WEYMOUTH & PORTLAND
Borough Council

2013 Progress Report for Weymouth and Portland Borough Council.

Incorporating Air Quality Updating and Screening Assessment and Detailed Assessment, for 'Boot Hill', Weymouth.

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

June 2013

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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 role of this report is to provide an overdue Updating and Screening Assessment, containing details for the 2013 Progress Report, and Detailed Assessment for Boot Hill

The report details the monitoring results from 2009 to 2012 and demonstrates that the air quality objectives for NO_2 and PM_{10} are being achieved. The detailed assessment of Boot Hill (Rodwell Road) has shown that there is no requirement to declare an AQMA to that area.

WPBC 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 Report

This report fulfils the requirements of the Local Air Quality Management 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.

The objective of this Updating and Screening Assessment is to identify any matters that have changed which may lead to risk of an air quality objective being exceeded. A checklist approach and screening tools are used to identify significant new sources or changes and whether there is a need for a Detailed Assessment. The USA report should provide an update of any outstanding information requested previously in Review and Assessment reports.

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 $\mu g/m^3$ (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 $\mu g/m^3$	Running annual mean	31.12.2003
	5.00 $\mu g/m^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu g/m^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu g/m^3$	Annual mean	31.12.2004
	0.25 $\mu g/m^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu g/m^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu g/m^3$	Annual mean	31.12.2005
Particles (PM_{10}) (gravimetric)	50 $\mu g/m^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu g/m^3$	Annual mean	31.12.2004
Sulphur dioxide	350 $\mu g/m^3$, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu g/m^3$, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu g/m^3$, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

The local authority has had a duty to report on Air Quality for some time. A summary of recent reports produced is provided below.

Table 1.4 – 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'

The findings from the June 2009 USA gave the conclusion that a Detailed Assessment was required for the Boot Hill area of Rodwell Road. However, this was agreed between the local authority and Defra to be delayed. This was due to the Dorset County Council's plans to undertake massive road infrastructure alterations to that area, in line with the Weymouth Transport Package for the 2012 Games. This scheme will be discussed within this report. As this new road system was not fully operational until 2012, the data used within any Detailed Assessment prior to this date would have been meaningless. Therefore the 2012 data, and the assumption that the road system is operating as it will do in future is used as the basis for the Detailed Assessment.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

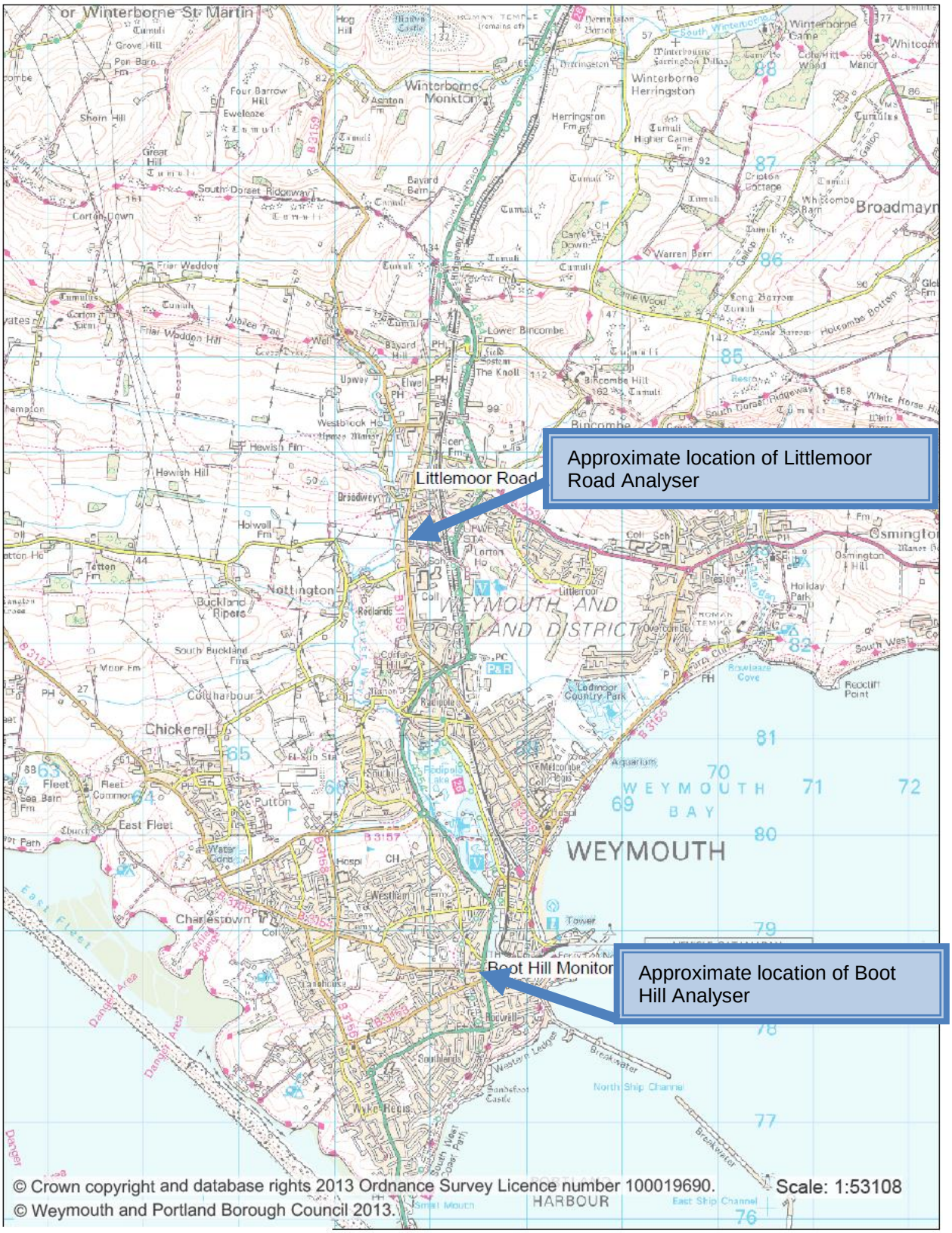
Weymouth and Portland Borough Council have carried out automatic monitoring for nitrogen dioxide at two sites, Littlemoor Road and Rodwell Road. (See figures 2.1.a and b).

Littlemoor Road was installed in 2005 to monitor nitrogen dioxide. Due to the new Weymouth Relief Road opening in March 2010 (discussed in Chapter 3) the traffic is now diverted from this location, resulting in a significant reduction in levels of nitrogen dioxide. This site will be decommissioned in 2013.

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.

Neither analysers are 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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Weymouth
Dorset, DT4 8TA

Figure 2.1.a Map of Littlemoor Road Automatic Monitoring Site

Figure 2.1.b – Map of Rodwell Road Automatic Monitoring Site

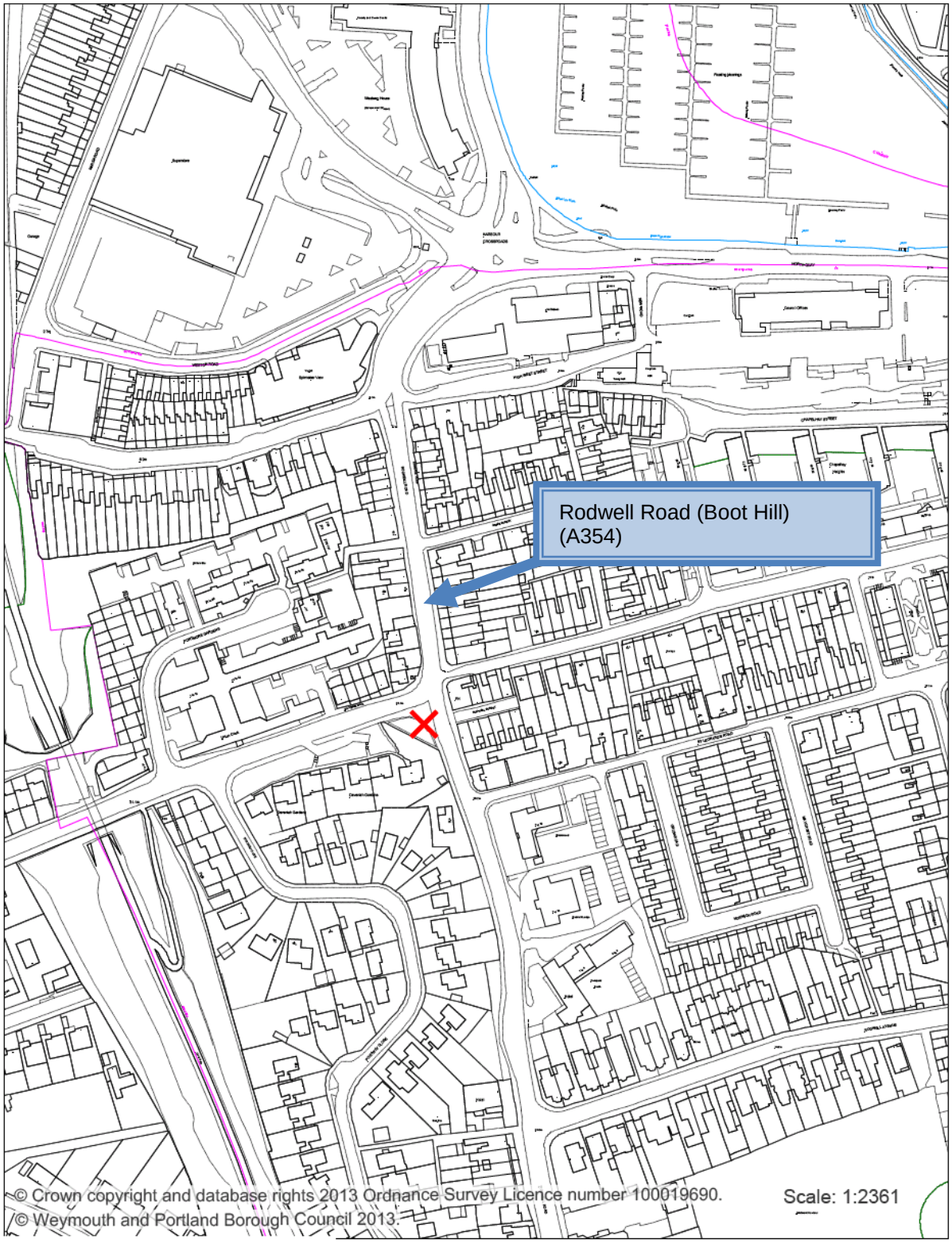


Table 2.1 Details of Automatic Monitoring Sites

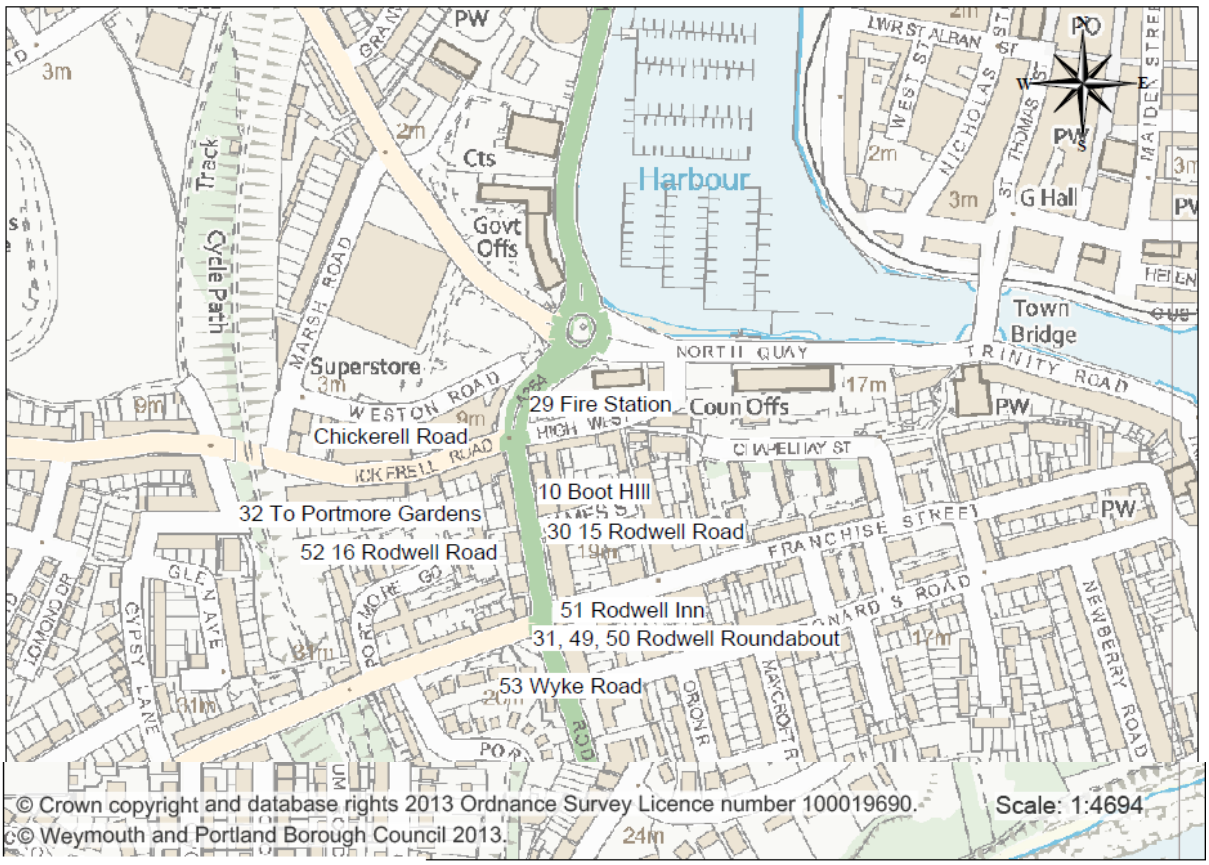
Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	Monitoring Technique	Relevant Exposure?	Distance to kerb of nearest road
Littlemoor Road	Roadside	366847	83634	NO_2	Chemiluminescent	N	1.5m
Boot Hill	Roadside	367541	78471	NO_2	Chemiluminescent	N	1.5m
Boot Hill	Roadside	367541	78471	PM_{10}	TEOM FDMS	N	1.5m

2.1.2 Non-Automatic Monitoring Sites

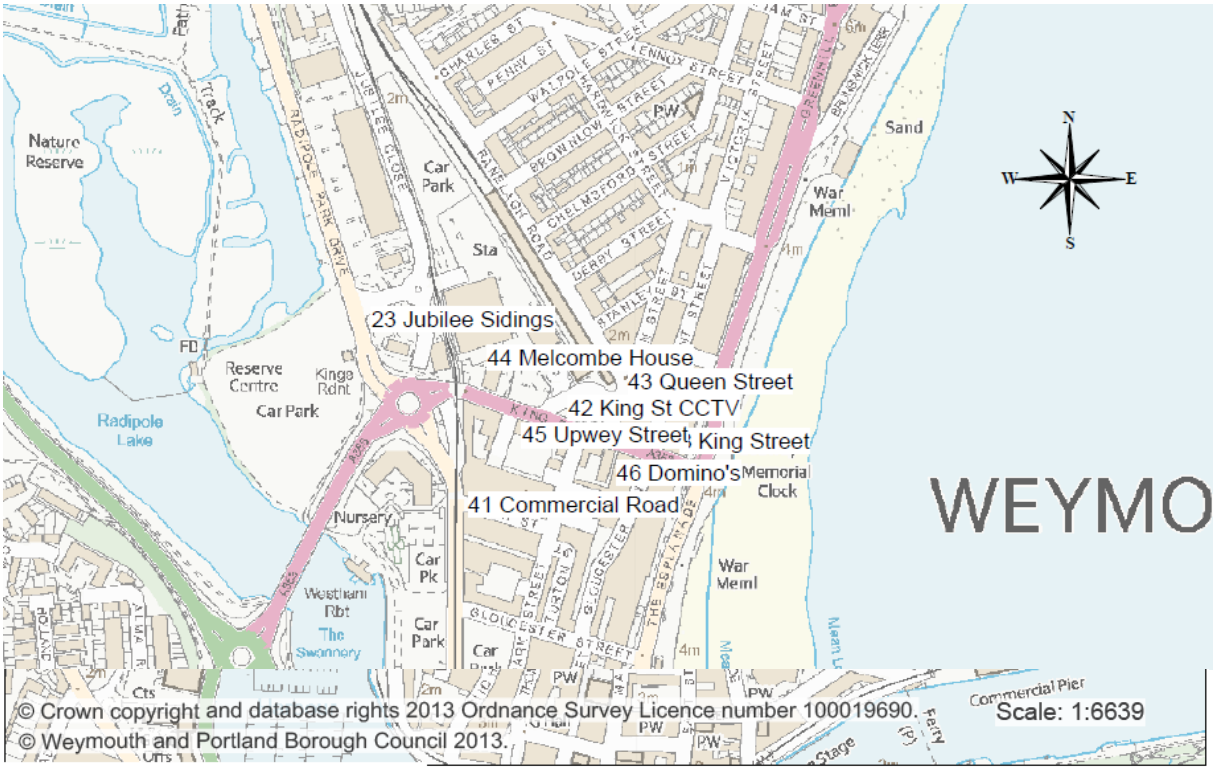
Non-automatic monitoring has been carried out for nitrogen dioxide since 1996 at a number of sites using diffusion tubes.

Since submission of the last USA from WPBC in 2009, there have been significant changes in the numbers of diffusion tubes throughout. Table 2.2 show all the diffusion tube locations from 2009 to present, however, a number have been removed, due to monitoring funded by DCC in relation to the WTP or WPBC's review of the monitoring from 2012

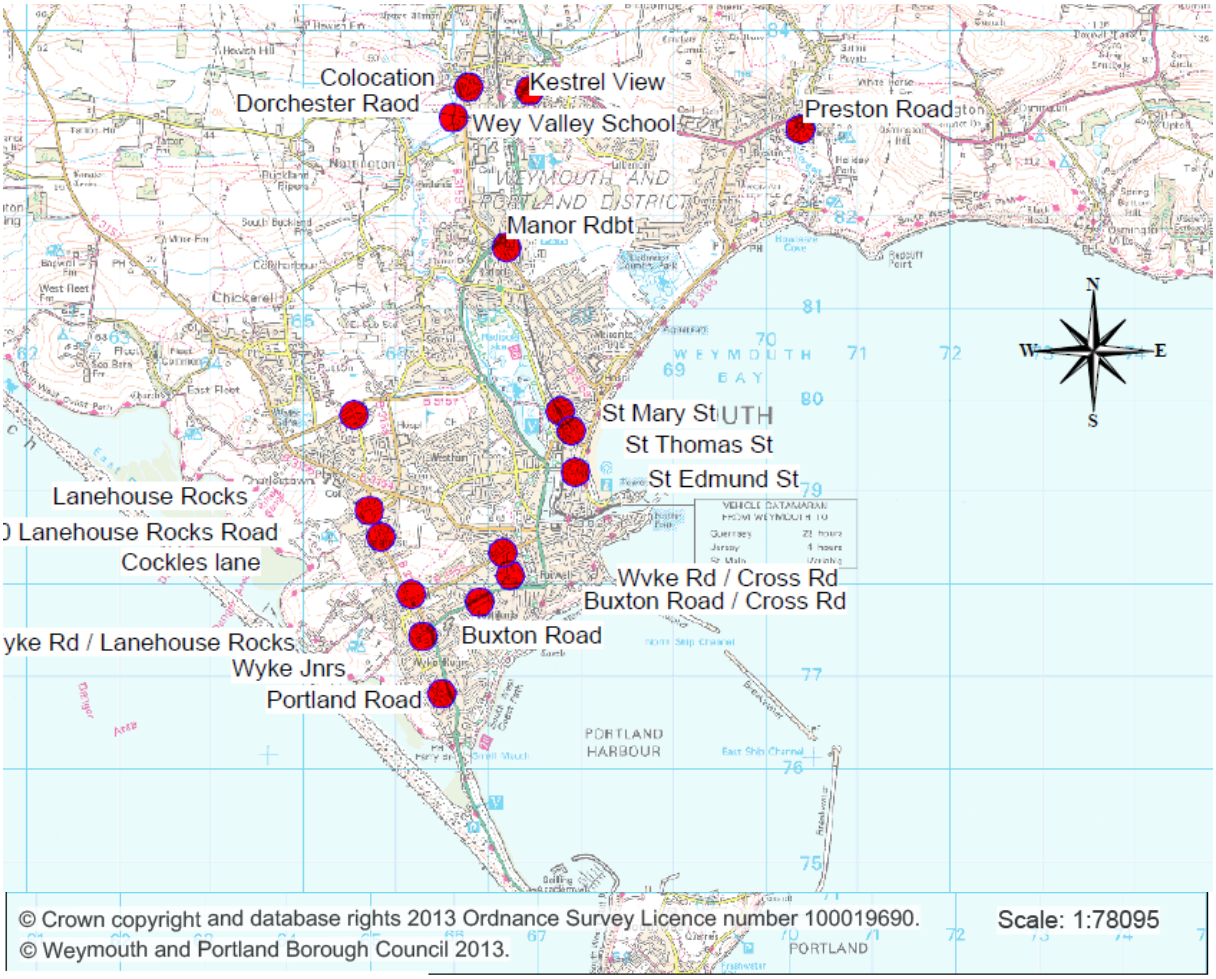
Figure 2.2.a Map of 2012 Non-Automatic Monitoring Site - Rodwell Road (Boot Hill



2.2.b Map of 2012 Non-Automatic Monitoring Sites - King Street



2.2.c Other Diffusion Tube locations

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Easton
St Georges
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Balaclava Bay
South Ship Channel
King's Pier
East Weare
Durdle Pier
Blacknor
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Table 2.2 Details of Non-Automatic Monitoring Sites – Nitrogen Dioxide, No AQMAs

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
2 Newstead Road	Roadside	X 367503	Y 78722	N	N	1	Y
4 St Georges Estate	Urban Background	X 368779	Y 71706	N	Y (1m)	2	N
5 Fortuneswell	Roadside	X 368662	Y 73491	N	Y (2m)	2	Y
7 Littlemoor Road	Roadside	X 366850	Y 83618	N	N	1	Y
8 King Street	Kerbside	X 368033	Y 79527	N	Y (0.5m)	1	Y
9 St Mary Street	Urban Centre	X 367954	Y 79012	N	N	Pedestrian	N
10 Boot Hill	Kerbside	X 367542	Y 78548	N	Y (4m)	1	Y
11 Preston Road	Roadside	X 37059	Y 83070	N	Y (0.5m)	1.5	Y
12 Portland Road	Roadside	X 366477	Y 77231	N	Y (8m)	1.5	Y
13 St Thomas Street	Kerbside	X 367883	Y 78790	N	Y (0.5m)	1	N
14Lanehouse Rocks Road	Suburban	X 365714	Y 78970	N	Y (19m)	1.5	Y
15 Manor Roundabout	Roadside	X 367163	Y 8169.5	N	N	2	Y
16 Kestrel View	Suburban	X 367434	Y 83361	N	Y (5m)	1	N
17 Co-location Site	Roadside	X 366847	Y 83634	Y	N	1	Y

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
18 719 Dorchester Rd	Kerbside	X 366892	Y 83952	N	Y (1m)	1	Y
19 Dorchester Rd	Roadside	X 366827	Y 83571	N	Y (2m)	1	Y
20 Co-location II	Roadside	X 366847	Y 83634	Y	N	1	Y
21 Co-location III	Roadside	X 366847	Y 83634	Y	N	1	Y
22 Wey-Valley School	Urban Background	X 366882	Y 82548	N	Y	1	Y
23 Jubilee Sidings	Roadside	X 367762	Y 79548	N	N	2	Y
29 Fire Station	Roadside	367514	78631	N	N	1.5	N
30 15 Rodwell Road	Roadside (on façade of dwelling)	367545	78550	N	Y (façade)	4	Y
31 Rodwell Roundabout	Roadside	367540	78471	Y	Y	1	Y
32 To Portmore Gardens	Roadside	367528	78554	N	Y (representative of façade)	2	Y
52 16 Rodwell Road	Kerbside	367533	78531	N	Y (façade)	1	Y
53 Wyke Road	Roadside	367525	78475	N	N	0.5	N
54 Chickerell	Kerbside	367498	78616	N	N	0.5	N

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
Road							
33 Buxton Road	Roadside	366645	77711	N	N	1.5	N
34 Wyke Juniors	Kerbside	366385	77496	N	N	0.5	N
35 Cockles Lane	Kerbside	365960	78268	N	N	0.5	N
36 60 Lanehouse Rocks	Kerbside	365758	78768	N	N	1	N
37 Wyke Rd / Cross Rd Junc	Roadside	367197	78330	N	N	0.5	N
38 Buxton Rd / Cross Rd	Kerbside	367123	77942	N	N	1	N
39 Wyke Rd / Lanehouse Rocks Rd	Roadside	366144	77841	N	N	0.5	N
40 St Edmund St	Urban Centre	367915	78770	N	Y (1m)	0.5	N
41 Commercial Road	Roadside	367815	79443	N	N	2	N
42 King St CCTV	Roadside	367948	79557	N	N	2	N
43 Queen St	Roadside (on façade of dwelling)	367985	79571	N	Y (façade)	0.5	Y

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
44 Melcombe House	Kerbside	367830	79595	N	N	1	N
45 Upwey St	Kerbside (on façade of dwelling)	367879	79567	N	Y (façade)	0.5	Y
46 Dominoes	Kerbside (on façade of dwelling)	367995	79528	N	Y (façade)	0.5	Y

2.2 Comparison of Monitoring Results with AQ Objectives

2.2.1 Nitrogen Dioxide

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 at both sites. There was only one exceedence of the hourly mean of 200 µg/m^3 at Rodwell Road on 7th July 2012 at 11:00, which corresponded with a popular local Sea Food Festival. There is no need for a detailed assessment for NO_2.

Table 2.3 Results of Automatic Monitoring of Nitrogen Dioxide: 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	R	N	2010	(p.m.) 80.68	24.15
			2011	(a.m.) 99.89	31.32
			2012	(a.m.) 99.99	29.61
Littlemoor Road	R	N	2010	a.m. 96.43	39.35
			2011	a.m. 100	30.75
			2012	a.m. 100	13.18

Diffusion Tube Monitoring Data

Monitoring results for 2012 can be found in Table 2.4. All sites comply with the annual mean and the hourly air quality objectives. After completing the Precision and Accuracy Spreadsheet from AEA Energy and Environment (Appendix A), WPBC's it was considered suitable to use the locally derived bias-adjustment factor from the co-location study at Rodwell Road.

Further data are held within Table 2.5 for 2008 to 2011.

Table 2.4 Results of Nitrogen Dioxide Diffusion Tubes in 2012

Site ID	Location	Site Type	Within AQMA	Triplicate or Collocated Tube	Data Capture (no of months)	Data with less than 9 months has been annualised	Annual Mean concentration (Bias Adjustment Factor = 0.81
2	Newstead Road	R	N	N	8	Y	8.78
4	St Georges Estate	UB	N	N	12	n/a	7.44
5	Fortuneswell	R	N	N	12	n/a	13.03
7	Littlemoor Road	R	N	N	5	Y	14.56
8	King Street	K	N	N	12	n/a	22.57
9	St Mary Street	UC	N	N	12	n/a	10.07
10	Rodwell Road	K	N	N	12	n/a	32.80
11	Preston Road	R	N	N	5	Y	15.07
12	Portland Road	R	N	N	10	n/a	13.07
13	St Thomas Street	K	N	N	10	n/a	14.68
14	Lanehouse Rocks Road	S	N	N	10	n/a	11.33
15	Manor Roundabout	R	N	N	8	Y	15.97
16	Kestrel View	S	N	N	5	N	11.83
17	Colocation	R	N	Y	12	n/a	13.94
20	Colocation II	R	N	Y	12	n/a	14.02
21	Colocation III	R	N	Y	12	n/a	14.19
29	Fire Station	R	N	N	12	n/a	18.86
30	15 Rodwell Road	R	N	N	12	n/a	23.06
31	Rodwell Roundabout	R	N	Y	12	n/a	29.21
32	To Portmore Gardens	R	N	N	12	n/a	26.77
49	Rodwell Roundabout II	R	N	Y	12	n/a	29.44
50	Rodwell Roundabout III	R	N	Y	12	n/a	29.11
51	Rodwell Inn	R	N	N	12	n/a	31.43
52	16 Rodwell Road	K	N	N	12	n/a	34.24
53	Wyke Road	R	N	N	12	n/a	23.57
54	Chickerell Road	K	N	N	8	Y	11.07
33	Buxton Road	R	N	N	5	N	13.82
34	Wyke Juniors	K	N	N	12	n/a	11.66
35	Cockles Lane	K	N	N	12	n/a	21.81
36	60 Lanehouse Rocks Road	K	N	N	12	n/a	13.47
37	Wyke Rd / Cross Rd Junc	R	N	N	12	n/a	12.16
38	Buxton Rd / Cross Rd Junc	K	N	N	12	n/a	12.30
39	Wyke Rd / Lanehouse Rocks Rd	R	N	N	12	n/a	12.79
40	St Edmund St	UC	N	N	7	N	14.49

41	Commercial Road	R	N	N	4	N	15.70
42	King Street CCTV	R	N	N	12	n/a	19.32
43	Queen Street	R	N	N	5	N	14.70
44	Melcombe House	K	N	N	12	N	23.69
45	Upwey Street	K	N	N	12	n/a	27.05
46	Dominoes	K	N	N	12	n/a	26.74

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

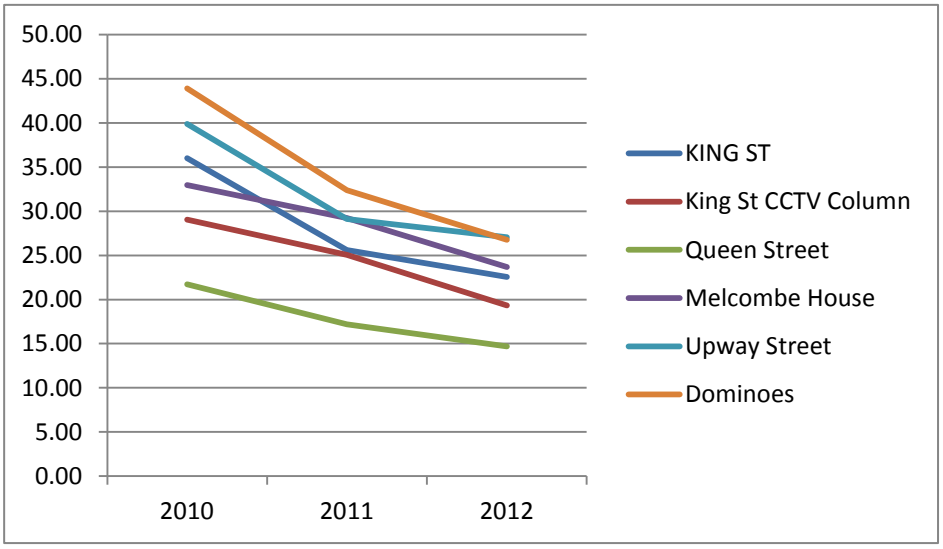
Table 2.5 Results of Nitrogen Dioxide Diffusion Tubes (2007 to 2011)

Monitoring Location	**2011** Bias Adjustment figure = 0.95	**2010** Bias Adjustment figure = 1.03	**2009** Bias Adjustment figure = 0.95	**2008** Bias Adjustment figure = 0.93
2 Newstead Road	18.35	20.99	19.31	18.59
4 St Georges Est	9.59	10.82	9.99	10.29
5 Fortuneswell	16.16	20.59	17.23	17.18
7 Littlemoor Road	22.73	29.30	35.01	31.03
8 King St	25.58	36.01	32.68	30.75
9 St Mary Street	13.51	18.33	16.96	14.83
10 Boot Hill	**42.56**	**43.45**	**51.57**	**43.08**
11 Preston Road	23.47	26.50	27.22	24.58
12 Portland Road	16.91	20.03	18.36	17.99
13 St Thomas Street	23.11	26.49	24.74	22.40
14 Lanehouse Rocks Road	16.31	20.46	13.77	16.68
15 Manor Roundabout	27.65	25.72	27.22	25.36
16 Kestrel View	11.86	13.52	12.31	10.30
17 Collocation Site	22.05	28.37	29.79	27.64
18 719 Dorchester Rd	18.21	33.39	37.98	32.79
19 Dorchester Road	25.22	**41.51**	38.99	31.91
20 Co-location II	21.78	31.36	32.76	26.79
21 Co-location III	22.06	30.36	33.75	26.94
22 Wey Valley School	10.11	14.98	13.80	12.83
23 Jubilee Sidings	17.90	18.78	18.82	17.13
29 Fire Station	24.84	32.59	31.79	
30 15 Rodwell Road	26.76	31.16	31.80	
31 Rodwell Roundabout	37.41	**44.31**	**44.80**	
32 To Portmore Gardens	32.82	37.67	37.84	
47 Fire Station II	31.38	32.87		
48 Fire III	32.99	30.77		
33 Buxton Road	14.40	17.95	15.75	
34 Wyke Juniors	13.60	18.33	13.97	
35 Cockles Lane	25.44	32.82	24.71	
36 60 Lanehouse Rocks Rd	18.09	21.19	16.89	

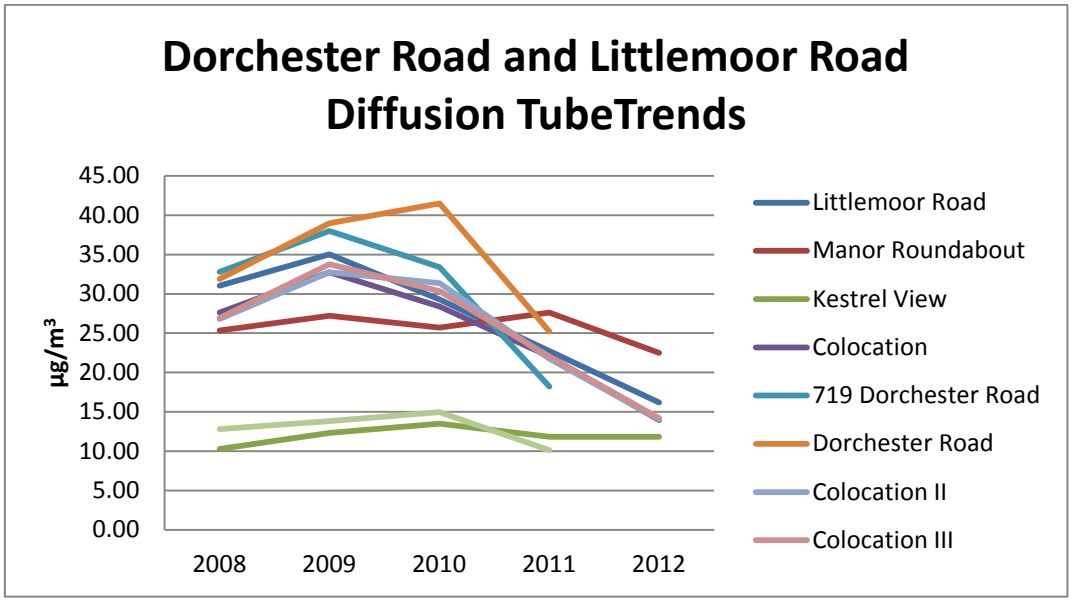
37 Junction Wyke Rd / Cross Rd	13.73	17.30	15.39	
38 Junction Buxton Rd / Cross Rd	14.44	17.67	12.94	
39 Junction Wyke Rd, LHRocks Rd	16.03	20.41	15.22	
40 St Edmund Street	20.73	23.87	19.57	
41 Commercial Rd	17.09	20.07	19.22	
42 King St CCTV Column	25.04	29.03	28.16	
43 Queen Street	17.19	21.71	19.27	
44 Melcombe House	29.22	32.94	34.00	
45 Upway Street	29.10	39.89	36.99	
46 Dominoes	32.38	**43.90**	39.98	
49 Rodwell Roundabout II	36.17			
50 Rodwell Roundabout III	36.66			

Figure 2.4 Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites (Areas previously of concern only).

2.4.a King Street Locations



2.4.b Dorchester Road and Littlemoor Road Locations



Trends for the monitoring locations along the Rodwell Road locations can be found in Appendix C. They show the same reduction as seen in other locations.

Diffusion tube monitoring from 2008 to 2012 indicates there is no need for a detailed assessment for NO_2

2.2.2 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. As mentioned in the previous chapter, 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. The monitoring has demonstrated that the annual mean of 40µg/m^3 and the 24 hour mean of no more than 35 exceedences of 50 µg/m^3 per year have been achieved.

Table 2.6 Results of Automatic Monitoring of PM_{10}: Comparison with Annual Mean Objective

Site ID	Site Type	Year	Valid Data Capture for period of monitoring, or for each year %	Confirm Gravimetric Equivalent	Annual Mean Concentration µg/m^3
Boot Hill	Roadside	2010	(p.m.) 87.13	Y	24.9
		2011	(a. m.) 99.8	Y	19.8
		2012	(a. m.) 97.18	Y	23.8

Table 2.7 Results of Automatic Monitoring for PM_{10}: Comparison with 24-hour mean Objective

Site ID	Site Type	Year	Confirm Gravimetric Equivalent (Y or NA)	Number of Exceedences of 24-Hour Mean (50µg/m^3)
Boot Hill	Roadside	2010	Y	8
		2011	Y	15
		2012	Y	8

Monitoring data from 2010 to 2012 indicates there is no need for a detailed assessment for PM_{10}

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

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

The last round or review and assessment looked at this aspect, however, as the road infrastructure has altered since the last report it was deemed appropriate to review this subject again.

The same locations were identified as in the last report:

- King Street
- Boot Hill (Rodwell Road)
- Chickerell Road (Rodwell Road end)
- Fortuneswell

However, a new location was identified – Benville Road.

Each location was looked at and the definitions of narrow and congested streets were applied as per Box 5.3 of TG(09).

Both King Street and Fortuneswell do have the relevant AADT (annual average daily traffic count), however, diffusion tube monitoring identifies that the air quality objectives are achieved and would not be exceeded, therefore the locations were discounted. Benville Road and Chickerell Road did not have a high enough AADT and finally Boot Hill is considered further within the Detailed Assessment (Appendix C).

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 & 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 HGVs.

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 assessment and refers to those junctions with more than 10,000 vehicles per day.

Weymouth and Portland Borough Council has assessed newly identified junctions meeting the criteria in Section A.4 of Box 5.3 in TG(09), and concluded that it will not be necessary to proceed to a Detailed Assessment.

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

The road infrastructure has changed dramatically since the last round of review and Assessment. The Borough has seen a new by-pass open, known locally as the Weymouth Relief Road (WRR), and improvements to the main route through Weymouth to Portland – The Weymouth Transport Package (the A354 & the B3155).

The WRR had an air quality assessment submitted along with its planning application, which was accepted.

Weymouth and Portland Borough Council has assessed new/proposed roads meeting the criteria in Section A.5 of Box 5.3 in TG(09), and concluded that it will not be necessary to proceed to a Detailed Assessment.

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 has assessed new/newly identified roads with significantly changed traffic flows, and concluded that it will not be necessary to proceed to a Detailed Assessment.

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

This matter was considered within previous rounds of review and assessment.

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 the 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 away 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 understand of the working of the Port, there have not been a significant rise in these numbers

There is relevant exposure within 250m away 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. This would be controlled by the Environment Agency, and both WPBC and the EA 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 have applied to change the proposed fuel for 50% of the operation time to Rubber Crumb to produce a synthetic liquefied gas, using thermodynamic cracking.

The updated air quality assessment has been reviewed and accepted.

Weymouth and Portland Borough Council has assessed new/proposed industrial installations, and concluded that it will not be necessary to proceed to a Detailed Assessment.

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 2000 m^3, located with a busy road nearby and have residential dwellings within 10 m^3 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, or
- 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 NO_x emissions. There are no plant burning biomass boilers present within the Borough, however, a boiler is 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 500x500 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 SO2 and PM10

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 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 in PM10. 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 Conclusions and Proposed Actions

8.1 Conclusions from New Monitoring Data

Monitoring undertaken throughout the Borough since the last report was submitted to Defra in 2009 has demonstrated that there are no areas which have exceeded any air quality objective for PM_{10} or NO_2

8.2 Conclusions from Assessment of Sources

Road transport and associated nitrogen dioxide are deemed 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.

8.3 Proposed Actions

There are is no need to undertake any Detailed Assessment for any pollutant within the WPBC area.

Review of diffusion tube monitoring locations to concentrate in the areas of concern King Street and Rodwell Road (Boot Hill Corridor) , to check levels of NO_2 in these locations in the future.

Automatic monitoring for NO_2 and PM_{10} in the vicinity of Boot Hill continue at present to check levels of these pollutants in the future. Howeverm, the Littlemoor / Dorchester Road automatic monitor will be decommissioned in 2013.

9 References

1. Local Air Quality Management Technical Guidance LAQM.TG(09)

2. Weymouth Transport Package for the 2012 Games One Year After Evaluation Report – Dorset County Council - http://www.dorsetforyou.com/media.jsp?mediaid=162237&filetype=pdf

3. Weymouth and Portland Borough Council's Updating and Screening Assessment 2009

4. AEA Energy and Environment Precision and Accuracy Spreadsheets

5. www.laqmsupport.org.uk

Appendices

Appendix A: QA/QC Data

Appendix B: Diffusion Tube Monitoring Results 2010-12

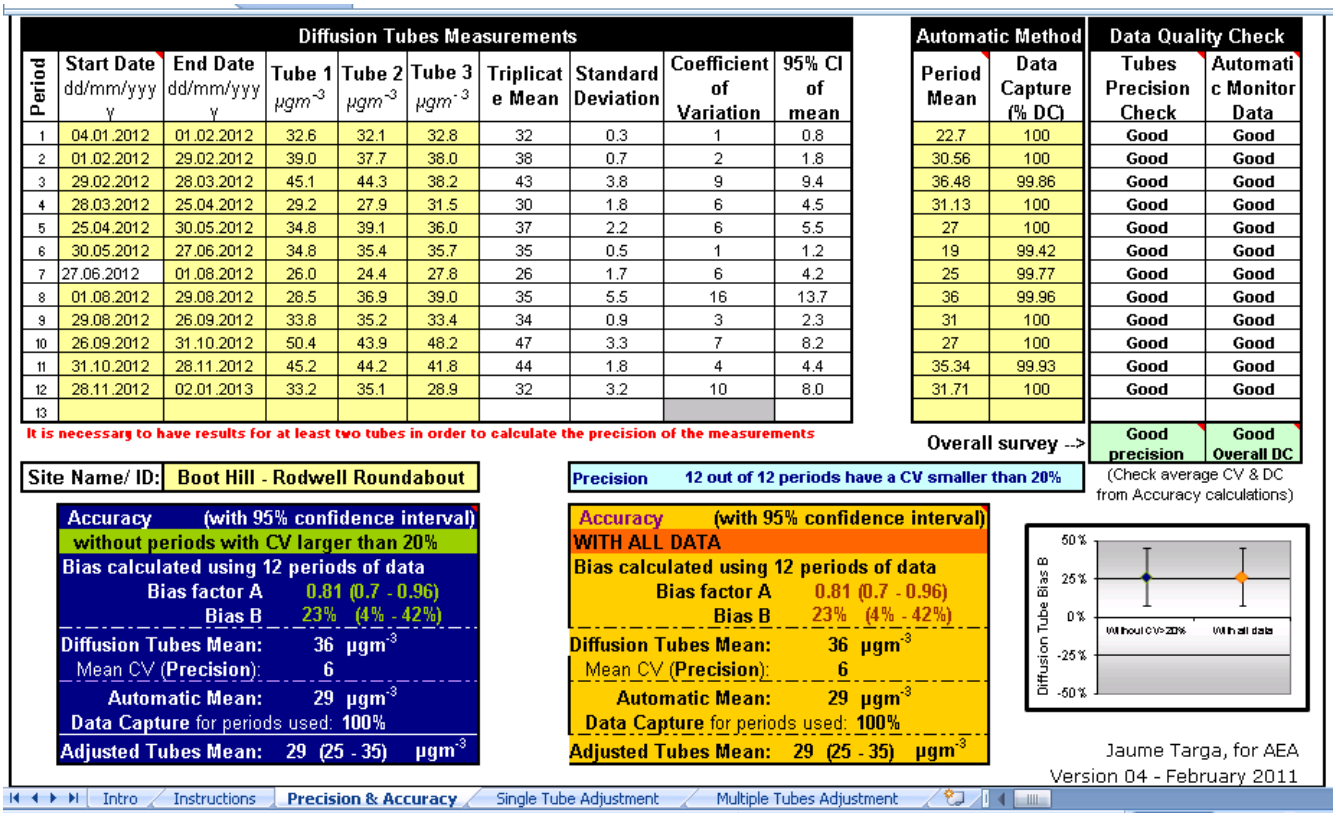
Appendix C: Detailed Assessment for Boot Hill (Rodwell Road)

Appendix A: QA:QC Data

Factor from Local Co-location Studies

The AEA Energy and Environment Precision and Accuracy Spreadsheets were used to ascertain a locally derived bias adjustment factor was available and suitable for use on the results. The Spreadsheet is supplied in Figure A.1 and shows a factor of 0.81. As the overall survey was deemed to be of good precision and good data capture, then this factor was chosen to be applied to the diffusion tubes results.

Figure A.1- AEA Energy and Environment Precision and Accuracy Spreadsheet



Diffusion Tubes Measurements

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	95% CI of mean	Automatic Method: Period Mean	Automatic Method: Data Capture (% DC)	Data Quality Check: Tubes Precision Check	Data Quality Check: Automatic Monitor Data
1	04.01.2012	01.02.2012	32.6	32.1	32.8	32	0.3	1	0.8	22.7	100	Good	Good
2	01.02.2012	29.02.2012	39.0	37.7	38.0	38	0.7	2	1.8	30.56	100	Good	Good
3	29.02.2012	28.03.2012	45.1	44.3	38.2	43	3.8	9	9.4	36.48	99.86	Good	Good
4	28.03.2012	25.04.2012	29.2	27.9	31.5	30	1.8	6	4.5	31.13	100	Good	Good
5	25.04.2012	30.05.2012	34.8	39.1	36.0	37	2.2	6	5.5	27	100	Good	Good
6	30.05.2012	27.06.2012	34.8	35.4	35.7	35	0.5	1	1.2	19	99.42	Good	Good
7	27.06.2012	01.08.2012	26.0	24.4	27.8	26	1.7	6	4.2	25	99.77	Good	Good
8	01.08.2012	29.08.2012	28.5	36.9	39.0	35	5.5	16	13.7	36	99.96	Good	Good
9	29.08.2012	26.09.2012	33.8	35.2	33.4	34	0.9	3	2.3	31	100	Good	Good
10	26.09.2012	31.10.2012	50.4	43.9	48.2	47	3.3	7	8.2	27	100	Good	Good
11	31.10.2012	28.11.2012	45.2	44.2	41.8	44	1.8	4	4.4	35.34	99.93	Good	Good
12	28.11.2012	02.01.2013	33.2	35.1	28.9	32	3.2	10	8.0	31.71	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

(Check average CV & DC from Accuracy calculations)

Site Name/ ID: Boot Hill - Rodwell Roundabout

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

Accuracy (with 95% confidence interval) without periods with CV larger than 20%
Bias calculated using 12 periods of data
Bias factor A: 0.81 (0.7 - 0.96)
Bias B: 23% (4% - 42%)
Diffusion Tubes Mean: 36 µgm-3
Mean CV (Precision): 6
Automatic Mean: 29 µgm-3
Data Capture for periods used: 100%
Adjusted Tubes Mean: 29 (25 - 35) µgm-3

Accuracy (with 95% confidence interval) WITH ALL DATA
Bias calculated using 12 periods of data
Bias factor A: 0.81 (0.7 - 0.96)
Bias B: 23% (4% - 42%)
Diffusion Tubes Mean: 36 µgm-3
Mean CV (Precision): 6
Automatic Mean: 29 µgm-3
Data Capture for periods used: 100%
Adjusted Tubes Mean: 29 (25 - 35) µgm-3

Jaume Targa, for AEA
Version 04 - February 2011

Intro | Instructions | Precision & Accuracy | Single Tube Adjustment | Multiple Tubes Adjustment

QA/QC of automatic monitoring

Both Automatic Analysers are 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 analysers remotely and contact the local authority if there are any unusual readings.

All analysers undergo 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. Both raw and ratified data is available.

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 with the instruction within LAQM.TG(09) Box a1.7. Gradko International Limited are a rate 'good' under the Workplace Analysis Scheme for Proficiency (WASP), as identified by AEA at www.laqmsupport.org.uk

Appendix B – Diffusion Tube Monitoring Results

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	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**

Gardens															
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 Roundabout III	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**
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

Appendix C

Detailed Assessment for Boot Hill (Rodwell Road, Weymouth), and Review of the Weymouth Relief Road's impact upon NO_2

Historically, WPBC has been concerned with levels of NO_2 within three areas, King Street, Dorchester Road (junction of Littlemoor Road) and Boot Hill (Rodwell Road), while King Street and Dorchester Road have not exceeded the annual mean objective, Boot Hill had in 2008.

In 2009, when the last Updating and Screening Assessment was submitted, Dorset County Council were constructing the Weymouth Relief Road, and proposing the Weymouth Transport Package for the 2012 Games. These roads were being constructed or altered to reduce the amount of congestion present to the area.

An air quality assessment was submitted with the Relief Road's planning application, which was reviewed and agreed prior to permission being granted. The Weymouth Transport Package however did not.

This Appendix should be considered alongside the data within the Updating and Screening Report.

Weymouth Relief Road (WRR)

The Relief Road comprises a single carriageway road, with a section of crawler lane linking the A354 Manor Roundabout near Radipole to the A354 at the top of Ridgeway Hill. The main carriageway of the Weymouth Relief Road (A354) opened on Thursday 17 March 2011. Figure C.1. shows the Weymouth Relief Road

Historically Weymouth and Portland Borough Council have monitored high levels of NO_2 along the Dorchester Road and Littlemoor Road junction. Monitoring comprised both diffusion tubes along the Dorchester Road and a real time analyser to Littlemoor Road. These sites saw a dramatic drop in NO_2 once the road opened (Table 2.4.b). There is now no need to monitor in that area. Diffusion tubes have been relocated and the realtime monitor will be decommissioned in 2013.

The Weymouth Transport Package (WTP)

The aim of the Weymouth transport Package was to improve public transport accessibility using traffic management and bus service improvements. This would therefore have a positive impact upon air quality on the areas already highlighted to be of concern for NO_2. One of the objectives of the WTP would help to improve air quality:

> "To relieve or reduce traffic congestion . . . focussing on the King Street and Boot Hill corridors where the impact of congestion is most significant"

(source: Weymouth Transport Package for the 2012 Games One Year After Evaluation Report – Dorset County Council)

The main elements of the WTP which impacted upon air quality are listed:

- Junction improvements to King Street
- Junction improvements to Boot Hill (Rodwell Road)
- Introduction of turning bans to both Boot Hill and King Street

Nitrogen Dioxide Monitoring Results

Dorset County Council looked at traffic distribution both before and after the schemes, Table C.1 below shows the changes in traffic flows, along with relevant diffusion tubes annual mean (adjusted for bias).

Table C.1 – Comparison of Traffic Flows and NO_2 Concentrations Pre and Post WTP

Description	2007/08	2012	% Difference in traffic counts	Annual Mean NO_2 2010 ($\mu g/m^3$)	Annual Mean NO_2 2012 ($\mu g/m^3$)
A354 Rodwell Road (Boot Hill	26,600	21,400	-24	43.45	32.80
Dorchester Road	26,800	11,400	-135	41.51	25.22*
Commercial Road	12,200	11,300	-8	20.07	15.70**
Lanehouse Rocks Road	15,300	18,100	15	16.68	11.33
Cross Road	1,500 (2001 data)	2,700	44	17.30	12.16

*2011 Annual Mean **Four Month Period Mean for 2012

This table demonstrates that both schemes have had a positive impact upon the air quality within the areas of concern for WPBC. (Dorchester Road is affected by the introduction of the WRR).

The diffusion tube monitoring for the Rodwell Road area shows a marked drop in NO_2 levels at all locations. Although there is an immediate reduction in NO_2 from 2009 to 2010, Rodwell Road was subject to a one-way diversion from 7th June through until 18th February 2011.

As detailed in the Updating and Screening Report, the works for the Weymouth Transport Package for the 2012 Games (WTP) commenced in June 2010 and was commissioned in July 2011. During this time, monitoring continued along the Boot Hill Corridor, however, these results were not considered to be truly representative of the road system's use until July 2011.

Defra's request for WPBC to complete a Detailed Assessment for that area due to the AQO for NO_2 being exceeded in 2009, was agreed to be put on hold until the WTP was completed, and WPBC had a full 12 months monitoring data with the road running as proposed.

Once the WTP works were completed, the 2012 annual mean data for all diffusion tube sites along the Boot Hill Corridor was achieved. (after applying a local bias adjustment factor).

The automatic analysers sited at Boot Hill have further supported these data:

Table C.2 Annual Mean Concentration from Automatic Monitor – Nitrogen Dioxide

Site ID	Site Type	Within AQMA?	Year	Valid Data Capture for period of monitoring, %	Annual Mean Concentration μg/m^3
Boot Hill	**R**	**N**	**2010**	**(p.m.) 80.68**	**24.15**
			2011	**(a.m.) 99.89**	**31.32**
			2012	**(a.m.) 99.99**	**29.61**

Similarly, King Street, Dorchester and Littlemoor Roads have also been positively affected by the introduction of the WTP and WRR – See Figures C.3 and C.4.

Additionally, monitoring continues along the Boot Hill Corridor, and traffic engineers can view the real time automatic analyser results, using this data to consider the need for re-phasing of the traffic lights to disperse the traffic if required.

Conclusion

This study of the traffic and air quality monitoring results along Boot Hill demonstrates there is no need for WPBC to declare an AQMA for breaches of the annual mean NO_2 objective at this time.

Figure C.1 Map detailing Weymouth Relief Road

(Source: http://www.dorsetforyou.com/media.jsp?mediaid=162237&filetype=pdf)

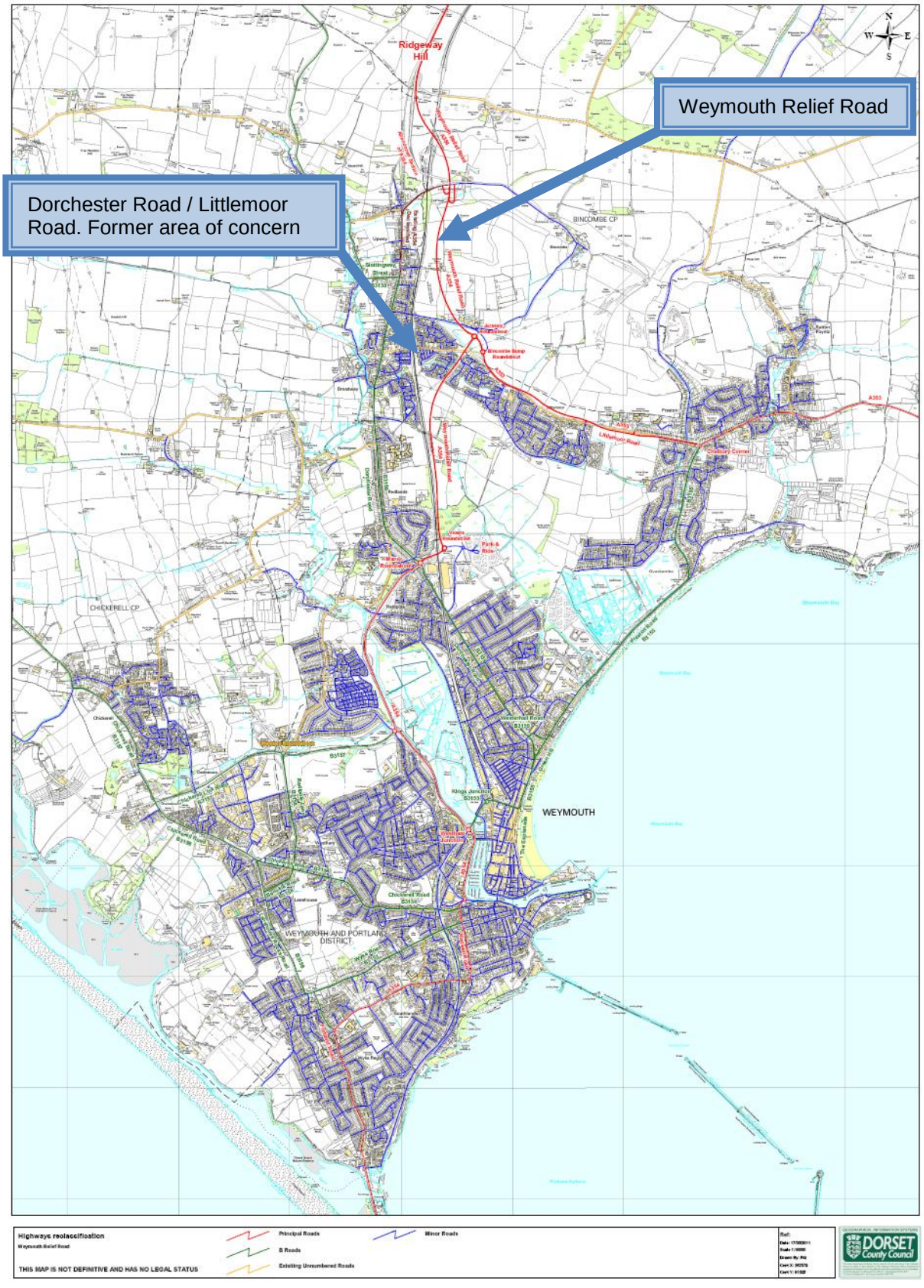


Figure C.2 – Diffusion Tubes results 2008-12 – Rodwell Road Area

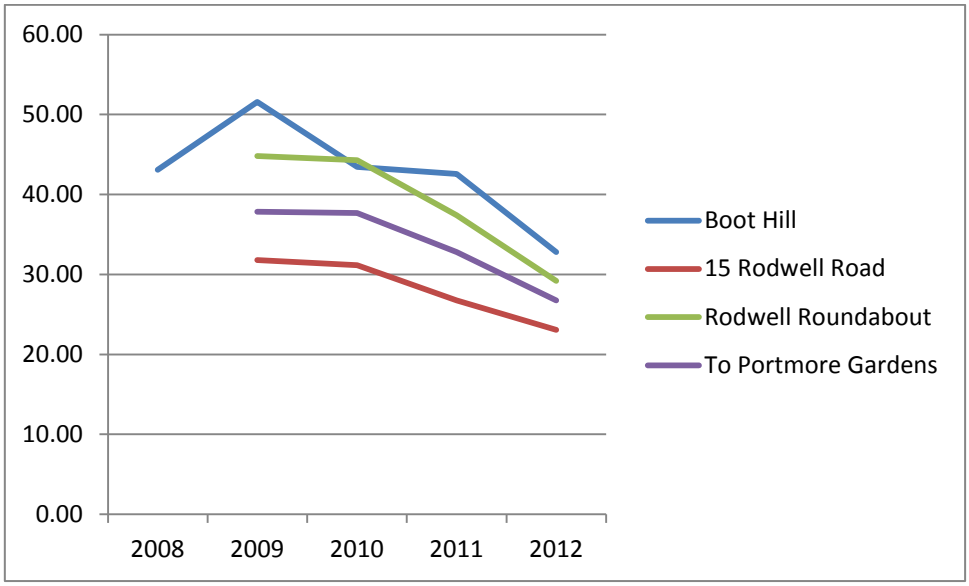


Figure C.3 – Diffusion Tubes results 2010-12 – King Street Area

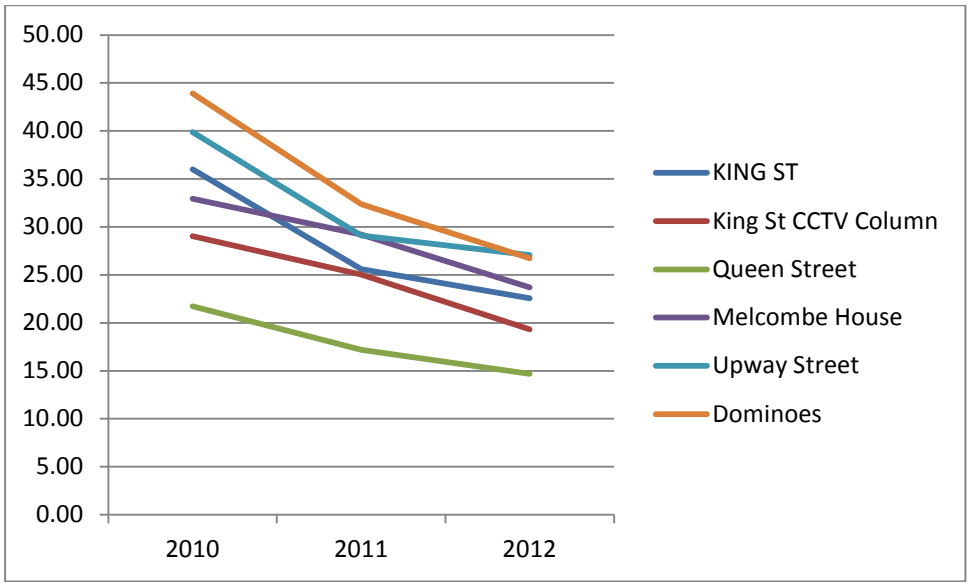


Figure C.4 – Diffusion Tubes results 2009-11 – Dorchester Road Area