

# Alderholt Meadows, Alderholt, Fordingbridge

## Technical Note – Air Quality Assessment of Revised Traffic Data

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This document has been prepared and checked in accordance with Waterman Group’s IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS EN ISO 45001:2018)

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### 1. Introduction

- 1.1. In 2022 a planning application was submitted for a residential development at Land at Alderholt, Fordingbridge, Dorset (the ‘Site’).
- 1.2. An Environmental Impact Assessment (EIA) was undertaken to assess the environmental effects of the Development. Chapter 14: Air Quality formed part of the Environmental Statement (ES) (hereafter referred to as the ‘2022 ES’) and was prepared by Waterman Infrastructure & Environment Limited (Waterman IE).
- 1.3. Following submission of the planning application, traffic data used within the air quality assessment and presented in the 2022 ES has been updated. The air quality assessment has therefore been updated with revised traffic data provided by the Transport Consultant, Paul Basham Associates. This technical note presents the updated results from the Operational Impacts section of Chapter 14: Air Quality and determines if there would be a change to the likely significant effects and conclusions presented in Chapter 14: Air Quality of the 2022 ES.

### 2. Updated Traffic Data

- 2.1. The updated traffic data provided by Paul Basham Associates for the air quality assessment, is presented in Table 1.

Table 1: 24 hour Annual Average Daily Traffic (AADT) Data Used within the Assessment

Link	2033 Without Development		2033 With Development	
	AADT	% HDV	AADT	% HDV
B3078 S Of Cranborne	3061	5	3809	5
B3078 S Of Verwood	8048	5	9164	5
B3078 Between Cranborne and Batterley Drove	1465	5	2212	5
B3081 Batterley Drove	2785	5	5146	5
B3078 Between Batterley Drove and Alderholt	3803	5	6912	5
B3078 Station Road	4018	5	5694	5
Ringwood Road	1080	5	3329	5
Hillbury Road (North)	2068	5	5694	5
Harbridge Drove	2984	5	6184	5
A31 West	112869	5	114789	5
A31 East	115999	5	117279	5
B3078 Fordingbridge Road	6275	5	8009	5
Sandleheath Road	2289	5	3389	5
A338 North	15346	5	15919	5
B3078 Southampton Road (NF)	4573	5	4592	5

### 3. Updated Operational Impact Assessment

- 3.1. Effects on local air quality associated with the completed and operations Proposed Development would likely result from changes to the associated traffic flows. **Table 2** and **Table 3** present the predicted concentrations at relevant existing and proposed receptors nearest to road traffic.

#### Nitrogen Dioxide (NO<sub>2</sub>)

Table 2 : NO<sub>2</sub> Results of the ADMS modelling at sensitive receptors

ID	Receptor	NO <sub>2</sub> Annual Mean (µg/m <sup>3</sup> )			
		2019 Baseline	2041 Without Development	2041 with Development	2041 Change
1	Ashley Cottages	27.3	13.3	13.6	0.3
2	Horton Road	26.4	13.1	12.9	-0.2
3	30 Ringwood Road	25.9	13.9	13.7	-0.2
4	Salisbury Road	26.9	13.4	13.2	-0.2

#### Appendix A

ID	Receptor	NO <sub>2</sub> Annual Mean (µg/m <sup>3</sup> )			
		2019 Baseline	2041 Without Development	2041 with Development	2041 Change
5	43 Eastfield Lane	34.2	16.2	15.9	-0.3
6	Belt Cottage	15.9	11.8	12.1	0.3
7	Drove End Farm	16.9	11.9	12.9	1.0
8	Station Road	18.1	12.3	13.0	0.7
9	56 Ringwood Road	15.6	11.6	11.9	0.3
10	38 Station Road	16.9	12.0	12.4	0.4
11	Kingwood Day Nursery	16.5	11.8	12.2	0.4
12	Corner House	16.7	11.9	12.3	0.4
13	5 Edmondsham Road	16.4	11.5	11.8	0.3
14	Cardon Place	16.4	11.7	12.0	0.3
15	Verwood House	17.4	12.4	12.7	0.3
16	2 Cold Harbour	17.2	12.1	12.2	0.1
17	Avenue Lodge	16.1	11.7	11.8	0.1
18	2 Castle Street	18.5	12.1	12.8	0.7
19	Crane View	16.0	11.7	11.9	0.2
20	Mooracre Cottage	18.1	12.3	12.8	0.5
21	2 Hillbury Road	18.2	12.4	13.2	0.8
22	Sandleheath Road	17.0	12.0	12.3	0.3
23	15 Bowerwood Road	17.7	12.0	12.2	0.2
24	4 Provost Street	19.9	12.8	13.2	0.4
25	2 Bridge Street	19.8	12.8	13.2	0.4
26	Won Lodge	18.0	12.0	11.9	-0.1
27	Foxill Farm	16.0	11.6	11.6	0.0
28	<b>Proposed:</b> North-west of Site	-	-	11.9	-
29	<b>Proposed:</b> West of Site	-	-	13.0	-
30	<b>Proposed:</b> East of Site	-	-	13.2	-

- 3.2. The results in **Table 2** indicate the 2019 annual mean NO<sub>2</sub> concentrations are predicted to meet the annual mean NO<sub>2</sub> objective at all existing sensitive receptors modelled. The highest concentration of 34.2µg/m<sup>3</sup> is predicted at Receptor 5 (43 Eastfield Lane).
- 3.3. As discussed in Appendix 14.2 of the 2022 ES, the 1-hour mean NO<sub>2</sub> AQS objective is unlikely to be exceeded at a roadside location where the annual mean NO<sub>2</sub> concentration is less than

60µg/m<sup>3</sup>. As shown in **Table 2**, the predicted annual mean NO<sub>2</sub> concentrations in 2019 were below 60µg/m<sup>3</sup> at all the existing receptor locations and as such it is likely the 1-hour mean objective is met at all existing receptor locations.

- 3.4. **Table 2** shows that both ‘without’ and ‘with’ the Proposed Development, all existing receptors are also predicted to be below the NO<sub>2</sub> annual mean objective in 2041. Therefore, the 1-hour mean objective is also predicted to be met at all existing receptor locations.
- 3.5. Using the impact descriptors outlined in Table 14.9 of the 2022 ES, the Proposed Development is predicted to result in a ‘negligible’ impact on annual mean NO<sub>2</sub> concentrations at all existing receptors. The effect of the Proposed Development on existing receptors would be **not significant**.

### Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>)

Table 3 : PM<sub>10</sub> and PM<sub>2.5</sub> Results of the ADMS modelling at sensitive receptors

ID	PM <sub>10</sub> Annual Mean (µg/m <sup>3</sup> )				PM <sub>10</sub> - Number of Days >50µg/m <sup>3</sup>				PM <sub>2.5</sub> Annual Mean (µg/m <sup>3</sup> )			
	2019 Baseline	2041 Without Development	2041 with Development	2041 Change	2019 Baseline	2041 Without Development	2041 with Development	2041 Change	2019 Baseline	2041 Without Development	2041 with Development	2041 Change
1	15.0	14.9	15.1	0.2	0	0	0	0	11.3	9.6	9.8	0.2
2	15.1	15.0	15.1	0.1	0	0	0	0	11.3	9.7	9.7	0.0
3	13.7	13.7	13.7	0.0	0	0	0	0	10.6	9.1	9.1	0.0
4	15.3	15.3	15.3	0.0	0	0	0	0	11.6	9.9	9.9	0.0
5	16.2	16.7	16.7	0.0	0	0	0	0	13.0	10.9	10.9	0.0
6	12.4	11.2	11.3	0.1	0	1	1	0	8.5	7.4	7.4	0.0
7	12.5	11.5	11.9	0.4	0	1	1	0	8.3	7.3	7.6	0.3
8	12.3	11.4	11.6	0.2	0	1	1	0	8.6	7.5	7.6	0.1
9	12.1	11.1	11.3	0.2	1	2	1	0	8.2	7.4	7.4	0.0
10	12.3	11.4	11.5	0.1	0	1	1	0	8.5	7.5	7.6	0.1
11	11.9	10.9	11.0	0.1	1	2	2	0	8.1	7.1	7.2	0.1
12	12.5	11.5	11.6	0.1	0	1	1	0	8.1	7.2	7.3	0.1
13	12.2	11.4	11.5	0.1	0	1	1	0	8.5	7.6	7.7	0.1
14	12.1	11.3	11.5	0.2	1	1	1	0	8.3	7.5	7.6	0.1
15	12.3	11.5	11.6	0.1	0	1	1	0	8.1	7.2	7.3	0.1
16	13.1	12.2	12.2	0.0	0	1	1	0	8.3	7.4	7.4	0.0
17	13.0	12.0	12.0	0.0	0	1	1	0	8.2	7.3	7.3	0.0
18	13.0	12.0	12.1	0.1	0	1	1	0	8.6	7.5	7.5	0.0

### Appendix A

ID	PM <sub>10</sub> Annual Mean (µg/m <sup>3</sup> )				PM <sub>10</sub> - Number of Days >50µg/m <sup>3</sup>				PM <sub>2.5</sub> Annual Mean (µg/m <sup>3</sup> )			
	2019 Baseline	2041 Without Development	2041 with Development	2041 Change	2019 Baseline	2041 Without Development	2041 with Development	2041 Change	2019 Baseline	2041 Without Development	2041 with Development	2041 Change
19	12.0	11.0	11.0	0.0	1	2	2	0	8.0	7.1	7.1	0.0
20	12.2	11.3	11.5	0.2	0	1	1	0	8.4	7.4	7.5	0.1
21	12.3	11.4	11.7	0.3	0	1	1	0	8.4	7.4	7.6	0.2
22	12.2	11.2	11.3	0.1	1	1	1	0	8.3	7.3	7.4	0.1
23	12.7	11.8	11.9	0.1	0	1	1	0	8.7	7.6	7.7	0.1
24	13.0	12.1	12.3	0.2	0	1	0	0	9.4	8.3	8.4	0.1
25	13.0	12.2	12.3	0.1	0	1	0	0	9.5	8.3	8.4	0.1
26	12.8	12.0	12.0	0.0	0	1	1	0	8.7	7.8	7.8	0.0
27	12.4	11.4	11.4	0.0	0	1	1	0	8.2	7.3	7.3	0.0
28	-	-	11.2	-	-	-	1	-	-	-	7.4	-
29	-	-	12.2	-	-	-	1	-	-	-	7.7	-
30	-	-	11.9	-	-	-	1	-	-	-	7.8	-

- 3.6. As shown in **Table 3**, the annual mean PM<sub>10</sub> concentrations are predicted to be below the objective of 40µg/m<sup>3</sup> in 2019 and in 2041 both 'without' and 'with' the Proposed Development at all receptor locations considered. The maximum predicted concentration in all scenarios assessed is 16.2µg/m<sup>3</sup> at Receptor 5 (43 Eastfield Lane) in 2019.
- 3.7. Using the impact descriptors outlined in Table 14.9 of the 2022 ES, the Proposed Development is predicted to result in a 'negligible' impact on annual mean PM<sub>10</sub> concentrations at all sensitive receptors.
- 3.8. The results in **Table 3** indicate that in 2019 and in 2041 both 'without' and 'with' the Proposed Development, all receptor locations are predicted to be below the 24-hour mean PM<sub>10</sub> objective value of no more than 35 days exceeding 50µg/m<sup>3</sup>.
- 3.9. The results in **Table 3** indicate that in 2019 and in 2041 both 'without' and 'with' the Proposed Development, all receptor locations are predicted to be below the annual mean PM<sub>2.5</sub> objective value of 25µg/m<sup>3</sup>.
- 3.10. Using the impact descriptors outlined in Table 14.9 of the 2022 ES, the Proposed Development is predicted to result in a 'negligible' impact on annual mean PM<sub>2.5</sub> concentrations at all existing receptors.
- 3.11. Using professional judgement, based on the severity of the impact and the concentrations predicted at the sensitive receptors, it is considered the effect of the Proposed Development on PM<sub>10</sub> and PM<sub>2.5</sub> concentrations would be **not significant**.

## Appendix A

### Conditions within the Development

- 3.12. As shown by the results in **Table 2** and **Table 3**, the predicted NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations for the worst-case proposed receptor locations within the Proposed Development (Receptors 28, 29 and 30) are below the relevant objectives in 2041. As such, it is considered the effect of introducing future sensitive users to the Site would be **not significant**.

## 4. Conclusions

- 4.1. The likely significant air quality effects based on the revised traffic forecast data is unchanged from the likely significant effects presented in Chapter 14: Air Quality of the 2022 ES.