



Carrickfergus Borough Council

**Local Air Quality
Management
Progress Report**

September 2008



1. Introduction

The local air quality management (LAQM) system was introduced by the Environment (Northern Ireland) Order 2002 and subsequent Regulations. Under this legislation District councils are required to review the present quality of air and the likely future quality of air and assess whether the nationally prescribed objectives are likely to be achieved.

This Progress Report is a requirement of Government guidance issued in 2003 (LAQM.PGNI(03)) which set out the timescales for submission of the various reports on air quality. This report has been prepared in accordance with EHS guidance LAQM.PRGNI(04).

2. Synopsis of Carrickfergus Borough Council Air Quality Review and Assessment Process to Date

Air quality monitoring of NO₂ and SO₂ using diffusion tubes has been ongoing Carrickfergus Borough since March 1997. Real time monitoring of SO₂ and PM₁₀ commenced in July 2002 at the Councils Rosebrook Grove site and continues to date.

The First Stage Air Quality Review and Assessment completed February 2001 concluded that the pollutants indicated in the following table namely, NO₂ from roads and industrial sources, SO₂ from industrial and domestic sources and PM₁₀ from industrial and domestic sources, should be examined during the second stage review.

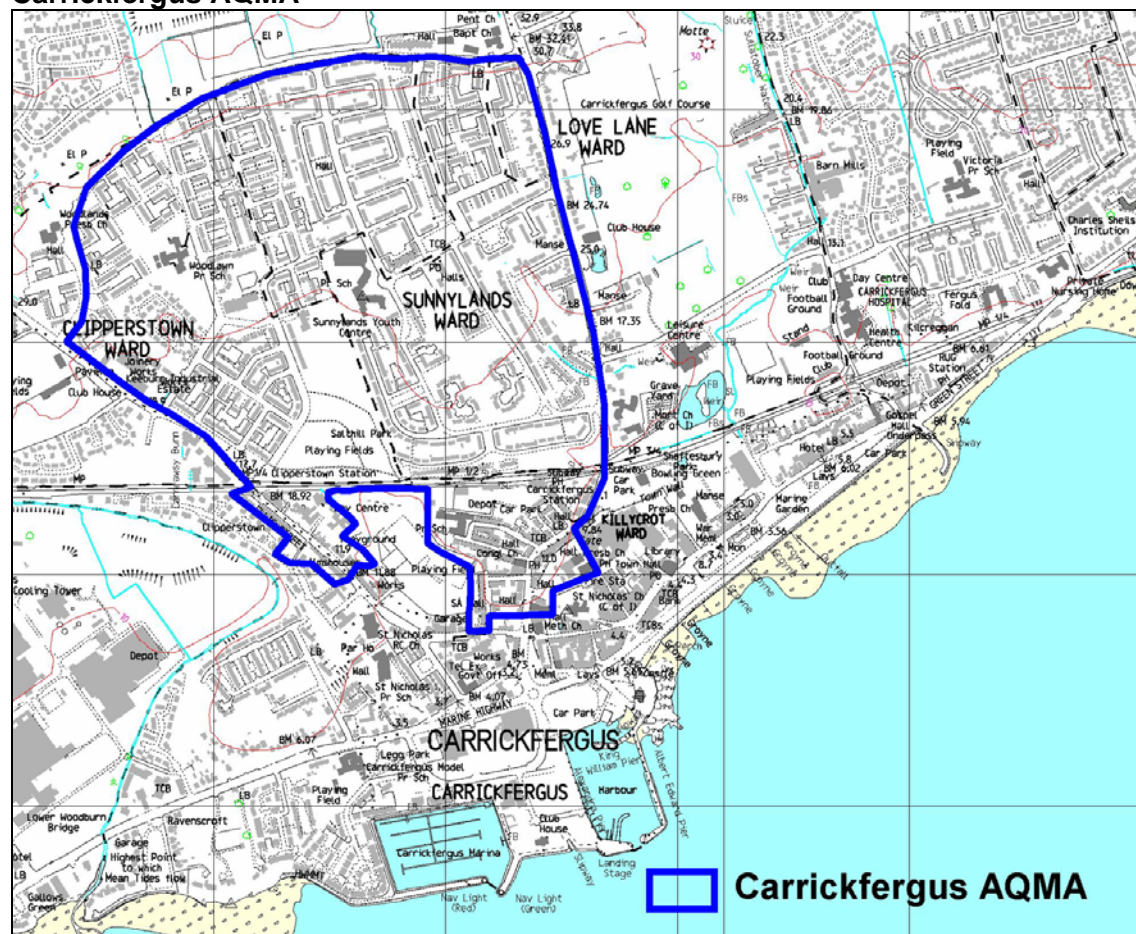
Pollutant	Exceedance Road Sources	Exceedance Industrial Sources	Exceedance Domestic Sources	Progress to Second Stage Review	Progress to Third Stage Review	Progress to Fourth Stage Review	Exceedances Predicted at Update Screening Assessment
Carbon Monoxide	None	None	None	No	No	No	None
Benzene	None	None	None	No	No	No	None
1,3 Butadiene	None	None	None	No	No	No	None
Lead	None	None	None	No	No	No	None
Nitrogen Dioxide	Yes	Yes	None	Yes	No	No	None
Sulphur Dioxide	None	Yes	Yes	Yes	Yes	No	None
PM10	Yes	None	Yes	Yes	Yes	Yes	None



The Second Stage Assessment completed in February 2002 excluded SO₂ and PM₁₀ from industrial sources and NO₂ from industrial and road sources.

Third Stage Review and Assessment concentrated on the assessment of the remaining pollutants namely PM₁₀ from domestic sources and road sources and SO₂ from domestic sources. Modelling of these pollutants excluded PM₁₀ from road sources and SO₂ from domestic sources, but predicted exceedances for PM₁₀ from domestic sources in both Carrickfergus town and Greenisland and resulted in the declaration of two Air Quality Management Areas.

Carrickfergus AQMA



Fourth Stage Review and Assessment was commenced at the end of 2004 with an updating of fuel use survey information within the AQMAs and was completed by the autumn of 2005.

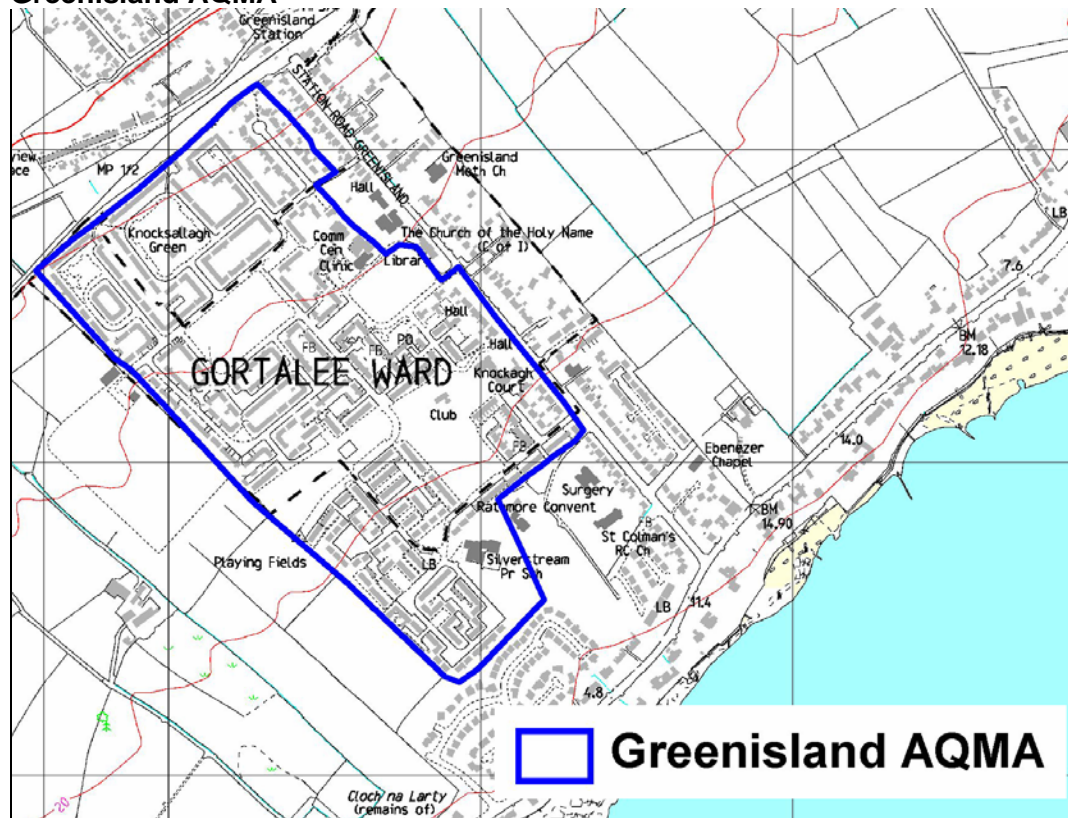
The conclusions Air Quality Review and Assessment Stage 4 - Detailed Modelling for Domestic Fuel Combustion indicated that PM₁₀ and SO₂ emissions arising from domestic fuel combustion in Carrickfergus Borough Council are not predicted to cause an exceedance of the PM₁₀ objectives at relevant receptors within the assessed areas. This has been confirmed by the monitoring data collected. Netcen who carried out the fourth stage modelling recommended,



“Carrickfergus Borough Council may wish to consider revocation of the AQMA on the basis of these results”

As a consequence of the Netcen recommendation and its subsequent appraisal and acceptance by U.W.E, Carrickfergus Borough Council revoked the two Air Quality Management Areas for PM₁₀ from domestic sources, in Carrickfergus town and Greenisland on the 6th February 2007.

Greenisland AQMA



The Review and Assessment of Air Quality, Updating and Screening Assessment completed in October 2006 concluded that,

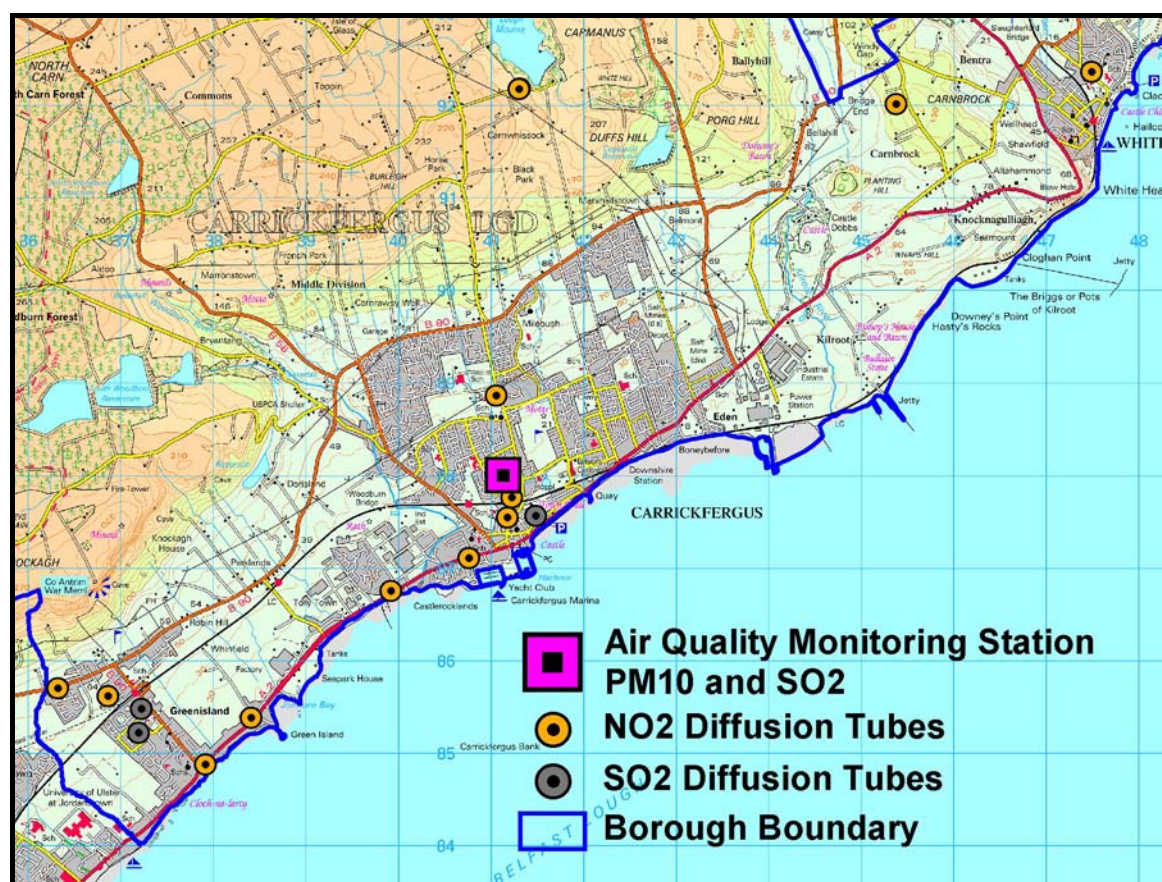
“Of the seven key pollutants updated, screened and assessed, the likelihood of the air quality objectives for carbon monoxide, benzene, 1,3 – butadiene, lead, sulphur dioxide, nitrogen dioxide, and fine particles (PM₁₀) being exceeded is negligible. There is therefore no requirement to proceed to a detailed assessment for any of these pollutants in the Carrickfergus Borough Council area”.



3. Air Quality Monitoring Locations

Council currently maintains 13 NO₂ diffusion tubes, five SO₂ diffusion tubes and a real time Air Quality Monitoring Station at Rosebrook Grove in Carrickfergus Town. This station monitors PM₁₀, SO₂ and meteorological data. The diffusion tubes are located throughout the Borough in a variety of roadside urban, urban background and rural locations, see map below.

Location of Air Quality Monitoring Points





4. Summary Tables of PM₁₀ and Sulphur Dioxide Concentrations

CARRICKFERGUS ROSEBROOK AVENUE 01 January to 31 December 2007

These data have been fully ratified by AEA

POLLUTANT	SO ₂	PM ₁₀
Number Very High	0	0
Number High	0	0
Number Moderate	0	0
Number Low	22601	7907
Maximum 15-minute mean	128 µg m ⁻³	267 µg m ⁻³
Maximum hourly mean	82 µg m ⁻³	117 µg m ⁻³
Maximum running 8-hour mean	32 µg m ⁻³	71 µg m ⁻³
Maximum running 24-hour mean	15 µg m ⁻³	64 µg m ⁻³
Maximum daily mean	15 µg m ⁻³	61 µg m ⁻³
Average	4 µg m ⁻³	18 µg m ⁻³
Data capture	65.9 %	90.5 %

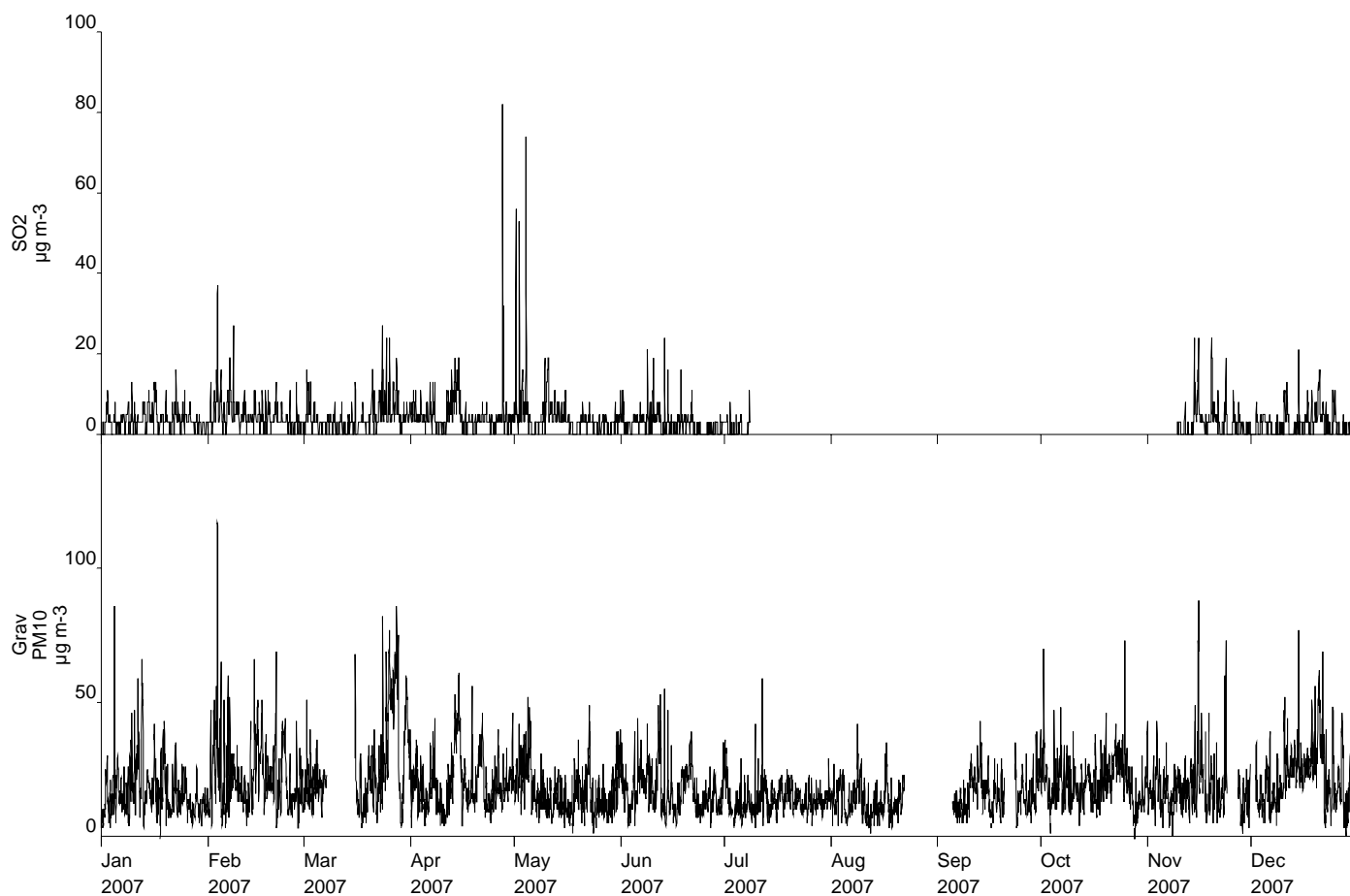
PM₁₀ as measured by a TEOM and corrected to Indicative Gravimetric Equivalent using a factor of 1.3
All mass units are at 20°C and 1013mb

Pollutant	Air Quality Regulations (Northern Ireland) 2003	Exceedences	Days
Sulphur Dioxide	15-minute mean > 266 µg m ⁻³	0	0
Sulphur Dioxide	Hourly mean > 350 µg m ⁻³	0	0
Sulphur Dioxide	Daily mean > 125 µg m ⁻³	0	0
PM ₁₀ Particulate Matter (Gravimetric)	Daily mean > 50 µg m ⁻³	2	2
PM ₁₀ Particulate Matter (Gravimetric)	Annual mean > 40 µg m ⁻³	0	-

Produced by AEA Energy & Environment on behalf of Carrickfergus Borough Council



Carrickfergus Rosebrook Avenue Air Monitoring Hourly Mean Data for 01 January to 31 December 2007





Produced by AEA Energy & Environment on behalf of Carrickfergus Borough Council

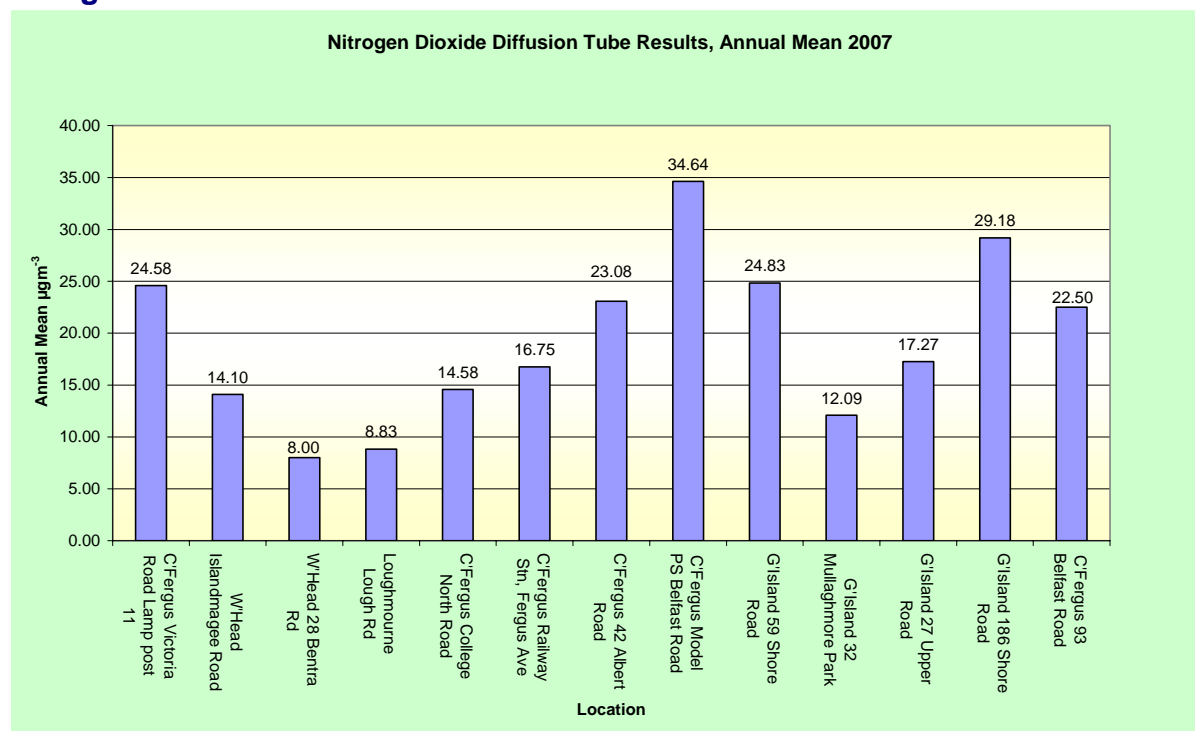
5. Nitrogen Dioxide Diffusion Tubes

Location	2007	CBC Site Nos	Site Type
C'Fergus Victoria Road Lamp post 11		13	Kerbside
W'Head Islandmagee Road		5	Kerbside
W'Head 28 Bentra Rd		11	Rural
Loughmourne Lough Rd		7	Rural
C'Fergus College North Road		2	Urban Background
C'Fergus Railway Stn, Fergus Ave		3	Intermediate
C'Fergus 42 Albert Road		8	Kerbside
C'Fergus Model PS Belfast Road		6	Kerbside
G'Island 59 Shore Road		10	Kerbside
G'Island 32 Mullaghmore Park		1	Urban Background
G'Island 27 Upper Road		9	Kerbside
G'Island 186 Shore Road		12	Kerbside
C'Fergus 93 Belfast Road		4	Kerbside

The graph below illustrated the results from a selection of the NO₂ monitoring points between 1997 and 2007. The highest readings are obtained from sites along the A2 Shore Road which carries approximately 30000 vehicles per day. The next highest results are from a location on the B90 Upper Road which carries approximately 15000 vehicles per day. None of the NO₂ monitoring site exceeds the annual objective of 21ppb.



Nitrogen Dioxide Diffusion Tube Results

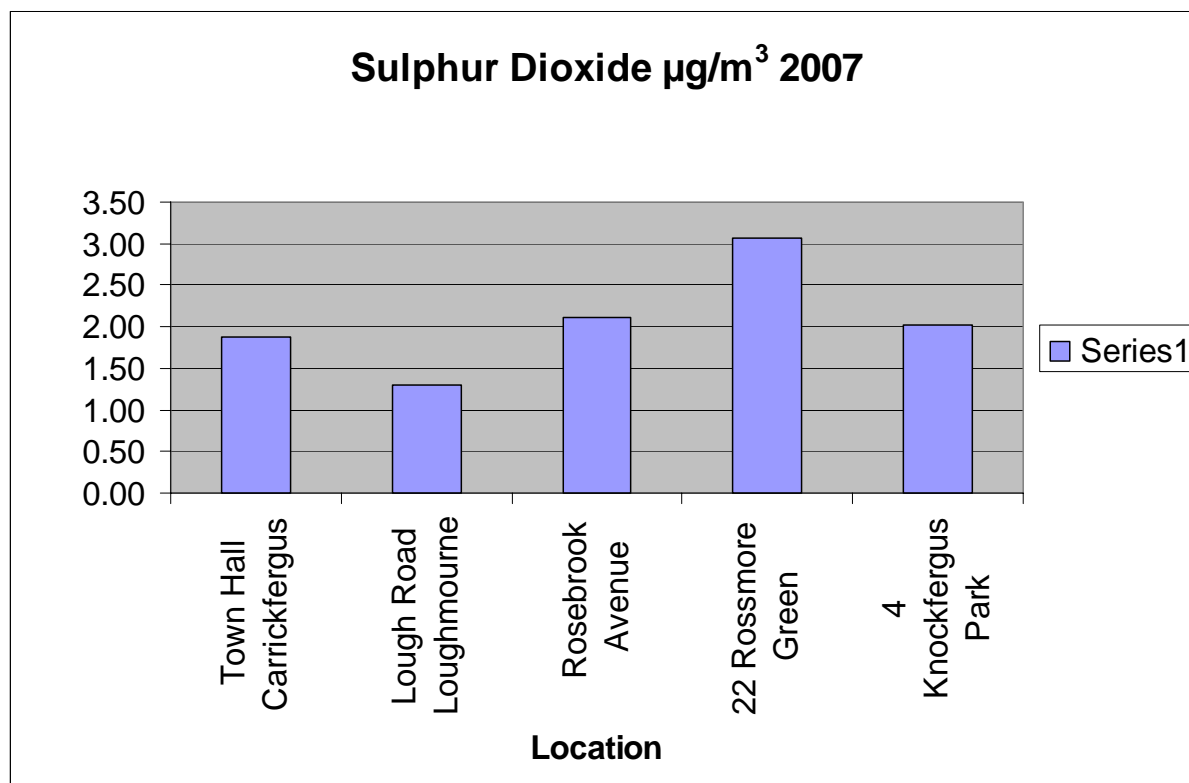


The analysis was carried out by Eurofins labs and the bias adjustment factor is 0.99

6. Sulphur Dioxide Diffusion Tubes

Carrickfergus Borough Council has maintained a number of sulphur dioxide diffusion tube sites in the Borough since 1997, listed below. The results from these sites are displayed in the graph below.

Location	Site
Town Hall Carrickfergus	Urban
Lough Road Loughmoure	Rural
Rosebrook Avenue Carrickfergus	Urban Co-located with real time SO ₂ Analyser
22 Rossmore Green Greenisland	Urban
4 Knockfergus Park Greenisland	Urban



Roads Applications

No major new roads have been constructed in the Borough in the last five years. The Belfast Metropolitan Transport Plan does include proposals to widen the two lane carriageway of the A2 Shore Road at Greenisland to a four lane highway by 2012. The Public Inquiry into the scheme is scheduled to commence in October 2007. When this widening scheme is completed, subject to the result of the Public Inquiry, it should remove the congestion experienced at this bottleneck and improve traffic flow.

New Landfill Sites

No new landfill sites have been approved in the Borough in the last five years.



9. Next Steps

a) Monitoring

Council will maintain its real time PM₁₀ and Sulphur Dioxide Monitors together with its Nitrogen Dioxide diffusion tube network.

b) Further Assessment of Minorca Place road Junction

Council will, when OSNI maps and Roads Service traffic data becomes available, assess the impact of any traffic increase on the recently created road junction at Minorca Place, Carrickfergus.

c) Air Quality Strategy

Council will seek to produce an Air Quality Strategy over the forthcoming year.

Alan Barkley
Director Environmental Services
Email abarkley.envhealth@carrickfergus.org

15th October 2008