey Woods - LNR	Impact	0.272	0.249	0.326	0.349	0.332
	Impact as % of CL	0.14%	0.12%	0.16%	0.17%	0.17%
Rainham Marshes - LNR	Impact	0.636	0.578	0.600	0.615	0.686
	Impact as % of CL	0.32%	0.29%	0.30%	0.31%	0.34%



**Table 15: Modelled Maximum Marine Vessel Impacts at Ecological Receptors for Annual Mean SO<sub>2</sub> during Operation**

Ecological Site	Scenario	Max PC 2018 (µg/m <sup>3</sup> )	Max PC 2019 (µg/m <sup>3</sup> )	Max PC 2020 (µg/m <sup>3</sup> )	Max PC 2021 (µg/m <sup>3</sup> )	Max PC 2022 (µg/m <sup>3</sup> )
Epping Forest - SAC, SSSI	Impact	0.0002	0.0002	0.0002	0.0002	0.0002
	Impact as % of CL	0.0020%	0.0016%	0.0016%	0.0015%	0.0023%
Ingrebourne Marshes - SSSI	Impact	0.005	0.006	0.006	0.006	0.005
	Impact as % of CL	0.049%	0.057%	0.055%	0.060%	0.054%
Inner Thames Marshes - SSSI	Impact	0.009	0.010	0.011	0.010	0.009
	Impact as % of CL	0.044%	0.050%	0.056%	0.049%	0.047%
Oxleas Woodlands - SSSI	Impact	0.001	0.001	0.001	0.001	0.001
	Impact as % of CL	0.0084%	0.0072%	0.0080%	0.0103%	0.0097%
West Thurrock Lagoon and Marshes - SSSI	Impact	0.002	0.002	0.002	0.002	0.002
	Impact as % of CL	0.0084%	0.0105%	0.0101%	0.0100%	0.0104%
Crossness - LNR	Impact	0.018	0.015	0.015	0.017	0.015
	Impact as % of CL	0.175%	0.145%	0.149%	0.174%	0.152%
Lesnes Abbey Woods - LNR	Impact	0.002	0.002	0.002	0.003	0.003
	Impact as % of CL	0.0218%	0.0190%	0.0205%	0.0271%	0.0253%
Rainham Marshes - LNR	Impact	0.009	0.010	0.011	0.010	0.009
	Impact as % of CL	0.044%	0.050%	0.056%	0.049%	0.047%

**Table 16: Modelled Maximum Marine Vessel Impacts at Ecological Receptors for Nitrogen Deposition during Operation**

<b>Ecological Site</b>	<b>Scenario</b>	<b>Max PC 2018 (kg/N/ha/yr)</b>	<b>Max PC 2019 (kg/N/ha/yr)</b>	<b>Max PC 2020 (kg/N/ha/yr)</b>	<b>Max PC 2021 (kg/N/ha/yr)</b>	<b>Max PC 2022 (kg/N/ha/yr)</b>
<b>Epping Forest - SAC, SSSI</b>	<b>Impact</b>	0.0004	0.0003	0.0003	0.0003	0.0004
	<b>Impact as % of CL</b>	0.007%	0.006%	0.006%	0.006%	0.009%
<b>Ingrebourne Marshes - SSSI</b>	<b>Impact</b>	0.004	0.005	0.005	0.005	0.005
	<b>Impact as % of CL</b>	0.028%	0.033%	0.032%	0.034%	0.032%
<b>Inner Thames Marshes - SSSI</b>	<b>Impact</b>	0.008	0.009	0.010	0.009	0.009
	<b>Impact as % of CL</b>	0.083%	0.094%	0.103%	0.094%	0.094%
<b>Oxleas Woodlands - SSSI</b>	<b>Impact</b>	0.002	0.001	0.002	0.002	0.002
	<b>Impact as % of CL</b>	0.011%	0.009%	0.010%	0.013%	0.012%
<b>West Thurrock Lagoon and Marshes - SSSI</b>	<b>Impact</b>	0.002	0.003	0.003	0.002	0.003
	<b>Impact as % of CL</b>	0.021%	0.026%	0.025%	0.025%	0.026%
<b>Crossness - LNR</b>	<b>Impact</b>	0.016	0.013	0.013	0.015	0.014
	<b>Impact as % of CL</b>	0.156%	0.134%	0.131%	0.154%	0.143%
<b>Lesnes Abbey Woods - LNR</b>	<b>Impact</b>	0.004	0.004	0.004	0.005	0.005
	<b>Impact as % of CL</b>	0.045%	0.039%	0.041%	0.052%	0.049%
<b>Rainham Marshes - LNR</b>	<b>Impact</b>	0.008	0.009	0.010	0.009	0.009
	<b>Impact as % of CL</b>	0.083%	0.094%	0.103%	0.094%	0.091%

**Table 17: Modelled Maximum Marine Vessel Impacts at Ecological Receptors for Acid Deposition during Operation**

Ecological Site	Scenario	Max PC 2018 (keq/ha/yr)	Max PC 2019 (keq/ha/yr)	Max PC 2020 (keq/ha/yr)	Max PC 2021 (keq/ha/yr)	Max PC 2022 (keq/ha/yr)
Epping Forest - SAC, SSSI	Impact	0.000073	0.000060	0.000060	0.000056	0.000085
	Impact as % of CL	0.001%	0.001%	0.001%	0.001%	0.002%
Oxleas Woodlands - SSSI	Impact	0.00031	0.00027	0.00030	0.00038	0.00036
	Impact as % of CL	0.002%	0.002%	0.002%	0.003%	0.002%

## 4. FULL PROPOSED SCHEME

### 4.1. CONSTRUCTION PHASE

#### HUMAN RECEPTORS

- 4.1.1. The maximum Full Proposed Scheme PC during construction for all pollutants for each of the modelled meteorological years (2018-2022) is shown in **Table 18**.
- 4.1.2. The maximum Full Proposed Scheme impact during construction for all pollutants for each of the modelled meteorological years (2018-2022) is shown in **Table 19**.
- 4.1.3. The data shown represent the maximum impacts anywhere within the model domain, irrespective of the presence of receptors at that location.

**Table 18: Maximum Ground Level Full Proposed Scheme Process Contribution Across the Receptor Grid for each Modelled Meteorological Year during Construction**

Pollutant	Averaging Period	Max PC 2018 (µg/m <sup>3</sup> )	Max PC 2019 (µg/m <sup>3</sup> )	Max PC 2020 (µg/m <sup>3</sup> )	Max PC 2021 (µg/m <sup>3</sup> )	Max PC 2022 (µg/m <sup>3</sup> )
NO <sub>2</sub>	1hr	58.5	58.4	55.7	55.1	59.5
PM <sub>10</sub>	24hr	0.6	0.7	0.8	0.7	0.7
SO <sub>2</sub>	15 minutes	104.3	104.6	101.4	101.4	103.0
	1hr	71.6	70.9	71.4	69.8	70.6
	24hr	6.6	6.3	6.8	7.0	6.5

**Table 19: Maximum Ground Level Full Proposed Scheme Impact across the Receptor Grid for each Modelled Meteorological Year during Construction**

Pollutant	Averaging Period	Max Impact 2018 (µg/m <sup>3</sup> )	Max Impact 2019 (µg/m <sup>3</sup> )	Max Impact 2020 (µg/m <sup>3</sup> )	Max Impact 2021 (µg/m <sup>3</sup> )	Max Impact 2022 (µg/m <sup>3</sup> )	Air Quality Standard	Max Impact as % of Standard
NO <sub>2</sub>	1hr	9.32	9.43	9.80	10.17	10.20	200	5.1%
PM <sub>10</sub>	24hr	0.10	0.08	0.11	0.09	0.12	40	0.3%
SO <sub>2</sub>	15 minutes	1.09	1.08	1.18	1.12	1.24	266	0.5%
	1hr	0.70	0.73	0.76	0.80	0.81	350	0.2%
	24hr	0.13	0.14	0.16	0.14	0.15	125	0.1%

## ECOLOGICAL RECEPTORS

- 4.1.4. The maximum Full Proposed Scheme PC during construction for daily NO<sub>x</sub> during construction for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 20**.
- 4.1.5. The maximum impact at each site has also been presented as a percentage of the pollutant and site-specific critical level/load (CL).

**Table 20: Modelled Maximum Baseline and Full Proposed Scheme PC and Impacts at Ecological Receptors for Daily Mean NO<sub>x</sub> during Construction**

Ecological Site	Scenario (PC)	Max PC 2018 (µg/m <sup>3</sup> )	Max PC 2019 (µg/m <sup>3</sup> )	Max PC 2020 (µg/m <sup>3</sup> )	Max PC 2021 (µg/m <sup>3</sup> )	Max PC 2022 (µg/m <sup>3</sup> )
Epping Forest - SAC, SSSI	Baseline	1.1	0.7	0.8	0.9	1.3
	Proposed Scheme	1.2	0.7	0.9	1.0	1.4
	Impact	0.1	0.1	0.1	0.1	0.1
	Impact as % of CL	0.1%	0.0%	0.0%	0.0%	0.1%
Grays Thurrock Chalk Pits - SSSI	Baseline	1.3	1.0	0.9	1.1	1.4
	Proposed Scheme	1.4	1.2	1.0	1.3	1.5
	Impact	0.1	0.1	0.1	0.2	0.2
	Impact as % of CL	0.0%	0.1%	0.1%	0.1%	0.1%
Ingrebourne Marshes - SSSI	Baseline	5.9	5.9	5.0	5.7	6.3
	Proposed Scheme	6.6	6.6	5.8	6.4	7.1
	Impact	0.7	0.7	0.8	0.7	0.8
	Impact as % of CL	0.4%	0.4%	0.4%	0.3%	0.4%
Inner Thames Marshes - SSSI	Baseline	10.0	10.2	11.4	9.8	10.5
	Proposed Scheme	11.2	11.3	12.5	11.0	11.8
	Impact	1.2	1.2	1.4	1.5	1.9
	Impact as % of CL	0.6%	0.6%	0.7%	0.8%	1.0%
Oxleas Woodlands - SSSI	Baseline	2.1	2.9	2.3	3.4	2.7
	Proposed Scheme	2.3	3.0	2.5	3.6	2.9

Ecological Site	Scenario (PC)	Max PC 2018 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2019 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2020 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2021 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2022 ( $\mu\text{g}/\text{m}^3$ )
	Impact	0.2	0.2	0.2	0.2	0.2
	Impact as % of CL	0.1%	0.1%	0.1%	0.1%	0.1%
West Thurrock Lagoon and Marshes - SSSI	Baseline	2.5	2.4	2.3	2.2	2.3
	Proposed Scheme	3.0	2.8	2.8	2.6	2.9
	Impact	0.5	0.4	0.5	0.4	0.6
	Impact as % of CL	0.3%	0.2%	0.3%	0.2%	0.3%
Crossness - LNR	Baseline	27.2	15.8	26.2	19.2	17.1
	Proposed Scheme	29.7	17.3	28.4	21.2	18.9
	Impact	4.0	3.6	4.8	4.5	4.5
	Impact as % of CL	2.0%	1.8%	2.4%	2.2%	2.2%
Lesnes Abbey Woods - LNR	Baseline	5.6	4.2	3.6	6.7	4.2
	Proposed Scheme	6.1	4.6	4.1	7.2	4.7
	Impact	0.5	0.4	0.5	0.5	0.6
	Impact as % of CL	0.3%	0.2%	0.2%	0.3%	0.3%
Rainham Marshes - LNR	Baseline	10.0	10.2	11.0	9.8	10.5
	Proposed Scheme	11.2	11.3	12.3	11.0	11.8
	Impact	1.2	1.2	1.4	1.5	1.9
	Impact as % of CL	0.6%	0.6%	0.7%	0.8%	1.0%

## 4.2. OPERATION PHASE

### HUMAN RECEPTORS

- 4.2.1. The maximum Full Proposed Scheme PC during operation for all pollutants for each of the modelled meteorological years (2018-2022) is shown in **Table 21**.
- 4.2.2. The maximum Full Proposed Scheme impact during operation for all pollutants for each of the modelled meteorological years (2018-2022) is shown in **Table 22**.
- 4.2.3. The data shown represent the maximum impacts anywhere within the model domain, irrespective of the presence of receptors at that location.

**Table 21: Maximum Ground Level Full Proposed Scheme Process Contribution across the Receptor Grid for each Modelled Meteorological Year during Operation**

Pollutant	Averaging Period	Max PC 2018 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2019 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2020 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2021 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2022 ( $\mu\text{g}/\text{m}^3$ )
NO <sub>2</sub>	1hr	100.1	102.2	100.9	102.7	104.5
	Annual	2.3	2.7	2.8	2.4	2.3
PM <sub>10</sub>	24hr	0.8	0.9	0.9	0.8	0.8
	Annual	0.2	0.2	0.2	0.2	0.2
SO <sub>2</sub>	15 minutes	199.3	199.2	215.6	202.5	209.6
	1hr	138.5	140.9	139.4	143.7	145.1
	24hr	5.8	7.8	10.7	7.4	6.4



**Table 22: Maximum Ground Level Full Proposed Scheme Impact Across the Receptor Grid for Each Modelled Meteorological Year during Operation**

Pollutant	Averaging Period	Max Impact 2018 (µg/m <sup>3</sup> )	Max Impact 2019 (µg/m <sup>3</sup> )	Max Impact 2020 (µg/m <sup>3</sup> )	Max Impact 2021 (µg/m <sup>3</sup> )	Max Impact 2022 (µg/m <sup>3</sup> )	Air Quality Standard	Max Impact as % of Standard
NO <sub>2</sub>	1hr	76.3	77.6	80.2	78.1	83.4	200	41.7%
	Annual	1.0	1.3	1.4	1.2	1.1	40	3.4%
PM <sub>10</sub>	24hr	0.3	0.4	0.3	0.3	0.3	50	0.7%
	Annual	0.0	0.1	0.1	0.1	0.1	40	0.2%
SO <sub>2</sub>	15 minutes	150.7	148.7	168.3	151.6	165.0	266	63.3%
	1hr	105.6	108.0	109.7	109.8	115.3	350	32.9%
	24hr	3.7	5.9	8.3	5.6	5.1	125	6.6%

## ECOLOGICAL RECEPTORS

- 4.2.4. The maximum Full Proposed Scheme PC during operation and impacts for annual mean NO<sub>x</sub> for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 23**.
- 4.2.5. The maximum Full Proposed Scheme PC during operation and impacts for daily NO<sub>x</sub> for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 24**.
- 4.2.6. The maximum Full Proposed Scheme PC during operation and impacts for annual mean SO<sub>2</sub> for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 25**.
- 4.2.7. The maximum Full Proposed Scheme PC during operation and impacts for nitrogen deposition for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 26**.

- 4.2.8. The maximum Full Proposed Scheme PC during operation and impacts for acid deposition for each of the modelled meteorological years (2018-2022) at each of the designated ecological sites is shown in **Table 27**.
- 4.2.9. The maximum impact at each site has also been presented as a percentage of the pollutant and site-specific critical level/load (CL).

**Table 23: Modelled Maximum Baseline and Full Proposed Scheme PC and Impacts at Ecological Receptors for Annual Mean NO<sub>x</sub> during Operation**

Ecological Site	Scenario (PC)	Max PC 2018 (µg/m <sup>3</sup> )	Max PC 2019 (µg/m <sup>3</sup> )	Max PC 2020 (µg/m <sup>3</sup> )	Max PC 2021 (µg/m <sup>3</sup> )	Max PC 2022 (µg/m <sup>3</sup> )
Epping Forest - SAC, SSSI	Baseline	0.1	0.0	0.0	0.0	0.1
	Proposed Scheme	0.1	0.1	0.1	0.1	0.1
	Impact	0.0	0.0	0.0	0.0	0.0
	Impact as % of CL	0.0%	0.0%	0.0%	0.0%	0.1%
Grays Thurrock Chalk Pits - SSSI	Baseline	0.1	0.1	0.1	0.1	0.1
	Proposed Scheme	0.1	0.1	0.1	0.1	0.1
	Impact	0.0	0.0	0.0	0.0	0.0
	Impact as % of CL	0.0%	0.0%	0.0%	0.1%	0.1%
Ingrebourne Marshes - SSSI	Baseline	0.9	1.1	1.1	1.1	1.0
	Proposed Scheme	1.0	1.3	1.2	1.3	1.1
	Impact	0.1	0.1	0.1	0.2	0.1
	Impact as % of CL	0.4%	0.4%	0.4%	0.5%	0.4%
Inner Thames Marshes - SSSI	Baseline	1.5	1.7	2.0	1.4	1.5
	Proposed Scheme	1.7	2.0	2.3	1.7	1.8
	Impact	0.3	0.4	0.4	0.3	0.3
	Impact as % of CL	1.0%	1.2%	1.3%	1.1%	1.1%

Ecological Site	Scenario (PC)	Max PC 2018 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2019 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2020 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2021 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2022 ( $\mu\text{g}/\text{m}^3$ )
Oxleas Woodlands - SSSI	Baseline	0.2	0.2	0.2	0.3	0.2
	Proposed Scheme	0.3	0.2	0.2	0.3	0.3
	Impact	0.0	0.0	0.0	0.1	0.1
	Impact as % of CL	0.2%	0.1%	0.2%	0.2%	0.2%
West Thurrock Lagoon and Marshes - SSSI	Baseline	0.2	0.2	0.2	0.2	0.2
	Proposed Scheme	0.2	0.3	0.2	0.2	0.2
	Impact	0.0	0.0	0.0	0.0	0.0
	Impact as % of CL	0.1%	0.1%	0.1%	0.1%	0.1%
Crossness - LNR	Baseline	1.1	0.6	1.1	1.0	0.9
	Proposed Scheme	1.0	0.7	1.0	1.3	1.0
	Impact	0.4	0.3	0.2	0.5	0.4
	Impact as % of CL	1.3%	1.2%	0.8%	1.6%	1.3%
Lesnes Abbey Woods - LNR	Baseline	0.3	0.2	0.3	0.4	0.3
	Proposed Scheme	0.4	0.3	0.4	0.6	0.5
	Impact	0.1	0.1	0.1	0.2	0.2
	Impact as % of CL	0.5%	0.4%	0.4%	0.7%	0.5%
Rainham Marshes - LNR	Baseline	1.5	1.7	2.0	1.4	1.5
	Proposed Scheme	1.7	2.0	2.3	1.7	1.8
	Impact	0.3	0.4	0.4	0.3	0.3
	Impact as % of CL	1.0%	1.2%	1.3%	1.1%	1.1%

**Table 24: Modelled Maximum Baseline and Full Proposed Scheme PC and Impacts at Ecological Receptors for Daily Mean NO<sub>x</sub> during Operation**

Ecological Site	Scenario	Max PC 2018 (µg/m <sup>3</sup> )	Max PC 2019 (µg/m <sup>3</sup> )	Max PC 2020 (µg/m <sup>3</sup> )	Max PC 2021 (µg/m <sup>3</sup> )	Max PC 2022 (µg/m <sup>3</sup> )
Epping Forest - SAC, SSSI	Baseline	1.1	0.7	0.8	0.9	1.3
	Proposed Scheme	1.6	0.8	1.0	1.4	1.5
	Impact	0.5	0.2	0.4	0.5	0.3
	Impact as % of CL	0.2%	0.1%	0.2%	0.3%	0.1%
Grays Thurrock Chalk Pits - SSSI	Baseline	1.3	1.0	0.9	1.1	1.4
	Proposed Scheme	1.5	1.1	1.1	1.6	1.6
	Impact	0.2	0.1	0.2	0.4	0.2
	Impact as % of CL	0.1%	0.1%	0.1%	0.2%	0.1%
Ingrebourne Marshes - SSSI	Baseline	5.9	5.9	5.0	5.7	6.3
	Proposed Scheme	7.2	6.8	5.9	7.4	7.5
	Impact	1.4	0.9	0.9	1.7	1.1
	Impact as % of CL	0.7%	0.5%	0.5%	0.8%	0.6%
Inner Thames Marshes - SSSI	Baseline	10.0	10.2	11.4	9.8	10.5
	Proposed Scheme	10.9	10.6	11.7	10.5	11.0
	Impact	2.1	1.9	2.4	2.6	2.0
	Impact as % of CL	1.1%	0.9%	1.2%	1.3%	1.0%
Oxleas Woodlands - SSSI	Baseline	2.1	2.9	2.3	3.4	2.7
	Proposed Scheme	2.6	3.4	2.8	4.0	3.4

Ecological Site	Scenario	Max PC 2018 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2019 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2020 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2021 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2022 ( $\mu\text{g}/\text{m}^3$ )
	Impact	0.4	0.5	0.6	0.5	0.7
	Impact as % of CL	0.2%	0.3%	0.3%	0.3%	0.3%
West Thurrock Lagoon and Marshes - SSSI	Baseline	2.5	2.4	2.3	2.2	2.3
	Proposed Scheme	2.8	2.8	2.5	2.3	2.7
	Impact	0.3	0.4	0.3	0.1	0.5
	Impact as % of CL	0.2%	0.2%	0.1%	0.0%	0.3%
Crossness - LNR	Baseline	27.2	15.8	26.2	19.2	17.1
	Proposed Scheme	16.6	19.5	19.8	27.9	20.1
	Impact	6.1	9.9	6.9	14.4	10.1
	Impact as % of CL	3.0%	4.9%	3.5%	7.2%	5.0%
Lesnes Abbey Woods - LNR	Baseline	5.6	4.2	3.6	6.7	4.2
	Proposed Scheme	8.7	6.1	6.3	10.0	6.3
	Impact	3.5	2.1	2.9	3.3	2.4
	Impact as % of CL	1.7%	1.1%	1.5%	1.7%	1.2%
Rainham Marshes - LNR	Baseline	10.0	10.2	11.0	9.8	10.5
	Proposed Scheme	10.9	10.5	11.5	10.5	10.8
	Impact	2.1	1.6	2.4	2.6	2.0
	Impact as % of CL	1.1%	0.8%	1.2%	1.3%	1.0%

**Table 25: Modelled Maximum Baseline and Full Proposed Scheme PC and Impacts at Ecological Receptors for Annual Mean SO<sub>2</sub> during Operation**

Ecological Site	Scenario	Max PC 2018 (µg/m <sup>3</sup> )	Max PC 2019 (µg/m <sup>3</sup> )	Max PC 2020 (µg/m <sup>3</sup> )	Max PC 2021 (µg/m <sup>3</sup> )	Max PC 2022 (µg/m <sup>3</sup> )
Epping Forest - SAC, SSSI	Baseline	0.0	0.0	0.0	0.0	0.0
	Proposed Scheme	0.0	0.0	0.0	0.0	0.0
	Impact	0.0	0.0	0.0	0.0	0.0
	Impact as % of CL	0.0%	0.0%	0.0%	0.1%	0.0%
Grays Thurrock Chalk Pits - SSSI	Baseline	0.0	0.0	0.0	0.0	0.0
	Proposed Scheme	0.0	0.0	0.0	0.0	0.0
	Impact	0.0	0.0	0.0	0.0	0.0
	Impact as % of CL	0.0%	0.0%	0.0%	0.0%	0.0%
Ingrebourne Marshes - SSSI	Baseline	0.3	0.3	0.3	0.3	0.3
	Proposed Scheme	0.3	0.3	0.3	0.3	0.3
	Impact	0.0	0.0	0.0	0.0	0.0
	Impact as % of CL	0.2%	0.2%	0.2%	0.3%	0.2%
Inner Thames Marshes - SSSI	Baseline	0.4	0.4	0.5	0.4	0.4
	Proposed Scheme	0.5	0.5	0.6	0.5	0.5
	Impact	0.1	0.1	0.2	0.1	0.1
	Impact as % of CL	1.1%	1.4%	1.6%	1.1%	1.1%
Oxleas Woodlands - SSSI	Baseline	0.1	0.0	0.1	0.1	0.1
	Proposed Scheme	0.1	0.0	0.1	0.1	0.1

Ecological Site	Scenario	Max PC 2018 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2019 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2020 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2021 ( $\mu\text{g}/\text{m}^3$ )	Max PC 2022 ( $\mu\text{g}/\text{m}^3$ )
	Impact	0.0	0.0	0.0	0.0	0.0
	Impact as % of CL	0.2%	0.1%	0.2%	0.2%	0.2%
West Thurrock Lagoon and Marshes - SSSI	Baseline	0.0	0.1	0.1	0.1	0.1
	Proposed Scheme	0.0	0.1	0.1	0.1	0.1
	Impact	0.0	0.0	0.0	0.0	0.0
	Impact as % of CL	0.0%	0.0%	0.0%	0.0%	0.1%
Crossness - LNR	Baseline	0.3	0.1	0.3	0.3	0.2
	Proposed Scheme	0.3	0.2	0.3	0.3	0.3
	Impact	0.2	0.2	0.2	0.1	0.2
	Impact as % of CL	2.2%	1.9%	1.6%	1.4%	2.1%
Lesnes Abbey Woods - LNR	Baseline	0.1	0.0	0.1	0.1	0.1
	Proposed Scheme	0.1	0.1	0.1	0.2	0.1
	Impact	0.0	0.0	0.0	0.1	0.1
	Impact as % of CL	0.5%	0.4%	0.5%	0.7%	0.6%
Rainham Marshes - LNR	Baseline	0.4	0.4	0.5	0.4	0.4
	Proposed Scheme	0.5	0.5	0.6	0.5	0.5
	Impact	0.1	0.1	0.2	0.1	0.1
	Impact as % of CL	1.1%	1.4%	1.6%	1.1%	1.1%

**Table 26: Modelled Maximum Baseline and Full Proposed Scheme PC and Impacts at Ecological Receptors for Nitrogen Deposition during Operation**

Ecological Site	Scenario	Max PC 2018 (kg/N/ha/yr)	Max PC 2019 (kg/N/ha/yr)	Max PC 2020 (kg/N/ha/yr)	Max PC 2021 (kg/N/ha/yr)	Max PC 2022 (kg/N/ha/yr)
Epping Forest - SAC, SSSI	Baseline	0.06	0.05	0.04	0.04	0.06
	Proposed Scheme	0.08	0.06	0.06	0.07	0.08
	Impact	0.03	0.02	0.03	0.04	0.03
	Impact as % of CL	0.58%	0.39%	0.52%	0.71%	0.67%
Ingrebourne Marshes - SSSI	Baseline	0.58	0.71	0.68	0.68	0.63
	Proposed Scheme	0.64	0.76	0.73	0.76	0.69
	Impact	0.06	0.06	0.06	0.09	0.07
	Impact as % of CL	0.42%	0.43%	0.40%	0.58%	0.45%
Inner Thames Marshes - SSSI	Baseline	0.86	1.00	1.19	0.81	0.87
	Proposed Scheme	1.03	1.20	1.38	1.00	1.05
	Impact	0.21	0.25	0.28	0.21	0.21
	Impact as % of CL	2.08%	2.46%	2.77%	2.06%	2.09%
Oxleas Woodlands - SSSI	Baseline	0.21	0.15	0.19	0.25	0.21
	Proposed Scheme	0.28	0.20	0.26	0.34	0.29
	Impact	0.09	0.06	0.09	0.11	0.10
	Impact as % of CL	0.63%	0.39%	0.61%	0.75%	0.64%
	Baseline	0.10	0.14	0.12	0.11	0.12
	Proposed Scheme	0.12	0.15	0.14	0.14	0.15



Ecological Site	Scenario	Max PC 2018 (kg/N/ha/yr)	Max PC 2019 (kg/N/ha/yr)	Max PC 2020 (kg/N/ha/yr)	Max PC 2021 (kg/N/ha/yr)	Max PC 2022 (kg/N/ha/yr)
West Thurrock Lagoon and Marshes - SSSI	Impact	0.02	0.02	0.02	0.03	0.03
	Impact as % of CL	0.22%	0.16%	0.21%	0.29%	0.28%
Crossness - LNR	Baseline	0.67	0.34	0.63	0.63	0.53
	Proposed Scheme	0.65	0.43	0.66	0.78	0.64
	Impact	0.21	0.19	0.21	0.33	0.28
	Impact as % of CL	2.09%	1.85%	2.12%	3.29%	2.83%
Lesnes Abbey Woods - LNR	Baseline	0.29	0.17	0.25	0.37	0.31
	Proposed Scheme	0.46	0.34	0.45	0.59	0.50
	Impact	0.19	0.18	0.22	0.24	0.21
	Impact as % of CL	1.94%	1.81%	2.18%	2.38%	2.10%
Rainham Marshes - LNR	Baseline	0.86	1.00	1.19	0.81	0.87
	Proposed Scheme	1.03	1.20	1.38	1.00	1.05
	Impact	0.21	0.25	0.28	0.21	0.21
	Impact as % of CL	2.08%	2.46%	2.77%	2.06%	2.09%

**Table 27: Modelled Maximum Baseline and Full Proposed Scheme PC and Impacts at Ecological Receptors for Acid Deposition during Operation**

Ecological Site	Scenario	Max PC 2018 (keq/ha/yr)	Max PC 2019 (keq/ha/yr)	Max PC 2020 (keq/ha/yr)	Max PC 2021 (keq/ha/yr)	Max PC 2022 (keq/ha/yr)
Epping Forest - SAC, SSSI	Baseline	0.008	0.006	0.006	0.006	0.009
	Proposed Scheme	0.011	0.008	0.008	0.010	0.012
	Impact	0.004	0.003	0.004	0.005	0.005
	Impact as % of CL	0.23%	0.16%	0.21%	0.29%	0.27%
Oxleas Woodlands - SSSI	Baseline	0.029	0.020	0.027	0.034	0.029
	Proposed Scheme	0.039	0.028	0.037	0.047	0.041
	Impact	0.013	0.008	0.013	0.016	0.013
	Impact as % of CL	0.49%	0.30%	0.48%	0.58%	0.50%



## DECARBONISATION

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