2014 Air Quality Progress Report and Detailed Assessment for

Southampton City Council

In fulfillment of Part IV of the

Environment Act 1995

Local Air Quality Management

May 2015

Southampton City Council

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Executive Summary

Southampton City Council has examined the results from 2013 monitoring in the Southampton Unitary Authority Area. Concentrations within most of the AQMAs still exceed the 40 µg/m^3 annual mean standard for nitrogen dioxide at some relevant receptors and the AQMAs should remain.

This Progress Report incorporates detailed assessments for four areas, Portswood Road; the southern section of Romsey Road, 2 residential receptors within the docks and Queens Terrace/Orchard Place. The detailed assessments have used NOx tube monitoring and appended at the end of the report as appendix B, C, D and E.

- This report recommends that the existing AQMA on Romsey Road is extended to include the NOx tube locations that are exceeding the 40 µg/m^3 annual mean standard for nitrogen dioxide at the southern section, the junction with Shirley Road.
- The existing Bevois Valley AQMA should be extended to include the NOx tube locations that are exceeding the 40 µg/m^3 annual mean standard for nitrogen dioxide on Portswood Road to the north.
- The monitoring in the docks at the residential receptors shows that this location is very unlikely to exceed the 40 µg/m^3 annual mean standard for nitrogen dioxide, and no further action is required.
- The Bittene Road AQMA will remain as 2013 monitoring data showed some NOx tubes were exceeding the annual mean standard. 2012 data indicated that all the monitoring locations were below the standard, although only just.
- Recent road layout changes that have drastically reduced traffic flow on Queens Terrace/Orchard Place has negated the need to extend the Town Quay AQMA to include the exceeding NOx tubes.

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Introduction

1.1 Description of Local Authority Area

The City of Southampton is a major coastal port located on the South Coast of England. It is the largest city in Hampshire, covering an area of 5,181 hectares (Southampton City Council, 2011) and has a population of approximately 237,000 (Southampton City Council, 2011). The city centre is located between two rivers, the River Test, which borders the city to the west and the River Itchen, which bisects central Southampton from the eastern wards. Both rivers converge into Southampton Water, a deep water estuary with a double tide that results in prolonged periods of high water. Southampton's excellent strategic position and channel characteristics have made it particularly good at facilitating the movements of large ships and has resulted in the city developing into a thriving cargo and cruise passenger port.

The Port of Southampton is run by Associated British Ports (ABP) and it is one of Southampton's biggest employers. The port handles around 41.0 million tonnes of goods per year (Associated British Ports, 2008) making it the 16th busiest port in Europe. A total of 889,0002 passengers (includes arrivals & departures) also pass through the port (Associated British Ports, 2008). Other significant employers include; the University of Southampton, NHS, Ikea, Carnival UK. Southampton's West Quay Shopping Centre, which opened in September 2000, is also a major retail hub for the region, ranked 14th in the UK for retail space (Southampton City Council, 2011).

The city has very good transport infrastructure links, served by a regional airport just outside the city's northern boundary, the M3 and M27 Motorways and a main line railway to London and along the south coast.

Southampton lies at the western end of the South Hampshire sub-region. The wider urban South Hampshire area, consisting of Southampton, Eastleigh, Fareham, Gosport, Portsmouth and Havant, together with parts of the New Forest, Test Valley, Winchester and East Hampshire has a combined population of 971,250 (Southampton City Council, 2006) and is the largest urban area in the South East region outside of London. As a consequence, the area is also one of the South East's

major economic centres and whilst other successful areas in the region depend upon linkages to London, South Hampshire operates in a distinct and largely separate manner, relying instead on connections with other regions and with Europe as a result of the presence of two major ports (Southampton and Portsmouth).

Southampton has a wealth of award winning parks, including Grade II listed parks within the city centre, making it is one of the greenest cities in Southern England. Of particular note is Southampton Common, a 362 acre wooded and grassy open recreational area just minutes from the city centre, which is designated a Site of Special Scientific Interest (SSSI).

Road transport emissions are the major source of air pollution in Southampton. Domestic gas boilers, industrial emissions, particularly from the waterside, and shipping emissions also significantly contribute towards the total.

1.2 Purpose of Progress 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.

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 Local Air Quality Management 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

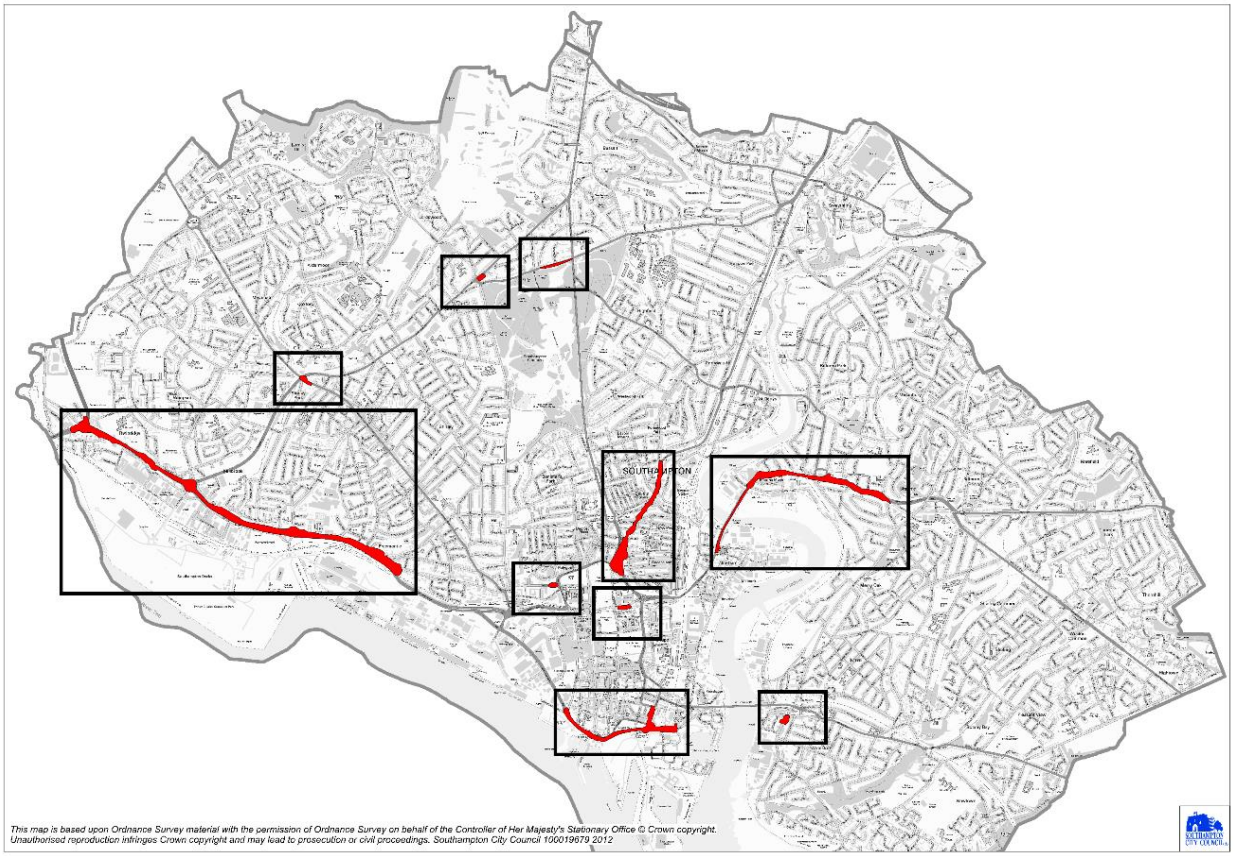
1.4 Summary of Previous Review and Assessments

Report Date	Report Type	Report Outcome
June 2003	Updating & Screening Assessment 1	Detailed Assessment required for SO2 and NO2
December 2004	Detailed Assessment	Six AQMAs required for NO2 (annual mean)
July 2005	Declaration of six AQMAs	AQMAs declared along Bitterne Road, Town Quay, Bevois Valley Road, Redbridge Road, Romsey Road / Winchester Road (Jct) and Hill lane / Winchester Road (Jct)
July 2005	Progress Report (2004)	No recommendations
March 2006	Climate Change and Air Quality Strategy	Published Climate Change & Air Quality Strategy
September 2006	Further Assessment	Recommended that one AQMA increased in size (Town Quay) and one AQMA decreased in size (Hill Lane / Winchester Road)
September 2007	Air Quality Action Plan (and subsequent annual progress reports)	Air Quality Action Plan published and incorporated into the Local Transport Plan
August 2006	Updating & Screening Assessment 2	Detailed Assessment required for NO2 at six locations and PM10 at one location
December 2007	Detailed Assessment	Two additional AQMAs required
July 2008	Declaration of two AQMAs	AQMAs declared for Commercial Road and Millbrook Road
November 2008	2007 Progress Report	No recommendations
July 2009	Further Assessment	Confirmed the two AQMAs declared in 2008 as valid
November 2009	Updating and Screening	Identified five roads outside the

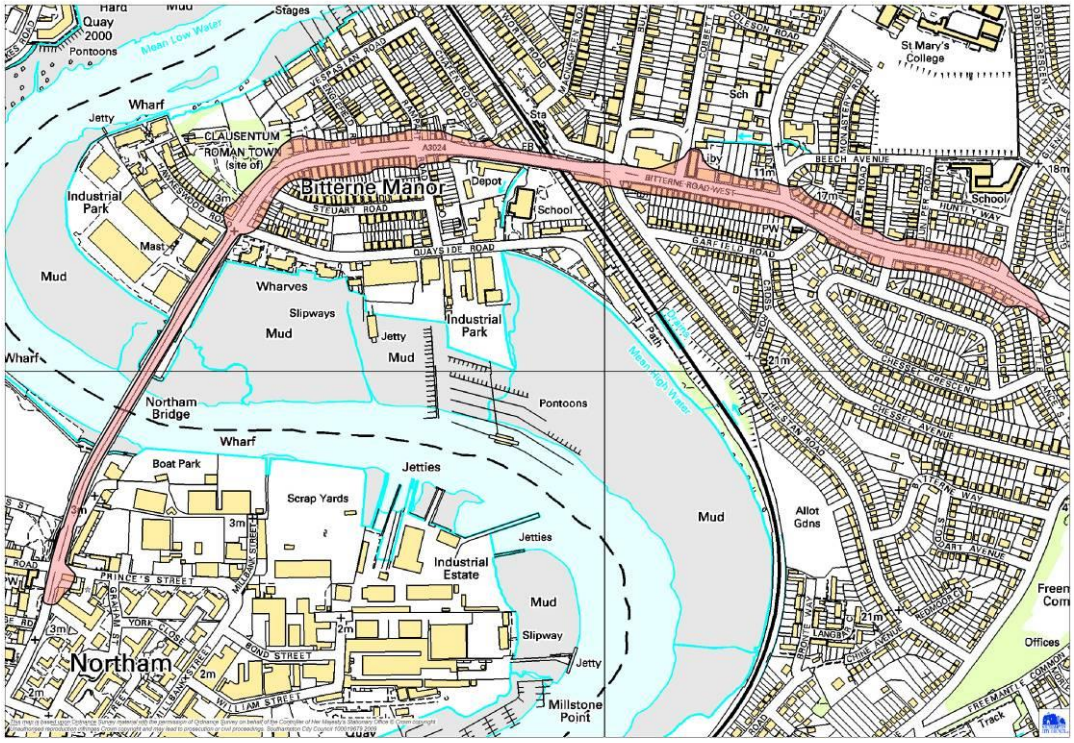
	Assessment 3	existing AQMAs which are at risk of exceeding the NO2 annual mean. Proceeded to a Detailed Assessment
December 2011	2010 Progress Report	Identified three more areas that were at risk of exceeding the NO2 annual mean
April 2012	Detailed Assessment	Recommended the declaration of 3 new AQMAs at New Road, Victoria Road and Burgess Road. Also recommended the extension of the existing Bitterne Road and Romsey Road / Winchester Road AQMAs and the merging of Redbridge Road and Millbrook Road AQMAs to form one larger AQMA
December 2012	Updating and Screening Assessment 4	Portswood Road and Millbrook Point Road were identified as areas requiring further investigation with NOx tube monitoring. Proceed to Detailed Assessment for Nitrogen Dioxide
December 2013	Progress Report	The southern end of Romsey Road was identified at risk of exceedance, 2 more NOx tubes to be deployed. Queens Terrace and Orchard Place adjacent to the Platform Road AQMA were identified at risk of exceedance

1.5 Maps of existing AQMAs in Southampton

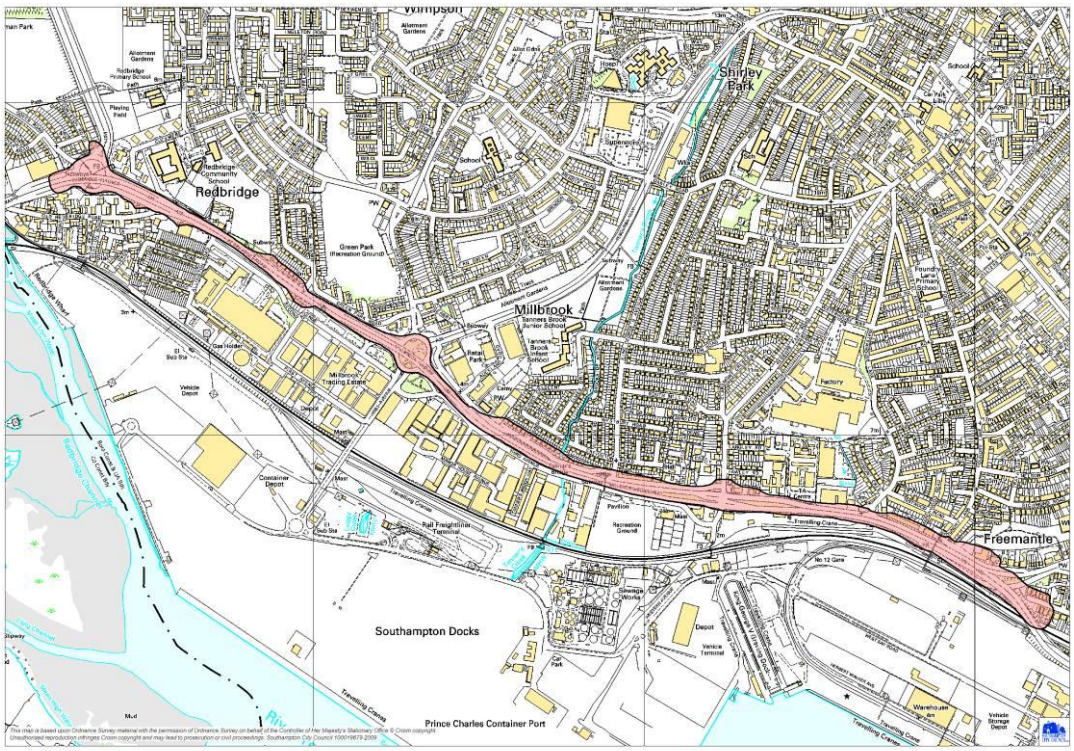
Figure 1.1 Maps of AQMA Boundaries



Bitterne/Northam Road AQMA

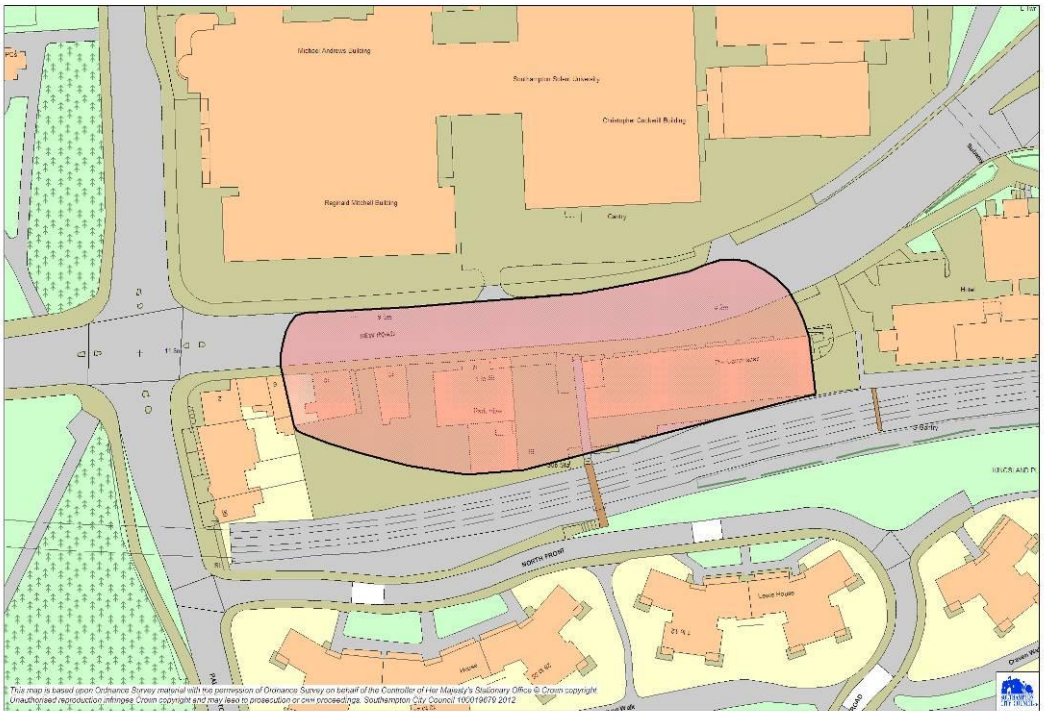


Redbridge/Millbrook Road AQMA



Victoria Road AQMA

New Road AQMA

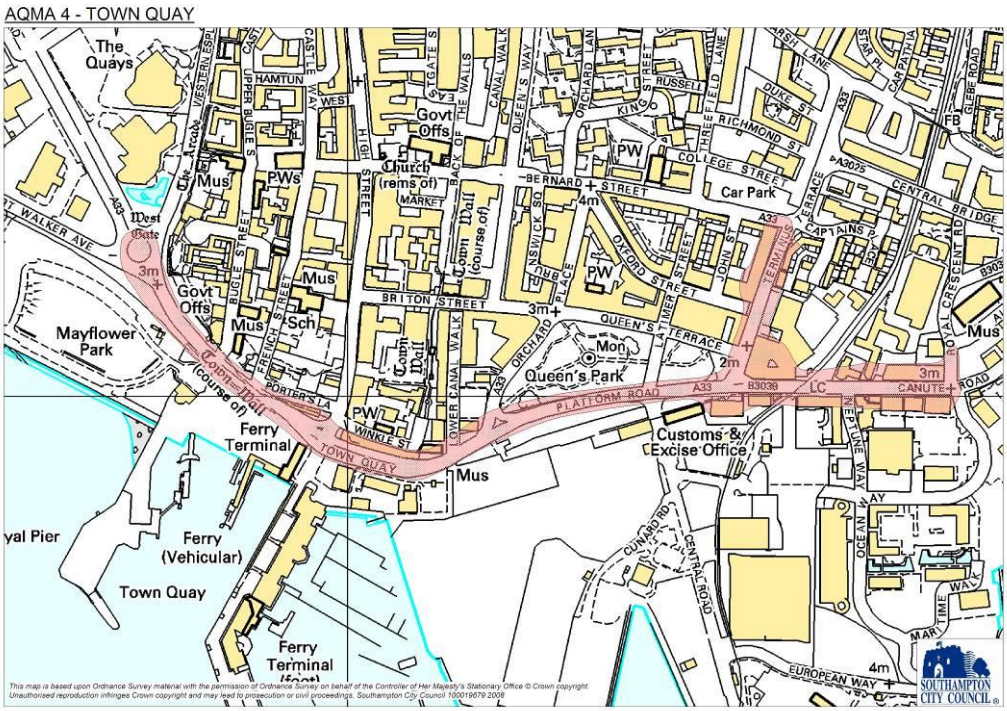


Commercial Road AQMA

AQMA 8 - COMMERCIAL ROAD

Town Quay AQMA

AQMA 4 - TOWN QUAY

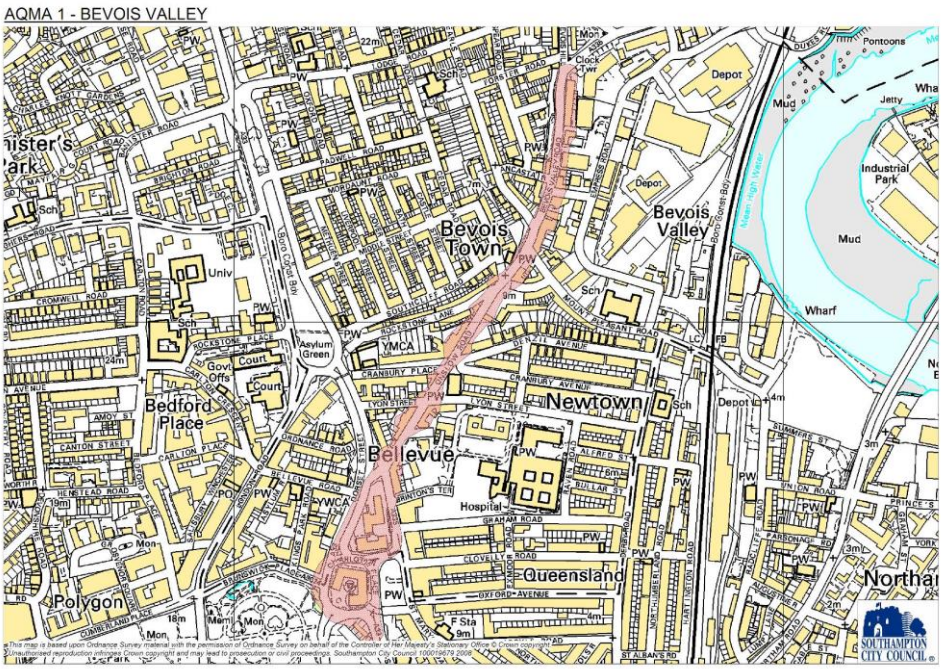


Winchester Road AQMA

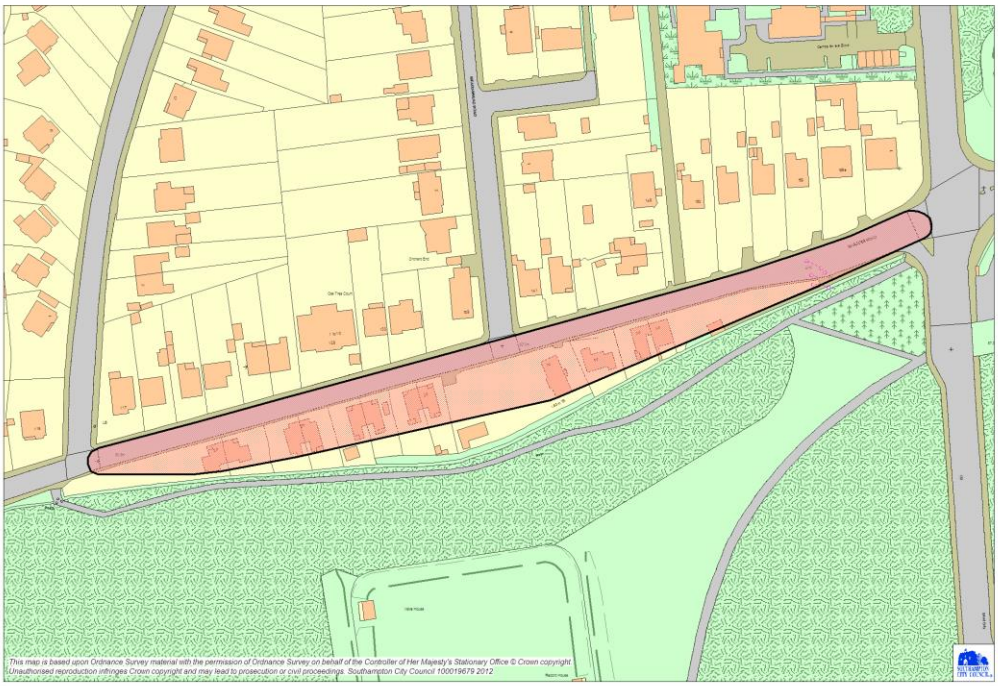
AQMA 3 - WINCHESTER ROAD / HILL LANE

Bevois Valley AQMA

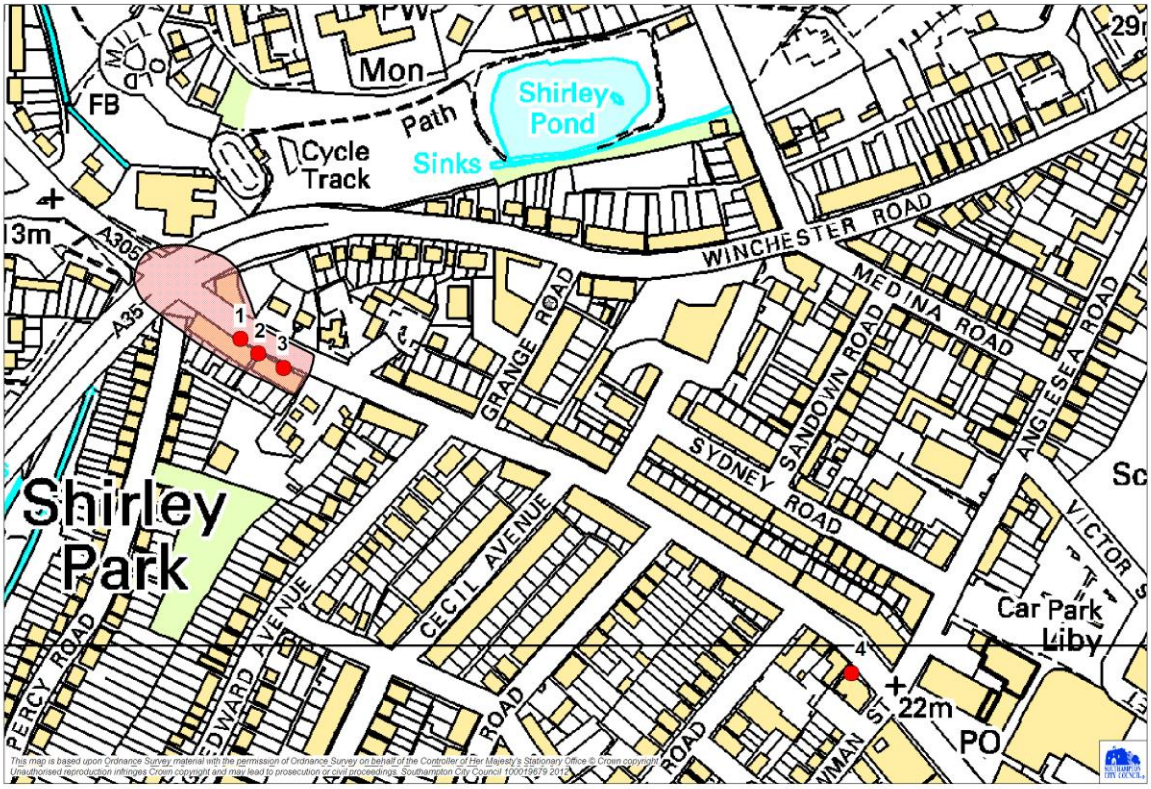
AQMA 1 - BEVOIS VALLEY



Burgess Road AQMA



Romsey Road AQMA



2.0 New Monitoring Data

2.1 Summary of Monitoring Undertaken

Figure 2.1 and Table 2.1 show details of the automatic monitoring stations located in Southampton

Automatic Monitoring Sites

Figure 2.1 Map of Automatic Monitoring Sites

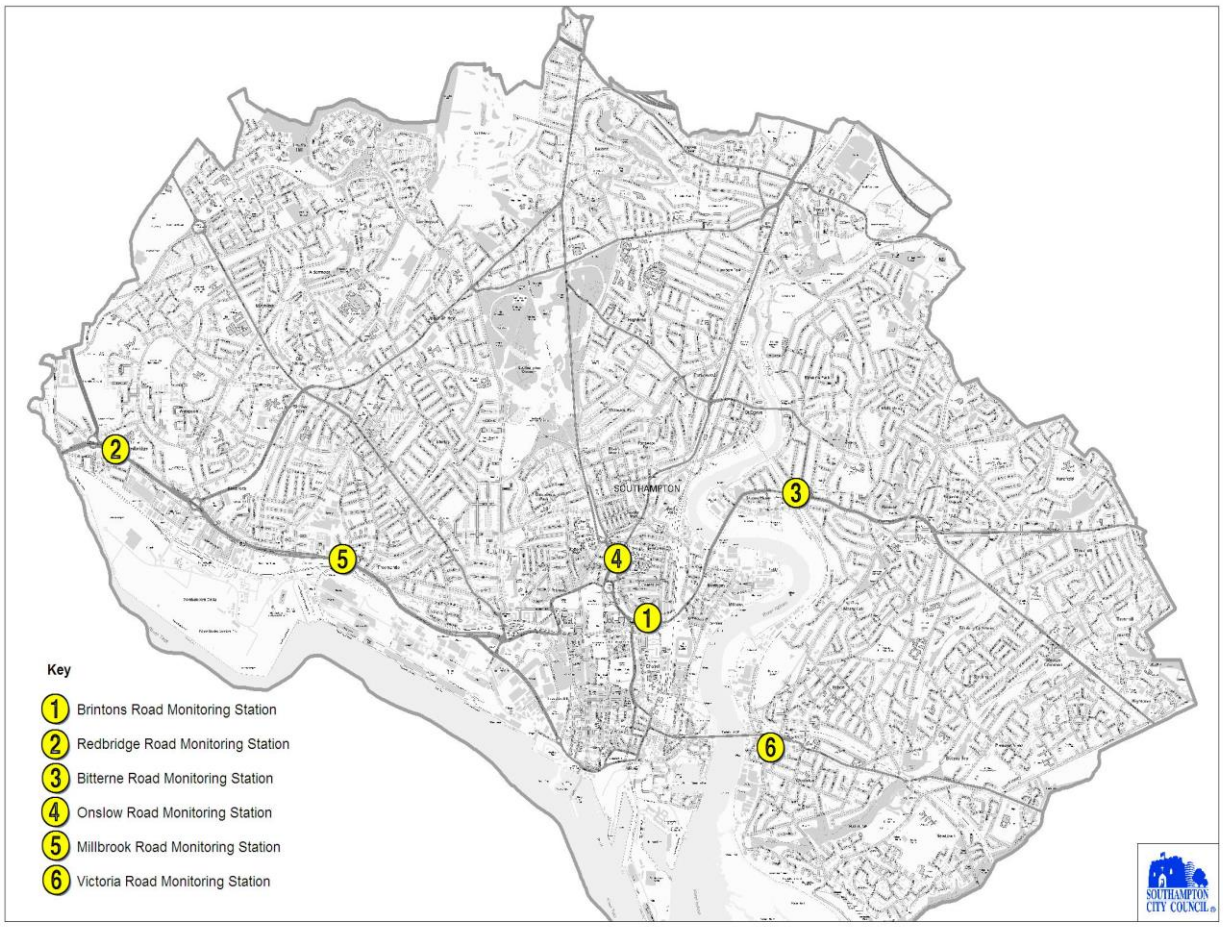


Table 2.1 Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Inlet Height (m)	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?
CM1	AURN Brintons Road	Urban Centre	442583	112248	2.5m	NO_2, PM_{10} (FDMS), $PM_{2.5}$ (FDMS), SO_2, CO, benzene, O3	N	Chemiluminescence (NO_2), FDMS (PM_{10} and $PM_{2.5}$), ultra-violet fluorescence (SO_2), infra-red absorption (CO), pumped diffusion tube sampler (benzene)	Y (18 m)	8m	N
CM2	Redbridge School **Closed April 2014**	Roadside	437549	113721	2.5m	NO2, PM10 (TEOM)	Y	Chemiluminescence (NO_2), TEOM (corrected using VCM) (PM_{10})	Y adjacent to school football pitch 0m	8m	Y

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Inlet Height (m)	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?**
CM3	Bitterne Road **Closed end of 2013**	Roadside	443987	113340	2.5	NO_2, PM_{10} (TEOM)	Y	Chemiluminescence (NO_2), TEOM (corrected using VCM) (PM_{10})	Y (some houses are closer to the road than the station 10m)	8m	N
CM4	Onslow Road	Roadside	442304	112771	1.3	NO_2	Y	Chemiluminescence (NO_2),	Y (houses similar distance to the road as station 10m)	2m	Y
CM5	Millbrook road	Roadside	439702	112248	1.3	NO_2 O3	Y	Chemiluminescence	Y (houses similar distance to the road as station 20m)	6m	Y
CM6	Victoria Road	Roadside	443751	111121	1.3	NO_2	Y	Chemiluminescence (NO_2)	Y (1m)	3m	Y

2.1.1 Non-Automatic Monitoring Sites

Southampton City Council has a network of approx 60 diffusion tubes in the City details below. Figures 2.2 – 2.5 show the locations of the tubes within the City, alongside the 6 automatic stations.

Figure 2.2 Map of Non-Automatic Monitoring Sites (in red) across the city, yellow numbered dots indicate automatic stations

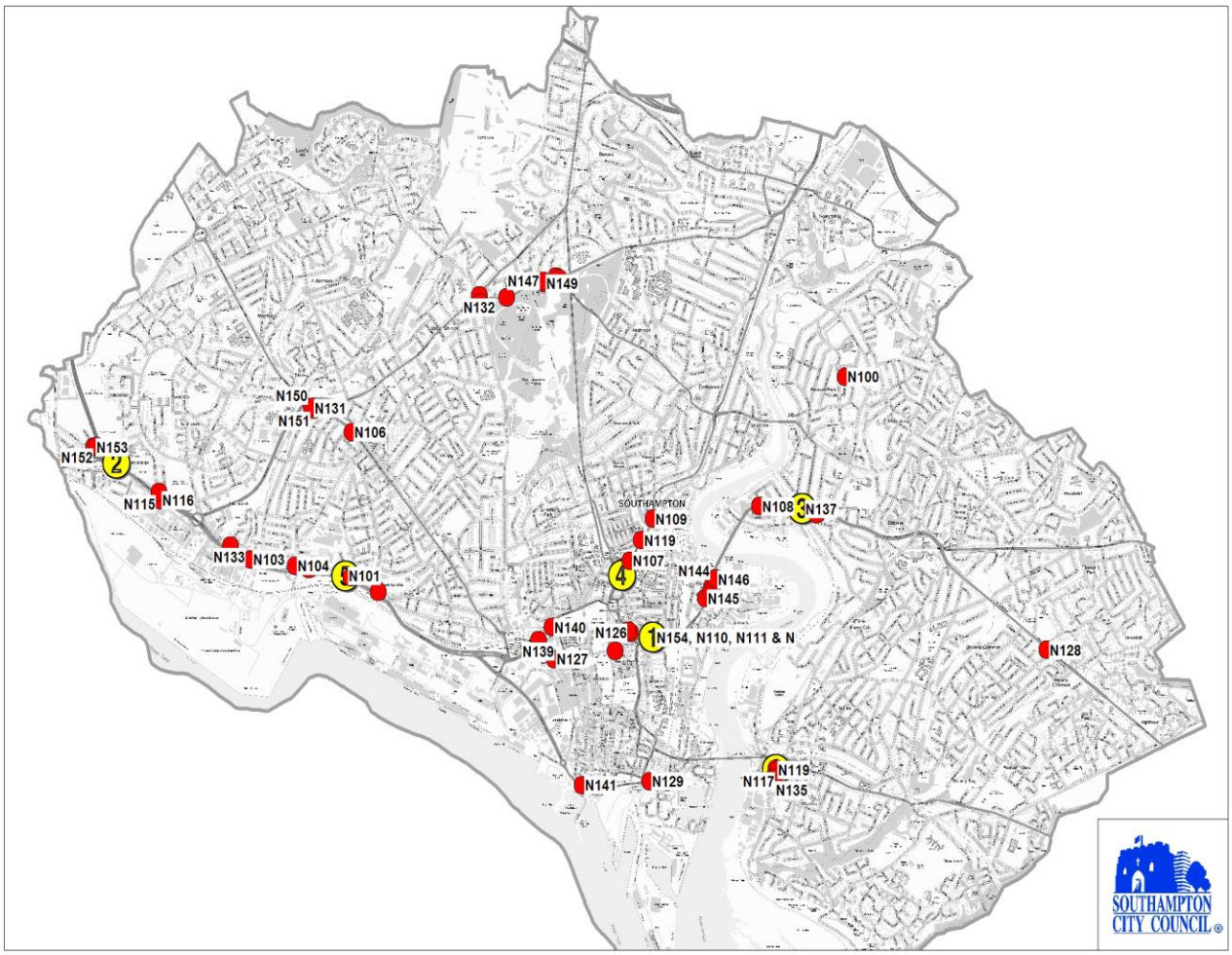


Figure 2.3 Map of diffusion tube locations on A33 Redbridge/Millbrook Road

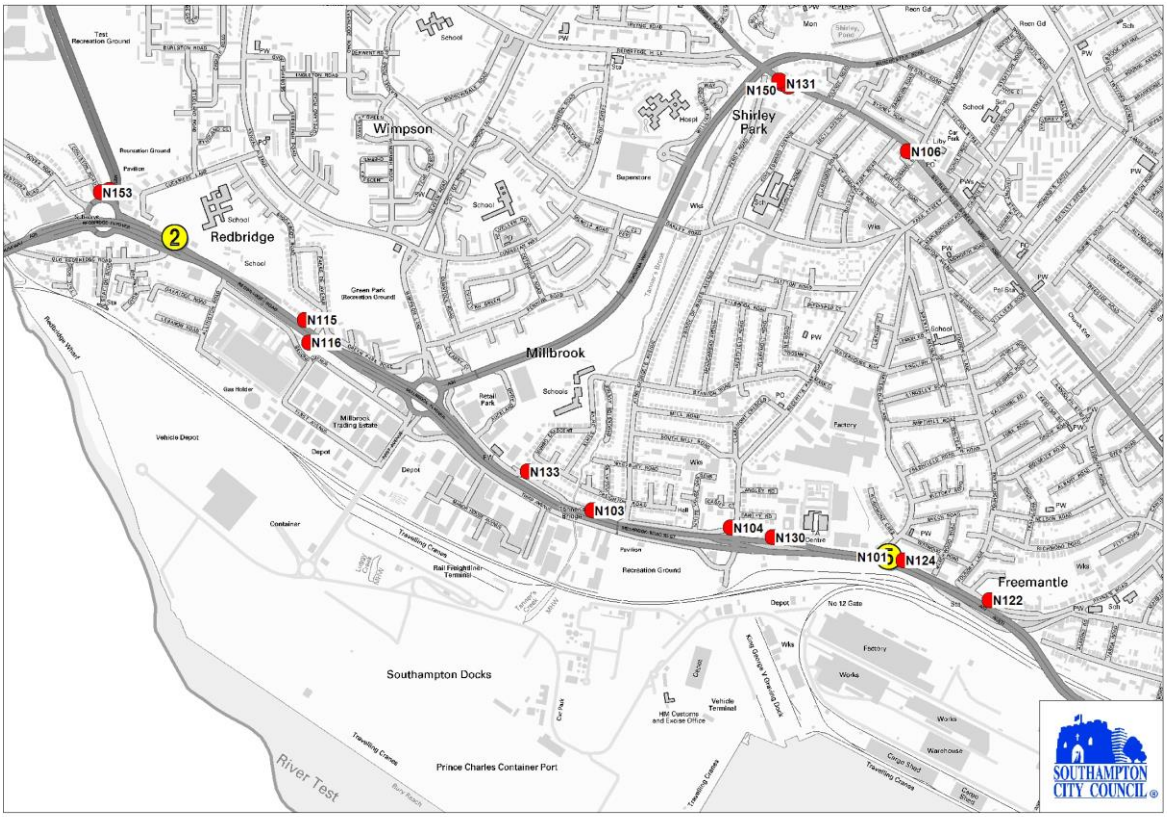


Figure 2.4 Map of diffusion tube locations on Burgess Road

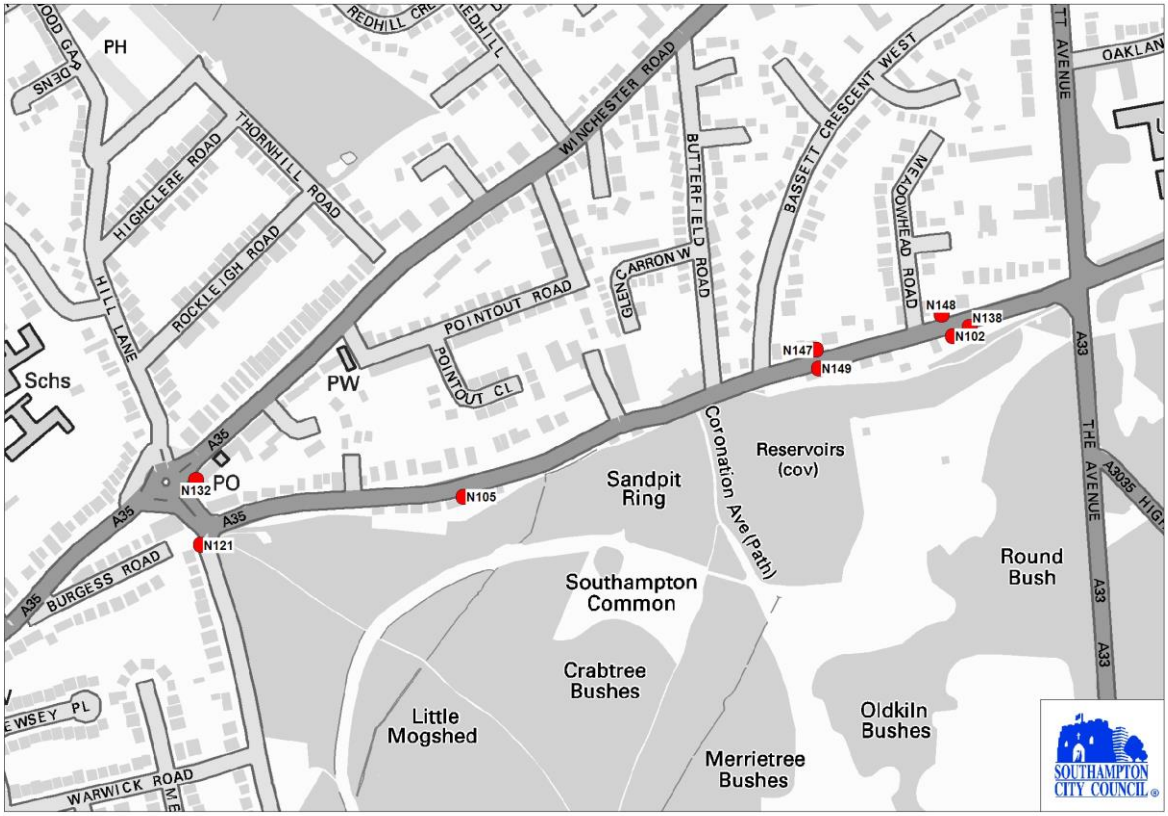


Figure 2.5 Map of diffusion tube locations in central Southampton, Bevois Valley and Northam

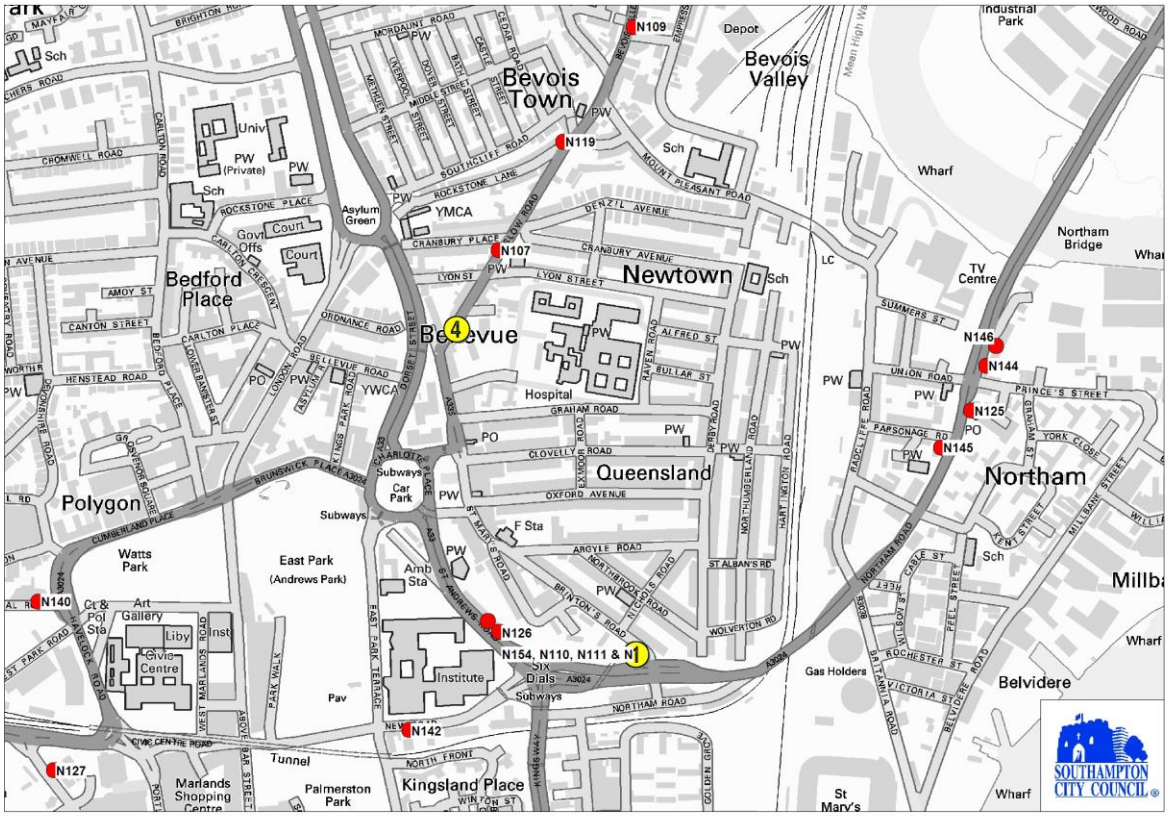


Table 2.2 Details of Non- Automatic Monitoring Sites

Site Address	Site ID	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Co-located 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)*	Worst-case exposure?
6 Sandringham Road	N100	Background	444386	114450	NO2	N	N	Y(0m)	N/A	N/A
Redbridge School AMS	N101	Roadside	437543	113726	NO2	Y Redbridge /Millbrook Road	Y	Y(0m)	8m	Y
64 Burgess Road	N102	Roadside	441678	115278	NO2	Y Burgess Road	N	Y(0m)	6m	N
485 Millbrook Road	N103	Roadside	438807	112908	NO2	Y Redbridge /Millbrook Road	N	Y(0m)	13m	Y
Regents Park Junction	N104	Roadside	439218	112850	NO2	Y Redbridge /Millbrook Road	N	Y(2m)	24m	N
32 Burgess Road	N105	Roadside	441210	115124	NO2	N	N	Y(0m)	5m	Y
2 Romsey Road, Oakhill	N106	Roadside	439754	113982	NO2	N	N	Y(0m)	5m	Y
Cranbury Place	N107	Roadside	442367	112896	NO2	Y Bevois Valley	N	Y(0.5m)	2m	Y
81 Bitterne Road	N108	Roadside	443581	113359	NO2	Y Bitterne Road	N	Y (0m)	5m	Y
72 Bevois Valley	N109	Roadside	442585	113251	NO2	Y Bevois Valley	N	Y(0.5m)	5m	Y
Brinton's	N110	Urban	442591	112240	NO2	N	Y	Y(18m)	10m	N

Road 1		Centre								
Brinton's Road 2	N111	Urban Centre	442591	112240	NO2	N	Y	Y(18m)	10m	N
Brinton's Road 3	N112	Urban Centre	442591	112240	NO2	N	Y	Y(18m)	10m	N
206 Bitterne Road	N113	Roadside	444124	113290	NO2	Y Bitterne Road	N	Y(0m)	5m	Y
Bitterne Library	N114	Roadside	444131	113326	NO2	Y Bitterne Road	N	Y(1m)	3.5m	Y

Site Address	**Site ID**	**Site Type**	**X OS Grid Ref**	**Y OS Grid Ref**	**Pollutants Monitored**	**In AQMA?**	**Co-located 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)*	**Worst-case exposure ?**
54 Redbridge Road	N115	Roadside	437939	113473	NO2	Y Redbridge /Millbrook Road	N	Y(0m)	11m	Y
57 Redbridge Road	N116	Roadside	437951	113407	NO2	Y Redbridge /Millbrook Road	N	Y(0m)	11m	Y
Victoria Road (lamp post)	N117	Roadside	443751	111122	NO2	Y Victoria Road	Y	Y(0.3m)	3m	Y
3 Rockstone Lane	N118	Roadside	442472	113068	NO2	Y Bevois Valley	N	Y(2.5m)	2.5m	Y
Dentist Portsmouth Road	N119	Roadside	443741	111130	NO2	Y Victoria Road	N	Y(0.4m)	2.4m	Y
6-9 Canute Road	N120	Roadside	442555	111021	NO2	Y Town Quay	N	Y(0m)	4 m	Y
Hill Lane	N121	Kerbside	440958	115068	NO2	N	N	Y(7 m)	1 m	Y
151 Paynes Road	N122	Roadside	439998	112634	NO2	N Redbridge /Millbrook Road	N	Y(0 m)	12 m	N

102 St. Andrews Road	N123	Roadside	442351	112302	NO2	N	N	Y(0 m)	4 m	Y

Site Address	Site ID	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Co-located 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)*	Worst-case exposure ?
305 Millbrook Road	N124	Roadside	439741	112746	NO2	Y Redbridge /Millbrook Road	N	Y(0 m)	10 m	Y
Princes Court	N125	Roadside	443126	112645	NO2	Y Bitterne Road	N	Y(0 m)	5.5 m	Y
St Andrew's Road	N126	Roadside	442369	112283	NO2	N	N	Y(2 m)	2 m	Y
Western Esplanade	N127	Roadside	441656	112065	NO2	N	N	Y(2 m)	2.8 m	Y
290 Bursledon Road	N128	Roadside	446283	112145	NO2	N	N	Y(0 m)	4.8 m	Y
SW House	N129	Roadside	442554	111022	NO2	Y Town Quay	N	Y(0 m)	3.1 m	Y
367A Millbrook Road	N130	Roadside	439346	112821	NO2	Y Redbridge /Millbrook Road	N	Y(0 m)	9 m	Y
142 Romsey Road	N131	Roadside	439378	114185	NO2	Y Romsey Road	N	Y(0 m)	5m	Y
Western Esplanade	N127	Roadside	441656	112065	NO2	N	N	Y(2 m)	2.8 m	Y
347A Winchester Road	N132	Kerbside	440950	115138	NO2	Y Wincheste r Road	N	Y(3 m)	1 m	Y
539 Millbrook Road	N133	Roadside	438608	113018	NO2	Y Redbridge /Millbrook	N	Y(0 m)	33 m	Y

						Road				
Ladbrokes	N134	Roadside	438953	112866	NO2	Y Redbridge /Millbrook Road	N	Y(0 m)	12 m	Y
24 Victoria Road	N135	Roadside	443714	111052	NO2	N	N	Y(0 m)	4 m	N
23 Victoria Road	N136	Roadside	443731	111053	NO2	N	N	Y(0 m)	3.2 m	N
Bitterne AMS	N137	Roadside	443990	113340	NO2	Y Bitterne Road	Y	Y(5 m)	10 m	N
66 Burgess Road	N138	Roadside	441694	115288	NO2	Y Burgess Road	N	Y(0 m)	3 m	Y
Wyndham Court	N139	Urban Centre	441506	112223	NO2	N	N	Y(0 m)	8 m	Y
5 Commercial Road	N140	Roadside	441629	112332	NO2	Y Commercial Road	N	Y(2 m)	2 m	Y
Town Quay Road	N141	Kerbside	441915	110993	NO2	Y Town Quay	N	Y(1 m)	0.8 m	Y

Site Address	**Site ID**	**Site Type**	**X OS Grid Ref**	**Y OS Grid Ref**	**Pollutants Monitored**	**In AQMA?**	**Co-located 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)*	**Worst-case exposure ?**
10 New Road	N142	Roadside	442225	112127	NO2	Y New Road	N	Y(0 m)	2 m	Y
102 Romsey Road	N143	Roadside	439468	114146	NO2	N	N	Y(0 m)	6 m	Y
208 Northam Road	N144	Roadside	443147	112709	NO2	N	N	Y(0 m)	5 m	Y
145 Northam Road	N145	Roadside	443076	112579	NO2	N	N	Y(0 m)	12 m	N
222 Northam Road	N146	Roadside	443164	112741	NO2	N	N	Y(0 m)	10 m	N
123 Burgess Road	N147	Roadside	441548	115266	NO2	N	N	Y(0 m)	7 m	Y

143 Burgess Road	N148	Roadside	441669	115300	NO2	N	N	Y(0 m)	10 m	Y
44B Burgess Road	N149	Roadside	441552	115247	NO2	Y Burgess Road	N	Y(0 m)	2 m	Y
148 Romsey Road	N150	Roadside	439368	114193	NO2	Y Romsey Road	N	Y(3 m)	2 m	Y
134 Romsey Road	N151	Roadside	439396	114176	NO2	Y Romsey Road	N	Y(0 m)	5 m	Y
M271 (b)	N152	Roadside	437353	112645	NO2	Y Redbridge /Millbrook Road	N	Y(14 m)	4 m	Y
Coniston Road	N153	Roadside	437325	113860	NO2	Y Redbridge /Millbrook Road	N	Y(3 m)	14 m	Y
Oceana Boulevard DG5	N154	Roadside	442234	111081	NO2	N	N	Y (0m)	1m	Y
24 Queens Terrace	N155	Roadside	442405	111083	NO2	N	N	Y (0m)	1m	Y
Union Castle House	N156	Roadside	442461	110996	NO2	Y Town Quay	N	Y (0m)	8m	Y

Site Address	**Site ID**	**Site Type**	**X OS Grid Ref**	**Y OS Grid Ref**	**Pollutants Monitored**	**In AQMA?**	**Co-located 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)*	**Worst-case exposure ?**
Admiralty House	N157	Roadside	442375	110970	NO2	N	N	Y	1m to Dock Gate 4, 35m to Platform Road	Y
1 Millbrook Cottages	N159	Within the Port on residential facade	439077	112587	NO2	N	N	Y (0m)	25m to road inside docks	Y

2 Dorset Street	N160	Roadside	442218	112890	NO2	N	N	Y (0m)		Y
30 Addis Square	N161	Roadside	442703	114127	NO2	N	N	Y (0m)	4m	Y
263A Portswood Road	N162	Roadside	442877	114342	NO2	N	N	Y (0m)	4m	Y
285 Portswood Road	N163	Roadside	442950	114381	NO2	N	N	Y (0m)	9m	Y
229 Portswood Road	N164	Roadside	442796	114258	NO2	N	N	Y (0m)	4m	Y
8 The Broadway	N165	Roadside	442767	114184	NO2	N	N	Y (0m)	4m	Y
14 New Road	N166	Roadside	442210	112140	NO2	Y New Road	N	Y (0m)	1m	Y
13 Romsey Road	N167	Roadside	439757	114013	NO2	N	N	Y(0m)	6m	Y
23 Romsey Road	N168	Roadside	439736	114025	NO2	N	N	Y(0m)	5m	Y
Brintons Road AURN	B1	Urban Centre	442591	112240	Benzene	N	N	Y(10 m)	10m	N

b - these sites were run by the Highways Agency until April 2009.

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 Nitrogen Dioxide

Automatic Monitoring Data

CM1 AURN Brintons Road (Six Dials)

An annual mean of 30µg/m^3 was recorded for nitrogen dioxide in 2013, a small decrease on 2012. . There were no exceedances of the 1 hour standard. Data capture was 97%. This station is not within any AQMA.
The nearest AQMA is approx 700metres away.

CM 2 Redbridge School Monitoring Station

Unfortunately the nitrogen dioxide analyser experienced numerous technical faults in 2013. An audit discovered a serious sample train fault in May 2013. An annual mean of 45µg/m^3 was recorded for nitrogen dioxide in 2013, but with only 58% data capture. The diffusion tube on the roof of the station recorded 42.7 µg/m^3 with 100% data capture. This monitoring station is located within the Redbridge/Millbrook Road Air Quality Management Area. This station was closed in April 2014.

CM3 Bitterne Monitoring Station

The annual mean nitrogen dioxide level for 2013 was 32 ug/m^3, the same as 2012. There were no exceedances of the One Hour Standard. data capture was 90%. This monitoring station is located within the Bitterne Road Air Quality Management Area. This station was closed at the end of 2013.

CM4 Onslow Road

Onslow Road recorded 40ug/m^3 for nitrogen dioxide annual mean in 2013, a significant decrease compared to 2012's 46 µg/m^3. This monitoring station is located within the Bevois Valley Air Quality Management Area. Data capture was 85%.

CM5 Millbrook Road

A mean of 41.0µg/m^3 for nitrogen dioxide was recorded, above the annual mean standard. This was a decrease on 2012 when it was 43.2. There were no exceedances of the One Hour Standard. Data capture for 2013 was 99%. This monitoring station is located within the Redbridge/Millbrook Road Air Quality Management Area.

CM6 Victoria Road

The annual mean nitrogen dioxide level for 2013 was 40.0 ug/m^3, a reduction on 2012 which was 44.0 µg/m^3 .There was 1 exceedance of the One Hour Standard. Data capture was 93%. The NOx tube adjacent to the monitoring station recorded 43.0 µg/m^3 as an annual mean in 2013, slightly higher than the automatic station. This monitoring station is located within the Victoria Road Air Quality Management Area.

2.2.2 Summary

Overall at all the stations the annual mean trend is downwards.

DEFRA are planning to introduce a new AURN monitoring station, adjacent to the A33 Redbridge Road (approx. 200 metres to the east of the former Redbridge School site). This will monitor nitrogen dioxide and PM_{10} from June 2015.

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

Site ID	Site Type	Location	Within AQMA?	Proportion of year with valid data 2013 (%)	Annual mean concentrations ($\mu g/m^3$)		
					2011	2012	2013
CM1	Urban Centre	Brintons Road, Six Dials, AURN	N	97	35	32	30
CM2	Roadside	Redbridge School	Y	58	**48**	**-**	**45a**
CM3	Roadside	Bitterne Road	Y	90	35	32	32
CM4	Roadside	Onslow Road	Y	92	**46**	**44**	**40**
CM5	Roadside	Millbrook Road	Y	99	**50**	**43**	**41**
CM6	Roadside	Victoria Road	Y	93	**47**	**44**	**43**

Table 2.3 shows a downwards trend at the monitoring stations. Millbrook Road has decreased the most from 50 in 2011 to 41$\mu g/m^3$

a Where data captures are less than 90%, data have been annualised following the methodology is presented in Appendix A1

Table 2.4: Results of Automatic Monitoring for Nitrogen Dioxide: Comparison with 1-hour Mean Objective (2009 – 2012)

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % [a]	Valid Data Capture 2013 % [b]	Number of Hourly Means > 200µg/m^3				
					2009	2010	2011	2012	2013
CM1 AURN	Urban Centre	N	98	98	0	0	0	0	0
CM2 Redbridge School	Roadside	Y	58	58	0	0	3	-	0
CM3 Bitterne	Roadside	Y	90	90	0	0	0	0	0
CM4 Onslow Road	Roadside	Y	92	92	1	1	1	1	0
CM5 Millbrook Road	Roadside	Y	99	99	0	0	0	0	0

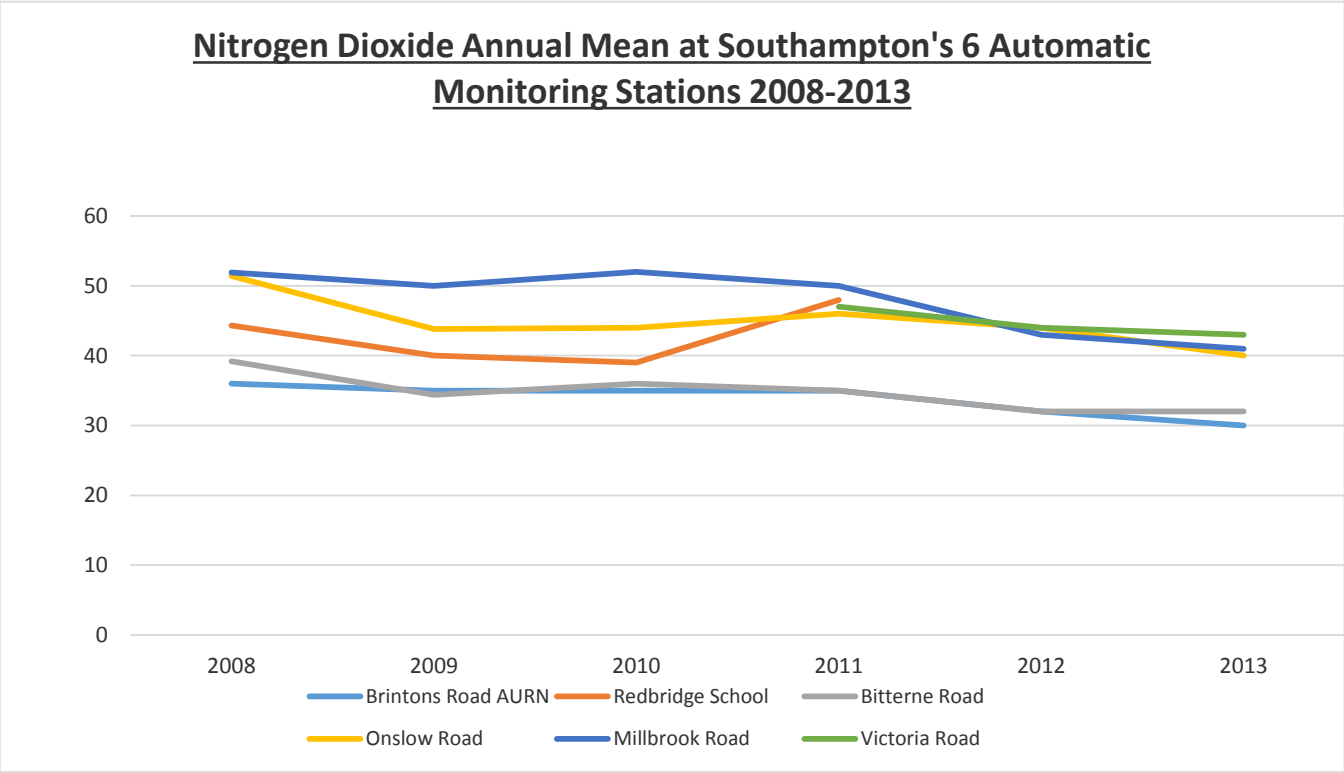
Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % [a]	Valid Data Capture 2013 % [b]	Number of Hourly Means > 200µg/m^3				
					2009	2010	2011	2012	2013
CM6 Victoria Road	Roadside	Y	93%	93%	-	-	0(124)	0(146)	1

In bold, exceedence of the NO_2 hourly mean AQS objective (200µg/m^3 – not to be exceeded more than 18 times per year)

[a] i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

[b] i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

Figure 2.6



Overall the trend is downwards, except for Redbridge in 2011.

2.2.1.1 The diffusion tube results for 2013 are shown in Table 2.5 below

Table 2.5 Results of NO_2 Diffusion Tubes 2013

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 (Number of Months or %) [a]	2013 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.95 [b]
N100	6Sandringham Road	Background	N	N	83%	20.4
N101	Redbridge School AMS	Roadside	Y	Co-located	100%	**42.7**
N102	64 Burgess Road	Roadside	Y	N	100%	33.3
N103	485 Millbrook Road	Roadside	N	N	100%	32.3
N104	Regents Park Junction	Roadside	Y	N	92%	**41.2**
N105	32 Burgess Road	Roadside	N	N	Disbanded, as well below objective	-
N106	2 Romsey Road, Oakhill	Roadside	N	N	83%	39.9
N107	Cranbury Place	Roadside	Y	N	33%	**51.0**
N108	81 Bitterne Road	Roadside	Y	N	100%	32.5

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 (Number of Months or %) [a]	2013 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.95 [b]
N109	72 Bevois Valley	Roadside	Y	N	83%	**41.2**
N110	Brinton's Road 1	Urban Centre	N	Triplicate and Co-located	92%	29.5
N111	Brinton's Road 2	Urban Centre	N	Triplicate and Co-located	92%	29.4
N112	Brinton's Road 3	Urban Centre	N	Triplicate and Co-located	100%	28.6
N113	206 Bitterne Road	Roadside	Y	N	100%	39.9
N114	Bitterne Library	Roadside	Y	N	83%	39.7
N115	54 Redbridge Road	Roadside	Y	N	100%	37.5
N116	57 Redbridge Road	Roadside	Y	N	100%	**42.1**
N117	Victoria Road (lamp post)	Roadside	Y	N	100%	**43.0 (b)**
N118	3 Rockstone Lane	Roadside	Y	N	100%	38.4

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 (Number of Months or %) [a]	2013 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.95 [b]
N119	Dentist Portsmouth Road	Roadside	Y	N	100%	33.6
N120	6-9 Canute Road	Roadside	Y	N	100%	**44.8**
N121	Hill Lane	Kerbside	N	N	Site disbanded, lamp post removed	-
N122	151 Paynes Road	Roadside	Y	N	100%	30.4
N123	102 St. Andrews Road	Roadside	N	N	92%	38.1
N124	305 Millbrook Road	Roadside	Y	N	100%	39.9
N125	Princes Court	Roadside	Y	N	92%	**42.6**
N126	St Andrew's Road	Roadside	N	N	92%	39.4
N127	Western Esplanade	Roadside	N	N	Site disbanded, below objective	-
N128	290 Bursledon Road	Roadside	N	N	Site disbanded, below objective	-

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 (Number of Months or %) [a]	2013 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.95 [b]
N129	SW House	Roadside	Y	N	100%	35.7
N130	367A Millbrook Road	Roadside	Y	N	92%	**42.2**
N131	142 Romsey Road	Roadside	Y	N	92%	**40.4**
N132	347A Winchester Road	Kerbside	Y	N	92%	**46.5**
N133	539 Millbrook Road	Roadside	Y	N	100%	31.5
N134	Ladbrokes	Roadside	Y	N	92%	**41.2**
N135	24 Victoria Road	Roadside	N	N	92%	36.7
N136	23 Victoria Road	Roadside	N	N	92%	35.7
N137	Bitterne AMS	Roadside	Y	Co-located	100%	32.7
N138	66 Burgess Road	Roadside	Y	N	92%	**44.5**
N139	Wyndham Court	Urban Centre	N	N	Disbanded, below objective	-

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 (Number of Months or %) [a]	2013 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.95 [b]
N140	5 Commercial Road	Roadside	Y	N	100%	**50.1 (b)**
N141	Town Quay Road	Kerbside	Y	N	100%	**40.7**
N142	10 New Road	Roadside	Y	N	100%	**42.6**
N143	102 Romsey Road	Roadside	N	N	100%	36.9
N144	208 Northam Road	Roadside	N	N	92%	34.4
N145	145 Northam Road	Roadside	N	N	Site disbanded, below objective	-
N146	222 Northam Road	Roadside	N	N	83%	29.1
N147	123 Burgess Road	Roadside	N	N	Site disbanded, below objective	-
N148	143 Burgess Road	Roadside	N	N	Site disbanded, below objective	-
N149	44B Burgess Road	Roadside	Y	N	100%	34.3

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 (Number of Months or %) [a]	2013 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.95 [b]
N150	148 Romsey Road	Roadside	Y	N	100%	**52.0 (b)**
N151	134 Romsey Road	Roadside	Y	N	92%	**40.2**
N152	M271	Roadside	Y	N	100%	**58.4 (b)**
N153	Coniston Road	Roadside	Y	N	75%	31.7
N154	Oceana Boulevard DG5	Roadside	N	N	92%	**40.6**
N155	24 Queens Terrace	Roadside	N	N	83%	**42.8**
N156	Union Castle House	Roadside	Y	N	100%	32.8
N157	Admiralty House	Roadside	N	N	92%	35.0
N159	1 Millbrook Cottages	Within the Port	N	N	33%	29.4a
N160	2 Dorset Street	Roadside	N	N	83%	33.7
N161	30 Addis Square	Roadside	N	N	92%	37.0

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2013 (Number of Months or %) [a]	2013 Annual Mean Concentration (µg/m^3) - Bias Adjustment factor = 0.95 [b]
N162	263A Portswood Road	Roadside	N	N	83%	**44.3**
N163	285 Portswood Road	Roadside	N	N	83%	31.6
N164	229 Portswood Road	Roadside	N	N	83%	**40.8**
N165	8 The Broadway	Roadside	N	N	33%	**49.3a**
N166	14 New Road	Roadside	Y	N	66%	**40.7**
N167	13 Romsey Road	Roadside	N	N	92%	38.1
N168	23 Romsey Road	Roadside	N	N	92%	**43.0**

In bold, exceedence of the NO_2 annual mean AQS objective of 40µg/m^3

Underlined, annual mean > 60µg/m^3, indicating a potential exceedence of the NO_2 hourly mean AQS objective

[a] Means "annualised" as in Box 3.2 of TG(09)(http://laqm.defra.gov.uk/technical-guidance/index.html?d=page=38), if full calendar year data capture is less than 75%

[b] If an exceedence is measured at a monitoring site not representative of public exposure, NO_2 concentration at the nearest relevant exposure should be estimated based on the "NO_2 fall-off with distance" calculator (http://laqm.defra.gov.uk/tools-monitoring-data/no2-

falloff.html), and results should be discussed in a specific section. The procedure is also explained in Box 2.3 of Technical Guidance LAQM.TG(09) (http://laqm.defra.gov.uk/technical-guidance/index.html?d=page=30).

2.2.3 Predicting Nitrogen Dioxide Concentrations at Relevant Receptors

Most of Southampton City Council's diffusion tubes are located at residential facades, however the 8 sites listed in table 2.6 above, are located on posts closer to the kerb than the relevant receptor. The "NO_2 fall-off with distance" calculator (http://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html was used to calculate the estimated concentration at the receptor as detailed in box 3.2 of the Technical Guidance. All the predicted exceedences above 40 are already within existing AQMAs.

Table 2.6 Predicted Nitrogen Dioxide Concentrations at Relevant Receptor

Site	At Monitor	Distance between receptor and monitor	Estimated value at Receptor
148 Romsey Road	**52.0**	3m	**45.2**
M271	**58.4**	14m	**40.9**
5 Commercial Road	**50.1**	2m	**45.3**
347A Winchester Road	46.5	3m	**40.7**
St.Andrews Road	39.4	2m	36.3
Cranbury Place	**51.0**	0.5m	**49.4**
3 Rockstone Lane	38.4	2.5m	35.3
Victoria Road lamp post	**43.0**	0.3m	**42.5**

Estimation of annual mean concentration from short – term monitoring February 2013 – June 2013 1 Millbrook Cottages

The Tables below shows the calculation method for estimating the annual mean from short term monitoring data sets.

Automatic station	Annual Mean 2013 (Am)	Period Mean (Pm)	Ratio (Am/Pm)
AURN Southampton (2 miles from site)	31.2	29.4	1.061
Redbridge Southampton (1 mile from site)	44.8	39.0	1.148
		Average Ratio	**1.104**

27.0 * 1.104 = 29.4 ug/m3 equivalent 2013 annual mean.

Estimation of annual mean concentration from short – term monitoring February 2013 – May 2103 8 The Broadway, Portswood Road

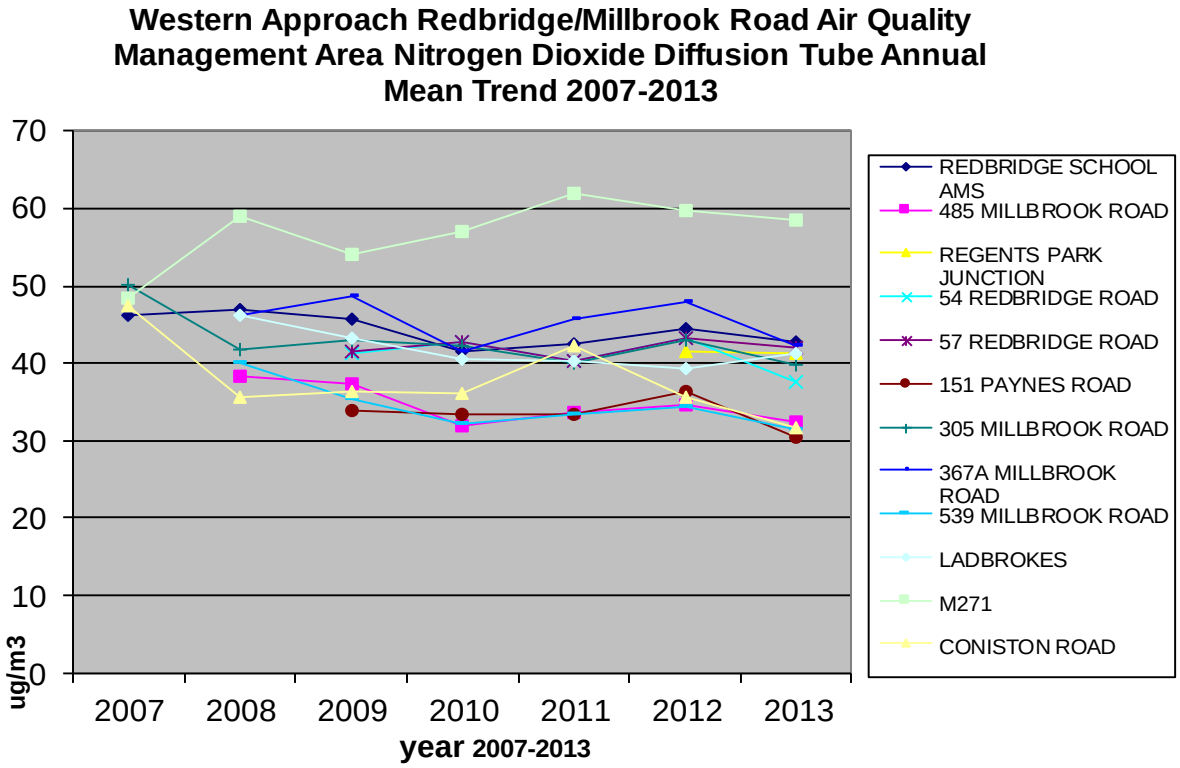
Automatic station	Annual Mean 2013 (Am)	Period Mean (Pm)	Ratio (Am/Pm)
AURN Southampton (2 miles from site)	31.2	31.3	0.996
Onslow Road Southampton (1 mile from site)	40.5	42.7	0.948
		Average Ratio	**0.972**

50.8 * 0.972 = 49.4 ug/m3 equivalent 2013 annual mean.

2.2.4 Trends in annual mean Nitrogen Dioxide Concentrations measured at diffusion tube monitoring sites within AQMAs

Figures 2.7 to 2.13 show annual trends in nitrogen dioxide annual mean over several years, with commentary below.

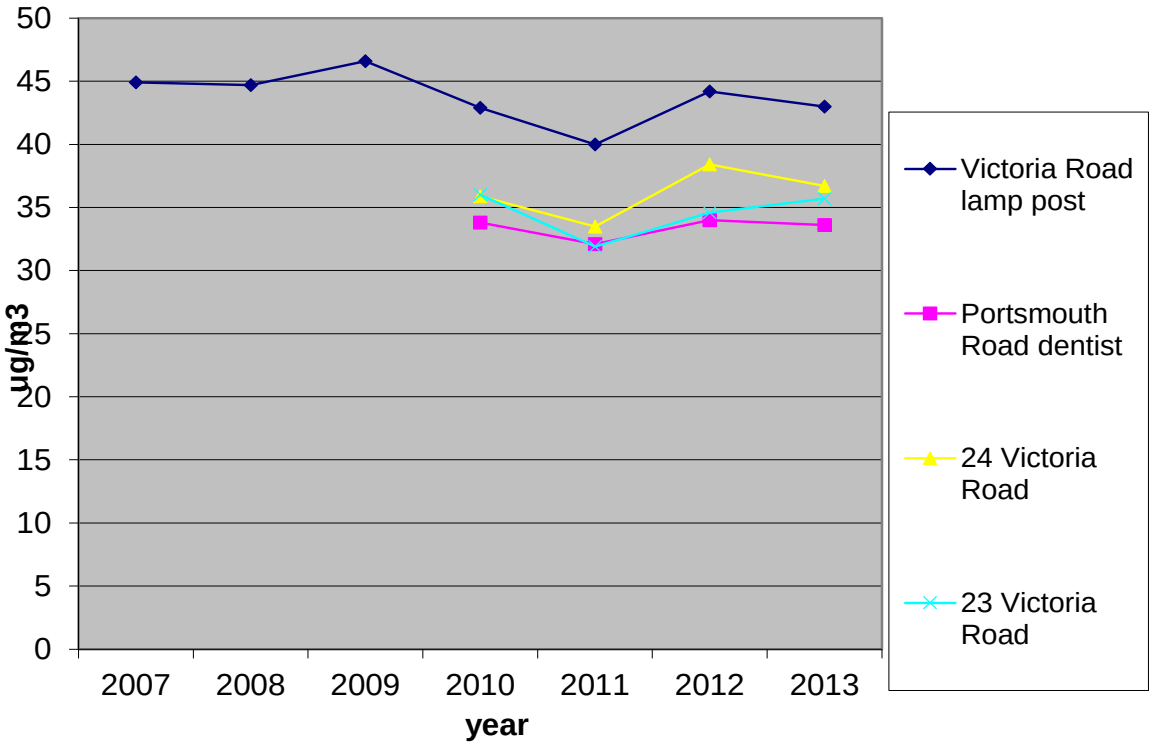
Figure 2.7 Trends in Annual Mean



5 sites exceeded the annual mean standard in 2013.

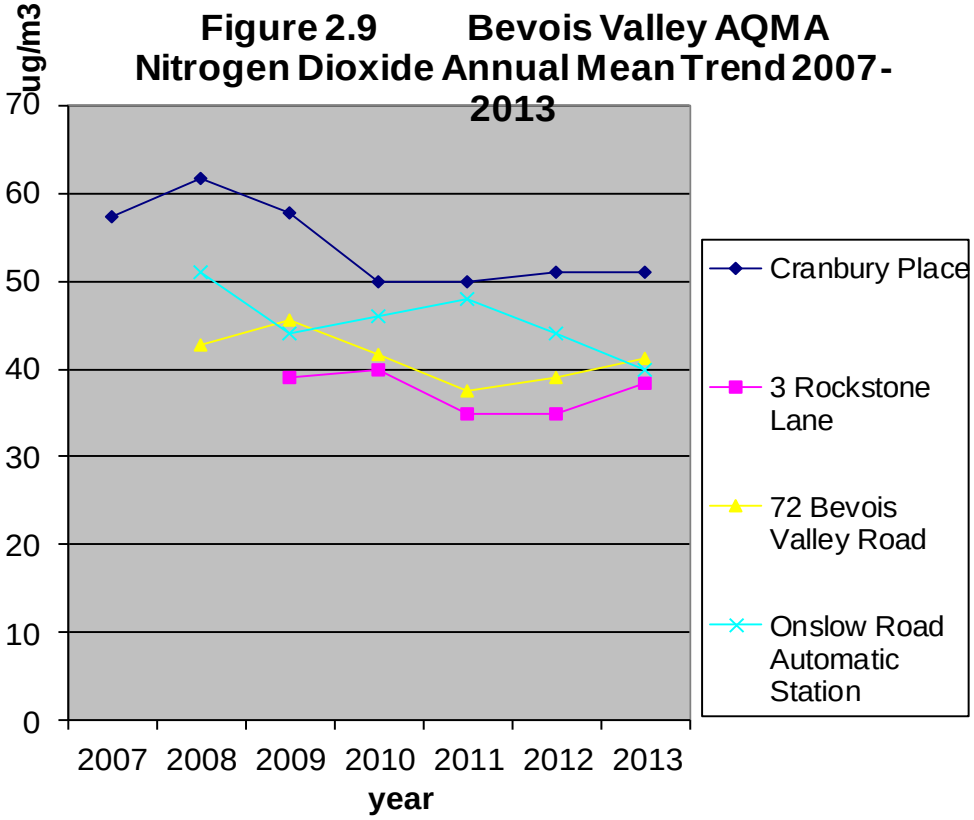
The overall trend is downwards.

Figure 2.8 Victoria Road AQMA Nitrogen Dioxide Diffusion Tube Annual Mean trend



Only the lamp post tube at the junction exceeded the annual mean standard

Figure 2.9 Bevois Valley AQMA Nitrogen Dioxide Annual Mean Trend 2007-2013

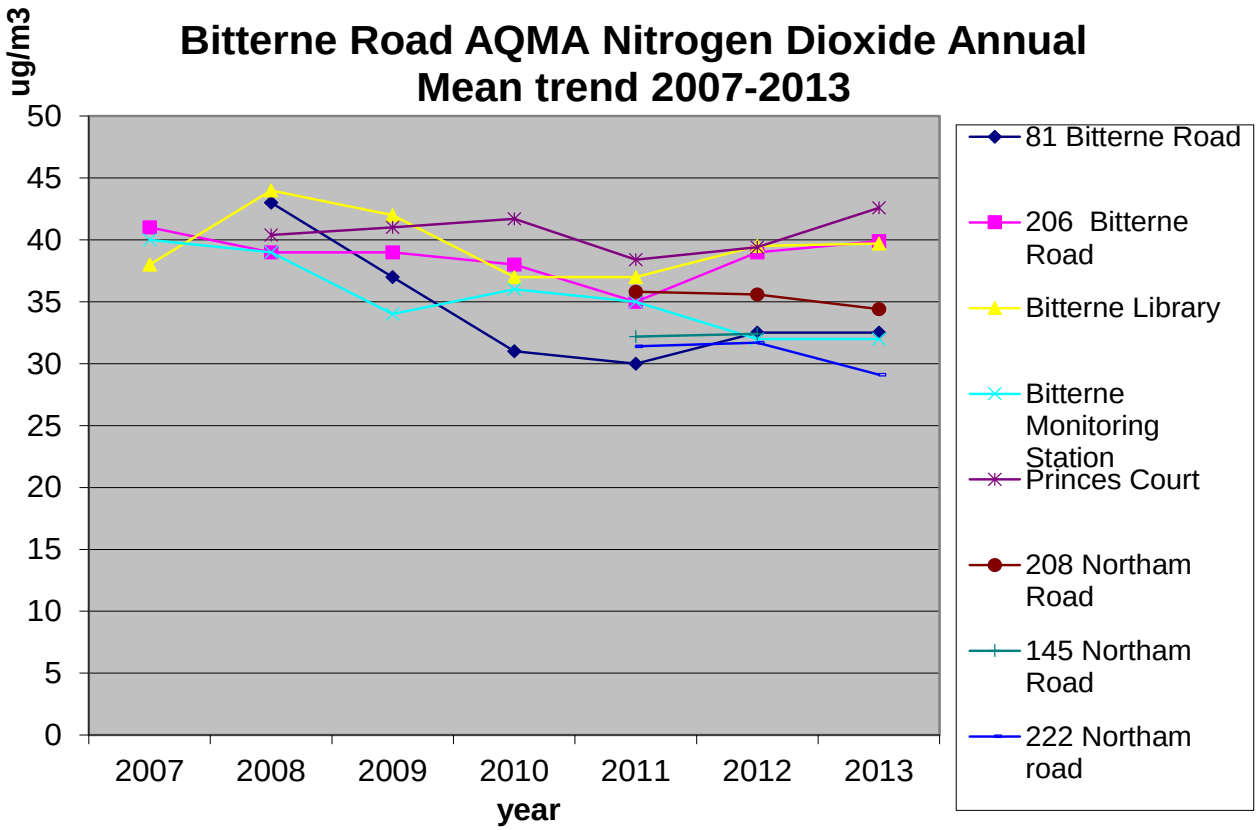


Two Sites were above the standard in 2013.

Cranbury Place still significantly exceeds the annual mean standard.

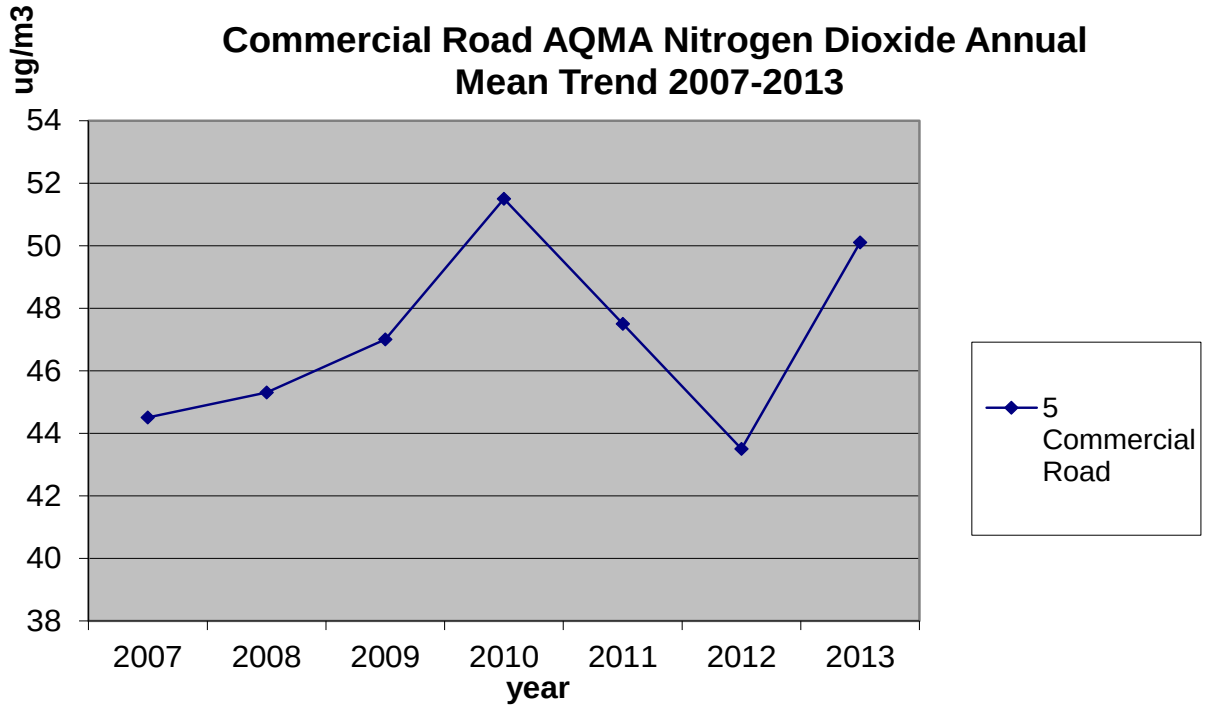
There appears to be no overall trend, with some tubes increasing and some decreasing in recent years.

Figure 2.10



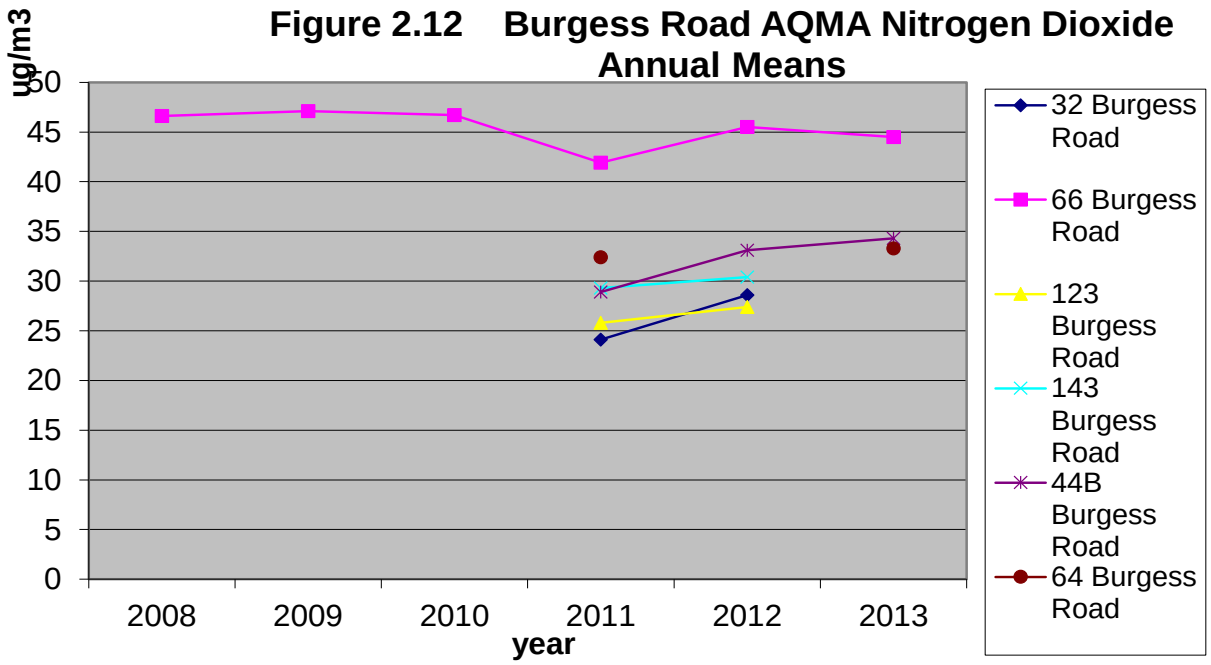
In 2011 and 2012 all the diffusion tubes were below the 40 ug/m^3 annual mean NO_2 standard along Bittene Road, although only just. However in 2013, Princes Court recorded 42.6 above the annual mean standard. 206 Bitterne Road was only marginally below at 39.9 and would have been slightly above 40 if the local co-location factor was used rather than the national factor of 0.95. The same can be said for the Bitterne Library NOx tube which recorded 39.7 using the national factor. Based on this monitoring evidence the AQMA should remain in place for the time being.

Figure 2.11



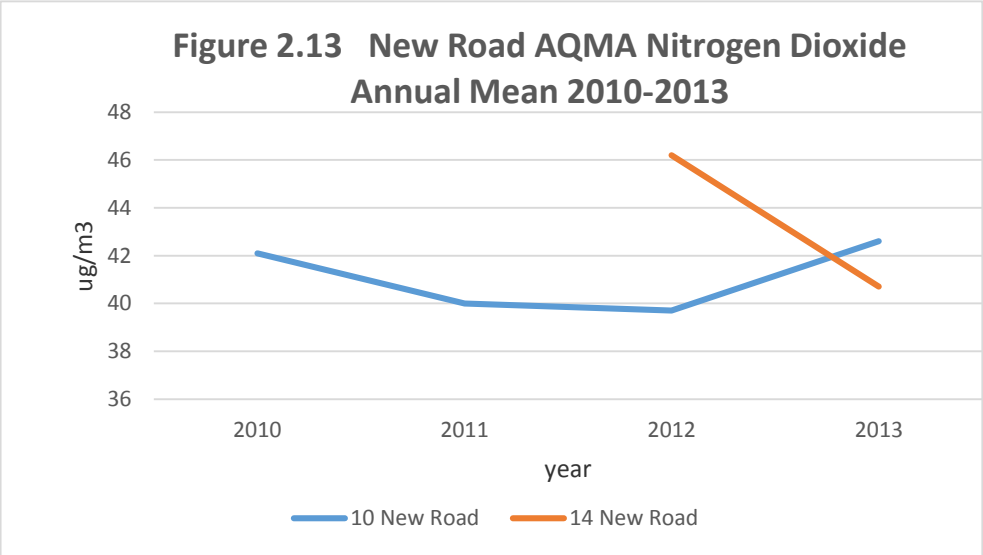
In 2010 the Commercial Road tube peaked at over 50 ug/m3 but reduced to 43.5 in 2012. However in 2013 it increased back up to 50. This may have been caused by increased traffic congestion near the tube as construction work on Mayflower Student Halls continued. However once scaled for the 2 metre distance of the tube from the residential receptor the annual mean was 45.3 ug/m^3 in 2013, still above the annual mean standard.

Figure 2.12



The diffusion tube at 66 Burgess Road is the only tube exceeding the air quality standard. This tube is on a residential façade on the south side of the road, very close to the kerb with queuing traffic.

Figure 2.13



Both diffusion tubes at the façades of 14 and 10 New Road were above the annual mean standard in 2013.

2.2.5 Particulate Matter (PM_{10})

There have been no exceedances of the 24 hour mean in excess of 35 days per annum or annual mean standard at any of the 3 monitoring stations that monitor PM_{10} .Table 2.7 and 2.8 show the monitoring results. Figure 2.21 shows the annual mean trend since 1994.

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

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % [a]	Valid Data Capture 2013 % [b]	Confirm Gravimetric Equivalent (Y or N/A)	Annual Mean Concentration (µg/m^3)				
						2009* [c]	2010* [c]	2011* [c]	2012* [c]	2013 [c]
CM1	Urban Centre	N	99%	96%	Y	18	18	21	20	21
CM2	Roadside	Y	95%	93%	Y	25	25	24	19	18
CM3	Roadside	Y	88%	96%	Y	21	22	24	23	23

Figure 2.21 Trends in Annual Mean PM_{10} Concentrations 1994-2013

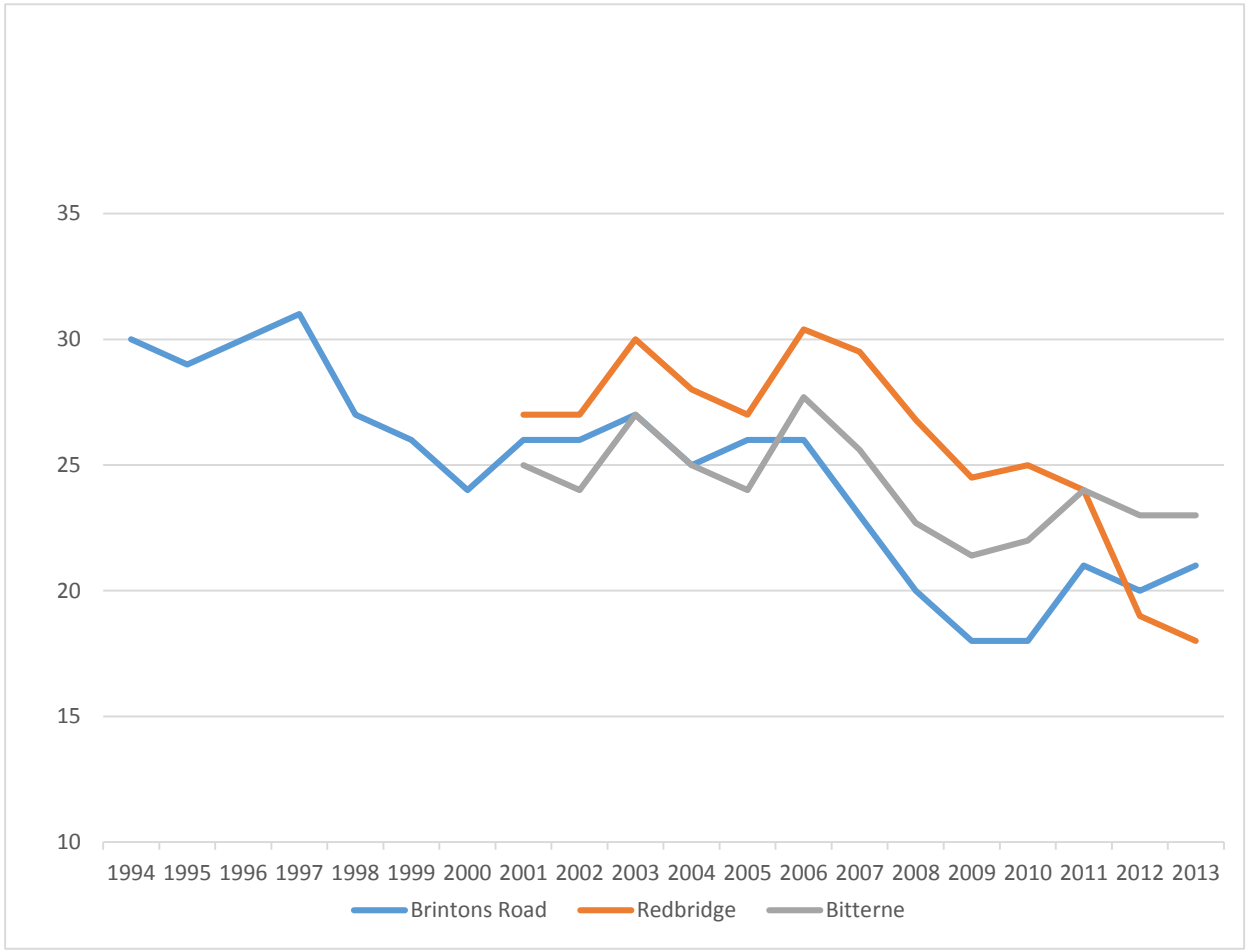


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Figure 2.21 clearly shows that PM_{10} annual mean has been steadily reducing at all 3 monitoring stations with occasional spikes due to weather extremes. Redbridge Monitoring Station showed a fairly dramatic drop from 2011-2013.

Table 2.8 Results of Automatic Monitoring for PM_{10}: Comparison with 24-hour Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period %	Valid Data Capture 2013 % [b]	Confirm Gravimetric Equivalent (Y or N/A)	Number of Daily Means > 50µg/m^3				
						2009	2010	2011	2012	2013
CM1	Urban Centre	N	99%	99%	Y	3	1	9	11	3
CM2	Roadside	Y	95%	93%	Y	4	4	15	6	0
CM3	Roadside	Y	96%	96%	Y	4	0	13	9	6

There have been no exceedances of the 24 hour mean in excess of 35 days per annum at any of the 3 monitoring stations.

2.2.6 Sulphur Dioxide (SO_2)

Table 2.9 Results of Automatic Monitoring for SO_2: Comparison with Objectives

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % [a]	Valid Data Capture 2013 % [b]	Number of:		
					15-minute Means > 266µg/m^3	1-hour Means > 350µg/m^3	24-hour Means > 125µg/m^3
CM1	Urban Centre	N	96%	96%	0	0	0

The Brintons Road AURN Station is the only one to monitor SO_2. No exceedances were recorded in 2013 the same as in previous years.

2.2.7 Benzene

In 2013, the Brinton's Road AURN Station (CM1) measured an annual mean of 0.88 µg/m^3 using a pumped diffusion tube. This was well below the annual mean standard of 5 µg/m^3.

2.2.8 Other Pollutants Monitored

$PM_{2.5}$ was monitored at the CM1, Brintons Road AURN Station.

Maximum 15 minute mean	135 µg/m^3
Maximum Hourly Mean	135 µg/m^3
Maximum Daily Mean	63 µg/m^3
Annual Average	15 µg/m^3
Data Capture	96%

2.2.9 Summary of Compliance with AQS Objectives

Southampton City Council has examined the results from monitoring in the Southampton Unitary Authority Area.

Concentrations within the AQMAs still exceed the 40 µg/m^3 annual mean standard for nitrogen dioxide at relevant receptors and the AQMAs should remain. The Bitterne/Northam Road AQMA had 2 NOx tube sites above the standard in 2013. Concentrations outside of the AQMAs were above the objectives at relevant locations, at the southern section of Romsey Road and parts of Portswood Road. The 2012 USA recommended proceeding to a Detailed Assessment for residential properties close to the kerb along Portswood Road and two houses within the docks at Millbrook Point Road. The 2 houses within the docks were below the objective at Millbrook Point Road. The Detailed Assessments are appended to this report as Appendix B, C, D and E.

3 New Local Developments

Table 3.0 below lists all the larger planning applications approved in 2013.

Table 3.0 Large Planning Applications Determined between 01/01/13 and 31/12/13

MAJOR APPLICATIONS DETERMINED BY OFFICER

between 01/01/13 and 31/12/13

44 Cases

Devt Code	Case Number	Address	Proposal Description	Date Application Becomes Valid	Actual Decision Code	Date Application Decision Issued
Q12	13/01298/FUL	Southampton General Hospital,Tremona Road,Southampton,SO16 6YD,	Erection of a two storey extension above the Haematology centre with a new external stair well, enclosed fire escape route and associated alterations	13/08/2013	CAP	16/10/2013
Q07	13/01570/MMA	Richmond House,Terminus Terrace,Southampton,SO14 3PN	Minor Material Amendment to planning permission reference 11/01839/FUL for 40 student flats (6 x studios, 13 x five-bedroom flats, 11 x six-bedroom and 10 x seven-bedroom units) to 212 studio flats with ground floor commercial space (either A1, A2, A3 or D2) & communal areas, including alterations to parking, landscaping and elevations.	08/10/2013	CAP	20/12/2013
Q06	12/01872/FUL	76 Hill Lane,Southampton,SO15 5BA	Variation of condition 21 of planning ref 06/00189/FUL for approved hostel to change from 24hr onsite management to 09.00-22.00 Monday to Friday, and 16.00-22.00 Saturday, Sunday and Bank Holidays	07/12/2012	CAP	27/02/2013
Q10	13/00415/FUL	East Street Shopping Centre and adjoining Land, including Capital House, The Royal Oak Public House, part of Challis Court and adjoining Areas of Public Highway, Southampton,,	Redevelopment of shopping centre and car park as a new foodstore (5,534 square metres gross floorspace) with car parking on upper levels, including works of demolition, retention of Capital House and the Royal Oak Public House; new vehicular access arrangements, including construction of a new roundabout on Evans Street, highway and public realm improvements, including creation of a new pedestrian link between East Street and Evans Street, landscaping and associated works (affects an existing right of way - amended application to previous permission reference 12/01355/FUL, the changes relate to the proposed highways alterations).	14/03/2013	CAP	07/06/2013
Q09	13/00206/REM	N X P Semiconductors ,Second Avenue,Southampton,SO15 0DJ	Application for reserved matters approval (access, appearance, landscaping, layout and scale) pursuant to outline planning permission dated 30 January 2013 (reference 12/00975/OUT) for redevelopment of the site. This application is for part of the site to provide an industrial/warehouse unit (Classes B1c, B2 and B8 - total floorspace of 8600 square metres) with access from Second Avenue and Allington Road, servicing areas and car parking. (Note: the application also seeks to discharge Conditions 4, 7, 8, 9, 10, 11, 16 and 17 of the outline permission).	18/02/2013	CAP	16/05/2013
Q07	13/00820/REM	468-480 Portswood Road,Southampton,SO17 3SP	Application for reserved matters approval (landscaping) pursuant to outline planning permission (reference 09/00409/OUT) for redevelopment of the site to provide 50 student housing flats and a retail unit.	24/05/2013	CAP	20/08/2013
Q12	13/00974/FUL	Former Town Depot Site ,Albert Road North,Southampton,SO14 5AT	Use of the former depot for a temporary period for the parking of vehicles in connection with import/export through the Port of Southampton, and erection of a single-storey temporary building.	08/07/2013	CAP	04/10/2013
Q07	13/00482/FUL	5 Bellevue Road,Southampton,SO15 2YE,	Redevelopment of the site. Demolition of the existing building and erection of a four-storey building to provide 10 x two-bedroom parent and baby flats and 9 x two-bedroom general needs flats with associated parking and other facilities.	02/04/2013	CAP	01/07/2013

Q07	13/01338/FUL	Erskine Court,Sutherland Road,Southampton,,	Redevelopment of the site. Demolition of the existing buildings and erection of a three-storey building to provide 54 Housing with Care flats for the elderly with support facilities, parking and associated works.	20/08/2013	CAP	19/11/2013
Q12	13/00351/FUL	Itchen College ,Middle Road,Southampton,SO19 7TB	Erection of a 2-storey building to provide Public Services and Essential Care teaching accommodation with associated alterations (to replace existing temporary accommodation)	05/03/2013	CAP	04/06/2013
Q07	13/00304/REM	Part of Former Ordnance Survey Site,Romsey Road,Southampton,SO16 4GU,	Application for reserved matters approval (appearance, scale and landscaping) for 141 dwellings in two and three-storey buildings pursuant to outline planning permission reference 12/01029/OUT granted 6 November 2012.	25/02/2013	CAP	07/06/2013
Q08	13/00602/FUL	Dock Gate 20 Warehouse,Western Avenue,Southampton,SO15 0HH,	Erection of an extension to the warehouse building (6,068 square metres additional floorspace)	14/05/2013	CAP	04/09/2013
Q07	13/00593/FUL	Land between 136-166 ,Above Bar Street,Southampton,,	Erection of two buildings, one of which would be up to 10-storeys in height, to provide an arts complex incorporating two auditoria, gallery space; ground floor retail/restaurant/cafe/drinking establishments (Classes A1/A3/A4) and 38 flats (5 x one-bedroom, 28 x two-bedroom and 5 x three-bedroom) with underground parking of 31 spaces. The development proposes the formation of a new street between Above Bar Street and Park Walk.	22/04/2013	CAP	27/08/2013
Q07	13/00476/FUL	Land At Weston Lane/Kingsclere Avenue including Somborne House, Ashton House and Kingsclere Close,Southampton,	Redevelopment of the site by erection of 2, 3 and 5-storey buildings to provide retail units (Use Classes A1 - A5 - 620 square metres), a community and library facility, 70 dwellings (40 houses and 30 flats) with associated parking and other works including stopping up and diversion of existing rights of way, new public footpaths, footway, verge and highway	27/03/2013	CAP	20/08/2013
Q08	13/01145/TIME	Horseshoe Park,Horseshoe Bridge,Southampton,SO17 2NP	Extension of time application to implement planning permission reference 10/00946/TIME (Erection of a five storey office building with associated parking and vehicular access from Drummond Drive)	08/07/2013	CAP	02/12/2013
Q07	12/01487/FUL	Land At The rear of,Cateran Close,Southampton,,	Erection of 10 x two-storey three-bedroom houses with associated access, parking and landscaping	01/10/2012	CAP	18/03/2013
Q08	13/00205/FUL	Acorn Workshops,Empress Road,Southampton,SO14 0JY,	Redevelopment of the site. Demolition of the existing buildings and erection of single-storey and two-storey buildings to provide industrial and office uses (Class B1 - 1,091 square metres floorspace) (Departure from Policy)	07/02/2013	CAP	30/07/2013
Q07	13/00348/FUL	Brunswick House,8 - 13 Brunswick Place,Southampton,,	Change of use from offices to ground floor commercial use (Classes A1-A5) with student residential accommodation above (156 studio units), rear extension at ground, first and second floor levels and an extension at third floor level to the front of the building with other external alterations.	05/03/2013	CAP	30/08/2013

Q08	12/01109/FUL	NXP Semiconductors,Second Avenue,Southampton,SO15 0LP,	Demolition of existing office building. Erection of a new 3-storey office building including roof plant, car parking and landscaping together with reconfiguring existing car parking to manufacturing unit - use classes B1a (office) and/or B1b (research and development) - description amended following validation.	31/07/2012	CAP	30/01/2013
Q10	12/01355/FUL	East Street Shopping Centre and adjoining Land, including Capital House, The Royal Oak Public House, part of Challis Court and adjoining Areas of Public Highway, Southampton,,	Re-development of shopping centre and car park as a new foodstore (5,534 square metres gross floorspace) with car parking on upper levels, including works of demolition, retention of Capital House and the Royal Oak Public House; new vehicular access arrangements, including construction of a new roundabout on Evans Street, highway and public realm improvements, including creation of a new pedestrian link between East Street and Evans Street, landscaping and associated works (affects an existing right of way).	24/08/2012	CAP	13/03/2013
Q03	12/00975/OUT	N X P Semiconductors ,Second Avenue,Southampton,SO15 0DJ	Outline application for re-development of the site to provide up to 20,360 square metres of employment floorspace (Classes B1(a) / B1(c) / B2 / B8) with ancillary offices, service areas, estate roads, landscaping and cycle/car parking.	29/06/2012	CAP	30/01/2013
Q07	12/01525/FUL	60 - 64 St Marys Road,Southampton,SO14 0BH,,	Redevelopment of the site, erection of a building ranging in height from 3-storeys to 20-storeys to provide 154 student residential flats, (77 cluster flats, 77 studios - 686 bed spaces), commercial/community uses on the ground floor (Class A1 - A5 inclusive, Class D1 or Class D2 - 581 square metres) with associated parking and communal facilities, vehicular access from Compton Walk and a new pedestrian access route from Charlotte Place to Compton Walk.	19/10/2012	CAP	28/05/2013
Q07	12/01217/OUT	100 - 102 High Road,Southampton,SO16 2HZ,	Re-development of the site. Four storey building to form student accommodation (9 self-contained studio flats) with ground floor commercial floorspace and associated amenity space, refuse and cycle storage. Outline application seeking approval for Access, Appearance, Layout and Scale with Landscaping reserved. Car free scheme amended following validation.	15/08/2012	CAP	27/03/2013
Q07	12/01928/FUL	Land At Exford Drive and Exford Avenue (Including Exford Arms PH and Mulberry Centre),Southampton,Hampshire,	Demolition of all the existing buildings and redevelopment to provide 35 houses (25 x 3 bedroom and 10 x 4 bedroom), 92 flats (14 x 1 bedroom, 77 x 2 bedroom, 1 x 3 bedroom) and new retail/office/food and drink use (Classes A1/A2/A3/A4/A5) on the former Exford Arms site with associated parking and other works including diversion/extinguishment/creation of rights of way (Amended application to previous permission reference 11/01400/FUL)	10/12/2012	CAP	23/07/2013
Q07	12/01953/FUL	165 St Marys Street &,Former Chantry Hall Site,Chapel Road,Southampton,SO14 5NH	Redevelopment of the site to provide 59 flats (9 x one bedroom, 46 x two bedroom and 4 x three bedroom) in a building ranging in height from 3-storeys to 6-storeys with associated parking and landscaping	21/12/2012	CAP	30/08/2013
Q07	12/01713/FUL	Park House,102 - 108 Above Bar Street,Southampton,SO14 7NH,	Change of use from offices to student residential accommodation (103 self contained studio flats - Use Class C3(a)) with associated parking and storage including alterations to the building and extension at roof level to extend the staircase up to roof level.	05/12/2012	CAP	30/08/2013
Q07	12/01400/FUL	104 - 106 Bevois Valley Road,Southampton,SO14 0JZ,,	Retention of a three-storey building and a five-storey building to provide 226 square metres of commercial floorspace (Class A3) and 43 student flats with associated parking and landscaping (retrospective application)	10/09/2012	CAP	27/06/2013
Q07	12/00922/FUL	Orions Point,78 St Marys Road,Southampton,,,	Change of use and reconfiguration of existing office building, conversion of the undercroft of Block C and erection of a new 16 storey building to provide additional student residential accommodation (comprising 12 studio and 67 cluster flats - 423 study bedrooms, in addition to the existing 431 study bedrooms) with on-site management and ground floor commercial uses (224 square metres A1 retail floorspace) with associated parking, other facilities and vehicular access retained from St Mary's Road.	16/06/2012	CAP	04/04/2013

Q08	12/01020/FUL	F H Brundle,Third Avenue,Southampton,,	Partial demolition of existing buildings, erection of a warehouse extension at the rear of the site and a three-storey office building at the front with alterations to parking arrangements	04/09/2012	CAP	03/07/2013
Q07	12/00682/OUT	115-125 Wilton Avenue,Southampton,SO15 2HB	Redevelopment of the site. Erection of a part three-storey, part four-storey building to provide 30 self-contained student flats with associated refuse, parking and cycle stores (Outline application seeking approval for access, appearance, layout and scale).	04/05/2012	CAP	14/03/2013
Q07	12/01522/FUL	Part of Former New College Site,The Avenue,Southampton,SO17 1XJ,,	Redevelopment of the site, erection of 12 three-storey 4 bedroom houses and a five-storey block of 35 flats (20 studios, 9 x one-bedroom and 6 x two-bedroom) with associated access, parking and landscaping.	19/10/2012	CAP	30/08/2013
Q07	12/01392/FUL	Former Birch Lawn Care Home,Sullivan Road,Southampton,SO19 0HS,	Construction of 22 houses (2 x two-bedroom, 18 x three-bedroom and 2 x four-bedroom) with associated landscaping and parking	07/09/2012	CAP	26/07/2013
Q07	12/00048/FUL	37- 75 Cumbrian Way and adjoining land,Southampton,SO16 4AT,,,	Re-development of the site following demolition of the existing buildings to provide 38 x 2 bedroom flats and 12 x 3 bedroom houses within two, three and four-storey buildings and a ground floor commercial unit (Use Class A1 Retail or Use Class A3 Restaurants and Cafes) with associated car parking, landscaping and external works including alterations to the existing road (affects existing public rights of way).	12/01/2012	CAP	22/01/2013
Q12	12/01171/FUL	Gracechurch House,25 - 35 Castle Way,Southampton,,	Alterations and extensions involving raising the height of the building and change of use from offices into a 95 room hotel (resubmission of application11/01844/FUL).	27/07/2012	CAP	22/08/2013
Q07	12/01262/FUL	2 - 8 Queensway and adjoining Area of Public Highway,Southampton,SO14 3AZ,	Redevelopment of the site to provide 34 flats (9 x one bedroom, 19 x two bedroom and 6 x three bedroom) in a 7-storey building, 7 x four bedroom 4-storey houses, 3 x two bedroom 2-storey houses and 132 square metres of commercial floorspace (Class A1, A2 or A3) with associated car parking and alterations to the public highway (includes stopping up of part of the highway/right of way).	21/09/2012	CAP	06/11/2013
Q12	11/02025/FUL	Pembroke Court,62 - 70 Westwood Road,Southampton,,	Re-development of the site, demolition of the existing building and erection of a four-storey building to provide a 72 bedroom residential care home with associated access, parking and landscaping.	03/01/2012	CAP	28/03/2013
Q07	12/00596/FUL	Land At junction of Brownhill Way and Lower Brownhill Road,	Erection of 14 two-storey houses (12 x three bedroom and 2 x two bedroom) with associated parking, vehicular access from Lower Brownhill Road and space for a children's play area.	23/04/2012	CAP	30/08/2013

Q07	12/00051/FUL	13 - 14 High Street,Southampton,SO14 2DF,	Erection of a rooftop extension to provide 10 studio flats (Class C3) for student accommodation	01/02/2012	CAP	01/08/2013
Q07	11/01839/FUL	Richmond House,Terminus Terrace,Southampton,,	Alterations and extensions to the existing building to provide 40 flats for student accommodation (6 x studios, 13 x 5-bedroom flats, 11 x 6-bedroom and 10 x 7-bedroom units) with an additional storey to Block A, infilling and conversion of the ground and first floors of Block B to create a commercial unit (Class A1- retail, Class A2 - office, Class A3 - cafe or Class D2- gym or fitness studio) with associated cycle and refuse facilities (ground floor health centre to remain in Block A).	21/11/2011	CAP	09/07/2013
Q07	11/02000/FUL	Land At Maritime Walk including The Promontory ,Ocean Way,Southampton,,	Site clearance and erection of a 76 bedroom hotel (class C1) with associated spa, restaurants, bars/club and function rooms with 12 residential units (Class C3) in a building ranging in height from 5-storeys to 7-storeys and erection of a building ranging in height from 6-storeys to 10-storeys to provide 82 flats and 1,139 square metres of commercial floorspace (Use Classes A1, A2, A3, A4, A5 or B1) with associated parking, landscaping and other works.	17/12/2011	CAP	27/08/2013
Q03	12/00106/FUL	Land between Brownhill Way and M271 and Redbridge Lane ,Southampton	Demolition of six residential properties and erection of a Regional Distribution Centre (42,820 square metres gross floor space - Class B8), 186 associated car parking spaces, HGV hardstanding, two sprinkler tanks and pump room and new peripheral landscaping. Proposal includes the stopping up of Lower Redbridge Lane and diversion of a public right of way.	16/01/2012	CAP	28/11/2013
Q07	11/00155/FUL	12 Bugle Street,Southampton,SO14 2JY	Alterations and conversion of existing office building to provide 21 residential units (2 x studios, 14 x 1-bed flats, 2 x 2-bed flats and 3 x 3-bed flats) with associated parking and landscaping.	03/02/2011	CAP	26/02/2013
Q07	10/01041/FUL	Former Boathouse ,Cobden Bridge,Cobden Avenue,Southampton,SO18 1FZ	Redevelopment of the site. Erection of a part 4, part 5, and part 6-storey building to provide 51 sheltered housing flats for the elderly (Category II type - 36 x one bedroom and 15 x two bedroom units) with associated parking and a riverside walk.	05/08/2010	CAP	03/06/2013

3.1 Road Traffic Sources

No new narrow congested streets with residential properties close to the kerb have been identified since the last Progress Report/USA.

No new busy streets where people may spend one hour or more close to traffic have been identified since the last Progress Report/ Updating and Screening Assessment.

No new roads have been constructed or proposed since the last Updating and screening Assessment/Progress Report.

No new Roads with a high flow of buses and/or HGVs have been identified since the last Progress Report/USA.

No new Roads with significantly changed traffic flows have been identified since the last Progress Report/USA. The Platform Road layout changes have been assessed in appendix D.

No new Bus or coach stations have been identified since the last Progress Report/USA

3.2 Other Transport Sources

No new airports, ports or new exposure to diesel/steam train locomotives have been identified since the last USA/PR.

3.3 Industrial Sources

A 100 MW biomass power station in Southampton Docks has been proposed by Heluis Energy. An EIA has been submitted and the Environment Agency has been approached for advice on seeking a permit. This is only 400m from the Millbrook Road AQMA and monitoring station. All of Southampton City Council's elected members at a Full Council Meeting passed a resolution to object to any forthcoming planning application, with air quality as one of the major reasons to object.

There are no new industrial installations or existing installations where emissions have increased substantially or new relevant exposure has been introduced.
No new Major fuel storage depots for storing petrol have been approved.
No new Petrol stations have been approved
No new poultry farms have been approved.

3.4 Commercial and Domestic Sources

A 200KW biomass boiler is proposed for a school in Maybush. This will be assessed using dispersion modelling. It is not close to any AQMAs.

3.5 New Developments with Fugitive or Uncontrolled Sources

There are no new developments with fugitive or uncontrolled sources identified since the last USA/PR.

Southampton City Council confirms that all the following have been consideredin accordance with LAQM Technical Guidance 09:

- **Road traffic sources**
- **Other transport sources**
- **Industrial sources**
- **Commercial and domestic sources**
- **New developments with fugitive or uncontrolled sources.**

4 Air Quality Planning Policies

Southampton City Council is currently developing new planning policies on air quality as part of the work on the Low Emission Strategy.

5 Implementation of Action Plans

5.1 Air Quality Action Plan

The measures in the Action Plan apply to all of the 10 AQMAs in Southampton. Although some measures will have more of an impact in specific AQMAs than others. For instance measures related to the Port will have more impact on the Western Approach Route that serves the Port.

5.2 Priorities for the coming year

Develop a Low Emission Strategy using DEFRA Air Quality Grant funding under the guidance of an experienced air quality consultancy. The objective will be to reduce the NO_2 annual mean in Southampton to below the EU Limit Value by 2018-20. This should be achievable with lots of small “gains” cumulatively reducing emissions.

Table 4.0 Action Plan Progress 2013

COUNCIL'S OWN ACTIONS					
Ref	Action	Additional Information	Status (RAG)	Responsible Owner	Progress
1.1	School travel plans	Survey of travel needs; encouraging alternatives to car travel; route improvements (walking/cycling); cycle storage provision; walking buses	Green	David Deane	100% of all schools in Southampton have travel plans in place
1.2	Assist staff in cycling to work in between meetings	A number of measures including: road safety assessments, expanding on number of secure cycle storage locations, a salary sacrifice scheme for bike lease to staff and providing pool bikes.	Green	Dale Bostock	Road safety assessments are now undertaken, the number of secure cycle storage locations have been expanded throughout the city, a salary sacrifice scheme for bike lease to staff has been put in place and pool bikes are now provided to staff
1.3	Journey Planning Service	Enables staff to have their journeys to/from work or business travel planned to increase financial efficiency and promote sustainable travel.	Amber	David Deane	30.9% of the working population are now covered by a Travel Plan.
1.4	Corporate Courier Transport Service	A council wide review of the movement of goods vehicles to re-engineer routes to create efficiencies.	Green	Annemarie Hooper	This has been completed and has resulted in 2 x WTE reducing from full time to term-time only and enabled a reduction in one fleet vehicle.
1.5	Continuous Improvement Objectives	A series of projects arising from a review of efficiency savings in fleet vehicle use conducted by Peopletoo consultancy	Green	Annemarie Hooper	Fleet Management Services have made a number of efficiency savings over the last few years, including reviewing the fleet vehicles they lease / purchase.
1.6	Improve emissions from the Council's vehicle fleet	A review of existing fleet to investigate the use of bio-fuel and the retro fitting of abatement technology.	Amber	Annemarie Hooper	This has been investigated but at the moment, new technologies for a greener fleet are expensive to maintain.
1.7	Public awareness and information provision	General awareness initiatives to encourage behavioural changes that could lead to reduced car use, more efficient car use, and greater acceptance of alternatives and air quality management measures.	Green	Dale Bostock and Simon Hartill	SCC runs the 'Southampton Cycle Challenge' communications campaign to encourage a greater take-up of cycling across the city as an alternative to private car use. Additionally the council runs the air alert project. Air Alert provides Southampton residents who have an existing respiratory condition with advance warning of poor air quality to enable them to adjust their behaviour to minimise the risk of exposure to elevated levels of pollution.

SOUTHAMPTON SUSTAINABLE TRAVEL CITY					
Ref	Action	Additional Information	Status (RAG)	Responsible Owner	Progress
2.1	City-wide travel marketing and communications	Travel awareness, branding, marketing campaigns, advertising, events and publicity in various locations (including creating a new website). This will involve the commissioning of a	Green	Adrian Webb	A city-wide campaign was run between January and March 2013. It achieved a 37% awareness of the MyJourney brand based upon 2700 survey responses. The campaign has since been commended for a national award. 25 MyJourney roadshow events were staged, a

SOUTHAMPTON SUSTAINABLE TRAVEL CITY					
Ref	Action	Additional Information	Status (RAG)	Responsible Owner	Progress
		new social marketing campaign to be used as the main branding and advertising. A range of strategic, low-cost advertising sites such as on school railings will be used to promote sustainable travel.			website has been launched offering a multi-modal journey planning tool and live bus and train travel information. A Skyride was run in the city in July 2013 with over 10,000 cyclists in attendance.
2.2	Business Travel Planning	Retail Travel Plans for Major Shopping Destinations including West Quay to encourage more shoppers to travel by public transport and reduce reliance on the car. Items such as cycle parking, shower facilities, electric vehicle charging points at workplaces, PT information points and establishing a framework for collective delivery and evaluation of the travel plan will be taken forward.	Green	Adrian Webb	SCC has been, and is continuing to, work with major retailers and businesses in the city including: Skandia, Mayflower Theatre, the National Oceanography Centre, Town Quay, IKEA, Lloyds Register, Station Quarter, Solent University, the University of Southampton and the General and Royal South Hants Hospitals. Organisations in the Station Quarter including the Maritime and Coastguard Agency have also been engaged. A travel plan for West Quay is in progress. A customer travel survey and a staff travel survey were conducted in August and October 2013 respectively with results of the studies to determine the measures included in the travel action plan being finalised in December 2013. Additional achievements include: 1. A car share scheme has been launched at the General Hospital and 60 additional cycle parking bays installed. 2. An annual travel and transport conference has also been staged. 3. The Royal South Hants Hospital now has a travel plan in place and several walking and cycling events have been held. 4. Solent University has implemented a parking management scheme and updated its cycle facilities. 5. The University of Southampton has installed additional cycle parking provide road safety training and a regular bike doctor for cyclists. 6. Bike week was held in June 2013 for the city. 7. A travel planner's forum has been set up with at least 20 businesses in attendance at each meeting. 8. A travel planning newsletter is also sent out on a monthly basis.
2.3	Freight consolidation and efficiency	The project will investigate, evidence and implement a series of measures to introduce 'Green fleet' management. This will eventually encompass **a driver behaviour change programme** aimed at encouraging more economic driving techniques, emissions modelling tools to identify particular locations where freight is delayed, reducing householder wasted mileage through picking up failed home deliveries, shared service activities in urban centres and smart bins to reduce unnecessary waste collection, **managed loading bay booking** in urban centres. A trial of the smart-	Green	Simon Fry	The viability study for the development of a Sustainable Freight Consolidation Centre has been produced. An OJEU process has been undertaken identifying a private distribution company who have since been appointed to develop and operate the centre. The site has also been identified in Nursling and will be commissioned in December 2013. A number of major organisations have signed up to make use of the centre including: 1. Southampton City Council 2. University Hospital 3. University of Southampton 4. Solent University 5. New Forest District Council

SOUTHAMPTON SUSTAINABLE TRAVEL CITY					
Ref	Action	Additional Information	Status (RAG)	Responsible Owner	Progress
		freight concept, the use of **smart tagging** to enhance customer visibility of freight transport and a **fleet vehicle partnership** looking at joint procurement and specification, sharing vehicles and depots to deliver efficiencies for members and lower emissions from vehicles purchased by members. These elements will be delivered through the development of a Sustainable Freight Distribution Centre.			6. Hampshire County Council 7. Eastleigh Borough Council 8. Hampshire Constabulary 9. West Quay A number of other private businesses have expressed an interest in utilising the facility.
2.4	Public Transport Travel Planning	Preparation of new rail station travel plans. Work with local rail users, transition towns, rail operators and ATOC to develop station travel plans at the following key locations including Southampton Central, Eastleigh and other local stations.	Green	Adrian Webb	A consultant has been appointed to develop a travel plan for the Southampton Central Station. The travel plan is scheduled to be completed in January 2014 with up to £180k of funding identified to be invested in measures to promote more sustainable modes of transport in the area. An overarching plan for all stations in the city is also in progress. Real time information is now available at the station providing travellers with up-to-date info on buses and trains.
2.5	Smart ticketing and media	Delivery of a sub-regional multi-modal interoperable transport smartcard. The ticket will provide the link between operators and modes to give the best possible products to transport users making public transport seamless, easier to use and cheaper as well as promoting the growth of the sector.	Green	Thomas King	A Hampshire-wide Smartcard will be launched in July 2014. The back office system has been procured and the equipment is in the process of being fitted to buses and ferries.
2.6	Brompton Bike Hire scheme	Expansion of the Brompton bike hire scheme i.e. PlusBike establishing a series of hire points in conjunction with South West Trains in addition to a Leeds-style cycle hub at Southampton Central Station.	Green	Adrian Webb	Installed in March 2013 and launched in April 2013. The scheme has 60 members signed up to use the bikes with 10% of bikes used every day of the year. Corporate members include the University Hospital, the University of Southampton, Solent University, Skandia, CooperVision, Ordance Survey and the Mayflower Theatre.
2.7	Legible Bus Network	Legible bus networks. Improving road-side publicity for services along key networks. The city has high levels of bus use and is seeking to double bus use over the next 20 years.	Green	Richard Cooke	A new format for bus timetables has been rolled out on bus stops along Above Bar Street as a pilot. Two additional phases of the project will see the new timetables installed at 181 bus stops in December 2013 and another 180 bus stops between February and March 2014.
2.8	School Travel Planning	Support for the implementation of measures in existing School Travel Plans and ModeShift	Green	David Deane	27 schools have signed up to the STARS school travel plan programme (a national accreditation scheme). Through this programme over 1000 bikes have been fixed, 192 Bike-it events have been staged, and 25,000 positive cycling and scooting experiences have been delivered. By July 2013 14 schools had achieved bronze status under the scheme which is the highest rate of any local authority area in the UK. The scheme has seen 18,000 pupils walk to school at least once a week and an 8% increase in cycling to school rates for those schools participating in 'Bike-it'. A pilot project was staged in Sholing where a road was closed off to simulate what it would be like without traffic. A bus pass for 16 to 19 year olds has

SOUTHAMPTON SUSTAINABLE TRAVEL CITY					
Ref	Action	Additional Information	Status (RAG)	Responsible Owner	Progress
					also been launched which has trebled participation in bus use. An additional travel training programme was developed with a number of schools for children with special educational needs and is running until March 2014. The scheme has so far seen 40 children shift from local authority supported journeys to other modes of travel resulting in a £31k saving within 9 months. The scheme is referenced as best practice by the DfT in their annual school travel review.
2.9	Active Travel programme	Active travel programme to encourage more active life styles through walking and cycling. A community and workplace engagement programme led by Sustrans in partnership with the city council.	Green	Sustrans	Sustrans staff now sit with the council's transport planning team. In 2012/2013 the active travel programme achieved the following: 1. Engagement with 12 community groups (target of 6) 2. Engagement with 5 SureStart Centres (target of 5) 3. 3 Health Walk Groups maintained 4. 1 Health Walk Group established 5. 34 Roadshow events staged 6. 63 Cycle training and Bike Doctor events held 7. 214 participants engaged in walking activities (target of 80) 8. 1000+ participants engaged in cycling activities (target of 80) 9. 845 participants provided info on walking and cycling (target of 800) 10. 22 Active Travel Champions recruited and trained (target of 10)
2.10	Traffic Control Predictions Development to improve air quality.	Working with Southampton University Transport Design Group to predict flows of traffic emanating from signals data to predict patterns ad influence travel advice. This will include disseminating the information via mobile media and amending signal plans to improve air quality	Amber	Adrian Webb	The city council is sponsoring an EngD student to take the project forward.
2.11	Promotion of home deliveries campaign	A campaign to be run in conjunction with retailers to encourage higher take-up of home deliveries allowing more people to travel to shops without the car.	Amber	Adrian Webb	To be progressed in 2014.
2.12	Development and promotion of a bus times smartphone app	SCC is working with academic partners to develop bespoke mobile phone apps to provide a step-change in public transport smart ticketing and information.	Amber	Adrian Webb	An online journey planner has been developed and implemented as part of the MyJourney website and marketing campaign. Access to this tool and information on bus times will be developed into a smartphone app in 2014.
2.13	Cycle Training	Joint Commissioning and contract management of bikeability cycle training across the South Hampshire sub-region to establish a standard offer for cycle training to help ensure the self funded centre of excellence for sustainable travel.	Green	Adrian Webb	Up to March 2013 the following was delivered: 1. Over 166 individuals have received bike maintenance training 2. Over 133 adults have received cycle training 3. Another 130 adults are on the waiting list to receive training 4. 667 children have undertaken 'bikeability' training 5. The target of 2000 children will be exceeded by March 2014
2.14	City Car Club	Develop a sub-regional car club scheme. The	Amber	Adrian Webb	A campaign will be run in February 2014 to drive up membership of

SOUTHAMPTON SUSTAINABLE TRAVEL CITY					
Ref	Action	Additional Information	Status (RAG)	Responsible Owner	Progress
		operator will supply vehicles to be used for marketing and installation of up to 200 bays. Clear options for extensive supply of electric vehicles within the fleet will be included.			the existing City Car Club. As part of this promotion Eco-driver training will be made available to residents and businesses.
2.15	Real time information provision	SCC will deliver public transport with real time information through display screens at our key transport hubs, core bus corridors and highly visible locations and through mobile phones by utilising current and future proof media. RTPI screens to be installed at 13 x locations including Hedge Superstores, Gosport Ferry terminal, Southampton cruise ship terminals, Bus Corridor RTPI on key routes and multi-modal real time information at interchanges.	Green	Paul Walker	Real time information systems have been fitted along all core bus routes in the city.
2.16	Access to work scheme	Free travel advice and bus passes to be provided to unemployed individuals in the city in order to aid their route back into employment.	Green	Adrian Webb	A scheme has been delivered in partnership with the Jobcentre plus to remove the transport barriers that may prevent unemployed people from accessing work. The scheme was targeted at 18 to 24 year olds with free Solent Travelcards provided to participants in the scheme along with free travel planning advice. 811 individuals were assisted throughout the scheme. Results suggest that of those participating in the scheme 44% were subsequently able to find a job compared to 10% of those who didn't participate.
2.17	Bus priority measures	Investment in measures on high frequency city corridors that reduce journey times for buses and design out delays including bus lanes, bus gates, changes to traffic signals and "virtual" priority measures.	Green	Simon Bell	Bus priority programme in progress with 42 junction improvements identified to be delivered.
2.18	Improving Journey Time Reliability	Targeted interventions to deliver journey time savings of 9.5 seconds per bus per junction. This will deliver an economic benefit, improve punctuality and journey times, whilst reducing emissions. The savings in peak vehicle requirement bought about by these improvements will be reinvested by operators within the bus network. This includes bus priority measures at 15 x locations.	Amber	Paul Walker	To be progressed

LTP3 ACTIONS					
Ref	Action	Additional Information	Status (RAG)	Responsible Owner	Progress
4.1	Cycle Lane/Routes Provision.	Work with Sustrans, Organisations & Stakeholders to contribute to the design and delivery of a city wide strategic cycle route.	Green	Dale Bostock	Phase 1 of the eastern cycle route to be completed by March 2014. University cycle corridor targeted for development with funding bids submitted. A 10 year cycle strategy has been produced.
4.2	Bus stop improvements	The installation of new bus shelters across the city to improve the waiting environment for passengers. This will be followed by the implementation of a legible bus network which will make it easier for passengers to find the correct bus stop and interpret timetable information.	Green	Simon Bell	Installation of new bus shelters has now commenced with phase completed in 2012/13. The legible bus network is currently in the design phase and will be implemented over the course of next the two years with completion in March 2015.
4.3	Platform road and Dock Gate 4 removal of gyratory	Major alterations to the highway network in order to enable two lanes of traffic in each direction between Town Quay and Dock Gate four, and the removal of the existing gyratory system arrangement.	Green	Phil Marshall	Scheme underway. Further information to be provided in next update.
4.4	Parking measures	Car Park Guidance System (CPGS) technology has recently been augmented by the arrival of reliable parking bay management systems. A red or green light above each bay indicates if the bay is free or not, and display boards at the top of each ramp indicate the number of free spaces on each floor.	Amber	Frank Baxter	To be progressed.
4.5	Civic Centre Place design and implementation	The Civic Centre Place scheme aims to remove through traffic from Civic Centre Road / New Road and divert this onto the Inner Ring Road via Havelock Road, Cumberland Place, Brunswick Place and Charlotte Place.	Amber	Phil Marshall	Further information to be provided in next update.
4.6	Oxford Street	Create a shared surface scheme, creating more space for the bars and restaurants to spill out into and activating the street.	Green	Phil Marshall	Scheme underway. Further information to be provided in next update.
4.7	Old Town public realm	Low cost improvements to the public realm will be implemented in the short term. These include works outside the recently renovated Tudor Merchant's House and the extension of the existing 20mph zone through the recently completed QE2 Mile enhancements in Holyrood to link with the existing scheme in French Street.	Amber	Phil Marshall	Scheme underway. Further information to be provided in next update.
4.8	North of central station improvements	Consolidation of surface level car parking into a new multi-storey car park to create land for redevelopment and to create a high quality public realm and public transport interchange.	Amber	Phil Marshall	To be progressed.
4.9	Legible cities	Delivery of the on street way finding maps and signing in the city centre.	Green	Richard Alderson	Phase 4 due to be completed in March 2014 which will see the city centre network completed.

LTP3 ACTIONS					
Ref	Action	Additional Information	Status (RAG)	Responsible Owner	Progress
4.10	District Centres - Bitterne	Bitterne District Centre is a high priority for investment to improve accessibility and enhance the public realm.	Amber	Richard Alderson	To be progressed.

PLANNING POLICY ACTIONS					
Ref	Action	Additional Information	Status (RAG)	Responsible Owner	Progress
4.1	Local planning policies (citywide)	Implementation of existing Local Plan policy and work towards strengthening policy in new Local Development Framework. This should include ensuring that the cumulative adverse effect of smaller developments on local air quality is avoided.	Green	Graham Tuck	There is a requirement in the Core Strategy transport policy (CS18) to 'Require new developments to consider impact on air quality, particularly in Air Quality Management Areas (AQMAs) through the promotion of access by sustainable modes of travel'. The Core Strategy sets out the general principles and the CCAP and Southampton Development Plan will show how this affects individual sites. To be progressed under the Low Emission Strategy
4.2	Targeted planning guidance to address air quality impacts of development	Ongoing involvement with Planning Policy and Development Control to avoid the canyon effect (created by tall buildings on both sides of a road) and cumulative air quality effects of development through the planning process.	Green	Graham Tuck	There is regular and ongoing close working between Planning Policy and Development Control. Both the Masterplan and CCAP set out a strategic approach to tall buildings.

OTHER ACTIONS					
Ref	Action	Additional Information	Status (RAG)	Responsible Owner	Progress
5.1	Low Emission Zone (LEZ)	Potential for reducing emissions from HGVs by working with freight partnerships to establish minimum emissions standards for HGVs operating in Southampton.	Green	Simon Hartill Steve Guppy	Low Emissions Strategy to be developed and adopted outlining appropriate measures to be implemented along the Western Approach to the city. SCC decided to not pursue a traditional LEZ model. The costs outweighed the benefits significantly.
5.2	Bus Quality Partnership	Emissions from buses can be reduced by modernising the bus fleet.	Green	Paul Walker	Partnership established. To be progressed under the Low Emission Strategy. Run a pilot study using innovative flywheel technology on buses in Southampton with the objective of reducing NOx emissions by 20% and also save the bus operators money on fuel.
5.3	Taxi Quality Partnership	Steps to modernise the taxi fleet and reduce taxi emissions.	Amber	Paul Walker	To be progressed under the Low Emission Strategy
5.4	Introduce fixed penalty for idling vehicles (including buses and taxis)	Use legal powers to enforce fines for idling vehicles and prevent unnecessary emissions.	Red	Paul Walker	This has not been invoked.
5.5	Changes to traffic light phasing	Use the road traffic management system to change traffic light phasing to hold back traffic queues in areas without residential receptors.	Amber	Paul Walker	To be progressed under the Low Emission Strategy
5.6	Port Masterplan actions	Working with ABP to address port related transport issues and emissions from shipping could involve a range of measures, including; creating new access routes, providing alternative fuel supplies, introducing freight quality partnerships, and developing lorry staging areas.	Amber	Sue Simmonite	To be progressed under the Low Emission Strategy
5.7	Legible city signage	Legible city methodology to be adopted to improve signage within the city to encourage cycling and walking at key points in the city.	Green	Richard Pemberton	Signage has been fully installed throughout the city centre.

OTHER ACTIONS					
Ref	Action	Additional Information	Status (RAG)	Responsible Owner	Progress
5.8	Integrate Air Quality Impact Assessment into all major transport projects	Include costs for air quality modelling and impact assessment in the design stage of major transportation projects to ensure that their impacts are understood.	Green	Frank Baxter	This is part of the planning and transport assessment and is done on a site by site basis
5.9	Research the health impacts of air pollution	Work closely with the Health Authority and University of Southampton to research the health impact of air pollution on vulnerable groups.	Green	Simon Hartill	The monitoring and evaluation procedures as part of the Air Alert project are specifically designed to research the health affects of air pollution. This project has now commenced
5.10	Use of adaptive traffic control systems	The study is intended to investigate the feasibility of reducing or relocating traffic queues in AQMA areas. It is a 3- year-long project. Whilst they won't necessarily reduce air pollution they will relocate the source to an area without receptors, therefore reducing the health impact.	Green	Martin Wylie	The first phase of project, which involves data collection and analysis, is approaching its conclusion
5.11	Air Alert	The Air Alert project aims to provide Southampton residents who have an existing respiratory condition with advance warning of poor air quality and enable them to adjust their behaviour to minimise the risk of exposure to elevated levels of pollution. The project will initially identify community clusters in 3 of Southampton's Air Quality Management Areas (AQMAs) – Redbridge Road, Bitterne Road and Bevois Valley. The project has now commenced and the process of registering users is taking place.	Green	Simon Hartill	201 air alert subscribers enrolled, 96 air alerts issued since June 2010. Very high customer satisfaction results from survey of subscribers undertaken in 2011. "90% of subscribers would recommend the service."
5.12	Keep the City Moving Group	A project board for congestion issues that will coordinate, communicate and plan in relation to keeping the city moving.	Green	Frank Baxter	The group provide a focus for and coordination of anti-congestion actions achieving financial savings from significant reduction in fuel consumption. The group has met several times and has developed an action plan
5.13	Flywheel technology	Buses in Southampton to be upgraded with pollution-reducing flywheel technology on transport routes with poor air quality.	Green	Paul Walker	Southampton was one of eleven local authorities to have been awarded funds from the Department for Transport's Clean Bus Technology Fund to enable the flywheel technology to be fitted to buses in the city. The funding will be made available for bus operators in the 2013-2014 financial year with installation by bus operators to be completed by 31st March 2014. It is possible that UK and EU companies could also adopt this technology and there is potential for a 'Centre of Excellence' to be created within the Southampton area for installation of flywheel technology on buses.

6.0

6.1 Conclusions from New Monitoring Data

Southampton City Council has examined the results from monitoring in the Southampton Unitary Authority Area.

Concentrations within most of the AQMAs still exceed the 40 µg/m^3 annual mean standard for nitrogen dioxide at some relevant receptors and the AQMAs should remain. The Bitterne/Northam Road AQMA will be reviewed next year as both 2011, 2012 and 2013 monitoring showed that monitoring sites were below the standard, although some only very marginally. However if using the local bias adjustment factor of 1.0, two sites would have been above the standard in 2013. This level of uncertainty confirms the need to keep the AQMA in place for the time being.
Concentrations outside of the AQMAs are all below the objectives at relevant locations, except for the new Romsey Road and Portswood Road NOx tubes.
The Detailed Assessments (appendix B,C,D and E) at the end of this progress report, go into the fine detail of the monitoring data and whether an AQMA will need to be declared.

6.2 Conclusions relating to New Local Developments

None of the new developments that have been granted planning permission will trigger a Detailed Assessment. If the proposed 100MW Biomass Power Station, adjacent to the Millbrook Road AQMA submits a planning application to the Planning Inspectorate and receives permission, a Detailed Assessment is likely to be required to assess the air quality impact. The Heluis developer proposal appears to be on hold at the moment due to financial difficulties.
An EIA has already been completed by the applicant which includes a detailed air quality assessment, using dispersion modelling by CERC. The EIA concluded that the proposed power station would increase NO_2 in the AQMA, but not significantly.

6.3 Proposed Actions

6.3.1 Undertake a Low Emission Strategy Study using the £60,000 DEFRA grant.

In-house SCC officers, in the transport and sustainability/ planning depts will work together with Environmental Health and an external consultant to progress the Study.

The Study will concentrate on the work packages listed below.

- Development of guidance on the use of public sector procurement to influence road transport emissions within the City, incorporating whole life and damage cost principles
- development of a City-wide bus emission strategy, in partnership with key operators, including GoAhead and First Group
- development of a City-wide freight emission strategy, building on plans to develop a sustainable freight consolidation centre, and working with the private sector to look at infrastructure necessary to support the uptake of low emission technologies
- development of a taxi emission strategy
- development of a passenger car emission strategy to look at incentives and disincentives for the reduction in use of high NOx emission vehicles and promote clean vehicle technology
- development of an AQ & health working group capable of reviewing local health impacts and promoting effective messaging, building upon on the success of the current air alert scheme that operates in Southampton.

6.3.2 Submit a DEFRA Air Quality Grant bid for £50,000 in September 2014 to support a trial conversion of DP World's diesel straddle carriers to cleaner gas, with the aim of converting 60% of the straddle carrier fleet to gas within 2 years.

The Low Emission Zone Study concluded that the Port contributes 34% of nitrogen dioxide emissions at a residential receptor along the Western Approach, not including HGVs accessing the Port. By targeting Port operations such as straddle carriers it is hoped that emissions can be substantially reduced without impacting upon the economy of the City, which relies heavily on the Port.

Targeting straddle carrier emissions is likely to be more cost effective than implementing a Low Emission Zone (LEZ) to reduce vehicle emissions on the Western Approach Road. It should also have the added benefit of reducing DP World's fuel costs and reducing CO_2 emissions.

The LEZ modelling undertaken by Ricardo AEA in the Port estimated that container handling by straddle carriers (SC) contributes 3 ug/m^3 of nitrogen dioxide at the midsection of Millbrook Road where there are residential receptors. By converting 60% of the straddle carriers to gas could reduce SC emissions by about half, approx. 1.5 ug/m^3, an appreciable reduction.

6.3.3 Submit a DEFRA Air Quality Grant bid for £30,000 in September 2014 to support a project to improve air quality in an existing AQMA.

The objective would be to optimise the traffic light controlled junction to try to reduce nitrogen dioxide air pollution within the existing Air Quality Management Area (AQMA) to below the annual mean standard, without adversely affecting traffic flows on nearby roads. **The ultimate objective would be to revoke the AQMA within 2 years.**
The project fits in with the existing Air Quality Action Plan which identified traffic management as an option to pursue if funding was available.
A study is estimated to cost £50,000 and will be piloted at the Commercial Road / Havelock Road Air Quality Management Area. Southampton City Council (SCC) Regulatory Services will provide £10,000 (available from a Section 106 contribution associated with the Mayflower Halls development). SCC Transport Policy will contribute a further £10,000 from its capital funds.

7.0 References

(1) Port of Southampton Master Plan 2009

(2) LAQM Technical Guidance TG(09)

(3) LAQM Policy Guidance 2009

(4) Southampton Shipping Movements 1991 - 2011

(5) DEFRA Screening Assessment for Biomass Boilers Technical Guidance

(6) EP UK, Biomass and Air Quality Guidance for Local Authorities

(7) Further Assessment of Commercial and Millbrook Roads August 2008
(Air Quality Consultants)

(8) USA 2003, 2006, 2009 and 2012 Southampton City Council

(9) Detailed Assessments 2004 and 2007 AEA Consultants

(10) Platform Road air quality assessment, 2013 Mott MacDonald

Most Review and Assessment Reports available on Council's website
http://www.southampton.gov.uk/s-environment/pollution/airquality/review.aspx

Appendix A: QA:QC Data

Diffusion Tube Bias Adjustment Factors

Gradko 20% TEA in water, national bias adjustment factor 0.95 version 06/2014 based on 35 studies including Southampton

Factor from Local Co-location Study

Average of exactly 1.0 see table below for monthly data compared to the AURN automatic data.

Diffusion Tube Collocation Data Questionnaire For Local Authorities

Please Read the "Notes" sheet and then fill in the white boxes of this questionnaire
Should you require assistance, email nick.martin@npl.co.uk or phone 020 8943 7088

	Date form filled in	Name of Local Authority	Your name	Phone number	Contact email
Your Details	12.6.14	southampton city council	simon hartill	023 80917531	simon.hartill@southampton.gov.uk

	Distance from kerb (m)	Site type (e.g. roadside, background). Definitions of site types are given on the "Notes" sheet	Distance from diffusion tube(s) to continuous analyser inlet (m) (this should be less than 1m from the analyser inlet)	Location (site name or a brief description)	Grid Reference of Site (if available)
Site Details	**8m**	urban background	less than 1m	southampton AURN Brintons Road	442583, 112248

	Prepared by	Analysed by	Example results sheet attached? (please attach a results sheet provided by the analysis laboratory)	Preparation method (e.g. 50% TEA in acetone; 50% TEA in water)	How are diffusion tubes deployed? (e.g. with a clip, spacer, shelter box, just tape)
Diffusion Tube Details	gradko	gradko		20% TEA in water	spacer

	Analyser type	QA/QC (e.g. local or network)
Continuous Analyser Details	Thermo	AURN

Data from the Automatic Analyser (Matching Individual Diffusion Tube Periods)

Period	Start Date (dd/mm/yy)	End Date (dd/mm/yy)	% Data Capture	Ratified / Provisional	NOx (if available) (ug/m^3)	Nitrogen Dioxide (ug/m^3)
1	07/01/2013	04/02/2013	99			35.2
2	04/02/2013	04/03/2013	91			33.5
3	04/03/2013	02/04/2013	99			31.6
4	02/04/2013	29/04/2013	100			24.9
5	29/04/2013	03/06/2013	100			25
6	03/06/2013	01/07/2013	100			21.9
7	01/07/2013	29/07/2013	99			26.9
8	29/07/2013	02/09/2013	88			25.6
9	02/09/2013	30-Sep	97			30.3
10	30/09/2013	04/11/2013	99			29.5
11	04/11/2013	02/12/2013	99			37.8
12	02/12/2013	30/12/2013	99			41.2
13						

Please express NOx as NO_2 (e.g. ppb x 1.913) or alternatively note the approach / units here:

When you are identifying the automatic monitoring periods that match your diffusion tube exposure periods, please be as precise as possible. It is not, however, necessary to match start times to the exact hour that you put out your tubes.

Individual Period (monthly) Mean Nitrogen Dioxide Data from the Diffusion Tubes (ug/m^3)

Period		Tube 1	Tube 2 (if available)	Tube 3 (if available)	Tube 4 (if available)
1		36.4	35.53	35.53	
2		35.3	31.57	31.76	
3		33.3	32.49	34.29	
4		26.9	29.42	26.79	
5		missing	missing	21.22	
6		24.8	20.73	22.71	
7		27.6	30.73	29.89	
8		25.6	27.16	24.66	
9		29	31.25	30.10	
10		28.2	27.87	31.04	
11		35	36.99	35.90	
12		39.1	36.33	37.43	
13					

	Are the concentrations stated in ug/m^3?	Did the diffusion tube supply or analysis method change during the monitoring period? When, from what, to what?	Were there any significant problems with the continuous analyser during the monitoring period?	Are there any other relevant issues with your data?
Other Information	yes	no	no	

Please Return Completed Questionnaires to: nick.martin@npl.co.uk
This questionaire is now maintained and distributed by the National Physical Laboratory on behalf of Defra and the DAs

Discussion of Choice of Factor to Use

We decided to use the national factor of 0.95 for consistency with the 2013 Progress Report.
This factor is statistically more robust than the single co-location factor calculated for the urban centre site at Southampton AURN Station, as it is based on 35 studies including Southampton. However the inherent uncertainty with NOx tube monitoring at or very close to the annual mean standard means we will err on the side of caution. The Detailed Assessments have reported both the national (0.95)and local bias adjusted (1.00) figure for comparison.

PM Monitoring Adjustment

The TEOM PM Monitoring was adjusted by Kings College London, ERG, using the recognised method.

QA/QC of Automatic Monitoring

ERG at Kings College London manage our data QA/QC. They collect the data on our behalf and ratify it. Manual calibrations are undertaken every 2 weeks by SCC staff at all our monitoring stations. Unfortunately the Redbridge and Victoria Road stations encountered serious technical problems in 2012.

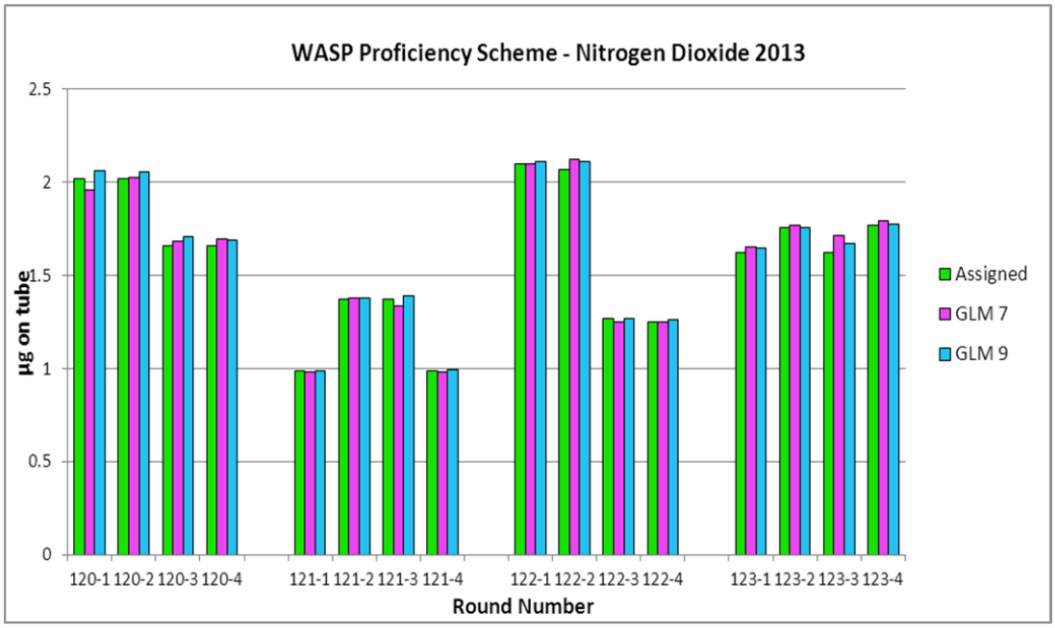
QA/QC of Diffusion Tube Monitoring

Gradko supplied and analysed the NOx tubes using 20% TEA in water
Gradko Tube Precision was good in 2013.
WASP QA/QC results below.

Nitrogen Dioxide WASP Results

Methods: GLM 7 – Camspec M550 Spectrophotometer, GLM 9 – QuAAtro Continuous Flow analyser

WASP Proficiency Scheme - Nitrogen Dioxide 2013								
Date	Round	Assigned value	Camspec M550 - GLM 7			QuAAtro - GLM 9		
			Measured concentration	z-Score	% Bias	Measured concentration	z-Score	% Bias
Feb-13	120-1	2.02	1.956	-0.4	-3.2%	2.063	0.3	2.1%
Feb-13	120-2	2.02	2.026	0	0.3%	2.059	0.3	1.9%
Feb-13	120-3	1.66	1.681	0.2	1.3%	1.711	0.4	3.1%
Feb-13	120-4	1.66	1.698	0.3	2.3%	1.692	0.3	1.9%
May-13	121-1	0.99	0.984	-0.1	-0.6%	0.988	0	-0.2%
May-13	121-2	1.37	1.379	0.1	0.7%	1.380	0.1	0.7%
May-13	121-3	1.37	1.339	-0.3	-2.3%	1.392	0.2	1.6%
May-13	121-4	0.99	0.980	-0.1	-1.0%	0.995	0.1	0.5%
Aug-13	122-1	2.10	2.098	-0.01	-0.1%	2.113	0.19	0.6%
Aug-13	122-2	2.07	2.125	0.35	2.7%	2.108	0.24	1.8%
Aug-13	122-3	1.27	1.253	-0.19	-1.3%	1.269	-0.02	-0.1%
Aug-13	122-4	1.25	1.249	-0.05	-0.1%	1.263	0.10	1.0%
Nov-13	123-1	1.62	1.656	0.32	2.2%	1.649	0.26	1.8%
Nov-13	123-2	1.76	1.770	0.1	0.6%	1.760	0.02	0.0%
Nov-13	123-3	1.62	1.717	0.78	6.0%	1.672	0.41	3.2%
Nov-13	123-4	1.77	1.796	0.2	1.5%	1.777	0.06	0.4%



Appendix B Detailed Assessment

Detailed Assessment Portswood Road

The Portswood Road NOx tubes were established in January 2013.
There is a high flow of buses along Portswood Road. 624 buses per day. 7am-7pm. 6 bus routes use Portswood Road. The 12 hour traffic count is about 8000 vehicles per day. There are residential flats above shops at first floor level on Portswood High Street. The traffic flow is very congested, with traffic queues forming at the major traffic light controlled junctions. It is a busy shopping district with a new large Sainsburys Store.

Table 1 2013 Nitrogen Dioxide Annual Average at residential facades outside of the Bevois Valley AQMA

Tube No	Location	Local bias adjusted Annual Average (1.00)	Data Capture	National Bias Adjusted Annual Average (0.95)	Distance from kerb to tube on receptor facade
N162	263A Portswood Road	46.6 ug/m^3	83%	44.3 ug/m^3	4m
N163	285 Portswood Road	33.3 ug/m^3	83%	31.6 ug/m^3	9m
N164	229 Portswood Road	42.9 ug/m^3	83%	40.8 ug/m^3	4m
N165	8 The Broadway	53.5 ug/m^3	33%	50.8	4m
N161	30 Addis Square	38.9 ug/m^3	92%	37.0 ug/m^3	4m

Table 2 Estimation of annual mean concentration from short – term monitoring February 2013 – May 2103 8 The Broadway, Portswood Road

Automatic station	Annual Mean 2013 (Am)	Period Mean (Pm)	Ratio (Am/Pm)
AURN Southampton (2 miles from site)	31.2	31.3	0.996
Onslow Road Southampton (1 mile from site)	40.5	42.7	0.948
		Average Ratio	**0.972**

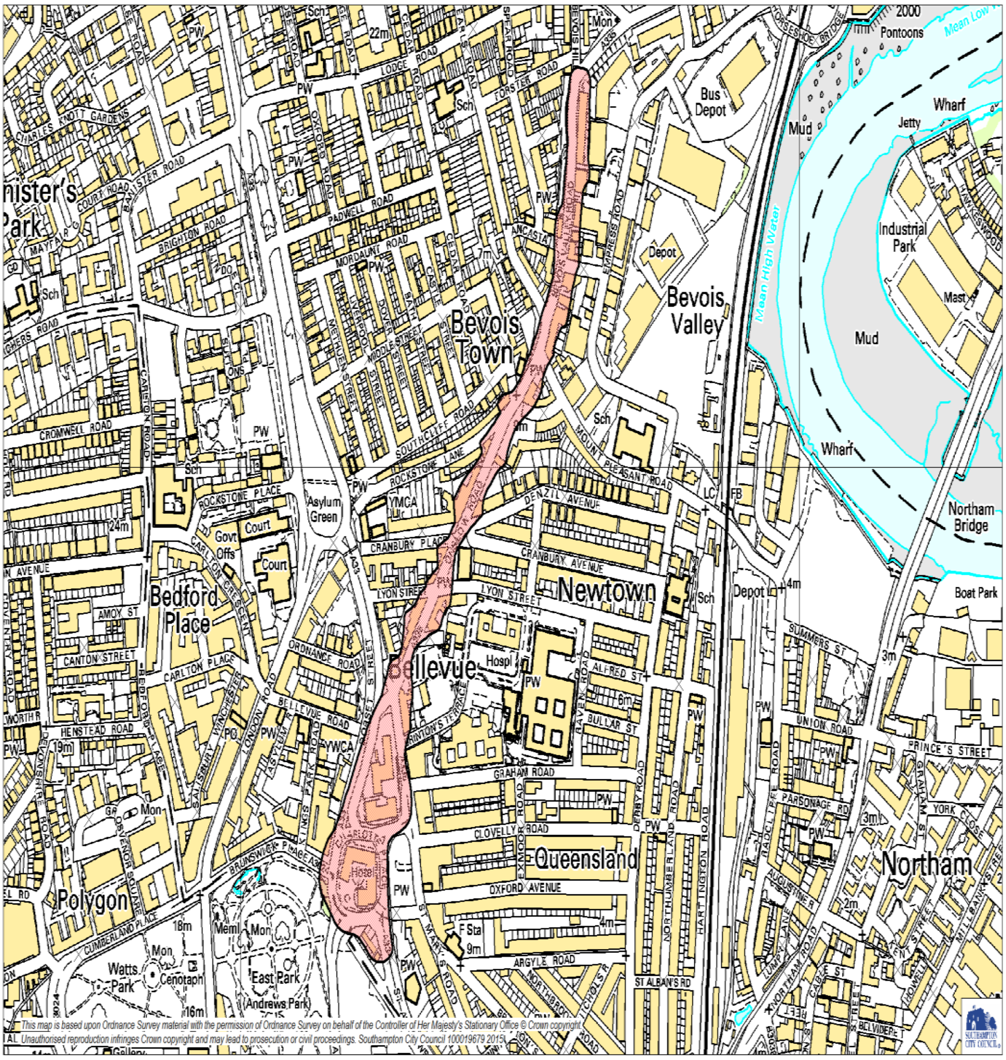
50.8 * 0.972 = 49.4 ug/m3   equivalent 2013 annual mean.

Discussion of Monitoring Results

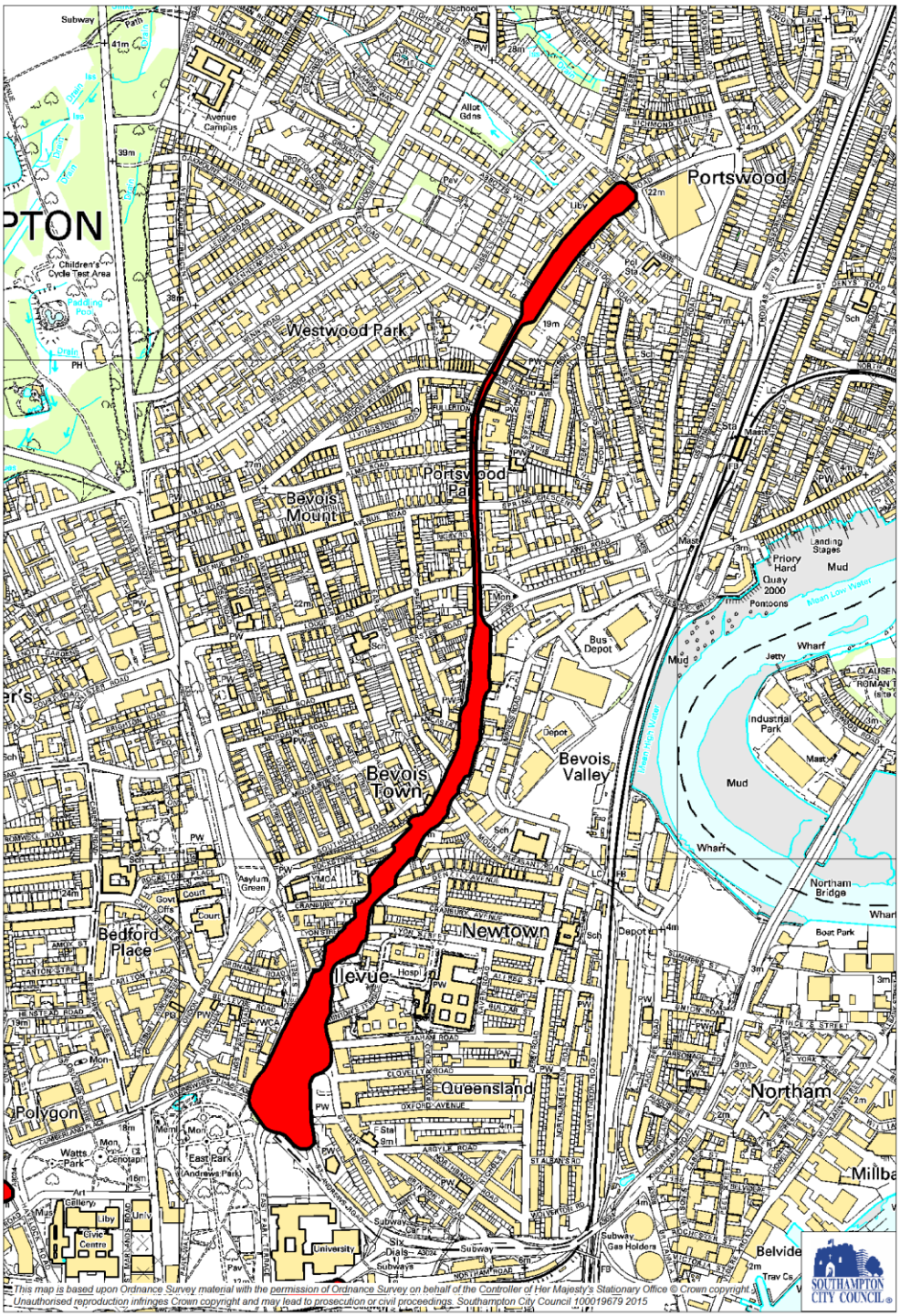
8 The Broadway (N165) experienced high levels of vandalism/theft of the NOx tube in 2013. It was relocated to a nearby location in 2014. Table 2 above shows the estimation of annual mean from short term monitoring, which gave an "equivalent" annual mean of 49.4 ug/m^3, well above the standard. Although there is a high level of uncertainty due to the very limited data capture, due to theft of the tube.

The monitoring data demonstrates that 3 out of the 4 Nitrogen Dioxide diffusion tubes are exceeding the NO_2 annual mean standard, whether using the local or national bias adjustment factor.

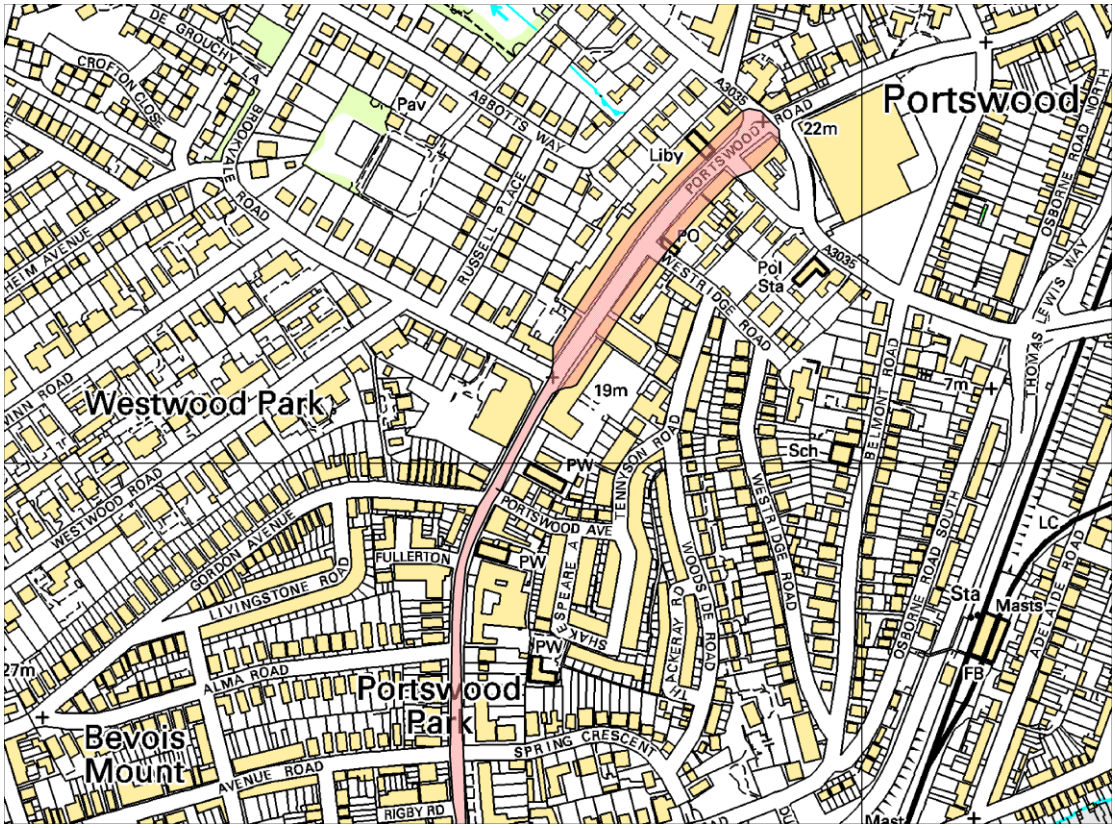
Map 1 Existing Bevois Valley AQMA



Map 2 Proposed extension to Bevois Valley AQMA to include Portswood Road at the northern section



Map 3 Proposed extended AQMA in more detail at Portswood Road section.



Conclusion

It is recommended to extend the existing the Bevois Valley AQMA further north to capture all receptors proven to be exceeding. The AQMA boundary will follow the kerb of the road in between the major road junctions where pollution is much lower and traffic is free flowing most of the time.

The Maps of the proposed AQMA extension are shown above.

Appendix C Detailed Assessment

Detailed Assessment Romsey Road

The northern section of Romsey is an existing AQMA at the junction with Teboura Way. 13 and 23 Romsey Road NOx tubes were established in January 2013 as new sites on the opposite side of the road as 2 Romsey Road, outside of the existing AQMA.

The eastern side of Romsey Road, where the new tubes are located at the junction with Shirley Road, has queuing traffic at the traffic lights for much of the day. All 3 locations are close to the busy junction with Anglesea Road/Shirley Road. 13 Romsey Road has a residential flat above a hairdressers and 23 Romsey Road is a terraced house.

There is a very high flow of buses along Shirley and Romsey Road, approx. 1200 buses per day. 7am-7pm. 12 bus routes use Shirley Road and the southern section of Romsey Road, before the Teboura Way junction. The 12 hour traffic count along this section of Romsey Road is approx. 14,000 vehicles.

Table 1 2013 Nitrogen Dioxide Annual Average at residential facades outside of the existing Romsey Road AQMA

Location	Local bias adjusted Annual Average (1.00)	Data Capture	National Bias Adjusted Annual Average (0.95)	Distance from kerb to tube on receptor facade
N106 2 Romsey Road	42.0 ug/m^3	83%	39.9 ug/m^3	5m
N167 13 Romsey Road	40.1 ug/m^3	92%	38.1 ug/m^3	6m
N168 23 Romsey Road	45.3 ug/m^3	92%	43.0 ug/m^3	5m

Table 2 2010 – 2012 Nitrogen Dioxide Annual Average at 2 Romsey Road comparing national and local bias adjustment factor for annual mean

Location	2010 Local bias adjusted Annual Average (1.00)	2010 National Bias Adjusted Annual Average (0.92)	2011 Local bias adjusted Annual Average (1.12)	2011 National Bias Adjusted Annual Average (0.95)	2012 Local bias adjusted Annual Average (1.09)	2012 National Bias Adjusted Annual Average (0.95)
N106 2 Romsey Road	40 ug/m^3	36.7 ug/m^3	44.8ug/m^3	37.5 ug/m^3	45.0ug/m^3	40.0 ug/m^3

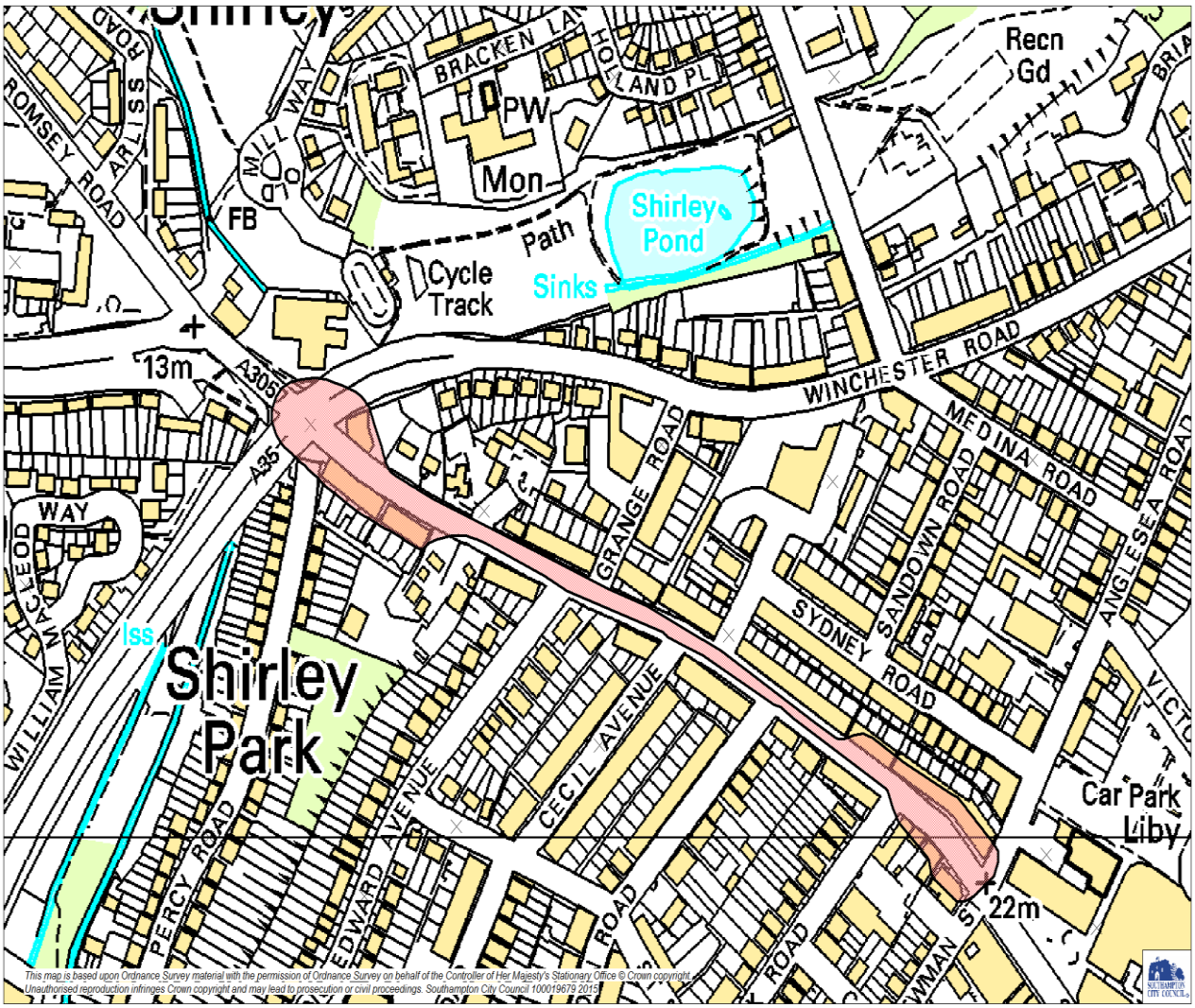
As the table above shows, 2 Romsey Road has been right on the threshold of the annual mean standard for the last 3 years, either above or below, depending upon which bias adjustment factor is applied to the raw data. In recent years, 2 Romsey Road nitrogen dioxide annual mean has been increasing.

Map 1 shows the location of NOx tubes on the southern section of Romsey Road

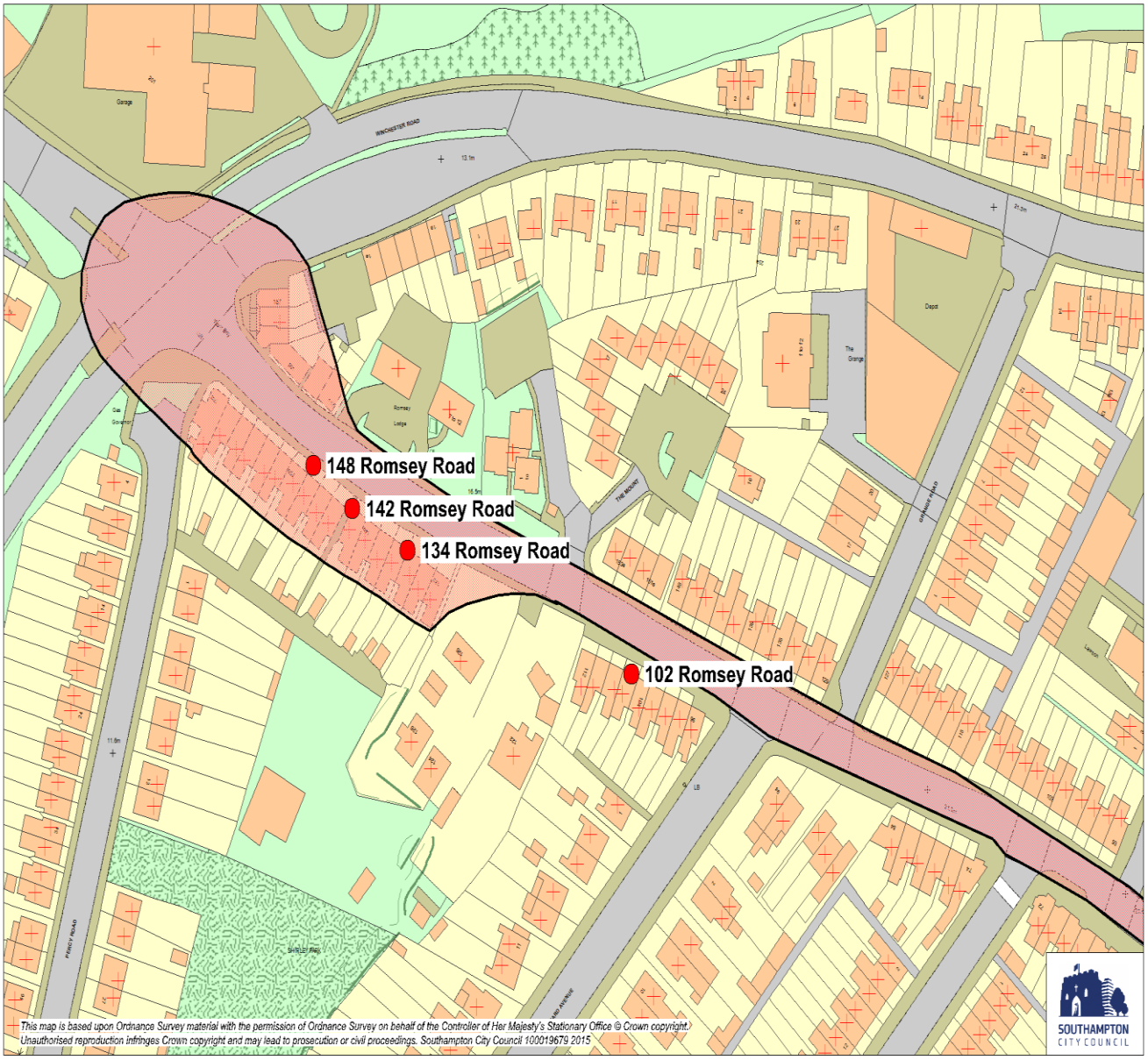
Map 2 shows the location of NOx tubes on the northern section of Romsey Road

(N143 NOx tube has always achieved the NO_2 annual mean standard as it is further away from the queuing traffic at the junction. In 2013 it was 36.9 ug/m^3)

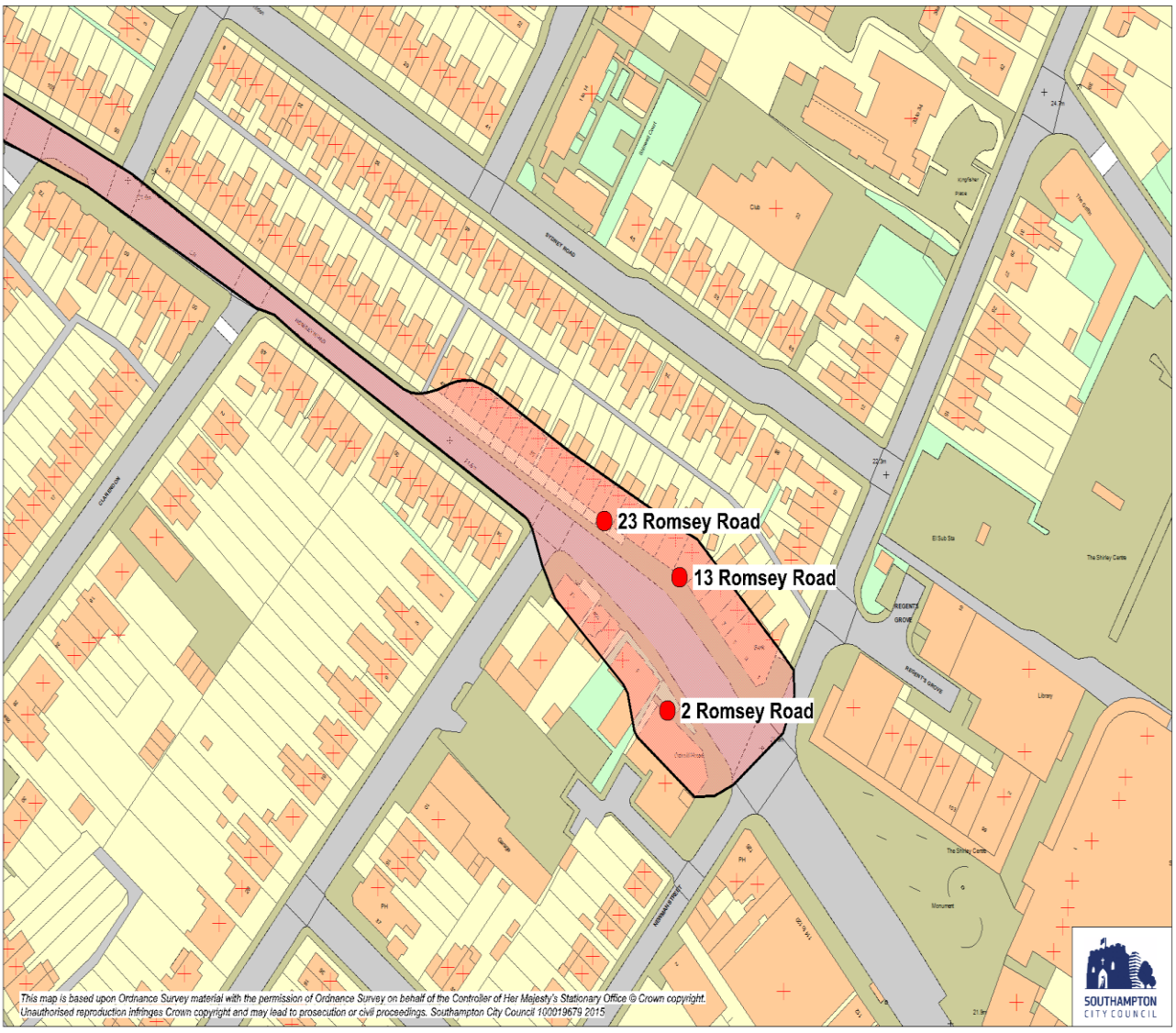
Map 3 shows the proposed AQMA extension to the northern section of Romsey Road linking up to the southern area of exceedance.



Map 3 showing existing AQMA with proposed extension along the kerb of Romsey Road to link to southern section. Red dots indicate NOx tube locations



Map 4 showing proposed AQMA extension to southern section of Romsey Road and NOx tube locations



Conclusion

The nitrogen dioxide diffusion tube data clearly shows that the southern section of Romsey Road should be declared an AQMA as the annual mean standard is being breached, although only marginally.

It is recommended to extend the existing northern section of Romsey Road along the kerbline to where exceedance at the southern section has been proven at residential receptors. The “middle section” of Romsey Road is further away from the traffic light controlled junctions at either end with free flowing traffic most of the time. The residential properties in the “middle section” are very unlikely to breach the air quality standard at the receptor façade. As proven by the NOx tube, N143 at 102 Romsey Road which recorded 36.9 ug/m^3 in 2013.

It is hoped that the introduction of new fly wheel technology to buses in Southampton will reduce pollution from buses by about 20% in the near future. Buses make a major contribution to nitrogen dioxide on Romsey Road, due to the high numbers of buses that use this busy route. It is the main route from the city centre up to Southampton General Hospital.

Appendix D

Nitrogen Dioxide Detailed Assessment

Orchard Place/Queens Terrace

NOx Tubes outside of existing Town Quay/Platform Road AQMA at risk of exceeding nitrogen dioxide annual mean

The 2013 Progress Report highlighted possible exceedance of the nitrogen dioxide annual mean at 2 new NOx tube sites at Oceana Boulevard and 24 Queens Terrace, to the north of the existing AQMA and Park. However the tubes were installed towards the latter half of 2012, with only 33% data capture for the calender year.

Table 1 showing annual nitrogen dioxide levels in 2013

Location 2013	Local bias adjusted Annual Average (1.00)	Data Capture	National Bias Adjusted Annual Average (0.95)	Distance from kerb to tube on receptor facade
N154 Oceana Boulevard	42.8 ug/m^3	92%	40.6 ug/m^3	1m to Orchard Place
N155 24 Queens Terrace	45.0 ug/m^3	83%	42.8 ug/m^3	1m to Queens Terrace
N156 Union Castle House	34.5 ug/m^3	100%	32.8 ug/m^3	8m to Platform Road
N157 Admiralty House	36.9 ug/m^3	92%	35.0 ug/m^3	1m to Dock Gate 4, 35m to Platform Road

Table 1 above, confirms the suspicion that the 2 new sites may exceed.
Both locations were above the annual mean objective in 2013 whether using the local or national bias adjustment factor.

However in 2014 the Council's major road project "Platform for Prosperity" drastically reduced the traffic flow along Queens Terrace and Orchard Place where the tubes were exceeding. These roads to the north of the Park now only have local traffic. All through traffic uses Platform Road, which is now two way traffic, 2 lanes in each direction. Before the scheme, Platform Road was one way westbound, with all eastbound traffic using Queens Terrace and Orchard Place.

Table 2 below shows the dramatic reduction in traffic using Queens Terrace and Orchard Place. This should lead to a reduction in nitrogen dioxide annual mean at the exceeding NOx tube locations on Queens Terrace and Orchard Place.

Platform Road has seen a corresponding increase in traffic. 2014 NOx tube data is anticipated to show an increase in nitrogen dioxide at Union Castle House and Admiralty House, both of which are converted offices to residential flats. This is already an AQMA. There are far less residential receptors on Platform Road than Queens Terrace and Orchard Place, so less Southampton residents will be exposed to nitrogen dioxide levels above the annual mean standard.

The Platform Road Traffic Scheme should reduce congestion and journey times, especially for HGVs, and cruise ship passengers accessing the Eastern Docks. The Scheme has provided much better off road cycle lanes than existed previously.

Map 1 Showing AQMA boundary and NOx tube locations

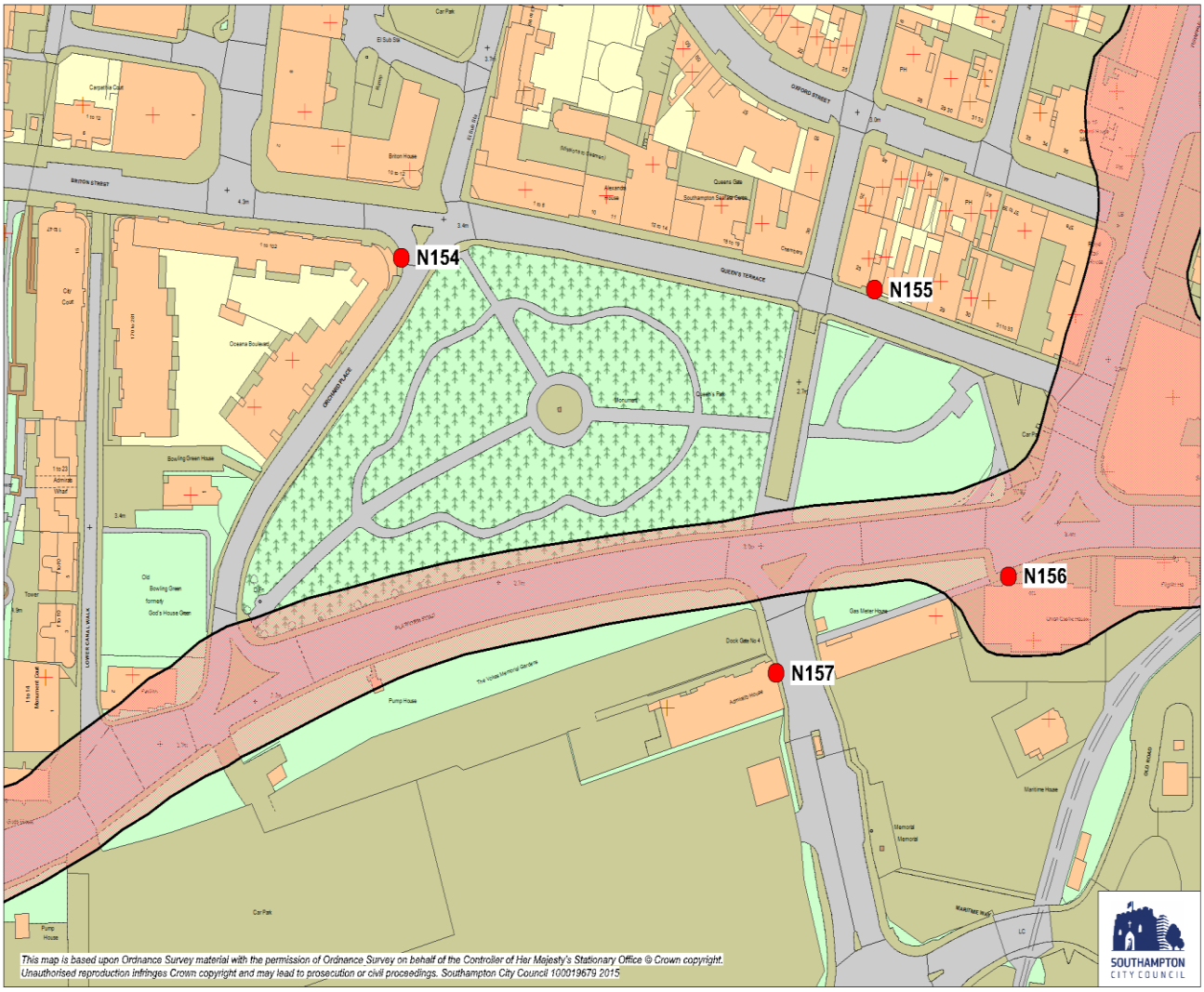


Table 2 Queens Terrace/Orchard Place/Platform Road

Changes to vehicle movements following redesigned road layout

Road section	Traffic flow after redesigned road scheme implemented 2014	Traffic flow before new road scheme
Queens Terrace	1504 vehicles 4 HDV	13,245 vehicles 782 HDV
Orchard Place	4002 vehicles 198 HDV	13,897vehicles 835 HDV
Platform Road	26,184 vehicles 1395 HDV	15,593 vehicles 1085 HDV

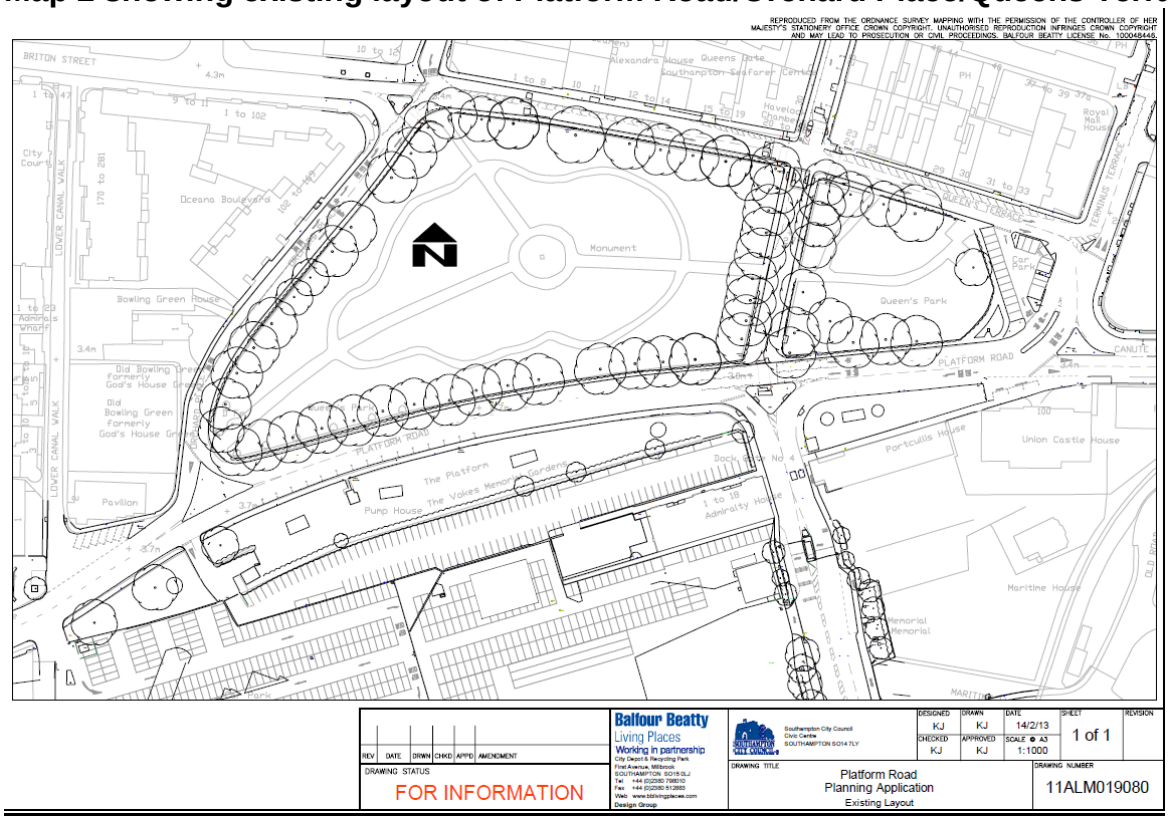
Mott MacDonald undertook an air quality impact assessment in 2013 on the Platform Road Improvement Scheme for nitrogen dioxide annual mean for Southampton City Council transport department.

A summary of the modelling results is shown in Table 3 below.

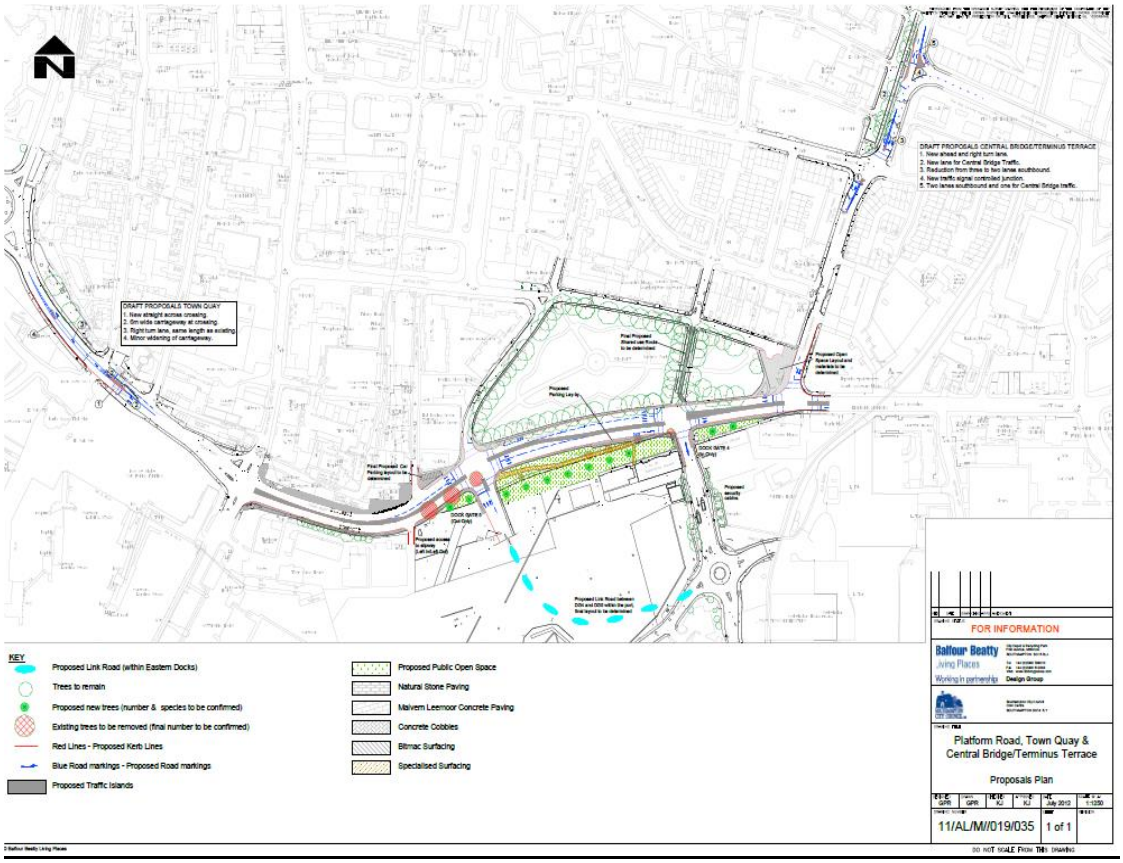
Table 3

Location	**Predicted NO_2 change ug/m3**	**Magnitude Descriptor**	**Significance**
Union Castle House	+2.1	Medium	Moderate Adverse
Admiralty House	+1.7	Small	Slight Adverse
31 Queens Terrace	-3.4	Medium	Slight Beneficial
Oceana Boulevard	-1.9	Small	Slight Beneficial

Map 2 showing existing layout of Platform Road/Orchard Place/Queens Terrace



Map 3 shows new road layout completed in 2014



Conclusion

The dramatic reduction in traffic flow on Orchard Place, Queens Terrace in 2014 resulting from the “Platform for Prosperity” Road scheme should reduce nitrogen dioxide annual to below the standard in 2014.

The NOx tubes at these locations will be maintained and the monitoring data reviewed in the 2014 Progress Report.

Appendix E Detailed Assessment

Map 1 Millbrook Cottage in the Docks

The 2012 USA identified there was possible exposure within the docks at 2 residential houses, close to the sewage works. These 2 cottages used to be owned and occupied by southern water sewerage workers. However the tied cottages were sold by Southern Water some years ago to new owners.

A dust nuisance complaint relating to a nearby waste metal recycling facility from the 2 residential properties in the docks drew Environmental Health's attention to this location. We were unaware of residential receptors within the docks until the complaint was received.

The fugitive dust nuisance issue was resolved speedily with the waste metal recycling facility operator in 2012 and no more complaints have been received. The operation of this facility is regulated by the Environment Agency, who enforce strict permit conditions on the operator to minimise fugitive dust spreading beyond the site boundary. The 2 cottages are just south of the main railway line, and 30m from the main east-west internal docks access road, used by HGVs, to travel around the docks to the various berths.

A NOx tube was located on the front façade of 1 Millbrook Cottage in 2013 for 5 months, from February to June. Unfortunately the porch column was removed, where the tube and strap were located by the owner, as part of a refurbishment of the property. 1 month data loss occurred in May due to a laboratory error by gradko.

However the 4 month monitoring at this location gave a 4 month mean of only 27.0 ug/m3, (bias adjusted for 0.95 national factor). well below the NAQS standard.
The house is 30metres from the main internal docks road, and at least 200m from the main Redbridge/Millbrook Western Approach Road which is an AQMA.

The figure of 27 ug/m3 was not unexpectedly low, bearing in mind the location is some distance from a major road. However a factor of 1.104 was applied to this figure as set out below to give a figure of 29.4 ug/m3, to adjust the short term monitoring to the annual mean.
This is still well below the nitrogen dioxide annual mean standard.

Table 1 Estimation of annual mean concentration from short – term monitoring February 2013 – June 2103

Automatic station	Annual Mean 2013 (Am)	Period Mean (Pm)	Ratio (Am/Pm)
AURN Southampton (2 miles from site)	31.2	29.4	1.061
Redbridge Southampton (1 mile from site)	44.8	39.0	1.148
		Average Ratio	**1.104**

27.0 * 1.104 = 29.4 ug/m3 equivalent 2013 annual mean.

Conclusion

An AQMA is not required at this location.