

## **APPENDIX 8.1 – PLANNING FOR AIR QUALITY**

## APPENDIX 8.1

### **ENVIRONMENTAL PROTECTION UK - Development Control: Planning for Air Quality**

#### **Descriptors for Impact Magnitude and Impact Significance in Air Quality Assessments**

Although there is no statutory UK guidance on determining the significance of air quality impacts, the main requirement within an air quality assessment is to describe significance in terms of the change in concentration and the absolute concentration after the change in relation to the UK air quality objectives, EU limit values and the presence/absence of an AQMA. The number of people exposed to the change should also be used to inform a judgment of significance.

The following tables provide descriptors for assessing the magnitude and significance of air quality impacts and should be used in the order that they occur.

Table A1: Descriptors for Changes in Ambient Concentrations of Nitrogen Dioxide and PM<sub>10</sub>

<b>Magnitude of Change</b>	<b>Annual Mean NO<sub>2</sub>/PM<sub>10</sub></b>	<b>Days PM<sub>10</sub>&gt;50µg/m<sup>3</sup></b>
Very large	Increase/decrease > 25%	Increase/decrease > 25days
Large	Increase/decrease 15-25%	Increase/decrease 15-25 days
Medium	Increase/decrease 10-15%	Increase/decrease 10-15 days
Small	Increase/decrease 5-10%	Increase/decrease 5-10 days
Very Small	Increase/decrease 1-5%	Increase/decrease 1-5 days
Extremely Small	Increase/decrease < 1%	Increase/decrease <1 days

Table A2: Descriptors for Impact Significance for Nitrogen Dioxide and PM<sub>10</sub>

<b>Air Quality Impact Significance Criteria</b>						
Absolute concentration in relation to standard	Extremely Small	Very Small	Small	Medium	Large	Very Large
<b>Decrease with scheme</b>						
Above standard with scheme	Slight beneficial	Slight beneficial	Substantial beneficial	Substantial beneficial	Very substantial beneficial	Very substantial beneficial
Above standard without scheme	Slight	Moderate	Substantial	Substantial	Very substantial	Very substantial

Below with scheme	beneficial	beneficial	beneficial	beneficial	beneficial	beneficial
Below standard without scheme, but not well below	Negligible	Slight beneficial	Slight beneficial	Moderate beneficial	Moderate beneficial	Substantial beneficial
Well below standard without scheme	Negligible	Negligible	Slight beneficial	Slight beneficial	Slight beneficial	Moderate Beneficial
<b>Increase with scheme</b>						
Above standard without scheme	Slight adverse	Slight adverse	Substantial adverse	Substantial adverse	Very substantial adverse	Very substantial adverse
Below standard without scheme Above with scheme	Slight adverse	Moderate adverse	Substantial adverse	Substantial adverse	Very substantial adverse	Very substantial adverse
Below standard with scheme, but not well below	Negligible	Slight adverse	Slight adverse	Moderate adverse	Moderate adverse	Substantial adverse
Well below standard with scheme	Negligible	negligible	Slight adverse	Slight adverse	Slight adverse	Moderate adverse
Well below the standard = < 75% of the standard level. 'Standard' in the context of this table relates to specific air quality objective or Limit Value in question						

# **APPENDIX 8.2 – JUNCTION ANALYSIS TRAFFIC DATA**

**APPENDIX 8.2 – JUNCTION ANALYSIS TRAFFIC DATA**

**Table B1: Queue Data 2011 base**

Junction	Number of Vehicles							Queue Length
	AM			PM			AM/PM	
	Min	Max	Average	Min	Max	Average	Average	
<b>A12/Eagle Way/ Anson Road</b>								
A12 SB	2	52.3	5.9	2.0	14.8	3.3	4.6	18.4
A12 NB	2	3.7	2.2	2.0	5.0	3.3	2.8	11.0
Eagle Way	2	2.9	2.2	2.0	2.9	2.1	2.1	8.5
Anson Rd	2	19.2	4.7	2.0	21.2	3.9	4.3	17.3
<b>A12/Eagle Way/Barrack Square</b>								
A12 SB	2	54.3	5.7	2.0	2.9	2.1	3.9	15.7
A12 NB	2	5.5	2.2	2.0	4.1	2.2	2.2	8.8
Eagle Way	2	15.5	6.0	2.0	3.5	2.1	4.1	16.3
Barrack Square	2	4.3	2.3	2.0	24.5	4.6	3.5	13.9
<b>A12/Foxhall Road/Newbourne Road</b>								
A12 SB	2	9.6	2.5	2.0	22.4	3.8	3.1	12.5
A12 NB	2	7.3	2.7	2.0	30.3	4.8	3.8	15.0
Foxhall Road	2	47.1	5.2	2.0	8.4	2.9	4.0	16.2
Newbourne Road	2	15.5	4.6	2.0	28.6	6.7	5.7	22.7

**Table B2: Turning Counts 2011 base**

<b>A12/Eagle Way/ Anson Road</b>				
	Direction	AM	PM	AADT
A12 NB	LT	92	151	1249
	S	1075	1230	11848
	RT	159	341	2570
A12 SB	LT	441	264	3624
	S	1389	1229	13457
	RT	91	100	982
Eagle Way North	LT	161	86	1270
	S	45	32	396
	RT	71	29	514
Anson Rd	LT	33	430	2380
	S	15	48	324
	RT	193	436	3233
<b>A12/Eagle Way/Barrack Square</b>				
	Direction	AM	PM	AADT
A12 NB	LT	39	141	925
	S	1164	1507	13729
	RT	772	80	4380
A12 SB	LT	384	43	2195
	S	1045	1557	13374
	RT	39	87	648
Eagle Way South	LT	53	56	560
	S	18	1	98
	RT	114	89	1043
Barrack sq	LT	301	332	3254
	S	17	3	103
	RT	109	166	1414

<b>A12/Foxhall Road/Newbourne Road</b>				
	<b>Direction</b>	<b>AM</b>	<b>PM</b>	<b>AADT</b>
A12 NB	LT	209	470	3490
	S	1564	1393	15199
	RT	47	43	463
A12 SB	LT	89	167	1316
	S	1184	1426	13415
	RT	189	374	2894
Foxhall Rd	LT	252	236	2508
	S	56	109	848
	RT	257	163	2159
Newbourne Rd	LT	67	41	555
	S	112	102	1100
	RT	159	97	1316

LT= left turn, S= straight, RT= right turn; SB= southbound, NB=northbound

**Table B3: Queue Data 2011 with development and with no improvement**

<b>Junction</b>	<b>Number of Vehicles</b>							<b>Queue Length</b>
	<b>AM</b>			<b>PM</b>			<b>AM/PM</b>	
	<b>Min</b>	<b>Max</b>	<b>Average</b>	<b>Min</b>	<b>Max</b>	<b>Average</b>	<b>Average</b>	
<b>A12/Eagle Way/ Anson Road</b>								
A12 SB	2	55.1	4.9	2.0	16.1	3.2	4.1	16.2
A12 NB	2	3.9	2.1	2.0	4.9	2.2	2.2	8.7
Eagle Way	2	3.0	2.1	2.0	2.7	2.1	2.1	8.3
Anson Rd	2	18.8	4.4	2.0	21.7	3.9	4.1	16.5
<b>A12/Eagle Way/Barrack Square</b>								
A12 SB	2	56.8	5.7	2.0	5.5	2.2	4.0	15.8
A12 NB	2	6.8	2.3	2.0	5.0	2.2	2.2	8.9
Eagle Way	2	18.5	6.1	2.0	3.6	2.1	4.1	16.4
Barrack Square	2	4.8	2.3	2.0	11.7	4.0	3.1	12.5
<b>A12/Foxhall Road/Newbourne Road</b>								
A12 SB	2	9.4	2.5	2.0	22.3	3.7	3.1	12.5
A12 NB	2	6.0	2.5	2.0	33.9	5.0	3.7	14.8
Foxhall Road	2	43.9	5.0	2.0	10.0	2.7	3.8	15.4
Newbourne Road	2	11.5	3.3	2.0	22.7	5.9	4.6	18.4

**Table B4: Turning Counts 2011 with development and no improvement**

<b>A12/Eagle Way/ Anson Road</b>				
	<b>Direction</b>	<b>AM</b>	<b>PM</b>	<b>AADT</b>
A12 NB	LT	86	152	1223.3
	S	1101	1232	11991.6
	RT	126	337	2379.8
A12 SB	LT	337	253	3032.6
	S	1356	1264	13466.8
	RT	87	253	1747.6
Eagle Way North	LT	161	86	1269.6
	S	39	31	359.8
	RT	71	29	514.0
Anson Rd	LT	26	423	2307.9
	S	14	45	303.3
	RT	167	411	2970.9

<b>A12/Eagle Way/Barrack Square</b>				
	<b>Direction</b>	<b>AM</b>	<b>PM</b>	<b>AADT</b>
A12 NB	LT	36	133	868.7
	S	1097	1471	13199.5
	RT	798	164	4944.7
A12 SB	LT	375	118	2534.0
	S	1004	1509	12916.8
	RT	375	83	2354.1
Eagle Way South	LT	47	53	514.0
	S	15	0	77.1
	RT	107	84	981.7
Barrack sq	LT	333	334	3428.4
	S	15	2	87.4
	RT	170	197	1886.4
<b>A12/Foxhall Road/Newbourne Road</b>				
	<b>Direction</b>	<b>AM</b>	<b>PM</b>	<b>AADT</b>
A12 NB	LT	200	453	3356.4
	S	1523	1402	15034.5
	RT	57	53	565.4
A12 SB	LT	62	266	1685.9
	S	1193	110	6697.4
	RT	193	162	1824.7
Foxhall Rd	LT	270	164	2230.8
	S	58	1400	7494.1
	RT	270	363	3253.6
Newbourne Rd	LT	101	65	853.2
	S	113	106	1125.7
	RT	140	100	1233.6
LT= left turn, S= straight, RT= right turn; SB= southbound, NB=northbound				

**Table B5: Queue Data 2011 with development and with improvement**

<b>Junction</b>	<b>Number of Vehicles</b>							<b>Queue Length</b>
	<b>AM</b>			<b>PM</b>			<b>AM/PM</b>	
	<b>Min</b>	<b>Max</b>	<b>Average</b>	<b>Min</b>	<b>Max</b>	<b>Average</b>	<b>Average</b>	
<b>A12/Eagle Way/ Anson Road</b>								
A12 SB	2	36.8	4.2	2	14.3	3.1	3.6	14.6
A12 NB	2	8.3	2.7	2	12.8	3.0	2.8	11.4
Eagle Way	2	4.6	2.2	2	3.8	2.2	2.2	8.8
Anson Rd	2	17.8	3.7	2	17.2	3.1	3.4	13.6
<b>A12/Eagle Way/Barrack Square</b>								
A12 SB	2	14.8	5.0	2	16.4	6.0	5.5	22.0
A12 NB	2	15.7	5.0	2	31.3	7.8	6.4	25.6
Eagle Way	2	14.3	4.2	2	4.9	2.3	3.2	12.9
Barrack Square	2	6.3	2.9	2	12.5	3.9	3.4	13.7
<b>A12/Foxhall Road/Newbourne Road</b>								
A12 SB	2	23.2	6.0	2	21.0	5.9	5.9	23.7
A12 NB	2	25.2	6.1	2	18.9	5.0	5.5	22.1
Foxhall Road	2	13.7	4.0	2	6.7	2.9	3.4	13.8
Newbourne Road	2	21.0	5.9	2	6.8	3.0	4.5	18.0

**Table B6: Turning Counts 2011 with development and with improvement**

<b>A12/Eagle Way/ Anson Road</b>				
	<b>Direction</b>	<b>AM</b>	<b>PM</b>	<b>AADT</b>
A12 NB	LT	89	168	1321.0
	S	1109	1493	13374.3
	RT	222	363	3006.9
A12 SB	LT	170	320	2518.6
	S	1673	1220	14870.0
	RT	92	102	997.2
Eagle Way North	LT	160	86	1264.4
	S	29	31	308.4
	RT	82	29	570.5
Anson Rd	LT	111	242	1814.4
	S	21	45	339.2
	RT	270	435	3623.7
<b>A12/Eagle Way/Barrack Square</b>				
	<b>Direction</b>	<b>AM</b>	<b>PM</b>	<b>AADT</b>
A12 NB	LT	52	153	1053.7
	S	1284	1589	14767.2
	RT	784	153	4816.2
A12 SB	LT	515	28	2791.0
	S	1366	1365	14037.3
	RT	50	82	678.5
Eagle Way South	LT	121	56	909.8
	S	26	4	154.2
	RT	91	91	935.5
Barrack sq	LT	141	734	4497.5
	S	7	7	72.0
	RT	70	360	2210.2
<b>A12/Foxhall Road/Newbourne Road</b>				
	<b>Direction</b>	<b>AM</b>	<b>PM</b>	<b>AADT</b>
A12 NB	LT	222	508	3752.2
	S	1698	1573	16812.9
	RT	62	58	616.8
A12 SB	LT	81	167	1274.7
	S	1495	1665	16242.4
	RT	211	418	3233.1
Foxhall Rd	LT	463	316	4004.1
	S	49	109	812.1
	RT	121	113	1202.8
Newbourne Rd	LT	118	67	950.9
	S	107	112	1125.7
	RT	120	105	1156.5
LT= left turn, S= straight, RT= right turn; SB= southbound, NB=northbound				

**Table B7: Queue Data 2018 base**

Junction	Number of Vehicles							Queue Length
	AM			PM			AM/PM	
	Min	Max	Average	Min	Max	Average	Average	
<b>A12/Eagle Way/ Anson Road</b>								
A12 SB	2.0	57.1	5.1	2.0	41.8	5.1	5.1	20.3
A12 NB	2.0	4.1	2.1	2.0	11.0	3.8	3.0	11.9
Eagle Way	2.0	3.4	2.1	2.0	4.2	2.4	2.3	9.1
Anson Rd	2.0	19.9	4.8	2.0	22.1	4.2	4.5	18.1
<b>A12/Eagle Way/Barrack Square</b>								
A12 SB	2.0	55.7	5.7	2.0	4.2	2.2	4.0	15.8
A12 NB	2.0	5.9	2.2	2.0	8.1	4.4	3.3	13.2
Eagle Way	2.0	21.7	6.1	2.0	3.8	2.2	4.1	16.5
Barrack Square	2.0	5.0	2.3	2.0	24.8	4.8	3.6	14.4
<b>A12/Foxhall Road/Newbourne Road</b>								
A12 SB	2.0	8.9	2.4	2.0	21.5	3.8	3.1	12.4
A12 NB	2.0	6.8	2.6	2.0	33.9	5.0	3.8	15.2
Foxhall Road	2.0	51.2	5.6	2.0	12.7	3.4	4.5	18.0
Newbourne Road	2.0	28.4	5.5	2.0	45.0	8.6	7.0	28.2

**Table B8: Turning Counts 2018 base**

<b>A12/Eagle Way/ Anson Road</b>				
	Direction	AM	PM	AADT
A12 NB	LT	96	155	1290
	S	1126	1235	12136
	RT	151	386	2760
A12 SB	LT	414	273	3531
	S	1388	1274	13683
	RT	94	105	1023
Eagle Way North	LT	174	92	1367
	S	48	34	421
	RT	77	31	555
Anson Rd	LT	37	366	2071
	S	15	47	319
	RT	184	377	2884
<b>A12/Eagle Way/Barrack Square</b>				
	Direction	AM	PM	AADT
A12 NB	LT	41	140	930
	S	1184	1548	14042
	RT	758	59	4199
A12 SB	LT	369	41	2107
	S	1066	1541	13400
	RT	40	89	663
Eagle Way South	LT	49	62	571
	S	20	1	108
	RT	112	97	1074
Barrack sq	LT	325	265	3033
	S	17	3	103
	RT	140	177	1629

<b>A12/Foxhall Road/Newbourne Road</b>				
	<b>Direction</b>	<b>AM</b>	<b>PM</b>	<b>AADT</b>
A12 NB	LT	215	472	3531
	S	1581	1402	15333
	RT	49	43	473
A12 SB	LT	193	169	1861
	S	1219	1374	13328
	RT	193	361	2848
Foxhall Rd	LT	238	257	2544
	S	54	119	889
	RT	251	178	2205
Newbourne Rd	LT	71	43	586
	S	117	107	1151
	RT	166	103	1383

LT= left turn, S= straight, RT= right turn; SB= southbound, NB=northbound

**Table B9: Queue Data 2018 with development and with improvement**

<b>Junction</b>	<b>Number of Vehicles</b>							<b>Queue Length</b>
	<b>AM</b>			<b>PM</b>			<b>AM/PM</b>	
	<b>Min</b>	<b>Max</b>	<b>Average</b>	<b>Min</b>	<b>Max</b>	<b>Average</b>	<b>Average</b>	
<b>A12/Eagle Way/ Anson Road</b>								
A12 SB	2	28.8	6.5	2	23.1	5.6	6.0	24.2
A12 NB	2	17.4	4.7	2	48.1	9.3	7.0	27.9
Eagle Way	2	11.3	3.3	2	12.5	4.1	3.7	14.6
Anson Rd	2	17.8	3.8	2	27.0	5.4	4.6	18.3
<b>A12/Eagle Way/Barrack Square</b>								
A12 SB	2	23.9	6.3	2	20.5	5.3	5.8	23.3
A12 NB	2	19.7	5.5	2	44.9	8.4	7.0	28.0
Eagle Way	2	9.8	3.5	2	5.8	2.4	2.9	11.8
Barrack Square	2	7.0	3.1	2	13.8	3.9	3.5	13.9
<b>A12/Foxhall Road/Newbourne Road</b>								
A12 SB	2	24.5	6.9	2	17.1	5.0	6.0	23.9
A12 NB	2	27.3	6.4	2	34.4	9.0	7.7	30.7
Foxhall Road	2	14.4	4.0	2	17.9	3.8	3.9	15.8
Newbourne Road	2	25.7	5.4	2	14.8	4.1	4.8	19.0

**Table B10: Turning Counts 2018 with development and with improvement**

<b>A12/Eagle Way/ Anson Road</b>				
	<b>Direction</b>	<b>AM</b>	<b>PM</b>	<b>AADT</b>
A12 NB	LT	94	163	1321.0
	S	1192	1477	13718.7
	RT	136	244	1953.2
A12 SB	LT	202	226	2199.9
	S	1903	1117	15522.8
	RT	103	89	986.9
Eagle Way North	LT	178	82	1336.4
	S	30	27	293.0
	RT	96	32	657.9
Anson Rd	LT	76	149	1156.5
	S	22	40	318.7
	RT	278	355	3253.6

<b>A12/Eagle Way/Barrack Square</b>				
	<b>Direction</b>	<b>AM</b>	<b>PM</b>	<b>AADT</b>
A12 NB	LT	41	166	1064.0
	S	1276	1480	14165.8
	RT	651	153	4132.6
A12 SB	LT	635	101	3783.0
	S	1439	1133	13220.1
	RT	53	69	627.1
Eagle Way South	LT	87	46	683.6
	S	56	30	442.0
	RT	86	88	894.4
Barrack sq	LT	111	308	2153.7
	S	15	11	133.6
	RT	106	440	2806.4
<b>A12/Foxhall Road/Newbourne Road</b>				
	<b>Direction</b>	<b>AM</b>	<b>PM</b>	<b>AADT</b>
A12 NB	LT	240	532	3968.1
	S	1559	1560	16031.7
	RT	429	315	3824.2
A12 SB	LT	66	97	837.8
	S	1526	1133	13667.3
	RT	260	321	2986.3
Foxhall Rd	LT	524	271	4086.3
	S	70	311	1958.3
	RT	122	167	1485.5
Newbourne Rd	LT	445	574	5237.7
	S	332	290	3197.1
	RT	82	76	812.1
LT= left turn, S= straight, RT= right turn; SB= southbound, NB=northbound				