The Lake Lothing (Lowestoft) Third Crossing Order 201[*]

Lake Lothing THIRD CROSSING

Document 6.3: Environmental Statement Volume 3 Appendices

Appendix 8F

Local Air Quality Results for Consultee Receptors

Author: Suffolk County Council

Appendix 8F Local Air Quality Results for Consultee Receptors

1.1 ABP Operations

1.1.1 The operational areas of the port at Lowestoft are situated within the footprint of the Scheme order limits. Dockside operations on the northern bank have been assessed as a number of discrete receptors through modelling of a transect running to the east and west of the Scheme. The transect modelling follows the same methodology as the modelling for the Local Air Quality Assessment explained in Appendix 8B. The modelled points representing the port operations area were selected starting from the roadside edge of the Scheme and at 10m distance intervals away from the road as presented in Figure 8.3. The control tower location for the Scheme has also been modelled. The results are given below in Table 0-1. The ABP operations area transect location and results are given in Figure 1

Figure 1 ABP Operations Area Transect Location and Change in NO_2 Concentration with the Scheme

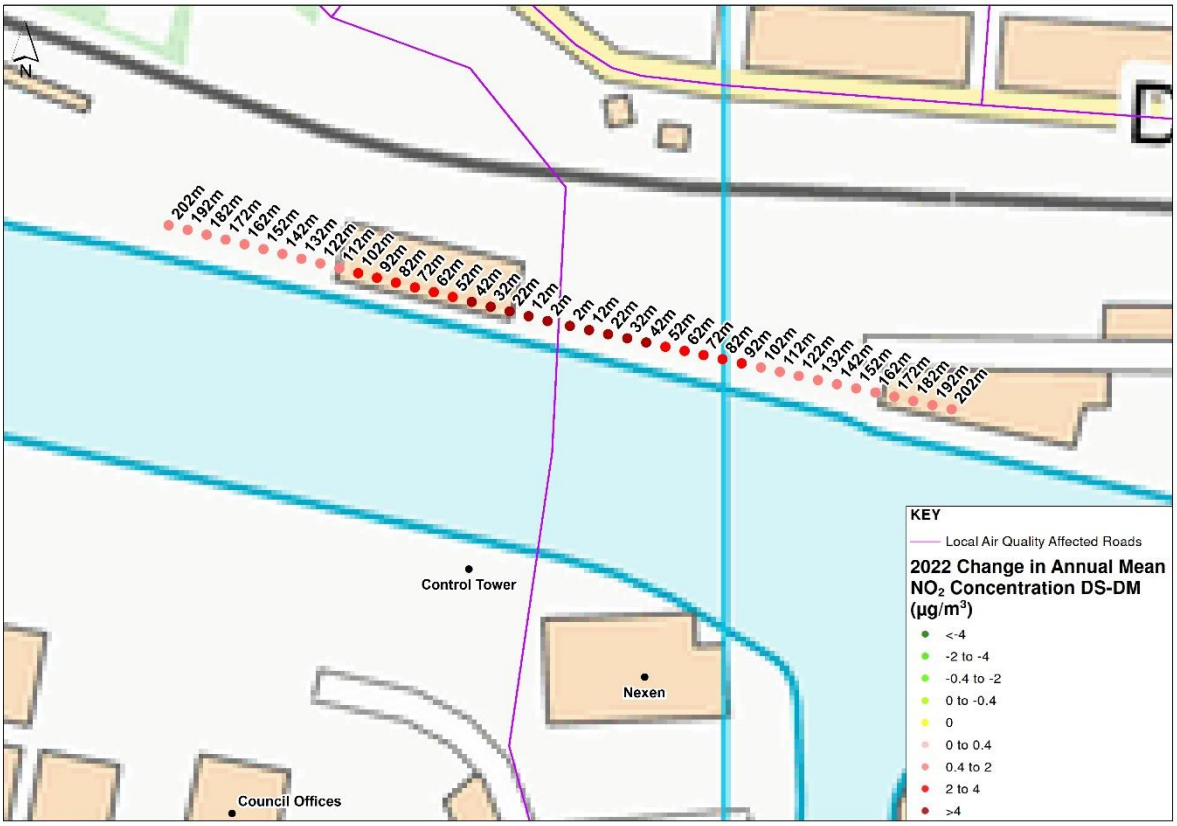

Table -0-1 ABP Operations Area Transect and Control Tower Results

Location/ Distance from edge of Scheme (m)	Annual Mean Concentration (µg/m^3)											
	2016 BY			2022 DM OY			2022 DS OY			DS-DM		
	NO_2	PM_{10}	$PM_{2.5}$	NO_2	PM_{10}	$PM_{2.5}$	NO_2	PM_{10}	$PM_{2.5}$	NO_2	PM_{10}	$PM_{2.5}$
Port West												
2	12.1	14.5	10.2	10.5	14.7	10.5	30.6	18.8	11.2	20.1	4.1	0.7
12	12.1	14.5	10.2	10.5	14.7	10.5	21.1	16.8	10.8	10.6	2.1	0.3
22	12	14.5	10.2	10.5	14.7	10.5	17.7	16.2	10.7	7.2	1.5	0.2
32	12	14.5	10.2	10.5	14.7	10.5	16	15.8	10.6	5.5	1.1	0.1
42	12	14.5	10.2	10.5	14.7	10.5	14.9	15.6	10.6	4.4	0.9	0.1
52	12	14.5	10.2	10.5	14.7	10.5	14.2	15.5	10.6	3.7	0.8	0.1
62	12	14.5	10.2	10.5	14.7	10.5	13.7	15.4	10.6	3.2	0.7	0.1
72	12	14.5	10.2	10.5	14.7	10.5	13.3	15.3	10.6	2.8	0.6	0.1
82	12	14.5	10.2	10.5	14.7	10.5	13	15.2	10.5	2.5	0.5	0
92	12	14.5	10.2	10.5	14.7	10.5	12.8	15.2	10.5	2.3	0.5	0
102	12	14.5	10.2	10.5	14.7	10.5	12.6	15.2	10.5	2.1	0.5	0
112	12	14.5	10.2	10.5	14.7	10.5	12.4	15.1	10.5	1.9	0.4	0
122	11.9	14.5	10.2	10.4	14.7	10.5	12.3	15.1	10.5	1.9	0.4	0
132	11.9	14.5	10.2	10.4	14.7	10.5	12.2	15.1	10.5	1.8	0.4	0
142	11.9	14.5	10.2	10.4	14.7	10.5	12.1	15.1	10.5	1.7	0.4	0
152	11.9	14.5	10.2	10.4	14.7	10.5	12	15.1	10.5	1.6	0.4	0
162	11.9	14.5	10.2	10.4	14.7	10.5	11.9	15	10.5	1.5	0.3	0
172	11.9	14.5	10.2	10.4	14.7	10.5	11.8	15	10.5	1.4	0.3	0
182	11.9	14.5	10.2	10.4	14.7	10.5	11.8	15	10.5	1.4	0.3	0
192	11.9	14.5	10.2	10.4	14.7	10.5	11.7	15	10.5	1.3	0.3	0
202	11.9	14.5	10.2	10.4	14.7	10.5	11.6	15	10.5	1.2	0.3	0
Port East												
2	12.1	14.5	10.2	10.5	14.7	10.5	31.8	19.1	11.2	21.3	4.4	0.7
12	12.1	14.5	10.2	10.5	14.8	10.5	21.9	17	10.8	11.4	2.2	0.3
22	12.1	14.5	10.2	10.6	14.8	10.5	18.3	16.3	10.7	7.7	1.5	0.2

Location/ Distance from edge of Scheme (m)	Annual Mean Concentration (µg/m^3)											
	2016 BY			2022 DM OY			2022 DS OY			DS-DM		
	NO_2	PM_{10}	$PM_{2.5}$	NO_2	PM_{10}	$PM_{2.5}$	NO_2	PM_{10}	$PM_{2.5}$	NO_2	PM_{10}	$PM_{2.5}$
32	12.1	14.5	10.2	10.6	14.8	10.5	16.4	15.9	10.7	5.8	1.1	0.2
42	12.1	14.5	10.2	10.6	14.8	10.5	15.2	15.7	10.6	4.6	0.9	0.1
52	12.2	14.5	10.2	10.6	14.8	10.5	14.4	15.5	10.6	3.8	0.7	0.1
62	12.2	14.5	10.2	10.6	14.8	10.5	13.8	15.4	10.6	3.2	0.6	0.1
72	12.2	14.5	10.2	10.6	14.8	10.5	13.4	15.3	10.6	2.8	0.5	0.1
82	12.2	14.5	10.2	10.7	14.8	10.5	13.1	15.2	10.5	2.4	0.4	0
92	12.3	14.5	10.2	10.7	14.8	10.5	12.8	15.2	10.5	2.1	0.4	0
102	12.3	14.5	10.2	10.7	14.8	10.5	12.6	15.2	10.5	1.9	0.4	0
112	12.4	14.6	10.2	10.7	14.8	10.5	12.5	15.1	10.5	1.8	0.3	0
122	12.5	14.6	10.2	10.8	14.8	10.5	12.4	15.1	10.5	1.6	0.3	0
132	12.6	14.6	10.2	10.9	14.8	10.5	12.3	15.1	10.5	1.4	0.3	0
142	12.7	14.6	10.2	11	14.8	10.5	12.3	15.1	10.5	1.3	0.3	0
152	13	14.6	10.2	11.1	14.8	10.5	12.4	15.1	10.5	1.3	0.3	0
162	13.1	14.6	10.2	11.3	14.9	10.5	12.4	15.1	10.5	1.1	0.2	0
172	13.2	14.6	10.2	11.3	14.9	10.5	12.4	15.1	10.5	1.1	0.2	0
182	13.2	14.6	10.2	11.3	14.9	10.5	12.3	15.1	10.5	1	0.2	0
192	13.2	14.6	10.2	11.3	14.9	10.5	12.2	15	10.5	0.9	0.1	0
202	13.2	14.6	10.2	11.3	14.9	10.5	12.1	15	10.5	0.8	0.1	0
Control Tower	12.8	15.1	10.8	10.5	14.6	10.3	30.6	18.7	11.0	20.1	4.1	0.7

1.1.2 The results of the local air quality assessment for the ABP operational locations are within the relevant air quality objectives for NO_2, PM_{10} and $PM_{2.5}$ in the DS scenario, however large increases in NO_2 are predicted within 2m to 22m from the Scheme. These concentrations reflect the introduction of a new road source into an area that was previously situated >100m from the nearest road, however no exceedance of the objective is predicted.

1.2 Commercial Properties and Council Offices

1.2.1 On the southern bank of Lake Lothing there are commercial buildings and buildings belonging to Waveney District Council, which were identified at the scoping stage as potentially being located in an area where air quality could worsen with the Scheme. Local air quality modelling results for the identified buildings are presented in Table 1-2.

Table 0-2 Consultee Receptor Results

Location	Annual Mean Concentration (µg/m^3)											
	2016 BY			2022 DM OY			2022 DS OY			DS-DM		
	NO_2	PM_{10}	$PM_{2.5}$	NO_2	PM_{10}	$PM_{2.5}$	NO_2	PM_{10}	$PM_{2.5}$	NO_2	PM_{10}	$PM_{2.5}$
Riverside Business Centre	16.3	15.7	10.8	13.1	15.2	10.4	20	16.8	10.6	6.9	1.6	0.2
Council Offices	12.8	15.1	10.8	10.5	14.6	10.3	11.8	14.9	10.3	1.3	0.3	0
Waveney Registry Office	13.1	15.2	10.8	10.7	14.6	10.3	16.5	16	10.5	5.8	1.4	0.2
Essex and Suffolk Water	17.7	15.9	10.9	14.4	15.5	10.4	17.6	16.3	10.5	3.2	0.8	0.1
Motorlings	18.3	16	10.9	14.6	15.5	10.4	19.9	16.8	10.6	5.3	1.3	0.2
Nexen	12.8	15.1	10.8	10.5	14.6	10.3	20	16.5	10.6	9.5	1.9	0.3

1.2.2 The results for the commercial properties and Council properties show that air quality does worsen with the Scheme however the concentrations of NO_2, PM_{10} and $PM_{2.5}$ are well within the respective air quality objectives. Essex and Suffolk Water requested that the intake for the buildings air conditioning was modelled, the façade of the building closest to the nearest road at a height 1.5m was considered worst case and has been modelled as being considered closer to the road than the inlet.