



Carrickfergus Borough Council

**Local Air Quality
Management
Progress Report**

September 2007



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.

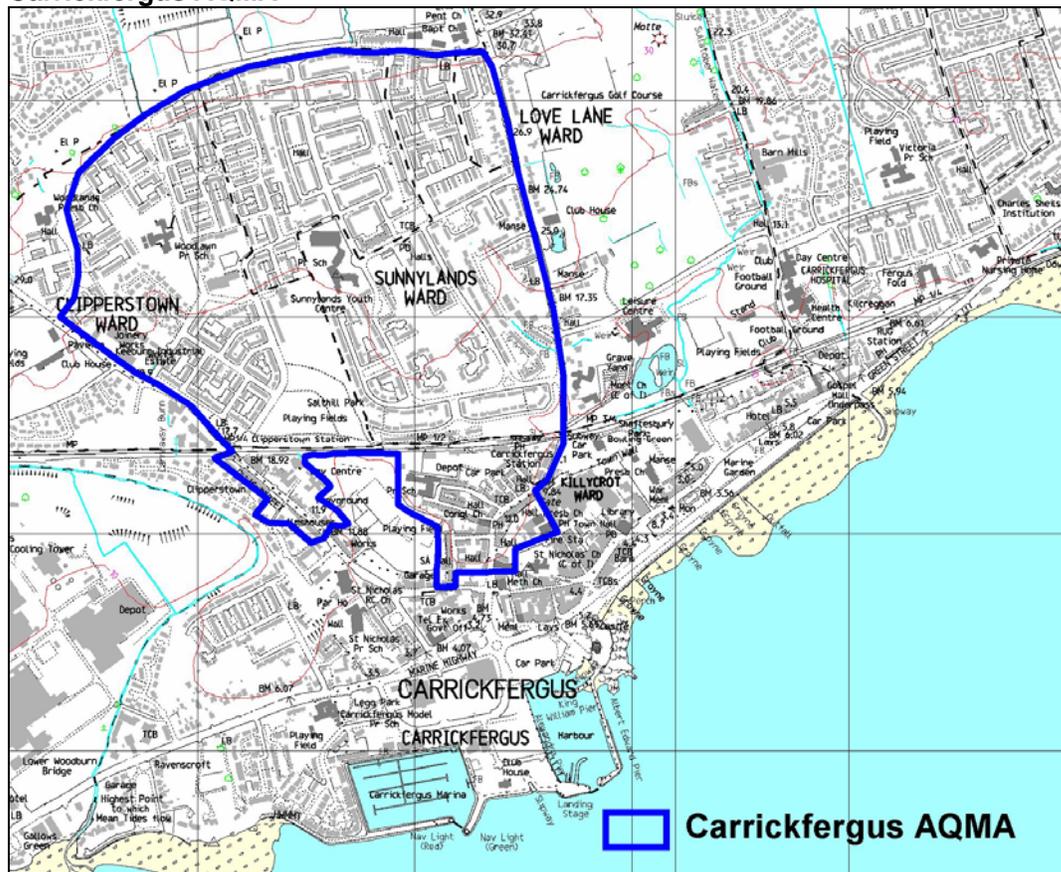
Pollutant	Exceedance Road Sources	Exceedance Industrial Sources	Exceedance Domestic Sources	Progress to Second Stage Review	Progress to Third Stage Review	Progress to Fourth Stage Review	Exceedances Predicted at Update Screening Assessment
Carbon Monoxide	None	None	None	No	No	No	None
Benzene	None	None	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.

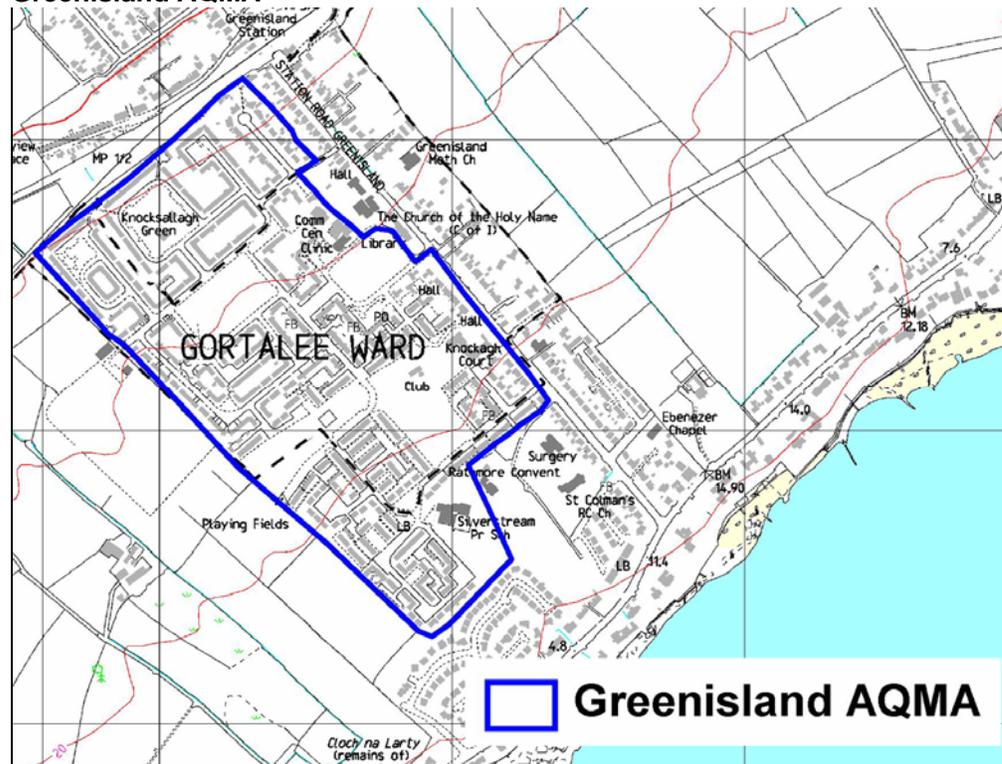
The conclusions Air Quality Review and Assessment Stage 4 - Detailed Modelling for Domestic Fuel Combustion indicated that PM₁₀ and SO₂ emissions arising from domestic fuel combustion in Carrickfergus Borough Council are not predicted to cause an exceedance of the PM₁₀ objectives at relevant receptors 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,

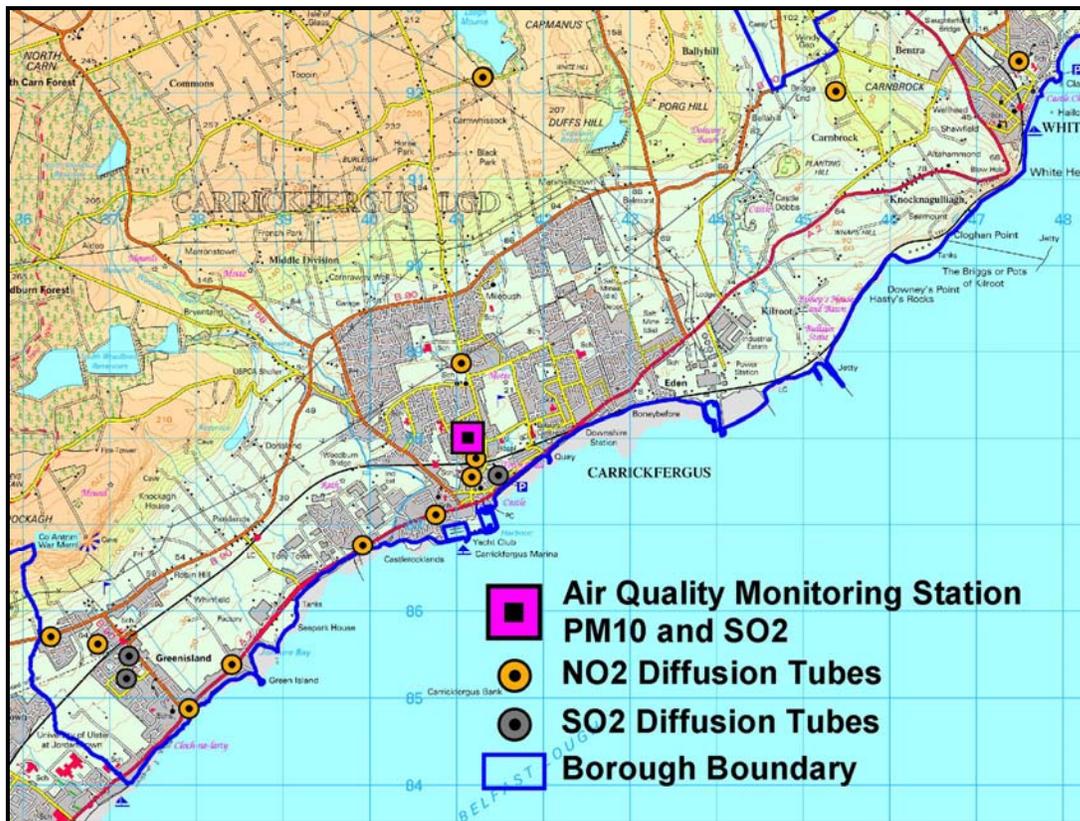
“Of the seven key pollutants updated, screened and assessed, the likelihood of the air quality objectives for carbon monoxide, benzene, 1,3 – butadiene, lead, sulphur dioxide, nitrogen dioxide, and fine particles (PM₁₀) being exceeded is negligible. There is therefore no requirement to proceed to a detailed 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 30 June 2006

These data are provisional from 01/04/2006 and may be subject to further quality control

POLLUTANT	SO ₂	PM ₁₀ *
Number Very High	0	-
Number High	0	-
Number Moderate	0	-
Number Low	15626	-
Maximum 15-minute mean	114 µg m ⁻³	278 µg m ⁻³
Maximum hourly mean	77 µg m ⁻³	148 µg m ⁻³
Maximum running 8-hour mean	45 µg m ⁻³	98 µg m ⁻³
Maximum running 24-hour mean	25 µg m ⁻³	63 µg m ⁻³
Maximum daily mean	21 µg m ⁻³	62 µg m ⁻³
Average	5 µg m ⁻³	22 µg m ⁻³
Data capture	91.9 %	98.7 %

* PM₁₀ in gravimetric units, instrument is a TEOM. Gravimetric correction 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	4	4
PM ₁₀ Particulate Matter (Gravimetric)	Annual mean > 40 µg m ⁻³	-	-



CARRICKFERGUS ROSEBROOK AVENUE 01 July 2006 to 30 June 2007

These data are provisional from 01/04/2007 and may be subject to further quality control

POLLUTANT	SO ₂	PM ₁₀	GR ₁₀
Number Very High	0	0	-
Number High	0	0	-
Number Moderate	0	0	-
Number Low	34083	8454	-
Maximum 15-minute mean	176 µg m ⁻³	390 µg m ⁻³	507 µg m ⁻³
Maximum hourly mean	82 µg m ⁻³	120 µg m ⁻³	156 µg m ⁻³
Maximum running 8-hour mean	34 µg m ⁻³	62 µg m ⁻³	80 µg m ⁻³
Maximum running 24-hour mean	18 µg m ⁻³	49 µg m ⁻³	64 µg m ⁻³
Maximum daily mean	18 µg m ⁻³	47 µg m ⁻³	61 µg m ⁻³
Average	4 µg m ⁻³	15 µg m ⁻³	19 µg m ⁻³
Data capture	99.4 %	96.4 %	96.4 %

PM₁₀ is measured with a TEOM instrument.

GR₁₀ is the PM₁₀ data converted to 'Indicative Gravimetric Equivalent' units using a conversion factor of 1.3

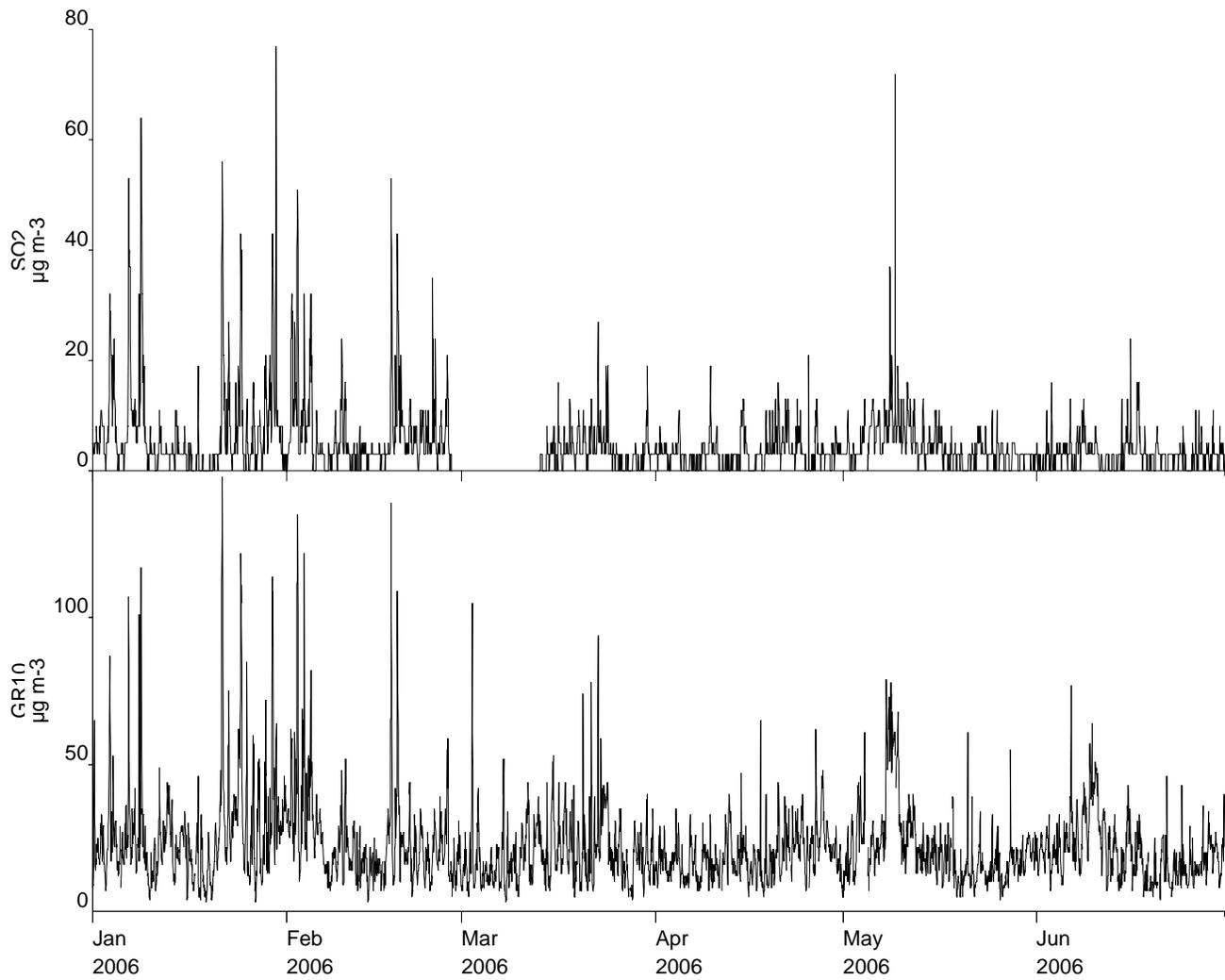
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Produced by AEA Energy & Environment on behalf of Carrickfergus Borough Council

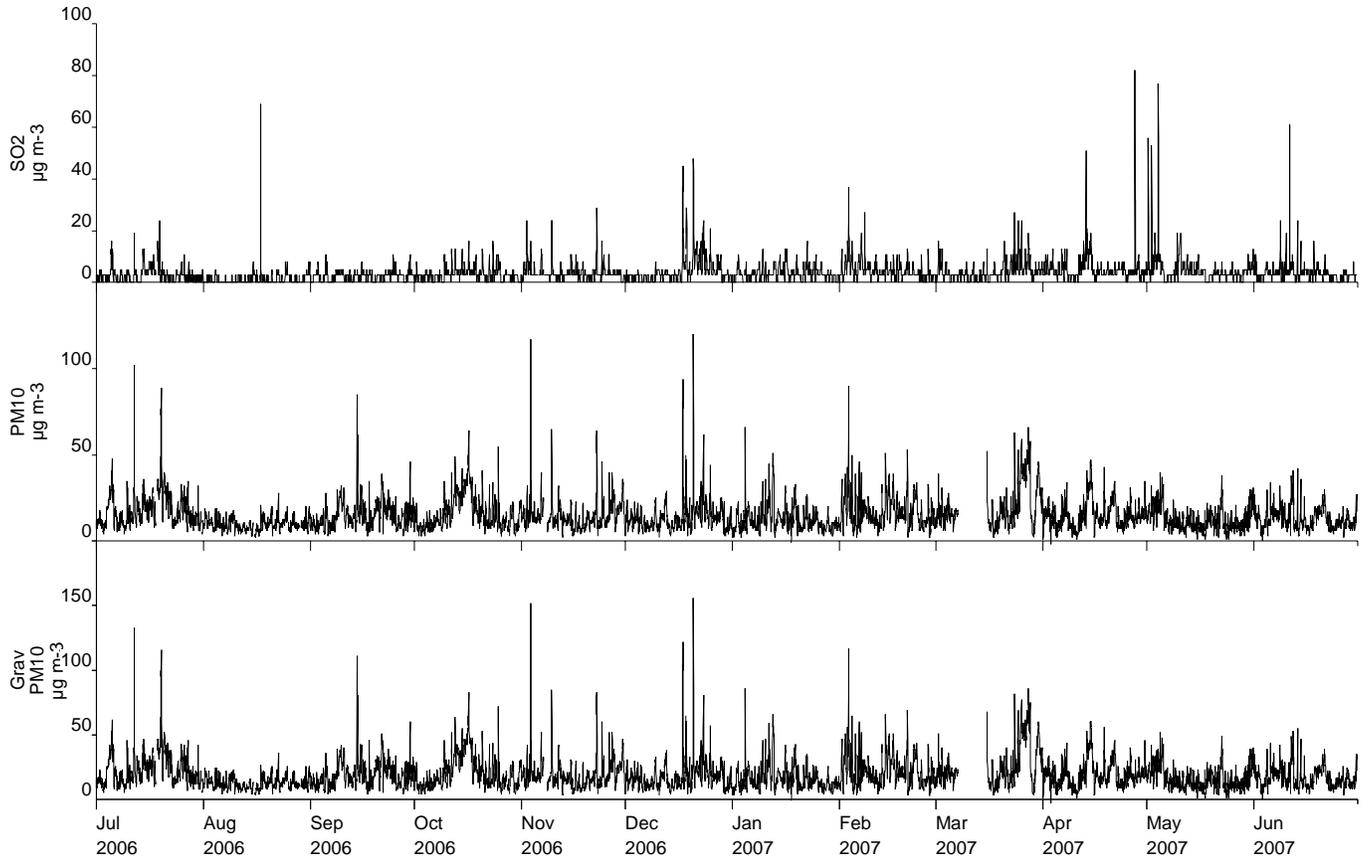


Carrickfergus Rosebrook Avenue Air Monitoring Hourly Mean Data for 01 January to 30 June 2006





Carrickfergus Rosebrook Avenue Air Monitoring Hourly Mean Data for 01 July 2006 to 30 June 2007



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

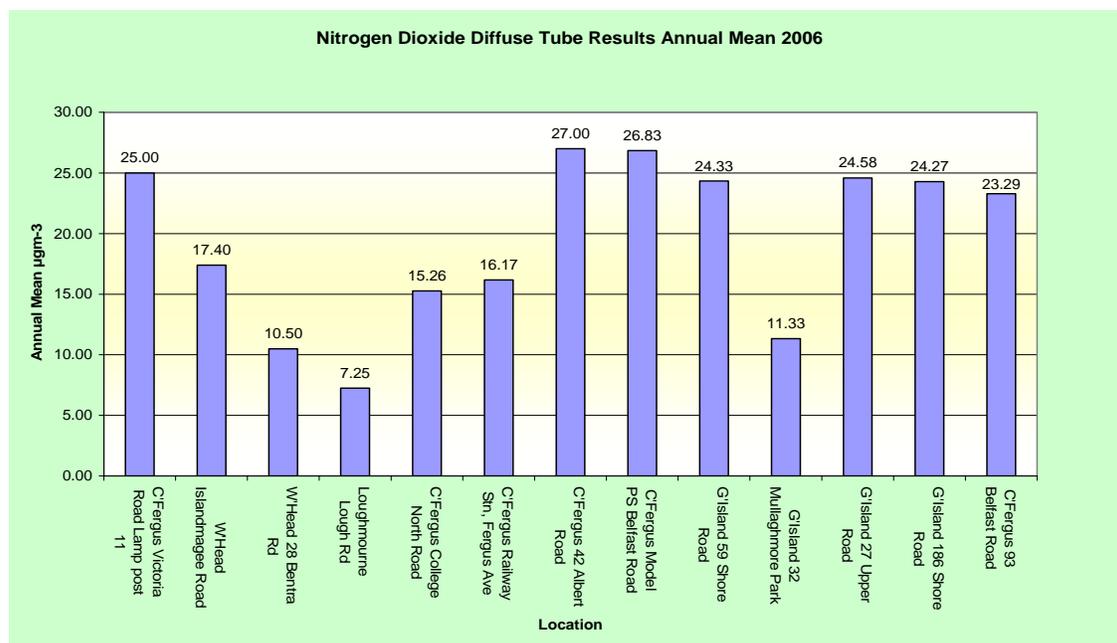


5. Nitrogen Dioxide Diffusion Tubes

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

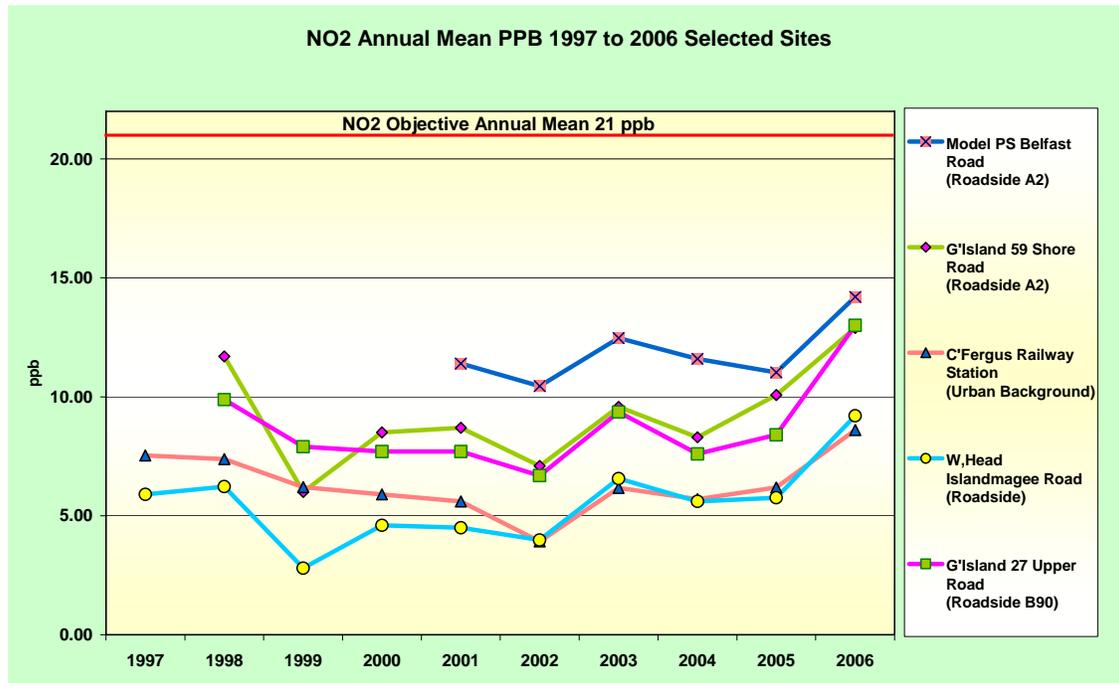
The graph below illustrated the results from a selection of the NO₂ monitoring points between 1997 and 2006. The highest readings are obtained from sites along the A2 Shore Road which carries approximately 30000 vehicles per day. The next highest results are from a location on the B90 Upper Road which carries approximately 15000 vehicles per day. None of the NO₂ monitoring site exceeds the annual objective of 21ppb.

Nitrogen Dioxide Diffusion Tube Results





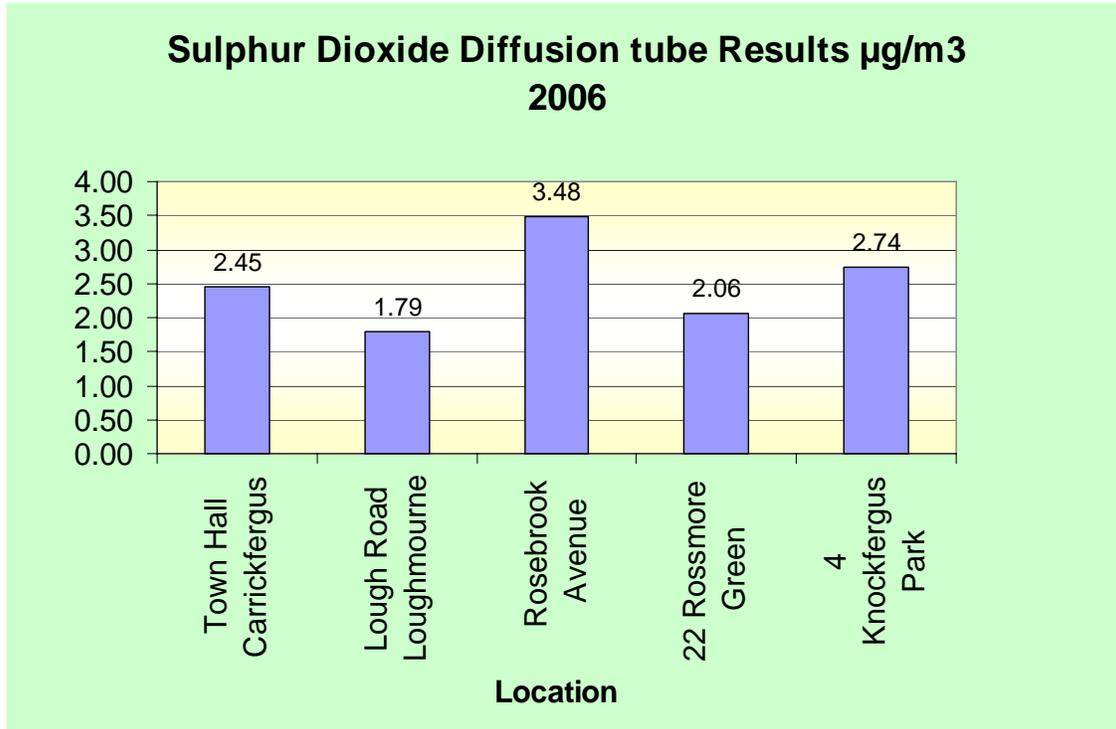
The analysis was carried out by Eurofins labs and the bias adjustment factor is 0.99



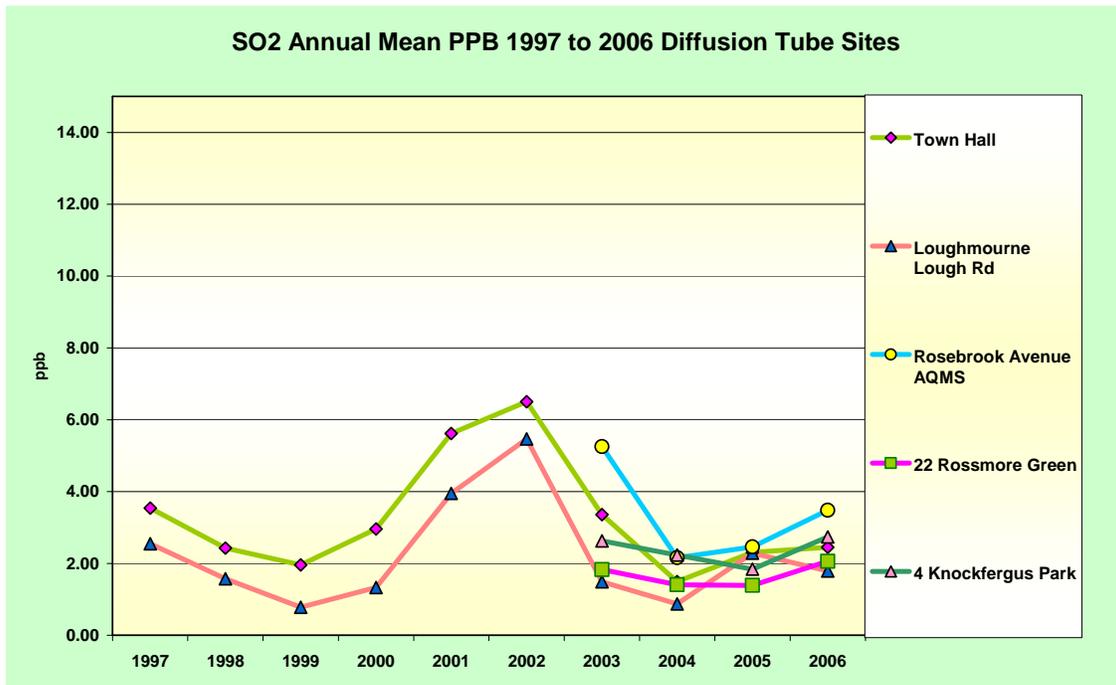
6. Sulphur Dioxide Diffusion Tubes

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 Loughmourne	Rural
Rosebrook Avenue Carrickfergus	Urban Co-located with real time SO2 Analyser
22 Rossmore Green Greenisland	Urban
4 Knockfergus Park Greenisland	Urban



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





8. Planning Applications that may have the Potential to Impact on Air Quality

Residential Applications

ADDRESS	TOWN	APP_NOS	PROPOSAL	TOTAL NOS
19 Downshire Road	Carrickfergus	V/2005/0005/O	32 Apts and townhouses	32
90-97 Larne Road	Carrickfergus	V/2005/0030/F	Housing Development	33
7 North Road	Carrickfergus	V/2005/0054/O	Housing Development	18
108 Larne Road	Carrickfergus	V/2005/0071/F	Housing Development	27
45 Shore Road	Greenisland	V/2005/0121/F	3 Apts Blocks	30
Redfort Drive	Carrickfergus	V/2005/0126/O	Housing Development	276
Land 41 Farm Lodge Dr	Greenisland	V/2005/0132/F	Housing Development	16
1 Larne Road	Carrickfergus	V/2005/0256/O	18 Apartments	18
75 Belfast Road	Carrickfergus	V/2005/0289/F	176 Apartments	176
Land Nth of Brackenridge	Carrickfergus	V/2005/0307/F	Semis and Detached	154
32-38 Scotch Quarter	Carrickfergus	V/2005/0326/F	22 Apt & 6 Bus units	22
S of Farm Lodge Park	Greenisland	V/2005/0342/F	24 Dwellings	24
3 Old Shore Road	Trooperslane	V/2006/0009/F	15 Apartments	15
62 Larne Road	Carrickfergus	V/2006/0018/O	3 apartment blocks	20
1 Upper Road	Greenisland	V/2006/0075/F	detach and semis	19
102 Prince Andrew Way	Carrickfergus	V/2006/0063/O	Townhouses and Apts	18
Donegal Rise	Carrickfergus	V/2006/0125/F	Housing Development	15
4 Upper Station Road	Greenisland	V/2006/0168/F	31 New Dwellings	31
Lands w of Shorelands	Greenisland	V/2006/0189/F	Housing development	69
44-50 Ellis Street	Carrickfergus	V/2006/0279/F	Demolition & 16 apts	16
Plot 8c Marina	Carrickfergus	V/2006/0270/F	Office and Apts	25
Lands S of Priory Drive	Carrickfergus	V/2006/0293/F	130 Dwellings	130
8-14 Glassillan Grove	Greenisland	V/2006/0295/F	Apt block r	24
6 Island Park	Greenisland	V/2006/0319/O	Demol + 18 apts	18
Lands At Bashfordlands	Carrickfergus	V/2006/0310/F	Housing development	48
252 Larne road	Carrickfergus	V/2007/0035/F	Demol + apts	40
7-9 North Road	Carrickfergus	V/2007/0062/F	23 Apartments	23
103-103A Shore Rd	Greenisland	V/2007/0094/F	Apartment blocks	43
Lands 6 Tudor Link	Carrickfergus	V/2007/0116/F	47 Residential units	47
7-39 Ellis street	Carrickfergus	V/2007/0075/F	18 apts in two blocks	18
Land Farm Lodge Park	Greenisland	V/2007/0118/F	18 two Bed Apts	18
Site 34 Trailcock road	Carrickfergus	V/2007/0087/F	25 detached dwellings	25
Site 19 Trailcock road	Carrickfergus	V/2007/0150/F	Dwelling and garage	25
Land Trailcock Lane	Carrickfergus	V/2007/0260/F	30 Apts in 3 Blocks	30

The table above lists applications for housing of greater than 15 units received since 2005. As the almost new housing in Carrickfergus and Greenisland uses either natural gas or oil as their main heating source, they are not expected to add significantly to PM10 or SO2 emissions.



Industrial/Commercial Applications

ADDRESS	TOWN	APP_NOS	PROPOSAL
Carrick Sewage Works Boneybefore	Carrickfergus	V/2005/0012	Upgrade sewage Works
75 Belfast Road	Carrickfergus	V/2005/0141/RM	Retail Warehouse and Trade
Sloefield Drive	Carrickfergus	V/2005/0337/F	Warehouse and Office
5 Sloefield Drive	Carrickfergus	V/2006/0143/F	Industrial workshop
Sloefield park	Carrickfergus	V/2006/0153/F	Production & Storage Extension
75A Belfast Road	Carrickfergus	V/2006/0232	Warehouse Unit
97 Sloefield Drive	Carrickfergus	V/2007/0049/F	Factory Extension

None of the above industrial/commercial proposals are expected to add significantly to atmospheric emissions.

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.

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21 September 2007