WEYMOUTH & PORTLAND
Borough Council

2014 Air Quality Progress Report and 2015 Updating and Screening Assessment for Weymouth and Portland Borough Council

In fulfillment of Part IV of the
Environment Act 1995
Local Air Quality Management

December 2015

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Executive Summary

This report comprises information sufficient to comply with Weymouth and Portland Borough Council's statutory responsibility to report on air quality matters.

The aim of this report is to provide details for the 2014 progress report and 2015 Updating and Screening Assessment.

The report details monitoring results from 2013 and 2014 and demonstrates that the air quality objectives for NO_2 and PM_{10} are being achieved and that there is no need to proceed to a detailed assessment.

Weymouth and Portland Borough Council propose to continue monitoring in areas of concern and results will be reviewed in future air quality reports.

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1 Introduction

1.1 Description of Local Authority Area

The Borough of Weymouth and Portland is situated on the South Coast of Dorset approximately 35 miles west of the nearest large conurbation of Bournemouth and Poole and approximately 50 miles east of Exeter. It has approximately 20 miles of coastline along the English Channel, and adjoins the neighbouring district of West Dorset along its entire boundary length.

The Borough has a mix of urban and rural areas with Weymouth as the main town. To the south lies the Isle of Portland, connected to the mainland by the causeway and Chesil Beach.

The predominant industry in the Borough is tourism particularly during the summer months. One of the oldest industries in the Borough is the extraction of stone from quarries on Portland. The main uses of land in the Borough, other than for residential, retail, tourism and leisure activities include:

Marine and Port Activities
Light Industrial and Business
Quarrying and Related Activities
Ministry of Defence
CEFAS
Agricultural Uses

Nitrogen dioxide from vehicles is considered to be the only major source within the Borough. It is appreciated that there can be a correlation between nitrogen dioxide and particulate matter, therefore monitoring for particulates has been undertaken since 2010 in one area of Weymouth.

1.2 Purpose of Progress Report

This report fulfils the requirements of the Local Air Quality Management (LAQM) process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy

for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedences are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

Progress Reports are required in the intervening years between the three-yearly Updating and Screening Assessment reports. Their purpose is to maintain continuity in the LAQM process.

They are not intended to be as detailed as Updating and Screening Assessment Reports, or to require as much effort. However, if the Progress Report identifies the risk of exceedence of an Air Quality Objective, the Local Authority (LA) should undertake a Detailed Assessment immediately, and not wait until the next round of Review and Assessment.

1.3 Air Quality Objectives

The air quality objectives applicable to LAQM **in England** are set out in the Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043), and are shown in Table 1.1. This table shows the objectives in units of micrograms per cubic metre µg/m^3 (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

Table 1.1 Air Quality Objectives included in Regulations for the purpose of LAQM in England

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 µg/m^3	Running annual mean	31.12.2003
	5.00 µg/m^3	Annual mean	31.12.2010
1,3-Butadiene	2.25 µg/m^3	Running annual mean	31.12.2003
Carbon monoxide	10 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.50 µg/m^3	Annual mean	31.12.2004
	0.25 µg/m^3	Annual mean	31.12.2008
Nitrogen dioxide	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m^3	Annual mean	31.12.2005
Particulate Matter (PM_{10}) (gravimetric)	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 µg/m^3	Annual mean	31.12.2004
Sulphur dioxide	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

Table 1.2 Summary of WPBC's reports submitted to Defra

Title of Report	Date Produced	Outcome
Updating and Screening Assessment	Nov 2003	Accepted by Defra
Progress Report	May 2004	Accepted by Defra - To proceed to a Detailed Assessment for NO_2
Detailed Assessment	Sept 2004	Accepted by Defra – No requirement to proceed to declare an AQMA
Progress Report	June 2005	Accepted by Defra
Updating and Screening Assessment	2006	Accepted by Defra – To proceed to a Detailed Assessment for NO_2
Detailed Assessment	June 2007	Accepted by Defra – No requirement to proceed to declare an AQMA
Progress Report	May 2008	Accepted by Defra
Updating and Screening Assessment	June 2009	Accepted by Defra – To proceed to an Detailed Assessment for NO_2 'Boot Hill'
Progress Report **Incorporating Air Quality Updating and Screening Assessment and Detailed Assessment, for 'Boot Hill', Weymouth.**	June 2013	Accepted by defra no requirement to proceed to declare an AQMA

The findings from the June 2013 Progress Report gave the conclusion that the monitoring results from 2009 – 2012 demonstrated that the objectives for NO_2 and PM_{10} were being achieved. The detailed assessment of Boot Hill (Rodwell Road) showed that there was no requirement to declare an AQMA in that area.

Proposed actions from the 2013 Progress Report were:

- there was no need to undertake any Detailed Assessment for any other pollutant within the WPBC area;
- to review the diffusion tube monitoring locations to concentrate in the areas of concern (King Street and Rodwell Road) and to monitor levels of NO_2 in these locations in future;

- to continue automatic monitoring for PM_{10} and NO_2 in the vicinity of Boot Hill to monitor levels of these pollutants in future;
- decommission the automatic monitor at Dorchester Road/Littlemoor Road in 2013.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

Weymouth and Portland Borough Council have carried out automatic monitoring for nitrogen dioxide at two sites, Littlemoor Road and Rodwell Road (see figures 2.1a and 2.1b).

The monitoring site at Littlemoor Road was installed in 2005 to monitor nitrogen dioxide. This site was decommissioned in 2013 due to a significant reduction in levels of nitrogen dioxide. This was due to the new Weymouth Relief Road opening in March 2010 which resulted in traffic being diverted from this location.

Rodwell Road was an area of concern for a number of years for traffic related nitrogen dioxide. As there was thought to be a correlation between nitrogen dioxide and particulate matter, a grant application was put to Defra to enable to purchase of a TEOM FDMS analyser for this location. Dorset County Council assisted WPBC with purchasing a chemiluminescent analyser to be placed at this location. The site was installed in February 2010.

The analyser at Rodwell Road is not located within an AQMA. The Rodwell Road station is considered to be representative of relevant public exposure, as there are facades of residential properties located at approximately the same distance from the road in that area.

Figure 2.1 Map of Weymouth detailing automatic analysers locations

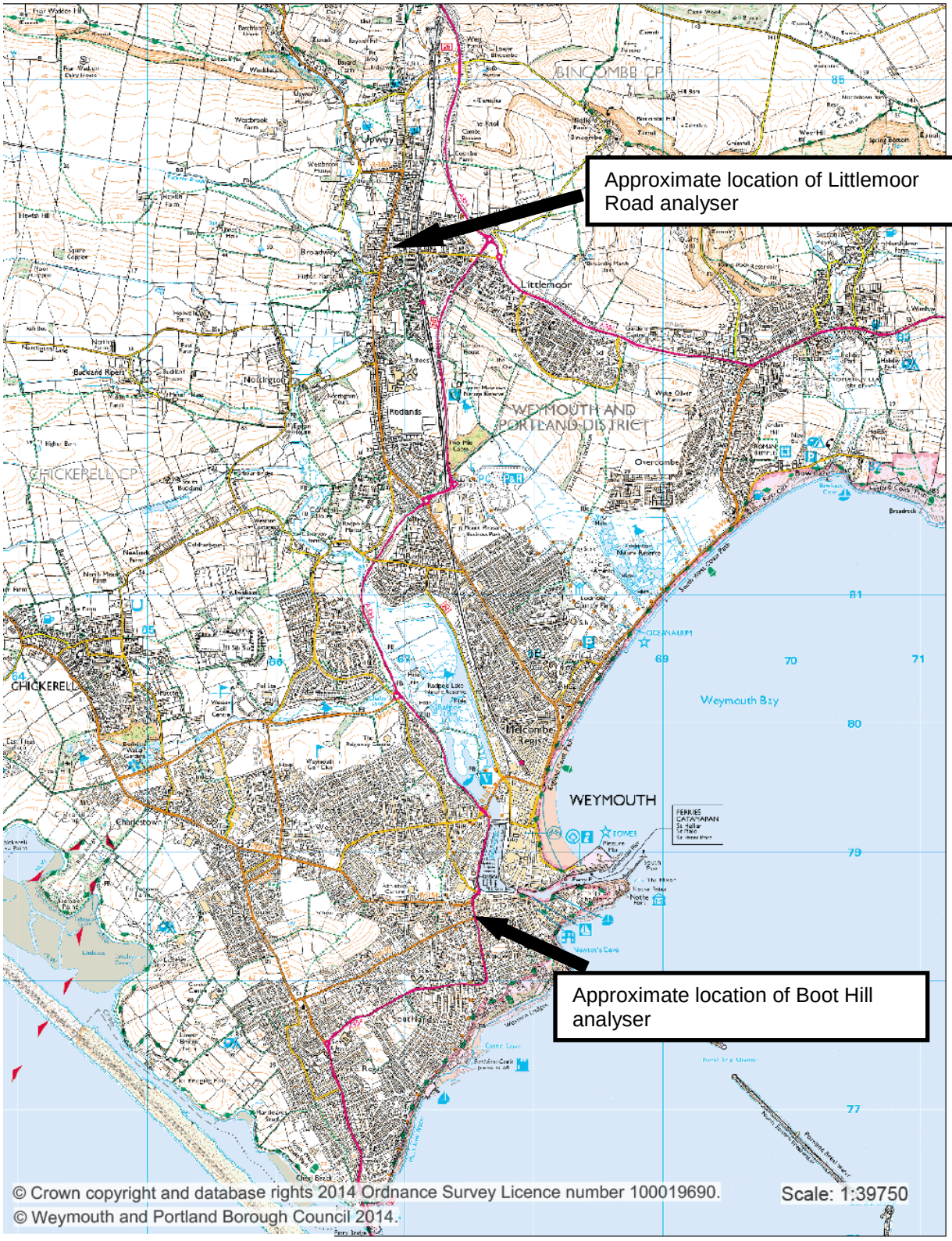

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Figure 2.1a Map of previous location of Littlemoor Road Automatic Monitoring Site

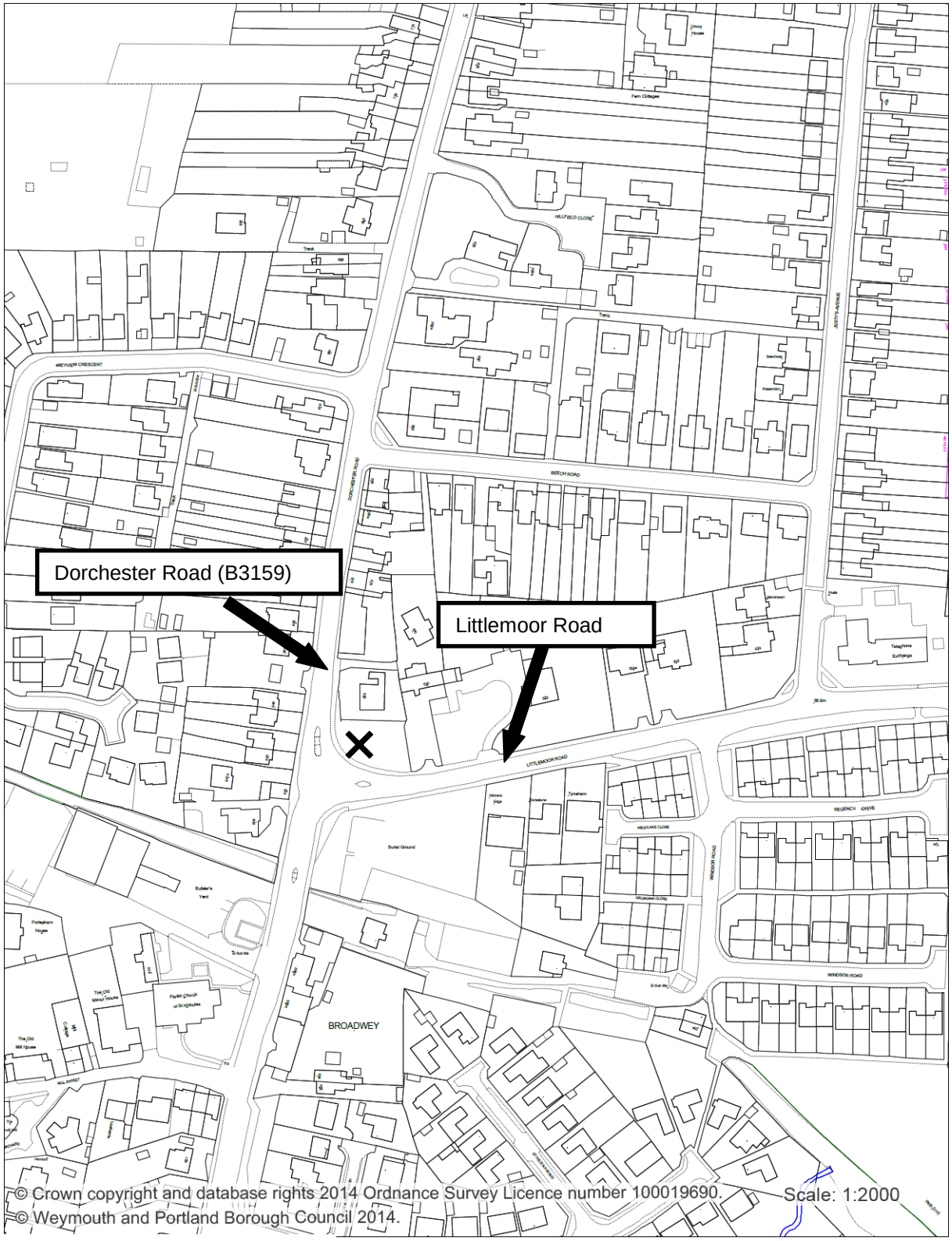

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Figure 2.1b Map of Rodwell Road Automatic Monitoring Site

Table 2.1 Details of Automatic Monitoring Sites

Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Pollutants Monitored	In AQMA?	Monitoring Technique	Relevant Exposure? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
Boot Hill	Roadside	367541	78471	NO_2	N	Chemiluminescent	N	1.5	Y
Boot Hill	Roadside	367541	78471	PM_{10}	N	TEOM FDMS	N	1.5	Y

The automatic analyser is not a relevant exposure site (not being on the facade of a dwelling) however, it is representative of relevant exposure being approximately the same distance from the road as dwellings along Boot Hill in this location.

2.1.2 Non-Automatic Monitoring Sites

Non-automatic monitoring has been carried out for nitrogen dioxide since 1996 at a number of sites using diffusion tubes.

Since submission of the last progress report in 2013, there have been changes in the number of diffusion tubes throughout. Table 2.2 shows all the diffusion tubes from 2013 to present, however a number have been removed in relation to WPBC's review of the monitoring from 2013.

Figure 2.2a Map of Non-Automatic Monitoring Sites – Rodwell Road (Boot Hill)

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Figure 2.2b Map of Non-Automatic Monitoring Sites – King Street

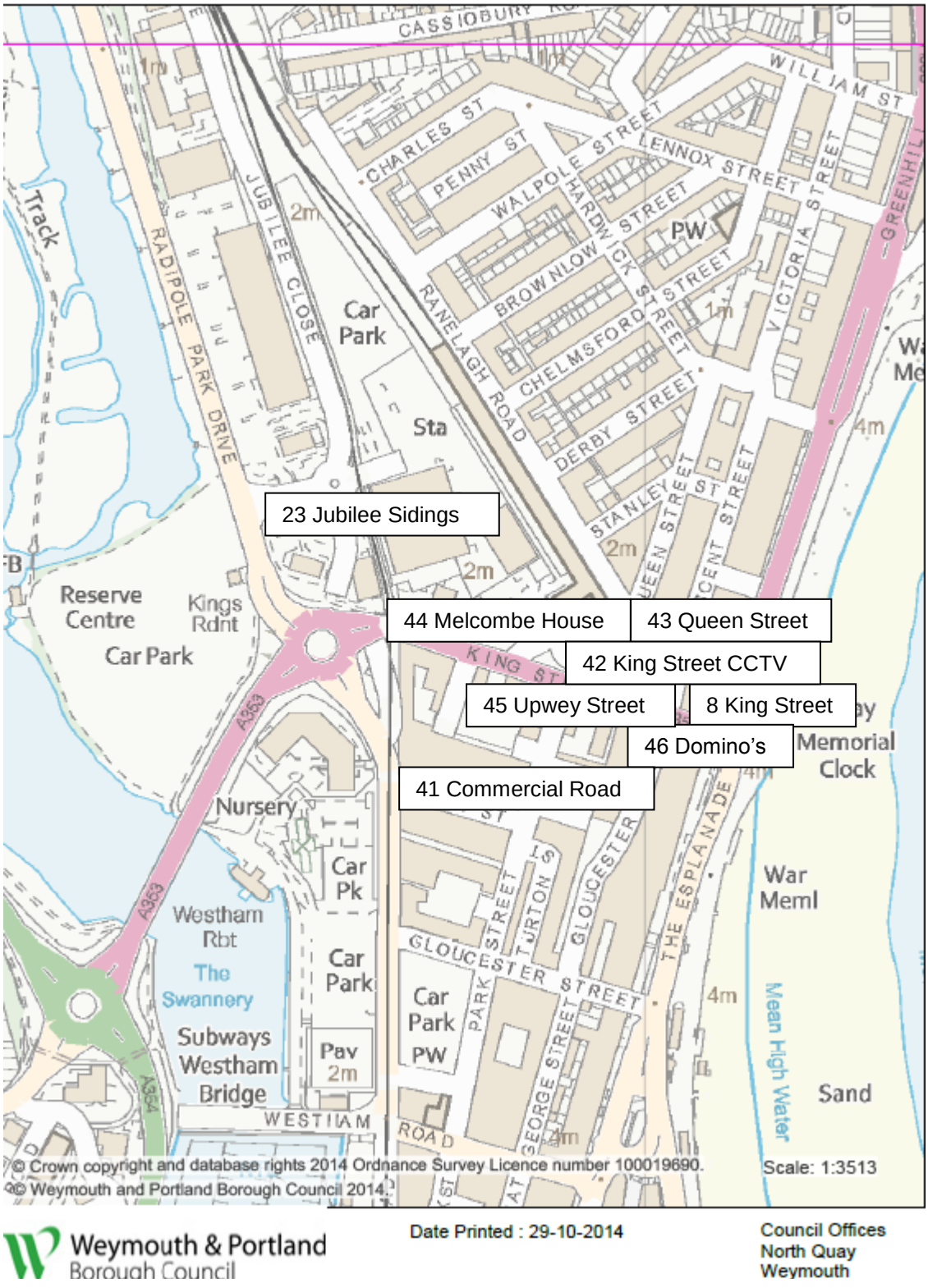
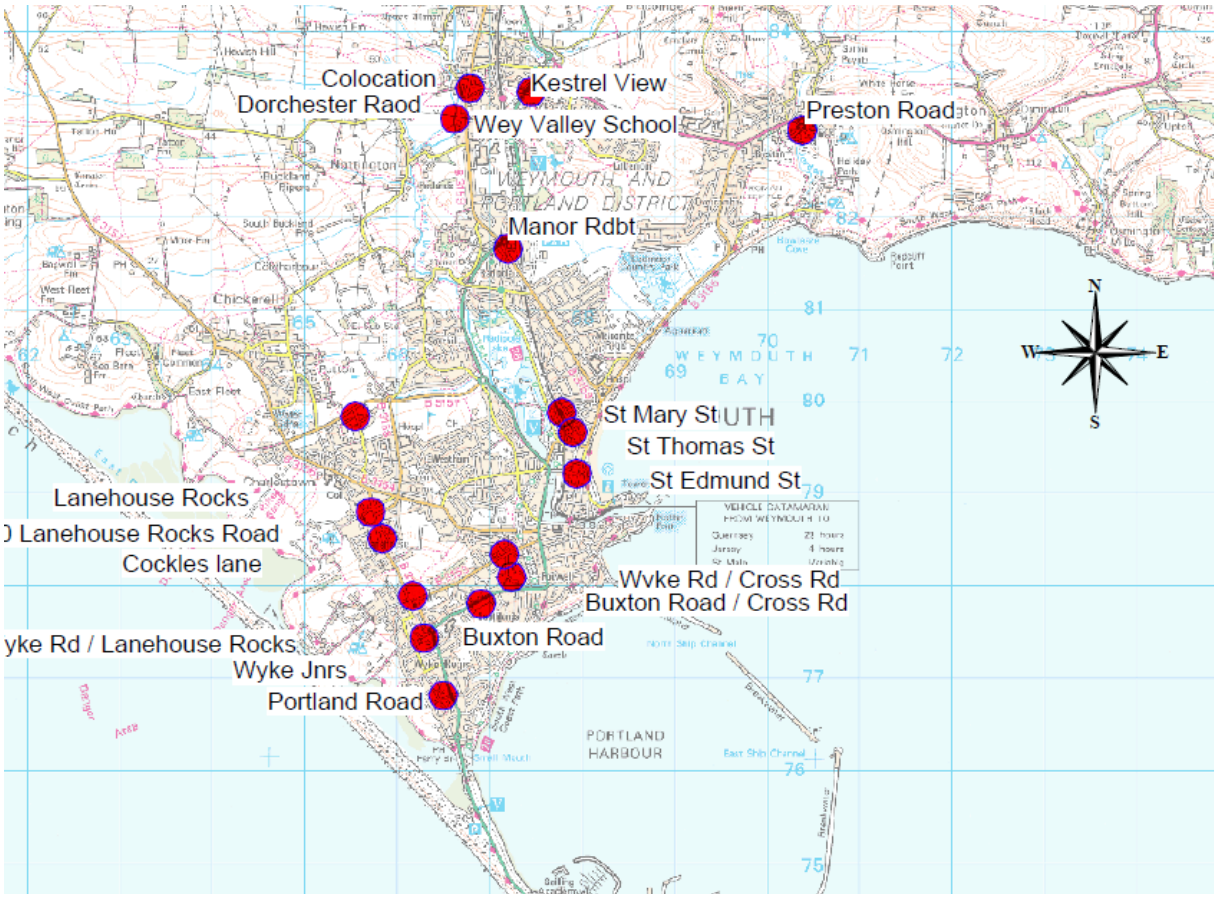


Figure 2.2c Other Diffusion Tube Locations




Fortuneswell
Easton
St Georges
Weston
Southwell
PORTLAND
WEYMOUTH AND
PORTLAND DISTRICT
PORTLAND BILL
West Bay
Chiswell
Sailing Academy
Osprey Quay
Portland Castle
Castletown
South Ship Channel
Balaclava Bay
King's Pier
East Weare
HM Young Offender Institution
Grove
Clay Ope
Quarry
Durdle Pier
Blacknor
Church Ope Cove
Freshwater Bay
Quarries
Quarries (dis)
Lookout Sta
Cave Hole
Bird Observatory
Pulpit Rock
South West Coast Path
A354
75
74
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72
71
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68
67

Table 2.2 Details of Non-Automatic Monitoring Sites – Nitrogen Dioxide, No AQMAs

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Pollutants Monitored	In AQMA?	Is Monitoring Co-located with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
4	St Georges Estate	Urban Background	368779	71706	NO_2	N	N	Y (1m)	2	N
5	Fortuneswell	Roadside	368662	73491	NO_2	N	N	Y (2m)	2	Y
8	King Street	Kerbside	368003	79527	NO_2	N	N	Y (0.5m)	1	Y
10	Boot Hill	Kerbside	367542	78548	NO_2	N	N	Y (4m)	1	Y
12	Portland Road	Roadside	366477	77231	NO_2	N	N	Y (8m)	1.5	Y
14	Lanehouse Rocks Road	Suburban	365714	78970	NO_2	N	N	Y (19m)	1.5	Y
17	Co-location Site	Roadside	366847	83634	NO_2	N	Y	N	1	Y
20	Co-location II	Roadside	366847	83634	NO_2	N	Y	N	1	Y
21	Co-location III	Roadside	366847	83634	NO_2	N	Y	N	1	Y
29	Fire Station	Roadside	367514	78631	NO_2	N	N	N	1.5	N
30	15 Rodwell Road	Roadside (on façade of dwelling)	367545	78550	NO_2	N	N	Y (façade)	4	Y
31	Rodwell Roundabout	Roadside	367540	78471	NO_2	N	Y	Y	1	Y

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Pollutants Monitored	In AQMA?	Is Monitoring Co-located with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
32	To Portmore Gardens	Roadside	367528	78554	NO_2	N	N	Y (representative of façade)	2	Y
52	16 Rodwell Road	Kerbside	367533	78531	NO_2	N	N	Y (façade)	1	Y
53	Wyke Road	Roadside	367525	78475	NO_2	N	N	N	0.5	N
34	Wyke Juniors	Kerbside	366385	77496	NO_2	N	N	N	0.5	N
35	Cockles Lane	Kerbside	365960	78268	NO_2	N	N	N	0.5	N
36	60 Lanehouse Rocks	Kerbside	365758	78768	NO_2	N	N	N	1	N
37	Wyke Road / Cross Road Junction	Roadside	367197	78330	NO_2	N	N	N	0.5	N
38	Buxton Road / Cross Road	Kerbside	367123	77942	NO_2	N	N	N	1	N
39	Wyke Road / Lanehouse Rocks Road	Roadside	366144	77841	NO_2	N	N	N	0.5	N

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Pollutants Monitored	In AQMA?	Is Monitoring Co-located with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
42	King Street CCTV	Roadside	367948	79557	NO_2	N	N	N	2	N
44	Melcombe House	Kerbside	367830	79595	NO_2	N	N	N	1	N
45	Upwey Street	Kerbside (on façade of dwelling)	367879	79567	NO_2	N	N	Y (façade)	0.5	Y
46	Dominoes	Kerbside (on façade of dwelling)	367995	79528	NO_2	N	N	Y (façade)	0.5	Y
49	Rodwell Roundabout II	Roadside	367540	78471	NO_2	N	Y	Y	1	Y
50	Rodwell Roundabout III	Roadside	367540	78471	NO_2	N	Y	Y	1	Y
51	Rodwell Inn	Roadside	367550	78485	NO_2	N	N	Y	1	Y

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 Nitrogen Dioxide (NO_2)

Automatic Monitoring Data

The results from the automatic analysers can be found below in Table 2.3. The results show that the annual mean air quality objective is achieved.

There were no exceedances of the hourly mean of 200ug/m^3 in 2013 or 2104. There is no need for a detailed assessment for NO_2.

Table 2.3 Results of Automatic Monitoring for NO_2: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Year	Valid Data Capture for Period of Monitoring, %	Annual Mean Concentration (µg/m^3)
Boot Hill	Roadside	N	2010	(p.m.) 80.68	24.15
			2011	(a.m.) 99.89	31.32
			2012	(a.m.) 99.99	29.61
			2013	(a.m.) 99.99	29.23
			2014	(p.m.) 66.67	32.53

The 2014 mean has been annualised (Using Box 3.2 in TG(09)).

Table 2.4 Results of Automatic Monitoring for NO_2: Comparison with 1-hour Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture 2013 %	Valid Data Capture 2014 %	Number of Hourly Means > 200µg/m^3	
					2013	2014
Boot Hill	Roadside	N	99.99	66.67	0	0

Diffusion Tube Monitoring Data

Monitoring results for 2013 and 2014 can be found in Table 2.5. All sites comply with the annual mean and hourly air quality objectives. After completing the Precision and Accuracy Spreadsheet from AEA Energy and Environment (Appendix A), it was considered suitable to use the locally derived bias-adjustment factor from the co-location study at Rodwell Road for 2013 and 2014.

Due to a lab error, diffusion tubes for March 2013 were exposed for 8 weeks. Following advice from the LAQM Helpline, these results have been discounted.

Further data are held within Table 2.6 for 2009 to 2012.

Table 2.5 Results of NO_2 Diffusion Tubes 2013 and 2014

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 / 2014 (Number of Months or %)	2013 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.68	2014 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.76
4	St Georges Estate	UB	N	N	10 / 12	5.77	5.82
5	Fortuneswell	R	N	N	3 / 0	13.45 (p.m.)	
8	King Street	K	N	N	10 / 11	23.29	25.65
10	Boot Hill	K	N	N	10 / 12	30.38	33.99
12	Portland Road	R	N	N	2 / 0	12.45 (p.m.)	
14	Lanehouse Rocks Road	S	N	N	3 / 0	10.72 (p.m.)	
17	Co-location site	R	N	Y	3 / 0	12.33 (p.m.)	
20	Co-location site	R	N	Y	3 / 0	12.08 (p.m.)	
21	Co-location site	R	N	Y	3 / 0	10.66 (p.m.)	
29	Fire station	R	N	N	10 / 10	17.07	19.57
30	15 Rodwell Road	R	N	N	10 / 12	18.69	21.17
31	Rodwell Roundabout	R	N	Y	10 / 11	27.57	32.49
32	To Portmore Gardens	R	N	N	10 / 12	25.25	30.07
52	Rodwell Road	K	N	N	10 / 11	32.60	35.35
53	Wyke Road	R	N	N	3 / 0	20.55 (p.m.)	
34	Wyke Juniors	K	N	N	3 / 0	10.77 (p.m.)	
35	Cockles Lane	K	N	N	3 / 0	20.00 (p.m.)	
36	60 Lanehouse Rocks Road	K	N	N	3 / 0	12.84 (p.m.)	

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 / 2014 (Number of Months or %)	2013 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.68	2014 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.76
37	Wyke Road/Cross Road Junc	R	N	N	3 / 0	11.22 (p.m.)	
38	Buxton Road/Cross Road	K	N	N	3 / 0	8.28 (p.m.)	
42	King Street CCTV	R	N	N	10 / 12	18.76	21.93
44	Melcombe House	K	N	N	10 / 10	21.24	25.75
45	Upwey Street	K	N	N	10 / 12	24.58	28.45
46	Dominoes	K	N	N	10 / 12	25.68	29.76
49	Rodwell Roundabout II	R	N	Y	8 / 12	28.19	31.87
50	Rodwell Roundabout III	R	N	Y	9 / 11	29.30	30.73
51	Rodwell Inn	R	N	N	10 / 12	29.42	31.15

R – Roadside K – Kerbside S - Suburban

2013 – Mean for Tube 49 has been annualised (Using Box 3.2 in TG(09)).

Table 2.6 Results of NO_2 Diffusion Tubes (2009 to 2014)

Site ID	Site Type	Within AQMA?	Annual Mean Concentration (µg/m^3) - Adjusted for Bias					
			2009 (Bias Adjustment Factor = 0.95)	2010 (Bias Adjustment Factor = 1.03)	2011 (Bias Adjustment Factor = 0.95)	2012 (Bias Adjustment Factor = 0.81)	2013 (Bias Adjustment Factor = 0.68)	2014 (Bias Adjustment Factor = 0.76)
2 Newstead Road	R	N	19.31	20.99	18.35	8.78		
4 St Georges Estate	UB	N	9.99	10.82	9.59	7.44	5.77	5.82
5 Fortuneswell	R	N	17.23	20.59	16.16	13.03	13.45 (p.m.)	
7 Littlemoor Road	R	N	35.01	29.30	22.73	14.56		
8 King Street	K	N	32.68	36.01	25.58	22.57	23.29	25.65
9 St Mary Street	UC	N	16.96	18.33	13.51	10.07		
10 Boot Hill	K	N	**51.57**	**43.45**	**42.56**	32.80	30.38	33.99
11 Preston Road	R	N	27.22	26.50	23.47	15.07		
12 Portland Road	R	N	18.36	20.03	16.91	13.07	12.45 (p.m.)	
13 St Thomas Street	K	N	24.74	26.49	23.11	14.68		
14 Lanehouse Rocks Road	S	N	13.77	20.46	16.31	11.33	10.72 (p.m.)	

Site ID	Site Type	Within AQMA?	Annual Mean Concentration (µg/m^3) - Adjusted for Bias					
			2009 (Bias Adjustment Factor = 0.95)	2010 (Bias Adjustment Factor = 1.03)	2011 (Bias Adjustment Factor = 0.95)	2012 (Bias Adjustment Factor = 0.81)	2013 (Bias Adjustment Factor = 0.68)	2014 (Bias Adjustment Factor = 0.76)
15 Manor Roundabout	R	N	27.22	25.72	27.65	15.97		
16 Kestrel View	S	N	12.31	13.52	11.86	11.83		
17 Co-location site	R	N	29.79	28.37	22.05	13.94	12.33 (p.m.)	
18 719 Dorchester Road	R	N	37.98	33.39	18.21			
19 Dorchester Road	R	N	38.99	**41.51**	25.22			
20 Co-location II	R	N	32.76	31.36	21.78	14.02	12.08 (p.m.)	
21 Co-location III	R	N	33.75	30.36	22.06	14.19	10.66 (p.m.)	
22 Wey Valley School	UC	N	13.80	14.98	10.11			
23 Jubilee Sidings	S	N	18.82	18.78	17.90			
29 Fire Station	R	N	31.79	32.59	24.84	18.86	17.07	19.57
30 15 Rodwell Road	R	N	31.80	31.16	26.76	23.06	18.69	21.17

Site ID	Site Type	Within AQMA?	Annual Mean Concentration (µg/m^3) - Adjusted for Bias					
			2009 (Bias Adjustment Factor = 0.95)	2010 (Bias Adjustment Factor = 1.03)	2011 (Bias Adjustment Factor = 0.95)	2012 (Bias Adjustment Factor = 0.81)	2013 (Bias Adjustment Factor = 0.68)	2014 (Bias Adjustment Factor = 0.76)
31 Rodwell Roundabout	R	N	**44.80**	**44.31**	37.41	29.21	27.57	32.49
32 To Portmore Gardens	R	N	37.84	37.67	32.82	26.77	25.25	30.07
47 Fire Station II	R	N		32.87	31.38			
48 Fire Station III	R	N		30.77	32.99			
33 Buxton Road	R	N	15.75	17.95	14.40	13.82		
34 Wyke Juniors	K	N	13.97	18.33	13.60	11.66	10.77 (p.m.)	
35 Cockles Lane	K	N	24.71	32.82	25.44	21.81	20.00 (p.m.)	
36 60 Lanehouse Rocks Road	K	N	16.89	21.19	18.09	13.47	12.84 (p.m.)	
37Junction Wyke Road / Cross Road	R	N	15.39	17.30	13.73	12.16	11.22 (p.m.)	
38 Junction Buxton Road / Cross Road	K	N	12.94	17.67	14.44	12.30	8.28 (p.m.)	

Site ID	Site Type	Within AQMA?	Annual Mean Concentration (µg/m^3) - Adjusted for Bias					
			2009 (Bias Adjustment Factor = 0.95)	2010 (Bias Adjustment Factor = 1.03)	2011 (Bias Adjustment Factor = 0.95)	2012 (Bias Adjustment Factor = 0.81)	2013 (Bias Adjustment Factor = 0.68)	2014 (Bias Adjustment Factor = 0.76)
39 Junction Wyke Road / Lanehouse Rocks Road	R	N	15.22	20.41	16.03	12.79		
40 St Edmund Street	UC	N	19.57	23.87	20.73	14.49		
41 Commercial Road	R	N	19.22	20.07	17.09	15.70		
42 King Street CCTV	R	N	28.16	29.03	25.04	19.32	18.76	21.93
43 Queen Street	R	N	19.27	21.71	17.19	14.70		
44 Melcombe House	K	N	34.00	32.94	29.22	23.69	21.24	25.75
45 Upwey Street	K	N	36.99	39.89	29.10	27.05	24.58	28.45
46 Dominoes	K	N	39.98	**43.90**	32.38	26.74	25.68	29.76
49 Rodwell Roundabout II	R	N			36.17	29.44	28.19	31.87
50 Rodwell Roundabout III	R	N			36.66	29.11	29.30	30.73

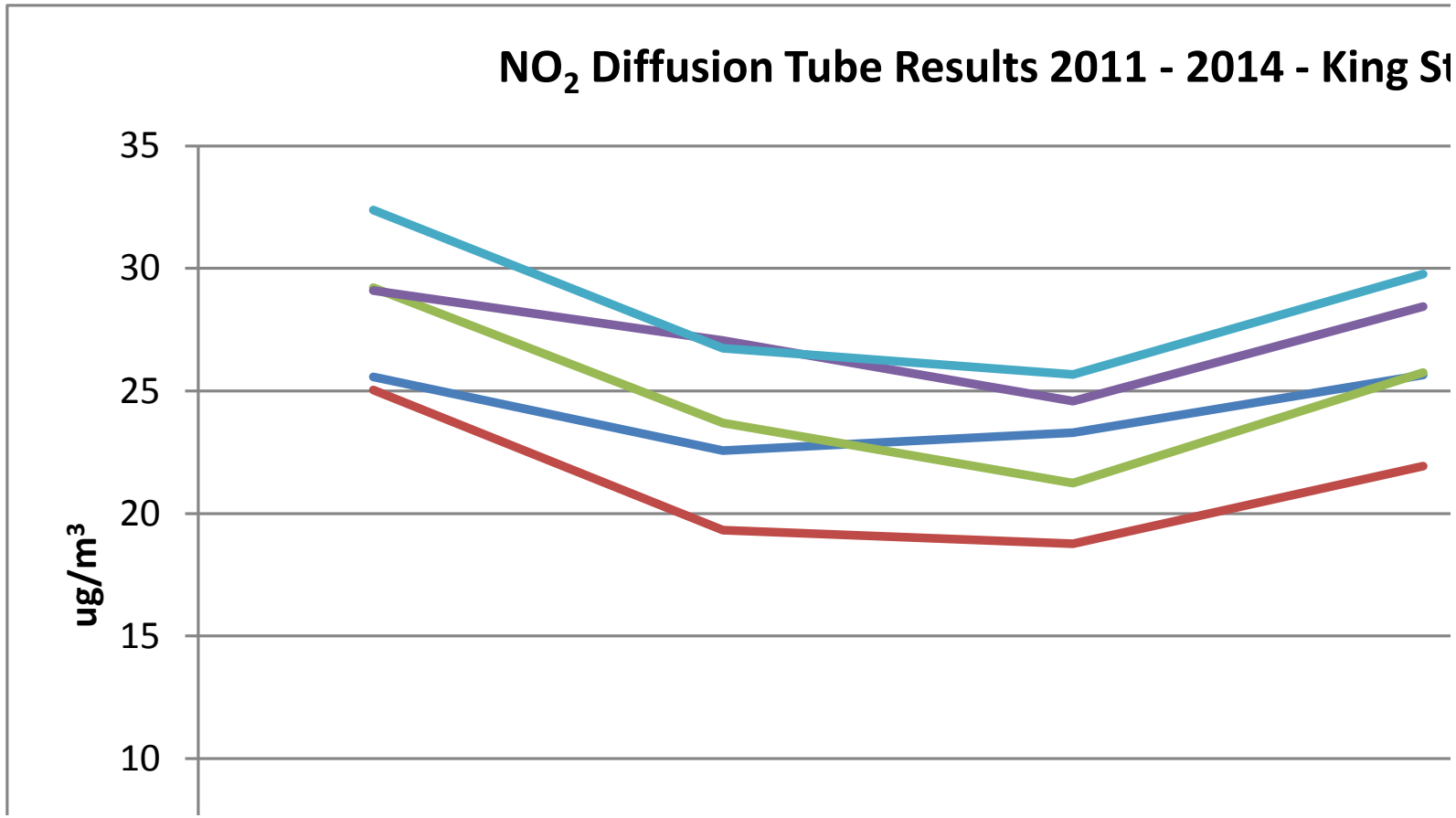
Site ID	Site Type	Within AQMA?	Annual Mean Concentration (µg/m^3) - Adjusted for Bias					
			2009 (Bias Adjustment Factor = 0.95)	2010 (Bias Adjustment Factor = 1.03)	2011 (Bias Adjustment Factor = 0.95)	2012 (Bias Adjustment Factor = 0.81)	2013 (Bias Adjustment Factor = 0.68)	2014 (Bias Adjustment Factor = 0.76)
51 Rodwell Inn	R	N				31.43	29.42	31.15
52 16 Rodwell Road	K	N				34.24	32.60	35.35
53 Wyke Road	R	N				23.57	20.55 (p.m.)	

R – Roadside UC – Urban Control K – Kerbside S - Suburban

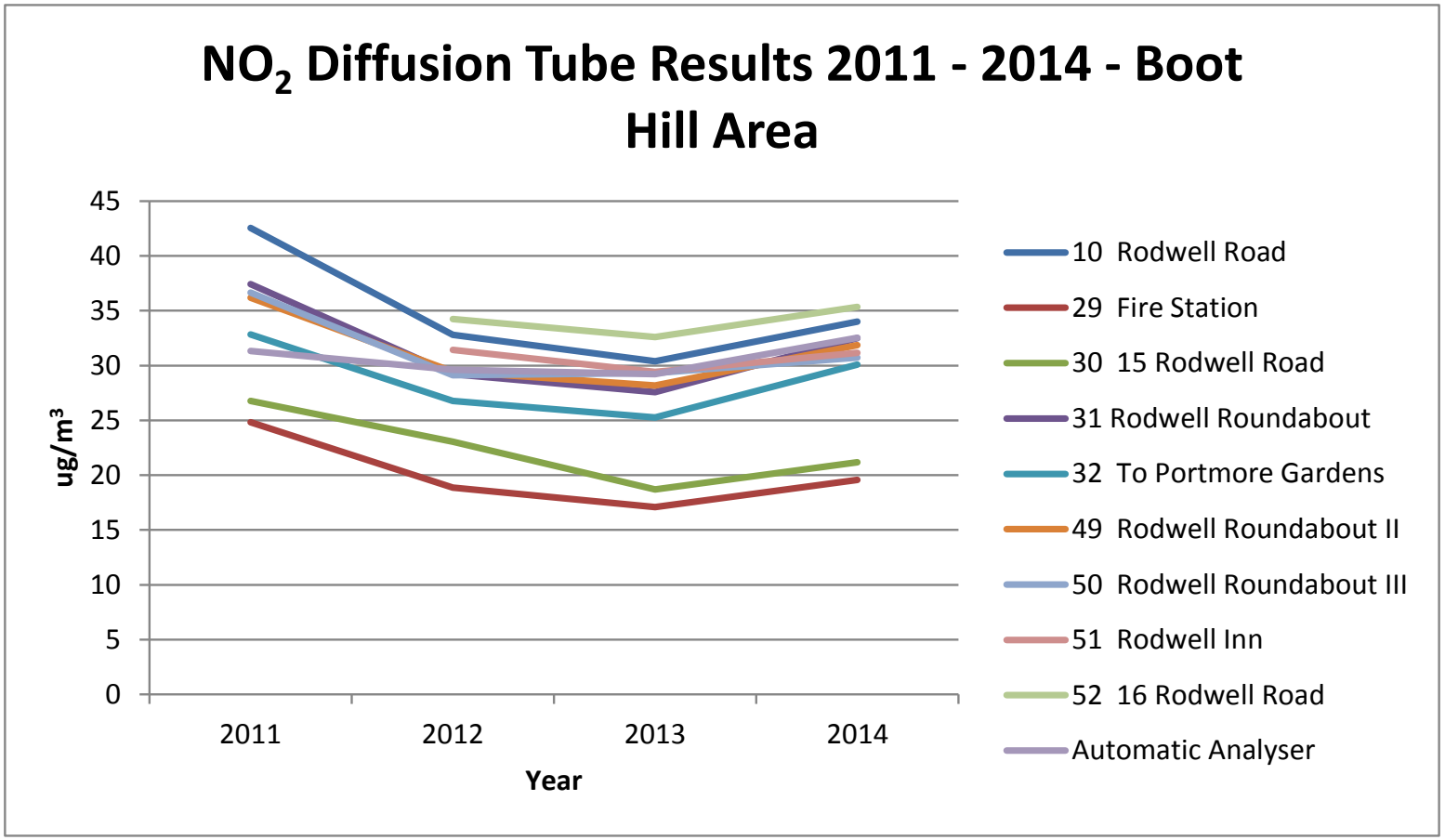
2013 – Mean for Tube 49 has been annualised (Using Box 3.2 in TG(09)).

Figure 2.4 Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites (Areas of Previous Concern Only)

2.4.a King Street Locations



2.4.b Boot Hill Locations



Diffusion tube monitoring from 2011 – 2014 indicates there is no need for a detailed assessment for NO_2.

2.2.2 Particulate Matter (PM_{10})

Monitoring for PM_{10} commenced in February 2010 in the Rodwell Road area of Weymouth. This was considered necessary due to the significant levels of NO_2 present to that area and a possible correlation between NO_2 and PM_{10} levels. The equipment was funded partly from the Defra grant, and financial assistance from the County Council. The monitoring is not within an AQMA.

A summary of the data collected since 2010 is presented below in Table 2.7. The monitoring has demonstrated that the annual mean of 40 µg/m^3 and the 24 hour mean of no more than 35 exceedences of 50µg/m^3 per year have been achieved.

Table 2.7 Results of Automatic Monitoring for PM_{10}: Comparison with Annual Mean Objective

Site ID	Site Type	Year	Within AQMA?	Valid Data Capture for period of Monitoring, or for each year %	Confirm Gravimetric Equivalent (Y or N/A)	Annual Mean Concentration (µg/m^3)
Boot Hill	Roadside	2010	N	(p.m.) 87.13	Y	24.9
		2011	N	(a.m.) 99.8	Y	19.8
		2012	N	(a.m.) 97.18	Y	23.8
		2013	N	(a.m.) Approx. 97	Y	30.91
		2014	N	(a.m.) approx. 80	Y	30.02

Results of Automatic Monitoring for PM_{10}: Comparison with 24-hour Mean Objective

PM_{10} has not been calculated against the 24-hour mean objective due to uncertainty with data capture. This will be reviewed for the next report in 2016, however, this objective is unlikely to exceed.

2.2.3 Sulphur Dioxide

No monitoring for Sulphur Dioxide is undertaken within Weymouth and Portland.

2.2.4 Benzene

No monitoring for Benzene is undertaken within Weymouth and Portland.

2.2.5 Other pollutants monitored

No other pollutants are monitored within Weymouth and Portland.

2.2.6 Summary of Compliance with AQS Objectives

Weymouth and Portland Borough Council has examined the results from monitoring in the borough. Concentrations are all below the objectives, therefore there is no need to proceed to a Detailed Assessment.

3 Road Traffic Sources

The last round of review and assessment looked at this aspect. There has been no change since the last assessment.

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

Weymouth and Portland Borough Council confirms that there are no new/newly identified congested streets with a flow above 5,000 vehicles per day and residential properties close to the kerb that have not been adequately considered in previous rounds of Review and Assessment.

3.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic

These areas will include locations where individuals may regularly spend 1 hour or more, for example in areas with outdoor café and bars.

Weymouth and Portland Borough Council confirms that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

3.3 Roads with a High Flow of Buses and/or HGVs

This matter was considered within previous rounds of review and assessment and refers to areas with an unusually high proportion of buses and/or HGV's.

Weymouth and Portland Borough Council confirms that there are no new/newly identified roads with high flows of buses/HDVs.

3.4 Junctions

This matter was considered within previous rounds of review and assessments and refers to those junctions with more than 10,000 vehicles per day.

Weymouth and Portland Borough Council confirms that there are no new/newly identified busy junctions/busy roads.

3.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment

Weymouth and Portland Borough Council confirms that there are no new/proposed roads.

3.6 Roads with Significantly Changed Traffic Flows

These roads are defined as those with more than 10,000 vehicles per day and that have experienced a large increase in traffic.

Weymouth and Portland Borough Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

Weymouth and Portland Borough Council confirms that there are no relevant bus stations in the Local Authority area.

4 Other Transport Sources

4.1 Airports

Weymouth and Portland Borough Council confirms that there are no airports in the Local Authority area.

4.2 Railways (Diesel and Steam Trains)

Stationary diesel and coal fired trains can give rise to high levels of sulphur dioxide. Moving diesel trains, in high numbers, can also lead to increases in nitrogen dioxide concentrations.

4.2.1 Stationary Trains

Weymouth and Portland Borough Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

4.2.2 Moving Trains

Nitrogen dioxide concentrations are found to be higher alongside rail lines with a large number of diesel train movements. Rail lines which fall into this category have been identified within TG(09). The railway line within this borough does not fall into this category.

Weymouth and Portland Borough Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

4.3 Ports (Shipping)

Bunker oils used by large ships give rise to increased emissions of sulphur dioxide. A port with between 5,000 and 15,000 movements a year and with relevant exposure within 250m from the berths and main movement area may mean that the 15 minute objective for sulphur dioxide is breached.

Weymouth and Portland Borough Council has two working ports. Whilst these had been considered within previous rounds of review and assessment, the major one, Portland Port, continues to steadily increase in numbers of ship movements.

Unfortunately, Portland Port Limited have not been able to provide WPBC with updated figures. The 2009 USA stated approximately 1200 ship movements in 2008, using officer's understanding of the working of Portland Port, there have not been a significant rise in these numbers.

There is relevant exposure within 250m from one of the berths.

Weymouth and Portland Borough Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

5 Industrial Sources

5.1 Industrial Installations

There have been no new or proposed industrial installations within the local authority since the last round of review and assessment. Existing installations are regulated under the Environmental Permitting Regime and there have been no increase in emissions.

5.1.1 New or Proposed Installations for which an Air Quality Assessment has been Carried Out

Planning permission has been granted for an 'energy plant' to Portland Port which was discussed in the 2013 Progress Report. This would be controlled by the Environment Agency, and both Weymouth and Portland Borough Council and the Environment Agency reviewed the initial air quality assessment in 2009. This was in relation to using Palm Oil as a fuel to produce a synthetic gas. Since then, the company applied to change the proposed fuel for 50% of the operation time to Rubber Crumb to produce a liquefied gas, using thermodynamic cracking. The updated air quality assessment was reviewed and accepted.

This installation has not been constructed; therefore there has been no change since the last Assessment. There is no intention for the installation to be in place in the next 12-24 months.

Weymouth and Portland Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

5.1.2 Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced

Weymouth and Portland Borough Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

5.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment

Weymouth and Portland Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

5.2 Major Fuel (Petrol) Storage Depots

Benzene may be emitted from major petrol fuel depots which, when combined with high levels from nearby roads, may exceed the 2010 objective. Depots are listed on the Local Air Quality Support Helpdesk.

There are no major fuel (petrol) storage depots within the Local Authority area.

5.3 Petrol Stations

Petrol stations which have an annual throughput of more than 2000m^3, located with a busy road nearby and have residential dwellings within 10m of the pumps are required to be assessed. Petrol stations are reviewed annually through the LAPPC regime.

Weymouth and Portland Borough Council confirms that there are no petrol stations meeting the specified criteria**.**

5.4 Poultry Farms

Poultry farms would need to be considered for PM_{10} if they are within the following categories:

- 400,000 birds if mechanically ventilated
- 200,000 birds if naturally ventilated
- 100,000 birds for a turkey unit

This matter would be highlighted through the Integrated Pollution Prevention and Control regime as enforced by the Environment Agency.

Weymouth and Portland Borough Council confirms that there are no poultry farms meeting the specified criteria.

6 Commercial and Domestic Sources

6.1 Biomass Combustion – Individual Installations

Biomass boiling can lead to an increase in PM_{10} and NOx emissions. There are no plant burning biomass boilers present within the Borough, however a boiler was proposed within the Portland Port area of Portland which was discussed in the previous chapter.

Weymouth and Portland Borough Council confirms that there are no biomass combustion plant in the Local Authority area.

6.2 Biomass Combustion – Combined Impacts

This aspect relates to the combination of many small biomass combustion installations. There is only one biomass installation proposed as discussed above. Therefore it is considered unnecessary to assess the combined impacts of biomass combustion.

Weymouth and Portland Borough Council confirms that there are no biomass combustion plant in the Local Authority area.

6.3 Domestic Solid-Fuel Burning

This relates to areas with ‘significant’ domestic solid fuel burning. This means an area of approximately 500 x 500 meters with 50 houses or more burning coal/smokeless fuel as their primary source of heating. These fuels are required to be considered as they contribute to levels of SO_2 and PM_{10}.

Weymouth and Portland Borough Council have used professional judgement and local knowledge to establish that there are no such areas.

Weymouth and Portland Borough Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

7 New Developments with Fugitive or Uncontrolled Sources

Consideration to dust emissions from fugitive and uncontrolled sources must be made under this section as they may result in increases PM_{10}. These emissions may be from vehicles over unpaved ground, handling of dusty material or from stock piles.

This matter was considered within previous rounds of review and assessment and is reviewed throughout the Pollution Prevention and Control regime.

Weymouth and Portland Borough Council confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area.

8 Planning Applications

The Public Health Team review all validated planning applications for their air quality impact. Relevant guidance is followed when reviewing these applications, i.e. Land-Use Planning and Development Control: Planning for Air Quality, May 2015 (EPUK and IAQM). Where there is a potential adverse impact, or the development introduces new sensitive receptors within the AQMA, an air quality impact assessment is required. Where this identifies a significant adverse impact on air quality or human health then mitigation measures are required.

In 2013 a planning application was approved to develop the Former Fire Station, North Quay, Weymouth. An Air Quality Assessment was provided in support of this application which concluded that air quality was not an issue to the proposed residential development. As the levels of NO_2 in this area had been reducing and there were only an additional 35 parking spaces proposed, it was not deemed that this would adversely impact upon the air quality to the Rodwell Road area, and the May 2013 Air Quality Assessment was therefore accepted.

During 2013 and 2014, no developments were granted planning permission that required mitigation for adverse air quality impacts.

9 Air Quality Planning Policies

West Dorset District Council and Weymouth & Portland Borough Council have prepared a joint Local Plan. The adopted Local Plan forms the main basis for making decisions on planning applications. It was adopted by Weymouth & Portland Borough Council on 15 October 2015 and by West Dorset District Council on 22 October 2015.

The Local Plan sets out a long term planning strategy for the area from 2011 - 2031 and includes detailed policies and site proposals for housing, employment, leisure and infrastructure.

The Councils Policies that relate to air quality in the 2015 Local Plan are:

Strategic Objective

Provide greater opportunities to reduce car use; improve safety; ensure convenient and appropriate public transport services; and seek greater network efficiency for pedestrians, cyclists and equestrians.

ENV11. THE PATTERN OF STREETS AND SPACES

i) Within and adjoining existing settlements, development should ensure that:

• In residential areas, or where pedestrian activity is high, the design of new vehicular routes should aim to keep traffic speed below 20mph;

• Places are designed to be clear and simple for people to find their way around, and not dominated by the road layout and parking, places are well connected throughout the site and with the surrounding area and do not unduly limit opportunities for future growth. Bus routes and bus stops, and strategic cycle and pedestrian routes, should be planned for;

ENV16. AMENITY

i) Proposals for development should be designed to minimize their impact on the amenity and quiet enjoyment of both existing residents and future residents within the

development and close to it. As such, development proposals will only be permitted provided:

• They do not generate unacceptable pollution, vibration or detrimental emissions unless it can be demonstrated that the effects on amenity and living conditions, health and the natural environment can be mitigated to the appropriate standard.

COM4. NEW OR IMPROVED LOCAL RECREATIONAL FACILITIES

i) Proposals for new or improved open space or recreation facilities will be permitted provided that:

• The proposal would be well-located to be accessible to its main catchment population and would not generate significant single purpose trips by private car;

COM7. CREATING A SAFE AND EFFICIENT TRANSPORT NETWORK

i) Development that generates significant movement should be located where the need to travel will be minimised and the use of sustainable transport modes including public transport, walking and cycling can be maximised.

ii) Development should be located where the volume of traffic likely to be generated can be accommodated on the local highway network without exacerbating community severance.

iii) Development will not be permitted where the residual cumulative impacts on the efficiency of the transport network are likely to be severe.

v) The delivery of a strategic cycle network and improvements to the public rights of way network will be supported.

COM8. TRANSPORT INTERCHANGES AND COMMUNITY TRAVEL EXCHANGES

i) Proposals which involve the improvement of the public realm around public transport interchanges will be encouraged and supported as long as there is no detriment to the function of the interchange.

ii) Proposals for community travel exchanges in urban and rural areas will be supported, provided that:

• it can provide safe access to the public right of way network, cycle network and highway network and can accommodate and provide safe access and egress for large vehicles;

• it has space to accommodate sufficient car and cycle parking;

Consideration has been given to air quality: Where there is reason to believe that the development would give rise to a significant change in air quality (either individually or cumulatively with other planned development) the councils may ask for an air quality assessment. Particular caution will be exercised in or close to designated Air Quality Management Areas, and due regard had to any air quality action plan.

10 Local Transport Plans and Strategies

10.1 Local Transport Plan 3 2011 – 2026

The Local Transport Plan 3 (LTP3) is a statutory document, which sets out a strategy for the management, maintenance and development of the County's transport system. It sets out a way forward to deliver transport needs through short, medium and long term transport solutions and how transport can improve safety and health, support the local economy, protect the environment and reduce carbon emissions and pollution. The LTP3 came into effect in April 2011 and has been produced for the whole of Bournemouth, Poole and Dorset. It covers the period from 2011 to 2026 and is based on a longer term strategy (2011 – 2026) and shorter term implementation plan(s) (3 years).

The key actions under the LTP3 that relate to air quality and the environment are:

- Minimise the need to travel by supporting the planning system to build sustainable communities where people live near services, employment, education and leisure opportunities;
- Leading by example in the Public Sector by instigating transport carbon reduction programmes and assisting major public services (Local Authority, schooling and health) to provide their services as close to the client group as possible;
- Strongly encourage people to choose low carbon travel modes by improving urban centres for walking, cycling and public transport complimented by effective demand management measures;
- Help individuals and businesses to consider and assess the carbon impacts of meeting their transport needs and change their travel behaviour accordingly through "Smarter Choices" measures;
- Facilitate walking and cycling especially for children and young people to ensure a significant increase in these modes for short trips;
- Significantly increase the proportion of journeys undertaken by public transport within the major urban centres and the hinterland of market towns;
- Promote the adoption of low carbon fuels and vehicle technologies in the domestic, business and HGV fleet;

- Identify and implement measures to reduce carbon emissions associated with leisure travel and tourism in Dorset;
- Encourage efficient and low carbon use of the car in areas of poor accessibility by walking and cycling & public transport;
- Maximise the efficiency of the existing Highways Network through the deployment of Intelligent Transport Systems (ITS)4;
- Manage and adapt the Highways Network and structures to reduce vulnerability to the direct physical impacts of climate change;
- Monitor and report on carbon emissions from transport.

10.2 Travel Choice

This is a County wide initiative to raise awareness about the impacts of travel behaviour and to encourage people to make an informed decision about journeys they make. For example Cycle West, a project to promote our area as a destination for cross channel cycle tourism, promoting cycling events and cycle routes and providing training for adults wanting to get back on their bikes. This initiative also promotes Car Share Dorset, an online tool o encourage and facilitate car sharing by matching journeys, run jointly by Dorset County Council and Bournemouth and Poole Borough Councils. More information can be found https://www.dorsetforyou.com/409048

10.3 Local Sustainable Transport Fund

Dorset County Council received £2.409m in 2012 from the Department for Transport through its Local Sustainable Transport Fund to provide sustainable alternatives for people to travel in Weymouth and Dorchester for the period 2012 – 2015. https://www.dorsetforyou.com/402591

Measures delivered through the package included:

- £1.02m investment in the Weymouth, Portland and Dorchester walking and cycling network

- £335k for Personalised Travel Planning including practical travel information, maps and upgrade of the traveldorset.org web travel information resource including apps
- £148k for marketing of sustainable transport in the area
- £100k for a Bike It Officer working exclusively in schools within Weymouth, Portland and Dorchester
- £78k towards working with Sustrans to deliver sustainable transport in the area
- £60k for community led sustainable travel initiatives
- £53k for tourist and visitor travel planning to encourage visitors to enjoy our area by public transport, walking and cycling when on holiday
- £50k for a business commuter club to support businesses to manage their travel needs including grants for cycle parking and other sustainable modes
- £34k to upgrade Dorset Flexicars Dorchester Car Club and expand into Weymouth
- £30k for the purchase of three car club vehicles
- £25k to work with schools
- £2k for electric vehicle and charge point operational costs

11 Conclusions and Proposed Actions

11.1 Conclusions from New Monitoring Data

Monitoring undertaken throughout the Borough since the 2013 Progress Report was submitted to Defra has demonstrated that the air quality objectives for PM_{10} and NO_2 have been achieved.

11.2 Conclusions relating to New Local Developments

Road transport and associated nitrogen dioxide are considered to be the major source within the Borough and is monitored at appropriate locations. Other sources, such as those from commercial and industrial installations are controlled via the Local Authority Pollution Prevention Control regime.

There are no other significant sources located within the Borough at this time.

11.3 Proposed Actions

There is no need to undertake a Detailed Assessment for any pollutant within the Weymouth and Portland Borough Council area.

The diffusion Tube monitoring locations have been reviewed. Locations will continue to monitor in areas of concern; King Street and Rodwell Road (Boot Hill Corridor) to monitor levels of NO_2 in the future.

Automatic monitoring for PM_{10} and NO_2 will continue to be monitored at Boot Hill to check levels of these pollutants in the future.

12 References

1. Local Air Quality Management Technical Guidance LAQM.TG(09).
2. Weymouth and Portland Borough Council's 2013 Progress Report Incorporating Air Quality Updating and Screening Assessment and Detailed Assessment for 'Boot Hill', Weymouth.
3. AEA Energy and Environment Precision and Accuracy Spreadsheets.
4. www.laqmsupport.org.uk

Appendices

Appendix A: Quality Assurance / Quality Control (QA/QC) Data

Appendix B: Diffusion Tube Monitoring Results 2010 - 2014

Appendix A: QA:QC Data

Factor from Local Co-location Studies (if available)

The AEA Energy and Environment Precision and Accuracy Spreadsheets were used to ascertain a locally derived bias adjustment factor and if this was suitable for use on the results. The spreadsheets for 2013 and 2014 are supplied in Figure A.1 and shows a factor of 0.68 and 0.76 respectively. As the overall survey was deemed to be of good precision and good data capture, then these local bias adjustment factors were chosen to be applied to all of the diffusion tube results.

As there were 8 months of data available from the NO_2 continuous monitor for 2014, advice was sought from the LAQM Helpline who advised that the local bias adjustment factor could be used.

Figure A.1 AEA Energy and Environment Precision and Accuracy Spreadsheets

Boot Hill 2013

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements										Automatic Method		Data Quality Check	
Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 µgm^{-3}	Tube 2 µgm^{-3}	Tube 3 µgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean	Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
1	02/01/2013	30/01/2013	46.1		44.7	45	1.0	2	9.3	33.32	100	Good	Good
2	30.01.2013	27.02.2013	40.6	38.1		39	1.8	4	15.9	31.65	100	Good	Good
3	27/02/2013	27/03/2013								37.43	100		Good
4	27/03/2013	24/04/2013								31.32	100		Good
5	24/04/2013	29.05/2013	41.9	39.8	43.2	42	1.7	4	4.3	29	100	Good	Good
6	29/05/2013	26.06.2013	36.7	38.4	37.7	38	0.8	2	2.1	29	100	Good	Good
7	26.06.13	31.07.13	41.1	42.0	43.9	42	1.4	3	3.5	30	100	Good	Good
8	31.07.13	04.09.2013	47.4		47.1	47	0.2	0	1.8	29	100	Good	Good
9	04.09.2013	02.10.2013	32.1	42.5	38.3	38	5.2	14	13.0	26	100	Good	Good
10	02.10.2013	30.10.2013	36.1	37.8	39.4	38	1.7	4	4.2	23	100	Good	Good
11	30.10.2013	04.12.2013	46.9	44.4	54.6	49	5.4	11	13.3	30	100	Good	Good
12	04.12.2013	08.01.2014	36.7	40.3	38.8	39	1.8	5	4.5	23.02	100	Good	Good
13													
										Overall survey -->		Good precision	Good Overall DC

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

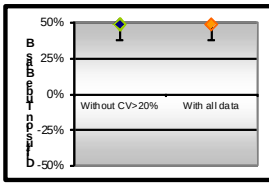
Site Name/ ID:	Boot Hill 2013

Precision: 10 out of 10 periods have a CV smaller than 20%

(Check average CV & DC from Accuracy calculations)

Accuracy (with 95% confidence interval) without periods with CV larger than 20%	
Bias calculated using 10 periods of data	
Bias factor A	0.68 (0.63 - 0.73)
Bias B	48% (36% - 59%)
Diffusion Tubes Mean:	42 µgm^{-3}
Mean CV (Precision):	5
Automatic Mean:	28 µgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	28 (26 - 30) µgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 10 periods of data	
Bias factor A	0.68 (0.63 - 0.73)
Bias B	48% (36% - 59%)
Diffusion Tubes Mean:	42 µgm^{-3}
Mean CV (Precision):	5
Automatic Mean:	28 µgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	28 (26 - 30) µgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011

Boot Hill 2014

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements										Automatic Method		Data Quality Check	
Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 μgm^{-3}	Tube 2 μgm^{-3}	Tube 3 μgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean	Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
1	08.01.14	05.02.14		42.3	35.8	39	4.6	12	41.7	28.87	100	Good	Good
2	05.02.14	05.03.14	31.2	36.6	33.3	34	2.7	8	6.7	28.82	100	Good	Good
3	05.03.14	02.04.14	47.2	40.5	31.2	40	8.0	20	20.0	34.62	100	Poor Precision	Good
4	02.04.14	30.04.14	45.7	41.7		44	2.8	6	25.2	31.81	100	Good	Good
5	30.04.14	28.05.14	44.3	41.0	67.8	51	14.6	29	36.3	31	100	Poor Precision	Good
6	29/05/2014	04/07/2014	41.7	38.9	42.3	41	1.8	4	4.4	34	100	Good	Good
7	04/07/2014	31/07/2014	45.5	46.8	42.8	45	2.0	4	5.0	31	100	Good	Good
8	31/07/2014	28/08/2014	35.5	34.3	36.7	36	1.2	3	3.0			Good	
9	28.08.14	01.10.14	43.0	42.6	44.3	43	0.9	2	2.3	36	97	Good	Good
10	01.10.14	27.10.14	33.6	37.2	36.6	36	1.9	5	4.8			Good	
11	27/10/2014	03/12/2014	69.6	71.5	43.1	61	15.9	26	39.4			Poor Precision	
12	03/12/2014	12/01/2015	33.1	29.8	30.9	31	1.7	5	4.2			Good	
13													
											Overall survey -->	Poor precision	Good Overall DC

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

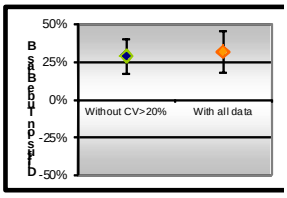
Site Name/ ID:	Boot Hill 2014

Precision: 9 out of 12 periods have a CV smaller than 20%

(Check average CV & DC from Accuracy calculations)

Accuracy (with 95% confidence interval) without periods with CV larger than 20%	
Bias calculated using 6 periods of data	
Bias factor A	0.78 (0.71 - 0.86)
Bias B	28% (17% - 40%)
Diffusion Tubes Mean:	41 μgm^{-3}
Mean CV (Precision):	6
Automatic Mean:	32 μgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	32 (29 - 35) μgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 8 periods of data	
Bias factor A	0.76 (0.69 - 0.85)
Bias B	31% (17% - 45%)
Diffusion Tubes Mean:	42 μgm^{-3}
Mean CV (Precision):	11 caution
Automatic Mean:	32 μgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	32 (29 - 36) μgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011

QA/QC of Automatic Monitoring

The automatic analyser is serviced and maintained by Air Monitors Ltd. The Local Authority undertake regular checks of the analysers by accessing the software 2-3 times per week to review if any error messages are showing. Physical visits to the analyser are undertaken each month for filter changes etc.

Air Monitors also monitor the analyser remotely and contact the Local Authority if there are any unusual readings.

The analyser undergoes automatic calibration. Data are screened regularly for any spurious results, which are then removed and the data ratified. Any possible drift in the analyser's daily calibration can be identified and adjusted and correction factors applied if they are needed.

QA/QC of Diffusion Tube Monitoring

The UKAS accredited laboratory, Gradko International Limited, supply and analyse the diffusion tubes, which are a preparation of 50% TEA (triethanolamin) / Acetone. Tubes are handled in accordance within the instruction within LAQM.TG(09) Box a1.7. Gradko International are rated good under the Workplace Analysis Scheme for Proficiency (WASP), as identified by AEA at www.laqmsupport.org.uk

Appendix B – Diffusion Tube Monitoring Results

2014 Diffusion Tube Data

Monitoring Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	Bias Adjustment Factor	Annual Mean corrected for bias
4 St Georges Estate	6.66	5.99	11.05	8.6	8.75	7.77	6.08	4.23	7.25	5.3	13.65	6.61	7.66	0.76	**5.82**
8 King Street	28.13	24.74	33.3	36.76	40.25	35.38	44.18	32.91	40.23	24.66	30.78		33.76	0.76	**25.65**
10 Rodwell Road	53.19	31.59	52.8	57.48	28.63	53.72	46.1	32.41	60.35	35.7	56.55	28.23	44.73	0.76	**33.99**
29 Fire Station			31.77	27.95	28.63	27.87	24.98	16.21	31.57	14	31.04	23.53	25.76	0.76	**19.57**
30 15 Rodwell Road	28.37	22.1	29.69	32.31	26.96	26.26	30.01	24.82	28.62	26.72	31.07	27.4	27.86	0.76	**21.17**
31 Rodwell Roundabout		31.2	47.18	45.69	44.32	41.66	45.48	35.46	43	33.59	69.58	33.13	42.75	0.76	**32.49**
32 To Portmore Gardens	40.32	35.12	41.02	46.57	43.11	40.68	39.1	41.19	39.23	37.09	43.07	28.22	39.56	0.76	**30.07**
49 Rodwell Roundabout II	42.32	36.57	40.54	41.73	40.98	38.91	46.78	34.31	42.56	37.17	71.48	29.83	41.93	0.76	**31.87**
50 Rodwell Roundabout III	35.75	33.3	31.19		67.79	42.25	42.84	36.73	44.33	36.59	43.08	30.86	40.43	0.76	**30.73**
51 Rodwell Inn	41.94	32.49	44.73	46	28.64	45.64	42.23	41	58.62	36.47	44.42	29.61	40.98	0.76	**31.15**
52 16 Rodwell Road	58.81		39.64	51.15	47.38	51.94	51.53	49.87	44.77	45.85	24.85	45.85	46.51	0.76	**35.35**
42 King Street CCTV	31.62	23.53	32.38	31.78	33.53	28.46	27.77	26.36	32.46	23.55	31.06	23.8	28.86	0.76	**21.93**
44 Melcombe House	38.75	26.08	35.32	40.03	45.36			32.85	31.4	25.35	38.07	25.63	33.88	0.76	**25.75**
45 Upwey Street	37.44	33.26	35.52	42.68	41.11	40.87	42.74	42.67	38.73	31.65	34.5	28.01	37.43	0.76	**28.45**
46 Dominoes	39.32	33.25	35.48	42.4	44.29	44.45	41.98	42.1	38.41	43.07	34.89	30.28	39.16	0.76	**29.76**

2013 Diffusion Tube Data

Monitoring Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	Bias Adjustment Factor	Annual Mean corrected for bias
4 St Georges Estate	11.97	13.24			4.92	7.28	7.56	7.82	7.7	6.45	11.78	6.17	8.49	0.68	**5.77**
5 Fortuneswell	21.6	23.03			14.73								19.79	0.68	**13.45**
8 King Street	32.64	39.14			37.29	30.27	39.96	37.3	33.61	28.34	35.86	28.03	34.24	0.68	**23.29**
10 Rodwell Road	51.4	58.04			41.06	43.46	57.3	42.94	42.21	38.17	38.57	33.62	44.68	0.68	**30.38**
12 Portland Road	27.24	M			9.39								18.32	0.68	**12.45**
14 Lanehouse Rocks Road	18.78	22.1			6.42								15.77	0.68	**10.72**
17 Colocation	22.64	17.63			14.13								18.13	0.68	**12.33**
20 Colocation II	22.57	16.58			14.14								17.76	0.68	**12.08**
21 Colocation III	24.1	15.01			7.92								15.68	0.68	**10.66**
29 Fire Station	28.05	33.13			21.59	22.73	26.64	22.99	24.65	20.58	29.88	20.82	25.11	0.68	**17.07**
30 15 Rodwell Road	30.63	39.01			7.49	26.7	28.51	32.69	23.26	26.46	36.46	23.61	27.48	0.68	**18.69**
31 Rodwell Roundabout	46.12	40.58			41.88	36.68	41.13	47.37	32.06	36.08	46.87	36.69	40.55	0.68	**27.57**
32 To Portmore Gardens	38.91	28.61			42.99	34.27	45.61	37.54	32.36	37.25	29.63	44.15	37.13	0.68	**25.25**
49 Rodwell Roundabout II	M	38.08			39.77	38.35	41.96		42.46	37.8	44.35	40.31	40.39	0.68	**28.19**
50 Rodwell Roundabout III	44.66	M			43.18	37.73	43.88	47.08	38.29	39.44	54.64	38.83	43.08	0.68	**29.30**
51 Rodwell Inn	46.29	45.73			41.37	34.1	57.06	42.52	42.19	43.39	44.75	35.19	43.26	0.68	**29.42**
52 16 Rodwell Road	60.45	44.3			41.39	42.18	59.73	44.21	43.68	48.91	47.18	47.37	47.94	0.68	**32.60**
53 Wyke Road	33.2	31.6			25.86								30.22	0.68	**20.55**
34 Wyke Juniors	20.61	19.74			7.17								15.84	0.68	**10.77**
35 Cockles Lane	31.15	31.56			25.52								29.41	0.68	**20.00**
36 60 Lanehouse Rocks Road	20.75	20.59			15.29								18.88	0.68	**12.84**
37 Wyke Rd / Cross Rd Junc	19.42	16.22			13.88								16.51	0.68	**11.22**

38 Buxton Rd / Cross Rd Junc	13.87	15.07			7.57								12.17	0.68	**8.28**
39 Wyke Rd / Lanehouse Rocks Rd	M	M												0.68	
42 King Street CCTV	28.25	24.12			26.23	23.29	34.88	33.05	26.82	25.95	26.75	26.52	27.59	0.68	**18.76**
44 Melcombe House	31.79	24.43			25.21	27.12	36.21	40.53	29.51	31.36	33.77	32.36	31.23	0.68	**21.24**
45 Upwey Street	35.55	30.44			30.45	30.27	54.56	44.19	33.69	33.9	33.83	34.59	36.15	0.68	**24.58**
46 Dominoes	34.05	27.45			31.21	33.38	57.07	46.05	34.21	37.52	37.79	38.97	37.77	0.68	**25.68**

2012 Diffusion Tube Data

Monitoring Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	Bias Adjustment Factor	Annual Mean corrected for bias
2 Newstead Road	16.85	19.79	24.41	11	13.45	11.81	9.87	14.97					15.27	0.81	**12.37**
4 St Georges Estate	9.34	14.53	18.98	5.1	7.43	6.39	5.22	6.76	4.92	11.69	10.94	8.87	9.18	0.81	**7.44**
5 Fortuneswell	17.06	24.03	23.1	11.18	15.63	11.42	9.96	15.23	10.16	20.66	18.71	15.9	16.09	0.81	**13.03**
7 Littlemoor Road	19.88	22.33	25.72	14.23	17.72								19.98	0.81	**16.18**
8 King Street	27.6	30.25	41.4	22.81	28.96	21.7	17.56	20.91	27.12	30.4	44.27	21.34	27.86	0.81	**22.57**
9 St Mary Street	13.57	17.05	20.68	7.82	9.84	9.6	9.05	15.66	9.04	11.95			12.43	0.81	**10.07**
10 Rodwell Road	37.92	40.03	53.89	30.2	40.36	39.45	30.68	41.05	29.9	53.3	47.61	41.49	40.49	0.81	**32.80**
11 Preston Road	19.84	22.31	26.9	14.17	20.16								20.68	0.81	**16.75**
12 Portland Road	19.98	22.78	25.06	11.4	13.19	11.47	10.66	12.97	10.92	22.87			16.13	0.81	**13.07**
13 St Thomas Street	21.56	25.69	23.42	12.49	14.32	17.38	13.87	13.96	19.3	19.26			18.13	0.81	**14.68**
14 Lanehouse Rocks Road	14.13	19.66	25	8.72	12.37	11.79	7.73	11.67			20.14	8.66	13.99	0.81	**11.33**
15 Manor Roundabout	34.46	34.71	42.55	24.02	23.03	20.19	19.41	23.7					27.76	0.81	**22.48**
16 Kestrel View	17.01	19.18	17.36	9.48	10.01								14.61	0.81	**11.83**
17 Colocation	21.21	18.85	22.75	11.45	15.32	14.68	13.48	18.54	17.53	14.03	23.09	15.64	17.21	0.81	**13.94**
20 Colocation II	20.41	19.34	24.45	11.85	14.58	15.54	13	17.99	17.79	15.01	21.45	16.33	17.31	0.81	**14.02**
21 Colocation III	20.72	19.95	22.4	11.34	17.56	14.91	13.15	17.73	18.57	14.43	22.17	17.34	17.52	0.81	**14.19**
29 Fire Station	28.36	33.53	34.03	18.51	21.54	18.73	12.53	15.28	24.26	21.63	27.04	23.92	23.28	0.81	**18.86**
30 15 Rodwell Road	31.72	34.54	35.46	26.66	30.94	22.01	17.6	23.52	27.09	32.05	30.5	29.54	28.47	0.81	**23.06**
31 Rodwell Roundabout	32.58	39.03	45.13	29.22	34.76	34.77	25.98	28.54	33.83	50.39	45.23	33.21	36.06	0.81	**29.21**
32 To Portmore Gardens	31.63	32.42	37.88	24.47	31.33	34.42	24.36	38.64	30.44	36.91	41.07	33.02	33.05	0.81	**26.77**
49 Rodwell Roundabout II	32.12	37.67	44.31	27.89	39.08	35.4	24.43	36.88	35.18	43.87	44.24	35.13	36.35	0.81	**29.44**
50 Rodwell	32.76	38.03	38.21	31.49	35.99	35.73	27.77	38.99	33.4	48.17	41.77	28.88	35.93	0.81	**29.11**

Roundabout III															
51 Rodwell Inn	32.41	38.74	52.91	28.19	40.21	37.39	29.16	37.29	46.3	46.18	43.92	32.94	38.80	0.81	**31.43**
52 16 Rodwell Road	41.69	45.57	50	32.7	38.31	38.86	32.83	43.63	41.18	42.91	57.39	42.13	42.27	0.81	**34.24**
53 Wyke Road	29.24	31.68	40.17	20.84	26.13	29.46	17.56		28.65	34.84	34.63	26.9	29.10	0.81	**23.57**
54 Chickerell Road	23.65	25.72	32.19	15.23	19.03	14.13	9.96	14.18					19.26	0.81	**15.60**
33 Buxton Road	16.07	21.13	23.75	10.71	13.66								17.06	0.81	**13.82**
34 Wyke Juniors	12.94	20.18	23.1	9.21	13.3	10.69	9.33	15.51	7.57	22.45	14.19	14.26	14.39	0.81	**11.66**
35 Cockles Lane	25.68	31.15	42.06	20.21	26.75	23.16	17.74	25.66	19.5	34.29	29.18	27.77	26.93	0.81	**21.81**
36 60 Lanehouse Rocks Road	16.44	23.88	28.42	11.63	14.74	12.14	9.99	17.04	9.69	22.7	17.5	15.45	16.64	0.81	**13.47**
37 Wyke Rd / Cross Rd Junc	16.63	21.2	22.97	8.37	13.76	10.65	10.57	13.05		18.71	15.12	14.11	15.01	0.81	**12.16**
38 Buxton Rd / Cross Rd Junc	15.27	19.82	23.96	9.13	12.94	14.7	10.2	16.46	10.67	19.39	14.49	15.23	15.19	0.81	**12.30**
39 Wyke Rd / Lanehouse Rocks Rd	17.79	21.95	24.08	10.13	15.58	11.36	9.61	13.25	11.63	18.97	16.57	18.49	15.78	0.81	**12.79**
40 St Edmund St	19.18	23.55	23.55	13.7	16.33	15.52	13.39						17.89	0.81	**14.49**
41 Commercial Road	16.71	19.77	27.93	13.12									19.38	0.81	**15.70**
42 King Street CCTV	25.47	26.99	34.27	17.14	19.13	20.72	18.28	23.64	24.91	21.94	34.11	19.6	23.85	0.81	**19.32**
43 Queen Street	17.79	19.13	26.08	12.88	14.87								18.15	0.81	**14.70**
44 Melcombe House	38.92	30.66	37.18	19.78	21.69	29.2	20.28	29.33	28.74	24.38	36.77	34	29.24	0.81	**23.69**
45 Upwey Street	33.33	36.3	46.19	26.82	28.94	30.36	30.82	39.15	34.3	29.88	39.02	25.7	33.40	0.81	**27.05**
46 Dominoes	31.04	35.48	43.77	26.54	30.24	32.8	30.43	34.19	35.22	27.27	42.02	27.22	33.02	0.81	**26.74**

2011 Diffusion Tube Data

Monitoring Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	MEAN	2011 BA Figure of 0.95
2 Newstead Road	23.85	25.04	26.33	24.62	10.65	14.74	17.53	14.43	16.34	21.49	27.19	9.53	19.31	18.35
4 St Georges Est	14.86	13.94	15.15	12.38	5.96	8	7.57	7.78	6.67	10.12	14.54	4.19	10.10	9.59
5 Fortuneswell	25.51	20.95	26.74	22.37	9.24	12.24	13.01	12.49	8.48	16.72	25.59	10.81	17.01	16.16
7 Littlemoor Road	36.83	40.19	28.91	25.73		10.07	21.1	23.08	21.25	19.59	22.26	14.14	23.92	22.73
8 King St	38.88	26.33	35.83	28.37	16.71	20.19	25.9	28.79	22.67	27.03	32.31	20.11	26.93	25.58
9 St Mary Street	18.49	17.59	19.86	17.95	7.67	10.93	12.28	12.37	10.77	16.29	17.89	8.52	14.22	13.51
10 Boot Hill	53.32	57.27	61.32	62.05	29.24	37.82	41.06	37.10	35.13	49.71	54.34	19.18	44.80	**42.56**
11 Preston Road	24.9	26.6	26.99	28.48	17.9	21.42	26.21	28.17	23.55	28.6	28.62	15	24.70	23.47
12 Portland Road	22.56	20.75	29.03	20.02	10.35	12.61	14.79	14.62	10.93	17.58	22.58		17.80	16.91
13 St Thomas Street	30.55	29.05	27.64	24.68	17.62	22.4	23.57	25.14	21.81	24.57	24.86	20.03	24.33	23.11
14 Lanehouse Rocks Road	23.83	18.92	31.82	24.58	7.65	11.98	17.66	12.84	10.83	17.48	23.14	5.29	17.17	16.31
15 Manor Roundabout	30.75	30.83	32.27	34.3	21.23	30.83	27.32	31.24	25.72	31.58	29.12	24.05	29.10	27.65
16 Kestrel View	17.03	10.59	16.6	13.09	7.5	9.97	10.22	12.06	10.67	15.46	16.81	9.78	12.48	11.86
17 Collocation Site	29.14	35.67	32.39	21.79	14.91	17.96	18.92	20.39	20.6	24.9	27.64	14.2	23.21	22.05
18 719 Dorchester Rd	38.25	33.27	31.90	16.82	7.47	12.24	12.58	20.25	12.53	15.72	19	9.99	19.17	18.21
19 Dorchester Road	53.71	43.32	41.03	26.96	12.22	19.02	22.62	18.67	15.89		26.74	11.84	26.55	25.22
20 Co-location II	28.36	35.54	32.35	21.51	14.33	18.8	19.21	17.2	19.84	24.24	27.85	15.94	22.93	21.78
21 Co-location III	30.88	35.36	31.49	24.52	14.91	19.41	19.07	17.55	20.23	24.7	27.68	12.79	23.22	22.06
22 Wey Valley School	18.39	15.7	16.38	11.91	5.5	7.8	7.22	6.29	8.56	9.17	14.99	5.83	10.65	10.11
23 Jubilee Sidings	22.48	22.3	23.42	20.93	8.73		15.35	16.95	13.49	18.15	26.58		18.84	17.90
29 Fire Station	37.16	28.38	35.63	33.17	14.51	20.09	25.52	21.81	21.74	27.58	31.45	16.77	26.15	24.84
30 15 Rodwell Road	36.22	31.18	33.17	32.46	18.05	27.21	29.01	29.77	21.97	26.21	30.02	22.77	28.17	26.76
31 Rodwell Roundabout	56.51	41.42	31.04	47.67	26.01	39.97	43.68	41.03	36.81	42.06	40.95	25.37	39.38	37.41
32 To Portmore Gardens	34.46	45.23	39.39	39.85	21.62	31.31	M	31.41	32.8	38.59	43.49	21.83	34.54	32.82
47 Fire Station II	34.6	27.29	37.22										33.04	31.38
48 Fire III	35.32	28.48	40.38										34.73	32.99
33 Buxton Road	22.48	19.29	23.38	12.69	9.6	14.03	14.32	12.47	11.08	13.73	19.14	9.66	15.16	14.40

34 Wyke Juniors	20.15	11.88	24.65	19.93	7.31	10.95	15.05	9.42	9.19	14.84	24.41	4.06	14.32	13.60
35 Cockles Lane	34.75	33.44	42.34	41.52	16.9	23.83	18.12	21.81	19.72	18.08	33.91	16.94	26.78	25.44
36 60 Lanehouse Rocks Rd	25.1	27.17	29.28	26.54	9.29	13.86	18.51	11.94	12.02	19.43	26.82	8.6	19.05	18.09
37 Junction Wyke Rd / Cross Rd	20.88	18.3	22.75	13.43	8.14	11.96	13.55	10.13	11.24	14.1	20.99	7.98	14.45	13.73
38 Junction Buxton Rd / Cross Rd	17.46	16.87	19.31	18.62	10.16	9.81	17.4	13.82	15.27	13.22	22.93	7.5	15.20	14.44
39 Junction Wyke Rd, LHRocks Rd	25.49	19.25	24.94	19.54	9.66	11.98	17.22	12.53	12.1	16.87	23.01	9.86	16.87	16.03
40 St Edmund Street	24.28	25.82	34.56	20.03	13.69	19.7	21.03	17.89	17.79	24.67	26.33	16.04	21.82	20.73
41 Commercial Rd	23.5	22.75	25.88	24.06	10.27	14.05	18.02	12.65	11.96	17.31	24.61	10.86	17.99	17.09
42 King St CCTV Column	28.4	30.63	28.42	31.15	15.45	20.27	23.21		22.69	29.88	38.53	21.29	26.36	25.04
43 Queen Street	24.43	21.15	24.24	24.19	10.25	14.03	16.18	14.8	14.5	16.71	24.94	11.68	18.09	17.19
44 Melcombe House	35.11	37.22	31.86	32.94		23.1	26.54	30.3	29.14	29.68	36.49	25.9	30.75	29.22
45 Upway Street	36.44	42.44	35.99	29.79	22.03	28.26	28.55	37.55	34.68	0	43.04	28.76	30.63	29.10
46 Dominoes	38.76	41.15	31.12	35.72	23	29.59		33.91	35.54	37.79	39.19	29.16	34.08	32.38
49 Rodwell Roundabout II				52.28	32.46	36.87	43.5	40.91	28.11	41.34	41.85	25.37	38.08	36.17
50 Rodwell Roundabout III				52.22	28.7	38	46.91	36.28	36.08	41.18	43.37	24.55	38.59	36.66

2010 Diffusion Tube Data

LOCATION	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	MEAN	Bias Adj Mean 1.03
NEWSTEAD RD	29.16	21.52	23.05	22.38	22.08	20.5	15.88	15.44	16.95	17.71	16.93	22.96	20.38	20.99
ST GEORGES EST	14.84	12.35	12.67	9.38	8.76	9.36	7.41	6.16	8.5	8.73	12.04	15.82	10.50	10.82
FORTUNESWELL	28.76	24.12	22.01	21.13	19.1	16.13	10.39	12.71	16.58	16.41	23.22	29.29	19.99	20.59
LITTLEMOOR RD	31.61	33.15	27.68	30.43	36.59	33.54		5.61		32.04	25.96	27.88	28.45	29.30
KING ST	38.1	35.97	34.15	39.17	47.26	37.51	26.91	30.94	32.55	31.65	30.79	34.53	34.96	36.01
ST MARY ST	24.86	18.18	17.51	15.58	13.46	13.92	14.52	12.16	29.59	14.48	19.96	19.36	17.80	18.33
BOOT HILL	64.5	57.19	52.87	51.19	54.71	40.25	24.72	29.40	14.09	34.07	39.29	43.93	42.18	43.45
PRESTON RD	19.69	25.16	26.04	24.24	27.26	25.27	26.73	25.96	39.56	23.55	22.81	22.44	25.73	26.50
PORTLAND RD	24.8	22.11	21.67	22.01	16.74	15.36	11.38	13.45	25.61	18.23	17.77	24.24	19.45	20.03
ST THOMAS ST	29.19	28.79	30.96	28.56	26.76	25.84	29.12	23.75	15.11	26.86	18.63	25.09	25.72	26.49
LANEHOUSE ROCKS RD	25.22	20.5	20.64	17.61	19.17	19.14	12.63	12.65	28.95	18.57	21.15	22.1	19.86	20.46
MANOR ROUNDABOUT	34.53	24.69	22.67	22.62	21.62	16.38		24.14	18.63	26.37	30.45	32.56	24.97	25.72
KESTREL VIEW	17.77	13.55	12.69	9.89	9.91	9.15	6.54	8.46	27.58	11.07	13.27	17.67	13.13	13.52
COLLOCATION SITE	29.06	33.01	27.76	28.69	30.86	27.85	32.17	26.25	11.36	28.86	27.68	27.03	27.55	28.37
719 Dorchester Rd	38.56	38.06	18.63	26.64	33.25	34.15	33.39	33.37	33.23	33.97	36.61	29.12	32.42	33.39
DORCHESTER	42.23	44.16	40.01	44.02	44.23	42.63	36.3	39.07	33.39	33.22	42.01	42.37	40.30	41.51
CO-LOCATION II	29.09	32.82	28.99	25.63	28.73	27.56	30.7	26.86	45.19	30.5	31.33	27.96	30.45	31.36
COLLOCATION III	28.27	28.87	31.98	28.17	31.91	25.88	31.77	25.35	32.84	30.63	27.07	30.96	29.48	30.36
WEY-VALLEY	13.48	13.7	13.72	10.42	11.55	11.94	11.15	9.66	34.03	12.6	14.6	17.64	14.54	14.98
JUBILEE SIDINGS	23.26	20.54	23.26	19.23	16.97	16.95	14.47	14.82	12.84	17.23	17.4	21.77	18.23	18.78
FIRE STATION	39.48	35.56	36.04	27.76	31.55	26.41	20.86	24.67		31.68	38.86	35.22	31.64	32.59

15 RODWELL ROAD	37.84	37.63	31.69	29.48	31.45	28.3	20.57	25.12	22.79	26.63	36.08	35.49	30.26	31.16
RODWELL RDBT	45.31	49.55	48.93	39.56	34.79	40.95	38.01	34.79	45.49	49.12	38.92	50.78	43.02	44.31
TO PORTMORE GDNS	31.61	39.72	41.2	35.03	38.53	35.34	39.47	31.76	32.47	43.54	39.54	30.68	36.57	37.67
Fire Station II					37.08	24	26.74	23.38		35.58	39.64	36.99	31.92	32.87
Fire III					37.58	24.04	24.08	23.2		32.14	33.7	34.38	29.87	30.77
Buxton Road	26.11	20.74	17.94	16.75	16.04	12.92	10.02	13.98	14.6	17.31	17.81	24.91	17.43	17.95
Wyke Juniors	23.49	20.74	19.66	20.97	17.8	16.11	9.53	11.28	15.34	M	19.49	21.33	17.79	18.33
Cockles Lane	33.81	32.76	28.26	35.34	30.96	32.82	23.22	27.89	36.71	30.3	34.34	35.99	31.87	32.82
60 Lanehouse Rocks Rd	23.19	22.91	22.05	19.53	18.54	18.26	15.71	14.72	22.26	20.08	24.14	25.49	20.57	21.19
Junction Wyke Rd / Cross Rd	22.54	17.81	18.2	16.28	13.81	15.38	15.63	8.95	13.8	15.4	20.15	23.57	16.79	17.30
Junction Buxton Rd / Cross Rd	18.38	17.32	17.06	14.21	17.33	14.11	14.13	10.48	36.36	11.74	15.81	18.95	17.16	17.67
Junction Wyke Rd, LHRocks Rd	25.75	20.23	19.74	16.99	16.35	18.08	12.34	19.68	23.98	18.48	22.52	23.64	19.82	20.41
St Edmund Street	27.58	25.55	22.28	25.27	23.13	20.68	18.36	21.11	25.55	21.82	20.68	26.13	23.18	23.87
Commercial Rd	26.8	24.04	23.46	20.33	17.4	17.34	14.11	14.5	18.18	15.66	19.08	22.98	19.49	20.07
King St CCTV Column	31.38	28.81	33.5	35.01	26.73	27.8	25.49	23.03	27.99	23.59	27.44	27.49	28.19	29.03
Queen Street	23.49	23.2	28.05	22.89	21.26	18.57	16.56	17.71	18.92	20.05	18.55	23.73	21.08	21.71
Melcombe House	32.6	33.15	32.55	30.73	32.69	35.22	33.18	32.25	M	26.8	28.87	33.74	31.98	32.94
Upway Street	38.39	38.23	47.01	41.44	44.29	40.91	45.16	40.11	38.68	32.33	33.09	25.11	38.73	39.89
Dominoes	46.68	47.28	49.18	47.58	54.32	42.1	48.88	39.64	43.32	37.94	40.09	35.07	44.34	43.90