

Appendix 6.4 – Model Input Parameters

Table 6.4A: Summary of ADMS-Roads Input Parameters

Parameter	Model Verification and Existing Baseline (2024)	Impact Assessment and Exposure (2031)
ADMS-Roads Model Version	5.1	5.1
Vehicle Emission Factors	EFT v13.1 for 2024	EFT v13.1 for 2031
Meteorological Data	Hourly sequential data from RAF Fairford (2024)	Hourly sequential data from RAF Fairford (2024)
Surface Roughness	0.5m	0.5m
Monin-Obukhov Length	30m	30m

Table 6.4B: Summary of 2024 Traffic Data for Model Verification

Road Name	AADT	HDV (%)	Average Speed (kph)
A4 Bath Road, Pickwick	15,942	2.1%	24
A350 Beanacre Road	20,073	8.5%	24
Pickwick Road	1,300	2.1%	16
(a) DfT count point 77990 for 2024 (b) DfT count point 78010 for 2024 (c) DfT TRA02 average flow on a minor road in the southwest 2024			

Table 6.4C: Summary of 2024 Traffic Data for Existing Baseline

Link ID	Road Name	AADT	HDV (%)	Average Speed (kph) (a)
12	A350 N of Bristol Road	30,012	5.9%	48
13	A420 Bristol Road E	11,856	5.0%	32
14	Bumpers Way	7,490	5.0%	24

15/17	A350 (Bumpers Farm R'bout to Cepen Park South R'bout)	23,491	6.0%	48/64
16	A420 Bristol Road W	14,703	3.0%	32
-	Bumpers Farm R'bout	43,776 (b)	5.3%	24
18	Sandown Drive	2,442	1.0%	24
19/20	A350 (Cepen Park South R'bout to Chequers R'bout)	23,082	1.0%	48
-	Cepen Park South R'bout	24,507 (b)	3.4%	24
23	A350 (Chequers R'bout to Showell Farm R'bout)	24,394	1.5%	64
25	A350 (Showell Farm R'bout to Lackham R'bout)	13,455	8.7%	48
-	Chequers R'bout	45,775 (b)	2.8%	24
26/29	Pattersdown Road S of Site Access	9,764	5.8%	32
28	A350 S of Lackham R'bout	22,684	6.5%	48
-	Lackham R'bout	22,951 (b)	7.0%	24
30	Site Access	-	0.0%	16
31	Pattersdown Road N of Site Access	10,551	5.8%	32
(a) Traffic speeds are based on professional judgement, taking into account the speed limit of the road and the potential for congestion/ slowing traffic at junctions. The speeds are representative of the carriageway adjacent to the identified receptors.				
(b) Traffic flow on roundabout assumed to be 50% of the sum of the flows on the adjoining links.				

Table 6.4D: Summary of 2031 Traffic Data for Operational Traffic Impact and Exposure Assessment

Link ID	Road Name	Baseline		Baseline + Development		Average Speed (kph) (a)
		AADT	HDV (%)	AADT	HDV (%)	
12	A350 N of Bristol Road	32,649	5.8%	32,983	5.8%	48
13	A420 Bristol Road E	12,687	5.0%	12,687	5.0%	32
14	Bumpers Way	8,057	5.0%	8,153	4.9%	24
15/17	A350 (Bumpers Farm R'bout to Cepen Park South R'bout)	25,773	5.9%	26,338	5.8%	48/64
16	A420 Bristol Road W	15,792	3.0%	15,926	3.0%	32
-	Bumpers Farm R'bout	47,479	5.2%	48,043	5.2%	24
18	Sandown Drive	2,613	1.0%	2,613	1.0%	24
19/20	A350 (Cepen Park South R'bout to Chequers R'bout)	25,336	1.0%	25,901	1.0%	48
-	Cepen Park South R'bout	26,861	3.4%	27,426	3.3%	24
23	A350 (Chequers R'bout to Showell Farm R'bout)	26,897	1.5%	27,817	1.5%	64
25	A350 (Showell Farm R'bout to Lackham R'bout)	15,191	8.3%	16,111	7.9%	48
-	Chequers R'bout	49,853	2.7%	50,951	2.7%	24
26/29	Pattersdown Road S of Site Access	10,948	5.6%	12,081	5.2%	32
28	A350 S of Lackham R'bout	24,753	6.4%	24,966	6.3%	48
-	Lackham R'bout	25,447	6.8%	26,579	6.6%	24
30	Site Access	-	0.0%	1,621	1.0%	16
31	Pattersdown Road N of Site Access	11,791	5.6%	12,280	5.4%	32

(a) Traffic speeds are based on professional judgement, taking into account the speed limit of the road and the potential for congestion/ slowing traffic at junctions. The speeds are representative of the carriageway adjacent to the identified receptors.

(b) Traffic flow on roundabout assumed to be 50% of the sum of the flows on the adjoining links.