



Dungannon and South Tyrone Borough Council

Air Quality Action Plan



APRIL 2010

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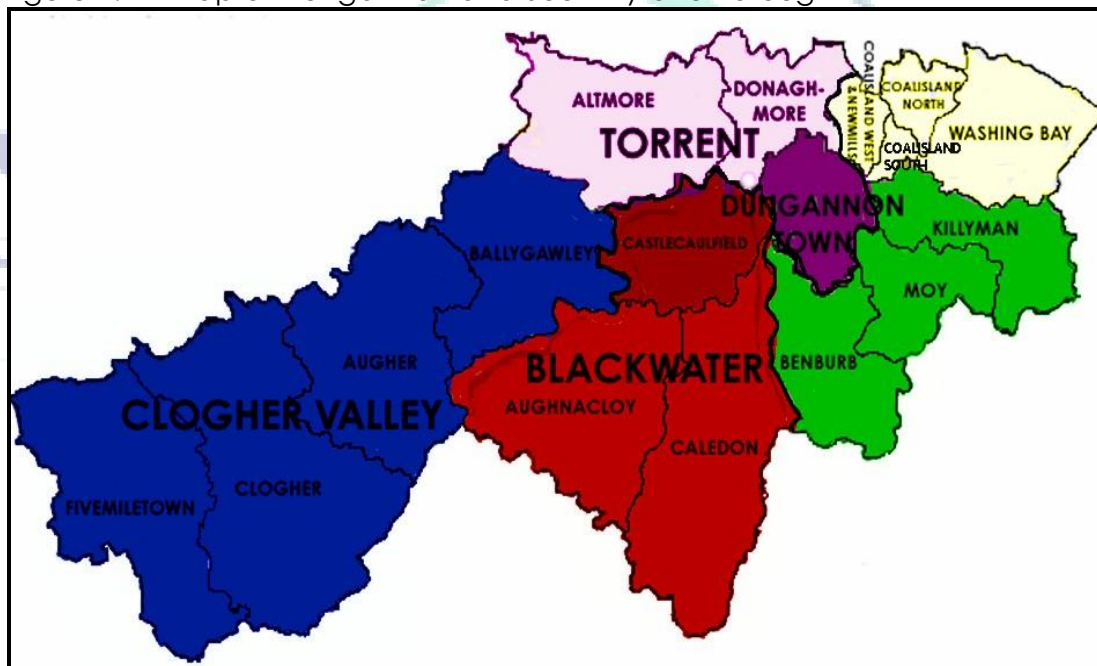
1 Introduction and aims of the Action Plan

1.1 Profile of the Council

The Borough of Dungannon and South Tyrone covers an area of approximately 315 square km, from the shores of Lough Neagh to the Fermanagh border and along the boundary with Co. Monaghan. It has a resident population of approximately 54,300, as at the Mid 2007 NISRA population estimates. The Council is ranked 5th out of the 26 local authorities in Northern Ireland in terms of the size of the area that it covers.

With an estimated population of 10,983 (2001 Census), Dungannon is the principal administrative and commercial centre for the Borough. It is also the main industrial base, especially in manufacturing and food processing. Coalisland is the second largest town in Dungannon and South Tyrone Borough with an estimated population of 4,872 (2001 Census). It is an industrial and local service centre in close proximity to Dungannon, located approximately 6 kilometres to the northeast.

Figure 1.1 – Map of Dungannon and South Tyrone Borough



The greatest contribution to local air pollution is from road traffic emissions. Given the size of the rural hinterland surrounding the town of Dungannon, the reliance on the motor car is greatly increased.

The Regional Development Strategy 2001 – 2025 designates Dungannon as a 'Main Hub Town' situated on two major transport corridors. The Key Transport Corridor (or the South Western Corridor)

connecting Belfast with Enniskillen via Dungannon on the M1; and the Coleraine to Newry Link Corridor. As a result Dungannon has a traffic flow higher than that which would be expected by local traffic alone.

Particulate Matter (PM¹⁰) and Nitrogen Oxide as NO₂ are considered the pollutants most at risk of breaching the objective limits in Dungannon as a result of road traffic emissions.

1.2 Legislative Background

The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, first published in 1997, establishes a strong framework for tackling air pollution. It was established on the basis of strong scientific evidence and a science-based understanding of the effects of air pollutants on health and the environment.

The Strategy sets objectives (Table 1.1) for a series of pollutants to be met within the UK. The scientific basis, the objectives set and provisions contained within the Strategy are closely associated with the corresponding standards set within European Air Quality Directives, as described above. However, provisions and corresponding objectives for some pollutants differ from those in the Air Quality Directives; these differences relate to scientific evidence and expert opinion that is specific to the UK situation.

A major revision of the Strategy was published in July 2007. This provides a detailed update of the effectiveness of current provisions and objectives, as well as proposing a series of new regulatory measures and objectives to be adopted. The key outcomes from the Strategy revision are that all current objectives for pollutants will be maintained. Additional objectives for PM_{2.5} to protect human health, and for ozone to protect ecosystems, have been adopted. Both of these new objectives are in line with corresponding standards in European Air Quality Directives. In addition, a series of policy measures have been considered for adoption following detailed cost-benefit analysis. The full revised Air Quality Strategy and associated technical annexes can be accessed at <http://www.defra.gov.uk/environment/airquality/strategy/index.htm>

The Air Quality Strategy highlights a number of government policies that aim to tackle air pollution throughout the UK. These policies focus broadly on the UK as a whole, but also function in parallel with local and regional air quality management policies introduced by devolved administrations and councils.

The UK Air Quality Website outlines a number of the policy initiatives introduced by the government to address air quality emissions (http://www.airquality.co.uk/what_are_we_doing.php) ;

- Cleaner Vehicles:
 - Promoting smarter driving to reduce fuel consumption
 - Encouraging the use of alternative modes of transport
 - Purchasing of more fuel efficient vehicles
 - Use of cleaner alternative fuels
 - Highlighting alternatives to flying when travelling abroad
- Industrial Pollution Prevention and Control (IPPC):
 - Reducing emissions to Air, Water and Land
- Air Pollution Prevention and Control:
 - Regulation of over 16,000 industrial premises to minimise air Emissions
- Clean Air Act:
 - To control domestic and industrial smoke emissions

The Department of the Environment in Northern Ireland has also now published its own Air Quality Standards Regulations (Northern Ireland) 2007, which came into operation on 28th May 2007. Other relevant legislation includes the Sulphur Content of Liquid Fuels Regulations (Northern Ireland) 2007, which came into force on the 31st May 2007. This legislation limits the permissible sulphur content liquid fuel oils such as those used for domestic heating, and thereby helps to reduce emissions of sulphur dioxide.

Local Air Quality Management (LAQM) provides the framework within which air quality is managed by district councils in Northern Ireland. LAQM requires District Councils to review and assess a range of air pollutants against the objectives set out within the Air Quality Strategy, using a range of monitoring, modelling, observations and corresponding analyses. For locations where objectives are not expected to be met by the relevant target date, District Councils are required to:

- Declare an Air Quality Management Area (AQMA), and
- Develop an Action Plan to address the problem.

In March 2006 Dungannon and South Tyrone Borough Council launched its Local Air Quality Strategy 2006 - 2010. The strategy was prepared in collaboration with the four other councils within the Southern Group region. The strategy brings local air quality management to the fore front of council operations and helps to

anticipate the appropriate responses required to tackle air quality issues arising out of breaches of the AQS monitoring regime.

Table 1.1 Local Air Quality Objectives

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	3.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
	0.25 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2005
Particles (PM₁₀) (gravimetric)	50 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
Sulphur dioxide	350 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.3 Scope of the Action Plan

Where district councils have designated AQMAs, they have a duty to produce an Action Plan. This plan must set out the measures the Council intends to introduce with the aim of reducing pollution below the AQS objectives. The principal aim of the Air Quality Action Plan is to minimise the effects of air pollution on human health within the local authority area using all reasonable measures, within reasonable time frames and by working towards achieving the AQS objectives. In order to meet the AQS objectives it may be necessary to include measures beyond the boundaries of the air quality management areas. Some of the measures will also benefit areas not included within AQMAs thereby improving the health of the population in those areas.

Dungannon and South Tyrone Borough Council has responsibility under Article 13(2) of the Environment (Northern Ireland) Order 2002 to prepare and submit an Action Plan to the Department of the Environment for Northern Ireland. The responsibility for preparing the Action Plan rests with the district council. However, there is a requirement on other relevant authorities to identify proposals in pursuit of the AQS objectives within their respective responsibilities and functions.

This Action Plan has been developed in partnership with other relevant bodies, including the DRD Roads Service (NI), DOE Planning Service, Translink, DRD Travelwise NI and neighbouring councils.

Borough Council

2 Overview of Air Quality in Dungannon

2.1 Local Air Quality Management – Review and Assessment

Table 2.1 below outlines the programme of review and assessment of air quality within Dungannon and South Tyrone Borough since 2001. The table also shows that in January 2004, June 2005 and September 2007 the Council has been required to provide additional information in support of its review and assessments. This information was required as pollutants such as nitrogen dioxide (NO₂) and PM₁₀ could not be ruled out as posing a risk of breaching the AQS objectives. The supplementary information has always focused on road traffic emissions and their impact on congested streets within Dungannon Town.

These reports hinted at the development of a significant air quality impact at Church Street in Dungannon and although the additional information often negated the requirement for an AQMA to be declared, the 2007 further assessment demonstrated that the objective limits had eventually been breached and thus an AQMA was declared in February 2008.

Table 2.1 – History of Review and Assessment of Air Quality within Dungannon

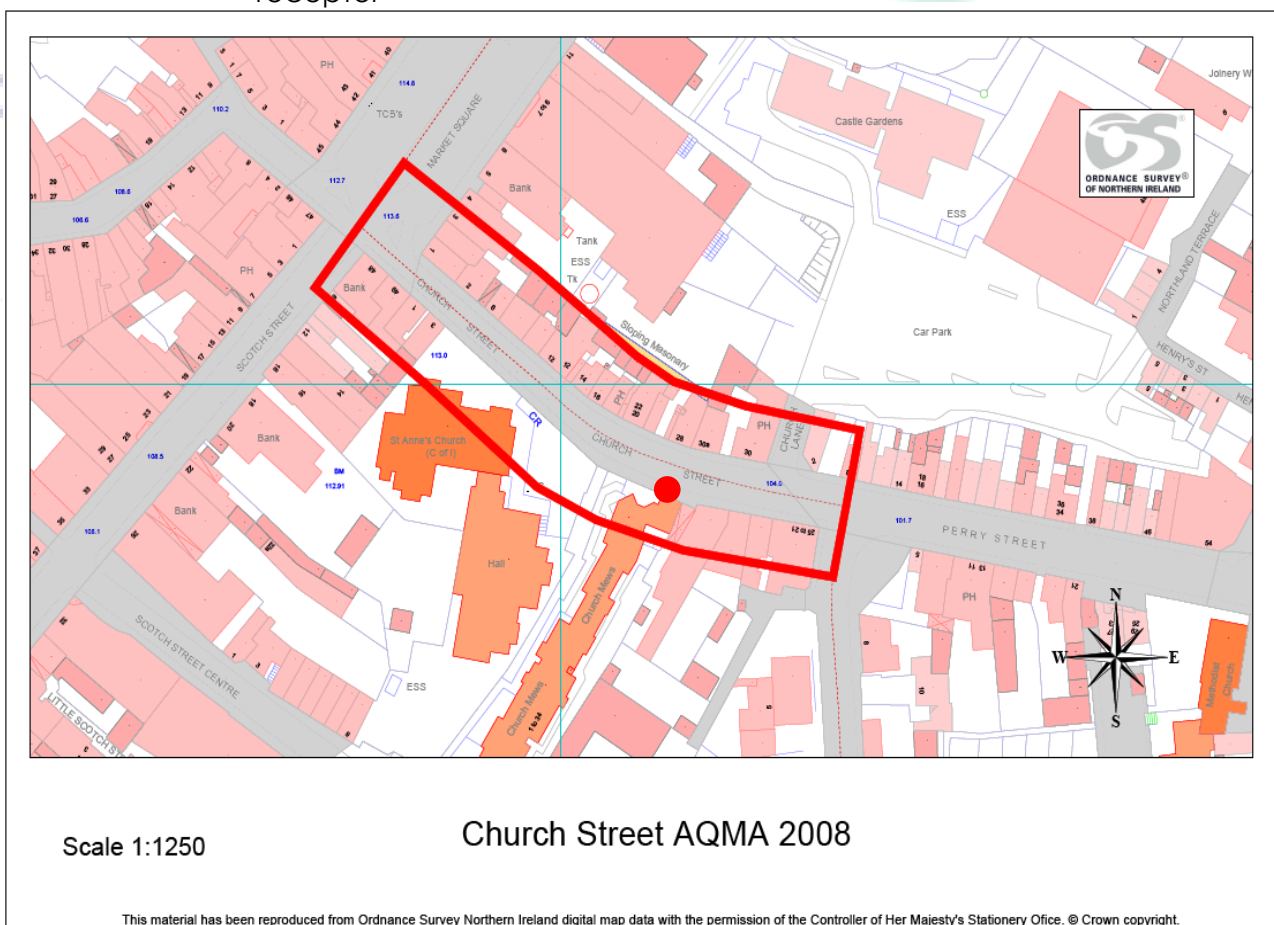
Report Type	Date	Exceedences	Detailed Assessment Required	AQMAs Declared
Initial Review and Assessment	Jan 2001	None	Yes	None
Reappraisal of Traffic Pollution Modelling	Jan 2004	None	No	None
Report of the Second and Third Stage R&A of Local Air Quality	Aug 2004	None	No	None
Progress Report	June 2005	None	Yes	None
Review and Assessment: Supplementary Report on NO ₂ concentrations in Church Street Dungannon	June 2005	None	No	None
Updating and Screening Assessment	June 2006	Yes	Yes	None
Further Assessment of NO ₂ levels in Church Street	September 2007	Yes	No	Yes
Progress Report	June 2008	Yes	No	Already declared
Updating and Screening Assessment	April 2009	Yes	No	Already declared

2.2 Church Street Air Quality Management Area

The AQMA declared at Church Street encompasses an area incorporating all of Church Street from Perry Street up to Market Square (see Figure 2.1). Church Street is a main arterial route for road traffic moving from the town centre to the main residential areas to the south of the town and as a thoroughfare for traffic avoiding Circular Road at peak periods. This is at its maximum during the school run and commuting. It has been identified that Church Street is also used as an alternative route for traffic travelling through Dungannon to Cookstown and Donaghmore areas.

The main causes for nitrogen dioxide exceeding the objective limit is the level of traffic on Church Street, its steep incline and narrow lay-out. It would not be cost effective or practical to change the topography and physical structure of the street and so alterations to traffic flow, vehicle type and emissions may need to be employed. In order for any change to be effective, as well as Church Street itself, the associated feeder roads and surrounding area will need to be considered in these alterations.

Figure 2.1 – Church Street Air Quality Management Area including sensitive receptor



2.3 Monitoring data

Dungannon and South Tyrone Borough Council operate eleven nitrogen dioxide monitoring sites throughout its area. Four of these sites are situated at strategic locations on Church Street and at each of these sites three separate diffusion tubes are grouped together (see Figure 2.2).

The diffusion tubes are supplied and analysed by Gradko Environmental Ltd under contract by Dungannon and South Tyrone Borough Council. Section 3.17 of the technical guidance document LAQM.TG (09) states that "...where tubes do have to be relied upon, the results should cover a full year, they should have a good precision and be appropriately bias adjusted". This means that all diffusion tube data must be appropriately 'bias-corrected' before use and that a bias adjustment factor be calculated from the co-location of diffusion tubes with a calibrated chemiluminescent monitor where available.

The 'Review and Assessment Helpdesk' (part funded by the DoE) provides yearly bias adjustment factors based on a number of co-located sites for each laboratory, as part of a national diffusion tube survey. Bias adjusted diffusion tube results from the monitoring site located in the AQMA and for the latest year available (2008) and the two previous years (2006 & 2007) are provided in Table 2.2. The bias adjustment factor for Gradko Environmental was 0.90 for 2008. The annual mean NO₂ concentration at Church Street (Church Mews site) for 2008 was not below the AQS objective value of 40µg/m³.

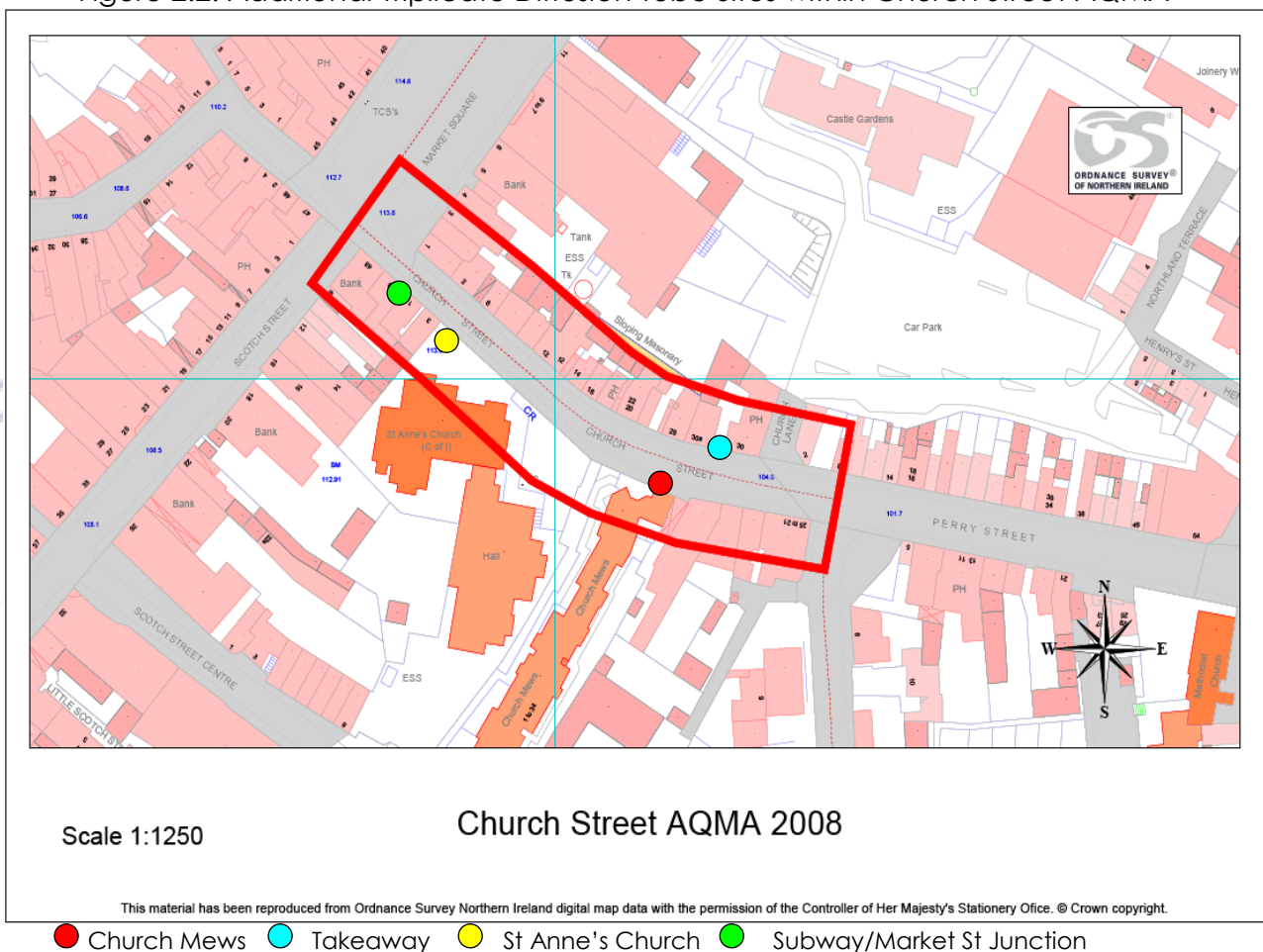
Table 2.2 – NO₂ diffusion tube results in Dungannon 2006 – 2008

Site ID	Location	Within AQMA?	Annual mean concentrations (µg/m ³) Adjusted for bias		
			2006 *	2007 *	2008*
Site 1	Market Street	N	22	23	24
Site 2	Howard Primary School	N	20	18	22
Site 3	Ardgannon	N	13	11	14
Site 4	11 Bushvale	N	13	9	12
Site 5	Church Street**	N	40	42	40

- *Bias Corrected
- **At Sensitive Receptor (Church Mews)

Following the declaration of the AQMA on Church Street, Dungannon and South Tyrone Borough Council selected three further sites within the AQMA to carry out additional NO₂ diffusion tube monitoring. These diffusion tubes were included in the monitoring programme at the beginning of January 2009. The positioning of the additional tubes gives the Council a greater understanding of the road traffic emission levels along a linear section of Church Street, taking into account the changing gradient of the road and the busy junction with Market Square & Scotch Street, to the North West. One of the additional monitoring sites (Takeaway) is located directly opposite the sensitive receptor at Church Mews. This site is on the downward gradient (southeasterly direction) of Church Street and is significant for demonstrating the variance of emission levels with vehicular speed.

Figure 2.2: Additional Triplicate Diffusion Tube Sites within Church Street AQMA



2.4 Source Apportionment

The Defra guidance LAQM TG(09) (section 7.09) states that source apportionment allows district councils "to identify the extent to which different sources contribute to the air quality exceedences that have been identified in the air quality monitoring results". Source

apportionment helps the Council “to correctly target the most important sources and to focus the principle measures within the Action Plan”.

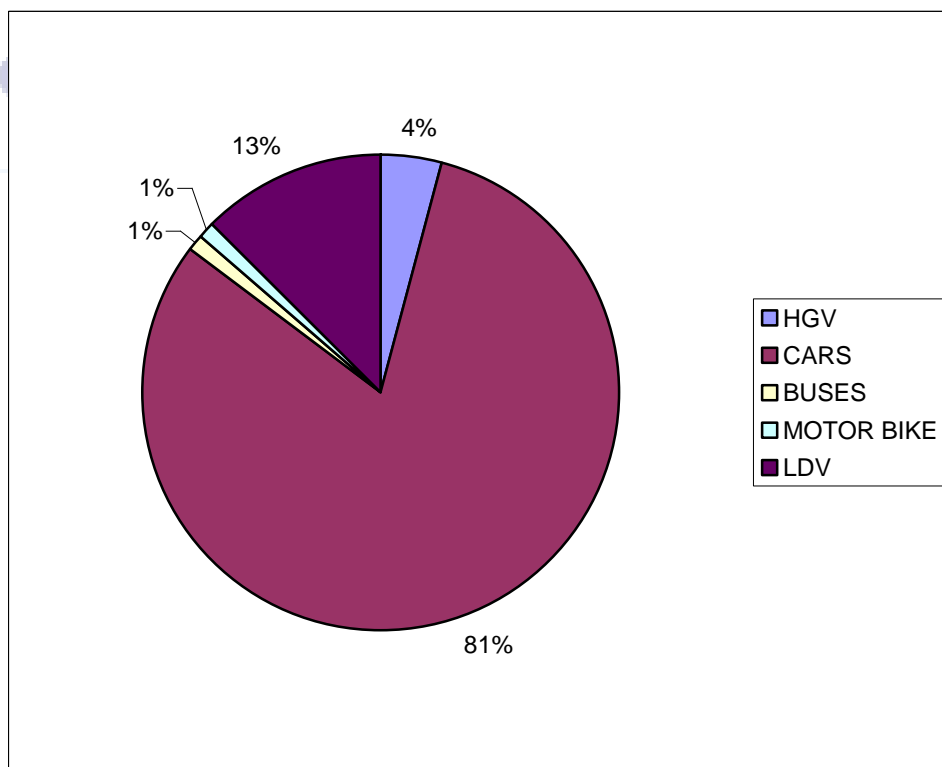
The source apportionment work carried out in 2009 by Dungannon and South Tyrone Borough Council as part of the preliminary study for the action plan considered the following vehicle categories:

The assessment considered the percentage of the total traffic flow (for year 2009, completed by consultants White Young Green on behalf of the Council as part of the Public Realm Scheme planning procedure), and provided the relative contribution to the total NO₂ concentrations observed in the AQMA for each vehicle category.

- Cars;
- Buses and coaches;
- Light Delivery Vehicles (LDVs);
- Heavy Goods Vehicles (HGVs)
- Motor Bikes.

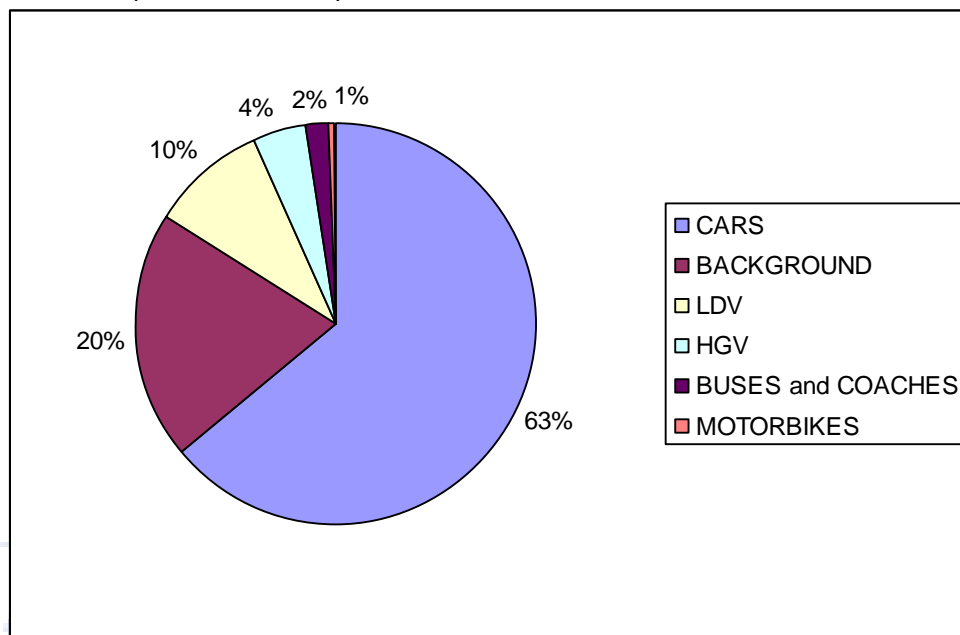
Figure 2.3 below shows a break down of vehicular types using Church Street. Cars and light delivery vehicles (LDVs) account for 94% of the total numbers of vehicles passing through the AQMA on Church Street. Buses and HGVs account for 5% of the total number of vehicles.

Figure 2.3: Percentage vehicle type using Church Street.



The results indicate that traffic emissions contribute up to 80% of the total NO₂ concentration, the rest (20%) representing the 'background' contribution from various sources in and around Church Street. Both cars and LGVs represented up to 73% of the total NO₂ emissions, although if buses and coaches were added to HGVs (i.e. HGVs; heavy-goods vehicles), together they contributed up to a maximum of 6%. Motor Bikes contributed less than 1%. Figure 2.3 shows the breakdown of the annual mean NO₂ concentration at Church Street (highest value).

Figure 2.4 – Contribution of local sources to annual mean NO₂ concentration in the AQMA (Church Street)



2.5 Required Reductions in NO₂

Dungannon and South Tyrone Borough Council declared an AQMA for Church Street in February 2008 based on monitored NO₂ concentrations in excess of AQS objectives for 2006 (40.42 µg/m³). A key part of the action planning process is to first ascertain the minimum reduction of NO₂ required to meet the AQS objective limit inside the Church Street AQMA.

In this reduction estimation study the NO₂ diffusion tube data for 2007 was used, as this was the most up to date monitoring data available at the time.

In order to ascertain the level of NO₂ contribution from the primary source (road traffic), the level of background NO₂ pollution has to be deducted from the overall annual mean for 2007. A representative background level of 8.5 µg/m³ was taken from the 2007 annual mean diffusion tube result from monitoring site 4, Bushvale in Dungannon.

Bushvale is a good example of a 'Background Site' as it is a quiet residential area where the NO₂ pollution from major roads is significantly diluted to give a representation of the NO₂ levels across a larger area. When considering source contributions it should be noted that the background concentration is not deducted from the annual mean result. The reduction value is calculated from the *total* mean result.

The NO₂ annual mean for 2007 is 42 µg/m³. The annual mean objective limit for NO₂ is 40 µg/m³. **Therefore the required reduction in emissions is 2 µg/m³ or a 5% improvement in air quality at the site.** The actual reduction required would be more than 2 µg/m³ since results for annual means that reach 40 µg/m³ are considered to have breached the AQS limits. However for this study the minimum requirement is to meet the objective limit.

The guidance document published by NSCA '*Air Quality Actions Plans: Interim Guidance for Local Authorities (November 2000)*', claims that because pollutants may undergo significant changes as a result of atmospheric chemistry and the differences in source contribution, it is better to present the required reductions of nitrogen oxide contributions in terms of NO_x as NO₂.

Nitrogen Oxides, NO_x (NO+NO₂) are predominantly emitted into the atmosphere in the form of nitric oxide (NO) which is then converted to nitrogen dioxide (NO₂) through chemical processes in the atmosphere. Under the most atmospheric conditions, the dominant pathway for NO₂ formation is via the reaction of NO with Ozone (O₃). Therefore the reduction values cited below are for NO_x.

Using a conversion factor from the Air Quality website (<http://www.airquality.co.uk/archive/laqm/tools/NOxfromNO2calculator2007.xls>) the 2007 annual mean NO₂ result for Church Street is converted into Total NO_x (inclusive of background concentrations).

Table 2.3: Calculation of required NO_x reduction

42 µg/m³ NO₂ annual mean = 133.5 µg/m³ NO_x annual mean

8.5 µg/m³ NO₂ Background Level = 10.8 µg/m³ NO_x Background Level

40 µg/m³ NO₂ Objective = 124 µg/m³ NO_x target

2 µg/m³ NO₂ reduction = 9.5 µg/m³ NO_x reduction

The figures in Table 2.3 show the source contributions to pollution levels. The figures indicate that only **8% of the total NO_x value is derived from background sources**. Given that there are no industrial sources or exposed domestic sources (such as oil central heating burners etc) it is clear that **road traffic is the primary source of the remaining 92% of NO_x emissions at the sensitive receptor**.

Therefore, the NO_x contribution from road traffic at the Church Street AQMA is calculated in Table 2.4 below;

Table 2.4: NO_x Contribution

$$\frac{\% \text{ Source Contribution} \times \text{Total Predicted NO}_x}{100}$$

$$\frac{92 \times 133.5}{100}$$

Table 2.5: Target NO_x Concentration Level

$$\text{Target NO}_x \text{ Concentration Level} =$$

$$\text{NO}_x \text{ Contribution from Traffic Emissions} - \text{Level of NO}_x \text{ Reduction required}$$

$$122 - 9.5$$

$$= 112.5 \mu\text{g}/\text{m}^3 (\text{NO}_x)$$

Table 2.5 above shows the target level of the objective limit in NO_x.

Table 2.6 below shows the percentage improvement in road traffic emissions required to bring the ambient air quality levels down to the objective limit.

Table 2.6: Percentage Improvement Required

$$\frac{\text{NO}_x \text{ Contribution from Road Traffic} - \text{Target Level}}{\text{NO}_x \text{ Contribution from Road Traffic}}$$

$$\times 100$$

$$\frac{122 - 112.5}{122}$$

$$\times 100 = 8\%$$

$$(= 10\% \text{ round up})$$

The formula in Table 2.6 above demonstrates that an 8% improvement in road traffic emissions is required to bring the levels of NO_x down to the objective limits within the Church Street AQMA. However section 4, page 15 of the NSCA document "Air Quality Action Plans: Interim Guidance for Local Authorities (2000) states that district councils are advised to round up the predicted improvement required to allow for some head space and uncertainties when assessing estimated improvements in emissions.

Therefore, in this case, **the required improvement is 10%.**



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3 Local and regional policies and strategies

There are a number of policies and strategies at regional and local level that are directly related to the aims of this Air Quality Action Plan and will help contribute to improvements in air quality across Dungannon and South Tyrone Borough Council.

3.1 The Dungannon and South Tyrone Borough Council- Local Air Quality Strategy 2006 – 2010

The production of the Local Air Quality Management Strategy commits the Council to a 5 year programme of direct action, involvement of local people, awareness raising and co-ordination of other public bodies to protect, conserve and improve the environment and quality of life within the Council area. Such a commitment can only be met by ensuring that the principles of sustainable development are blended into all aspects of community and business life. In other words, as well as asking the financial costs of development, the Council must also consider the environmental costs. The main aim of the strategy is to promote better local air quality through partnership integration

Priority internal partners include:

- Environmental Health
- Technical services
- Economic Development
- Building Control

Priority external partners include:

- The Southern Group Investing For Health Partnership
- Department of Environment Northern Ireland
- The Environment and Heritage Service.
- DRD Roads Service
- Translink
- The Southern Education and Library Board
- The Southern Health and Social Services Board
- The Housing Executive

3.2 Regional Development Strategy

The Regional Development Strategy (RDS) is a strategy to guide the future development of Northern Ireland to 2025. The RDS will influence the future distribution of activities throughout the Region and recognises that development policies will have a significant impact on the environment and the health of individuals. Chapter 5 (the Spatial

Development Strategy) and Chapter 11 (Developing a Regional Transportation System) are key in relation to this Action Plan.

3.2.1 Spatial Development Strategy for Northern Ireland

The Spatial Development Strategy (SDS) guides the physical development of the Region to 2025. The SDS will contribute to meeting a number of key regional challenges emerging from the significant local, national and international forces, which will drive change over the next 25 years, including:

Transport:

- Promote a change in travel culture and particularly manage the effects of a possible 100% growth in the number of vehicles by 2025;
- Contribute to the creation of a modern, sustainable, safe transportation system for the Region, meeting the travel needs of all groups in society;
- Accommodate the growing volume of freight moving to and from the regional gateways; and
- Strengthen the regional gateways to handle the increasing flow of people and goods in and out of the Region.

Environment:

- Accommodate future development growth while protecting and caring for the environment;
- Reduce the consumption of resources;
- Continue to maintain or, where needed, to improve the quality of air, water and land resources within the Region;
- Seek to maintain local landscape character and to conserve cultural assets; and
- Take particular care to sustain and, where required, to enhance the biodiversity of the Region, its natural habitats, high quality landscapes and built heritage.

3.2.2 Developing a Regional Transportation System

Creating an upgraded and integrated transport system, built around the Regional Strategic Transport Network of the key transport corridors with their main public transport services providing the framework for future development is recognised as one of the key assets to accommodate growth. Strategic planning guidelines relating to the development of a Regional Transport System (RTS) are as follows:

- **SPG-TRAN 1:** To develop a Regional Strategic Transport Network (RSTN), based on Key Transport Corridors (KTCs), to enhance accessibility to regional facilities and services. Two major roads

within the Borough are identified in the RDS as part of the Key Transport Corridors in Northern Ireland: -

- A4 Dungannon - Fivemiletown Road: The South Western Corridor; and
- A5 Aughnacloy - Omagh Road: The Western Corridor.
- In addition, the A29 Cookstown to Moy Road is identified as part of one of three additional Link Corridors in the RTS.

- **SPG-TRAN 2:** To extend travel choice for all sections of the community by enhancing public transport. Including the strengthening of the regional bus network (including the promotion of public transport routes and Park and Ride schemes) and the regional rail system;

- **SPG-TRAN 3:** To integrate land use and transportation to provide a much better range of travel choices for all, and reduce the demand for travel; and

- **SPG-TRAN 4:** To change the regional travel culture and contribute to healthier lifestyles, such as giving greater priority to encouraging more walking and cycling.

3.3 Regional Transportation Strategy

The Regional Transportation Strategy (RTS) for Northern Ireland 2002-2012 identifies strategic transportation investment priorities and considers potential funding sources and affordability of planned initiatives. The RTS focuses on three geographic areas and one overlying Network. These are as follows:

- Belfast Metropolitan Area (BMA), containing the continuous area comprising Belfast City Council and the built-up areas within the Council areas of Carrickfergus, Castlereagh, Lisburn, Newtownabbey and North Down;
-
- Other Urban Areas (OUAs): collectively those towns described as main or local hubs in the RDS (including Dungannon) and other towns outside the BMA with a population greater than 5,000);

- Rural Area – the remainder of Northern Ireland; and

- Regional Strategic Transport Network (RSTN) comprising the complete rail network and all motorway and trunk road links (including the Key Transport Corridors and Link Corridors).

The RTS is a “daughter document” of the Regional Development Strategy (RDS), which sets out the spatial development framework for

Northern Ireland up to 2025. Implementation of the Strategy will be through three Transport Plans covering the Regional Strategic Transport Network (RSTN), the Belfast Metropolitan Area (BMA), and the Sub-Regional Transport Plan (SRTP). Transport studies undertaken to support the RSTN Transport Plan will take due account of current and future cross-border inter-urban transport demands and the roles of the gateway cities and towns, including Dungannon. The RSTN Transport Plan is detailed in Section 3.4. The Sub-Regional Transport Plan is detailed in Section 3.5.

3.4 Regional Strategic Transport Network Transport Plan

The Regional Strategic Transport Network (RSTN) Transport Plan prepared by the Department for Regional Development (DRD) covers the complete rail network, five Key Transport Corridors (KTCs), four Link Corridors, the Belfast Metropolitan Transport Corridors and the remaining trunk network across Northern Ireland. The Plan is based on the guidance set out in the Regional Development Strategy (RDS) and the Regional Transportation Strategy (RTS), as described in Sections 3.2 and 3.3, above.

The RSTN Transport Plan consists of proposals for transport schemes and measures for the maintenance, management and development of the RSTN until 2015. The RSTN Transport Plan also includes a number of measures for rail, bus, roads, walking and cycling.

3.5 Sub-Regional Transport Plan 2015

The Sub-Regional Transport Plan (SRTP) was prepared by the Department for Regional Development (DRD) and completed in 2007. The SRTP is based upon the guidance provided by the Regional Development Strategy (RDS) and the Regional Transportation Strategy (RTS). Proposed public transport measures for Dungannon (within category of Other Urban Areas (OUA)) contained within the SRTP are as follows:

- Improved walk/cycle
- Improved local bus services
- Bus stop Improvement Strategy
- Bus based Park and Ride
- Increased parking at bus/rail station
- Taxi rank
- Transport Programme for People with Disabilities

3.6 Dungannon and South Tyrone Area Plan 2010

The Dungannon and South Tyrone Area Plan 2010 was completed in March 2005 under the provisions of Part III of the Planning (Northern Ireland) Order 1991 by the Planning Service, an Agency within the Department of the Environment. This document is a development plan designed to replace the previous Plans for the Dungannon and South Tyrone Borough Council Area.

The plan outlines two main objectives which target air quality in Dungannon;

"The integration of land use and transportation to reduce congestion and the need for car journeys and encourage a shift to more sustainable modes of transport, including walking and cycling"

"The Consolidation of the network of open space, cycleways and walkways"

The Plan provides strategies to achieve key objectives, along with the development of a transportation strategy for the Town and Borough, which will have a direct impact on air quality in Dungannon. The transportation strategy outlines three specific policies:

- **Plan Policy TRAN 1:** New Roads and Road Improvement Schemes
- **Plan Policy TRAN 2:** Retention of Car Parks in Dungannon and Coalisland Town Centres, and;
- **Plan Policy TRAN 3:** Pedestrian and Cycling Routes

3.7 Dungannon Regeneration Strategy 2016

In April 2001, the Dungannon Regeneration Partnership (DRP) appointed a team of consultants to prepare a regeneration strategy for Dungannon with a focus on the town centre. The Dungannon Regeneration Partnership (DRP) was formed at a public meeting held in June 2000. This meeting was called by Dungannon & South Tyrone Borough Council which recognised that *"something needed to be done"* to redress the decline of Dungannon as a vibrant market town. Attendees at the meeting believed that as a result of the thirty years of troubles and for other reasons, Dungannon was not competing as well as other population centres in the province. At the meeting members were elected to the Dungannon Regeneration Partnership with the express aim of facilitating the regeneration of the town.

The overall objective of the study was to:

“produce a medium and long-term strategy in both sectoral and spatial areas for the Dungannon Regeneration Partnership. The Strategy will also produce a list of issues that the DRP can address in the short-term which are consistent with the overall framework”

The Strategy aims to:

- audit existing proposals, initiatives and opportunities
- establish a vision of what Dungannon could be like in 2016
- identify key challenges which the DRP can address in the short term
- identify the means by which a range of programmes and projects can be implemented in the medium to long term to achieve this vision in regards to social, economic and physical regeneration
- provide a clear context and framework for future action and investment by the public, private and voluntary sectors

The ultimate aim of the commission is to produce a strategy, which would identify the means by which a range of programmes and projects could be implemented in the short, medium and long term. This regeneration strategy for Dungannon needs to provide a clear context and framework for future action and investment by the public, private and community organisations to progress social, economic and physical development.

Chapter 4 of the Strategy highlights issues in respect of parking within Dungannon Town Centre. Whilst the content of the chapter does not focus directly on air quality, it does identify the link between good parking provision, parking location, suitable pedestrian access and the impact this has on traffic congestion. The aim of the strategy is to tackle the issue of adequate parking provision, which in turn should impact on pollution from congested road traffic.

4 Action Plan Proposals for Dungannon and South Tyrone Borough Council

It is essential that all relevant authorities as defined in the Air Quality Regulations (Northern Ireland) 2003 provide the Council with the necessary information on their proposals that will ensure that the required reduction in Nitrogen Dioxide outlined above is achieved. In particular, as the major source of pollution in this AQMA is transport related those relevant authorities with responsibilities for transport have a very important role.

A summary of these proposals is outlined in the following pages, including the impact and timescales for these proposals. In order to inform the action planning process a simple assessment of the cost and benefit of each proposal has been undertaken. The following table gives an indication of the scoring used in the appendix. A simple multiplication of the cost and the beneficial impact gives some indication as to the cost effective score of the proposals.

Table 4.1 - Scoring used to assess and prioritise proposals

Costs		Beneficial Impact on Air Quality		Timescale*	
Score	£			Years	
7	<100k	↓	Highest	Short (S)	1 – 2
6	100 – 500k			↓	↓
5	500k – 1 million			↓	↓
4	1 – 10 million			Medium (M)	3 – 5
3	10 – 50 million			↓	↓
2	50 – 100 million			↓	↓
1	>100 million	1	Lowest	Long (L)	6+

*measures implemented already are denoted as "I", otherwise denoted as ongoing - "O"

4.1 Specific Measures to Be Implemented within the AQMA

To ensure that the AQS objectives will be achieved at the AQMA, the following measures will be/are proposed to be implemented

ACTION	Lead Authority	Impact	Time scale	Status	Impact	Cost	Cost Effective score	Indicator	To be achieved
1. Change the priority of traffic movement at Junction of Church Street and Market Square.	DRD Roads Service (NI)	Less congestion, less hill starts and faster speeds at Church Street AQMA leading to overall reduction in NO2 levels.	S	O	3	7	21	Conduct road traffic surveys on Church St to assess traffic queue length and traffic delay times Long Term reduction of NO2 in annual monitoring results	Annually On-Going
2. Investigate the efficiency of the traffic lights on Circular Road and improve the timings of the lights to aid traffic flow	DRD Roads Service (NI)	Reduction in the overall level of traffic pollution on Church Street. De-incentivise Church Street as short cut through town. Optimises use of traffic lights on Circular Road at peak periods.	S	O	5	7	35	DRD to report back to AQMA Stakeholder Committee on possible efficiency measures	May 2011
3. Introduce traffic control systems at the junction of Church Street and Market Square	DRD Roads Service (NI)	Allows for better efficiency in traffic flow throughout the town centre and could be synchronised with other traffic lights to maximise these benefits	S	O	2	7	14	Long Term reduction of NO2 levels in annual monitoring results Conduct road traffic surveys on Church St to assess traffic queue length and traffic delay times	May 2011 Annually

ACTION	Lead Authority	Impact	Time scale	Status	Impact	Cost	Cost Effective score	Indicator	To be achieved
4 Air Pollution Monitoring.	Dungannon and South Tyrone Borough Council	Identification of long term trends in pollution and focus on areas of poor air quality	M	O	5	7	35	Long Term reduction of NO2 in annual monitoring results	On-Going
5. Remove a number of the parking spaces on the 'downside' direction on Church Street.	DRD Roads Service (NI)	Reduces pressure on vehicles exiting Market Square and on Church Street & Perry Street. Optimises traffic speeds and eradicates congestion on the downside of Church Street.	M	O	2	7	14	Redesign included in drawings submitted to Northern Ireland Planning Service as part of Public realm Scheme in Dungannon Number of Car Parking spaces reduced Long term reduction of NO2 in annual monitoring results	May 2010 May 2011 On-Going
6. Investigate possibility of 'Pay & Display' system on Church Street	Dungannon and South Tyrone Borough Council	Increased efficiency in traffic flow leading away from the town centre. Reduces congestion and encourages use of larger off-street car parks.	S	O	5	7	35	DRD to report back to AQMA stakeholder committee on possible measures	Post May 2011

ACTION	Lead Authority	Impact	Time scale	Status	Impact	Cost	Cost Effective score	Indicator	To be achieved
7. Designate a number of free parking spaces in Market Square for electric/hybrid vehicles only.	Dungannon and South Tyrone Borough Council	Promotes the use of more environmentally friendly vehicles and the follow on reduction in road traffic pollution in the town centre	S	O	1	7	7	Redesign included in drawings submitted to Northern Ireland Planning Service as part of Public realm Scheme in Dungannon Percentage of parking spaces being used on a daily basis Road Works completed at Church Street Long term reduction of NO2 in annual monitoring results	Post May 2010 Post May 2011 May 2011 On-Going
8. To investigate the possibility of creating a Low Emissions Zone within Dungannon Town Centre	Dungannon and South Tyrone Borough Council & DRD Roads Service (NI)	Allow access for vehicles that meet the latest euro emissions standards to designated area within town.	M/L	O	1	7	7	DRD to report back to AQMA stakeholder committee on possible measures	May 2011
9. Introduce a 'Park and Ride' scheme for shoppers and employees on the outskirts of Dungannon	DRD Roads Service (NI) & Translink	Increases options for access to town centre and may reduce traffic congestion in Dungannon overall. Helps to promote the benefits of public transport.	M	O	2	6	12	Percentage of parking spaces being used on a daily basis Long term reduction of NO2 in annual monitoring results	On-Going On-Going

ACTION	Lead Authority	Impact	Time scale	Status	Impact	Cost	Cost Effective score	Indicator	To be achieved
10. Use the Northern Ireland Planning Service to ensure potential air quality issues are assessed with new developments before problems arise.	Dungannon and South Tyrone Borough Council)	Reduces the possibility of further AQMA declarations and limits the degradation of air quality in future years.	L	O	2	7	14	Long term reduction of NO2 in annual monitoring results Number of consultations on planning application by Dungannon and South Tyrone Borough Council	From May 2010 onwards
11. Air quality assessment of vehicle emissions	Dungannon and South Tyrone Borough Council	Reduction in the numbers of highly polluting vehicles on the roads	S	I	2	7	14	Long Term reduction of NO2 in annual monitoring results	On-Going
12. Cleaning up Council Vehicles	Dungannon and South Tyrone Borough Council	Reduction in pollution from Council vehicles	S	I	2	7	14	Long term reduction of NO2 in annual monitoring results	On-Going

ACTION	Lead Authority	Impact	Time scale	Status	Impact	Cost	Cost Effective score	Indicator	To be achieved
13. Investigate the use of alternative fuels where possible.	Dungannon and South Tyrone Borough Council	Reduction in pollution from Council vehicles	S	O	2	7	14	Report to be produced by Council on the viability of using alternative fuels for Council vehicles Long term reduction of NO2 in annual monitoring results	December 2011 On-Going
14. Vehicle upgrading/renewal programme to comply with EURO 5 emission standards	Dungannon and South Tyrone Borough Council	Reduction in pollution / noise from Council vehicles and increased fuel efficiency	S	O	2	7	14	Two new Bin Lorries purchased to replace two older models being removed from service Long term reduction of NO2 in annual monitoring results	December 2010 On-Going
15. Develop better travel planning amongst Council employees	Travelwise NI	Reduction in vehicle pollution from Council staff travelling to and from work.	S	O	2	7	14	Travel plan produced and implemented by Council	May 2011

ACTION	Lead Authority	Impact	Time scale	Status	Impact	Cost	Cost Effective score	Indicator	To be achieved
16. Sustainable Development.	Dungannon and South Tyrone Borough Council	General environmental impact. In form policy makers. Increased awareness of sustainable development issues among a variety of stakeholders	M	O	5	7	35	Long Term reduction of NO2 in annual monitoring results	On-Going
17. Industrial Pollution Control	Dungannon and South Tyrone Borough Council	Reduced ambient pollution in local atmosphere	S	O	3	7	21	Long term reduction of NO2 in annual monitoring results Percentage of IPPC inspections completed by Dungannon and South Tyrone Borough Council	On-Going
18. Nuisance policy for dealing with burning of commercial and domestic waste	Dungannon and South Tyrone Borough Council	Reduced pollution from uncontrolled burning of commercial and domestic waste	S	O	1	7	7	Long Term reduction of NO2 in annual monitoring results	On-Going
19. Air Quality Awareness Promotion Campaign	Dungannon and South Tyrone Borough Council & Translink	Increase public awareness of Air Quality Management Area and general air pollution issues	S	O	2	7	14	Production of visual, verbal and written materials for dissemination to general public highlighting air quality issues through various media	Annually

5 Consultation

It is important for the success of the Action Plan to seek involvement from all local stakeholders including local residents, community groups and local businesses in order to share knowledge about the issues and hopefully gain support for the final measures proposed.

To date a number of meetings have been held with the Strategic Partners and other agencies in developing this action plan. Please see **Appendix 4** for a log of these meetings

The following is a list of statutory and non-statutory consultees to which the draft Plan has been sent:

- The Secretary of State
- Department of the Environment / The Environment and Heritage Service
- Department of Regional Development
- Primary Care Trusts
- Dungannon and South Tyrone Borough Council Councillors and Officers
- Neighbouring local authorities
- Local residents within and bordering the AQMA (Updating letter sent)
 - Relevant local businesses, community groups and forums
 - Other relevant local stakeholders

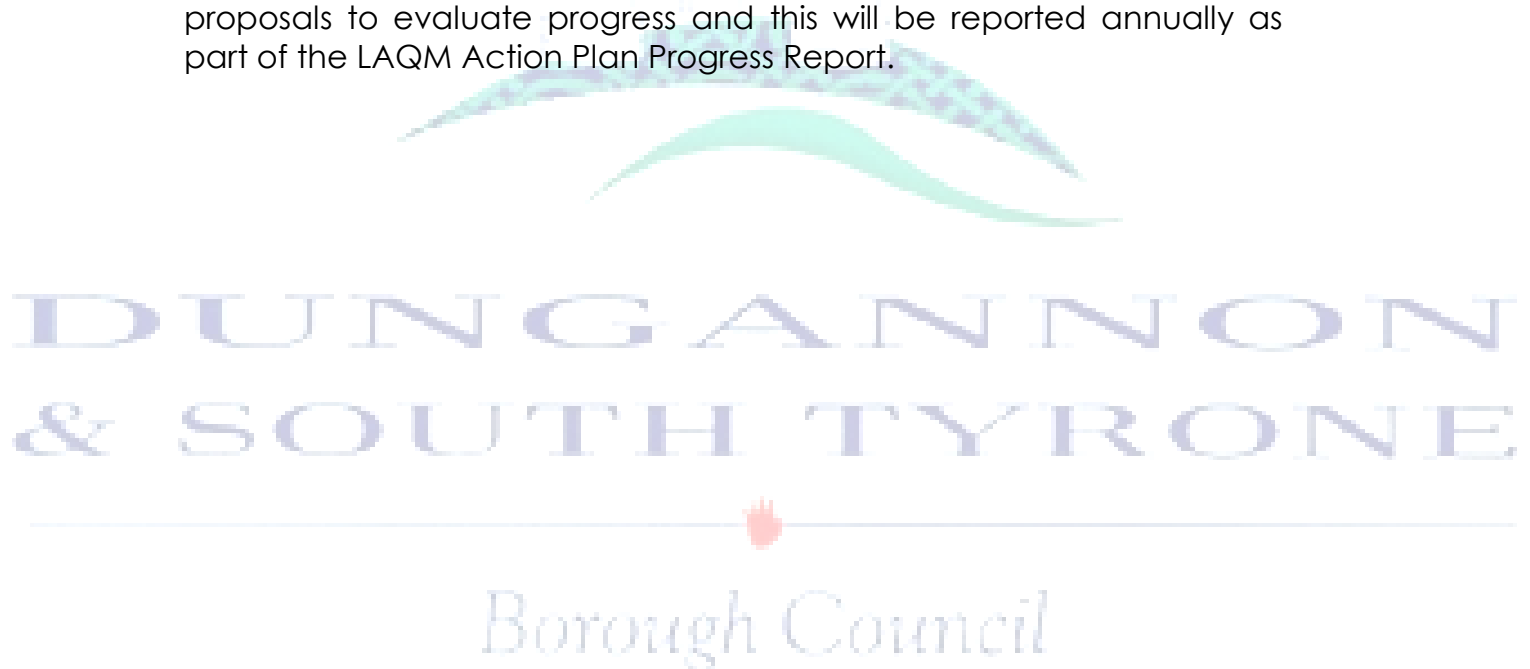
All comments from both statutory and non-statutory consultees received on the draft Action Plan have been considered and incorporated where appropriate into the final Action Plan. The Plan will now be presented to Dungannon and South Tyrone Borough Council for endorsement and subsequently placed on the Northern Ireland Air Quality website at <http://www.airqualityni.co.uk/reports>.

6 Implementation and Monitoring

Dungannon and South Tyrone Borough Council will work jointly on the action plan measures with the relevant partners. To secure the necessary air quality improvements, there must be involvement by all local stakeholders who should actively work to encourage community participation in the process.

The implementation and effectiveness of the Action Plan will be carefully assessed through monitoring of NO₂ at relevant receptor locations within the AQMA. In addition, traffic flow changes on the key roads will also be assessed through the review and assessment process, and the uptake of local measures.

There will be regular review and assessment of the action plan proposals to evaluate progress and this will be reported annually as part of the LAQM Action Plan Progress Report.



Glossary of Terms

Abbreviation/Term	Full name
AQMA	Air Quality Management Area
AQS	Air Quality Strategy
AURN	Automatic Urban and Rural Network
BMA	Belfast Metropolitan Area
CO-LOCATION SITE	Positioning of diffusion tubes in conjunction with an automatic monitor
DRD	Department for Regional Development
HGV	Heavy-Goods Vehicle
KTC	Key Transport Corridor
LAQM	Local Air Quality Management
LGV	Light-Goods Vehicle
NO	Nitric Oxides
NO ₂	Nitrogen Dioxide
NO _x	Oxides of Nitrogen
OQAs	Other Urban Areas
PM ₁₀	Particles of up to 10 µm in diameter
RDS	Regional Development Strategy
RSTN	Regional Strategic Transport Network
RTS	Regional Transport System
SDS	Spatial Development Strategy
SRTP	Sub-Regional Transport Plan
SENSITIVE RECEPTOR	A location where members of the public are likely to be exposed to the health effects of pollutants that breach the AQS objective limits
TEA	Triethylamine
µg/m ³	Micrograms per cubic metre



APPENDIX 1

**Photograph of Church Street
Looking North from Perry Street**

**DUNELM BOROUGH COUNCIL
& SOUTH TYRONE**

Borough Council





APPENDIX 2

**Church Street AQMA
with façade of sensitive receptor**

DUNGANNON
& SOUTH TYRONE

Borough Council



APPENDIX 3

Church Street AQMA Street level view displaying road elevation and sensitive receptor

Borough Council





APPENDIX 4

**Log of Meetings with Strategic
Partners and Agencies**

DUNGANNON
& SOUTH TYRONE



Borough Council

DATE	EVENT	AGENDA
8 th January 2009	Meeting with Southern Group Environmental Health Committee (SGEHC)	Discussion on proposals for AQMA Draft Action Plan
12 th January 2009	Meeting with Derry City Council Environmental Health Officers	Consultation with other Council with similar AQMA declaration
22 January 2009	Meeting with SGEHC	Discuss Proposals for using air quality monitoring software in determining objectives for draft action plan
26 th January 2009	Meeting with SGEHC and Development Officer at Dungannon Council	Discuss sustainable development issues within context of AQMA action plan
9 th February 2009	AQMA Action Plan Meeting with SGEHC	Assessment of reduction measures and reduction requirement in preliminary survey report sent to DOE and UWE
12 th February 2009	Dungannon Public Realm Scheme meeting	Incorporation of Public Realm Scheme plans with Church Street AQMA
10 th March 2009	Meeting with White Young Green Consultants and SGEHC	Discuss Public Realm Scheme and AQMA
7 th April 2009	Dungannon Public Realm Scheme Meeting	Overview of Public Realm Scheme plans and integration with AQMA
21 st April 2009	AQMA Action Plan Meeting with Translink	Strategic Partnership meeting to discuss Draft Action Plan and objective measures
23 rd April 2009	AQMA Action Plan Meeting with Roads Service and Northern Ireland Planning Service (Western Division)	Strategic Partnership meeting to discuss Draft Action Plan and objective measures
29 th April 2009	Dungannon Public Realm Scheme Meeting	AQMA Action Plan and town centre re-design issues
7 th May 2009	Meeting with White Young Green and SGEHC	AQMA Action Plan objectives and traffic measures.
14 th May 2009	Dungannon Public Realm Scheme Meeting	AQMA Action Plan integration with Public Realm Scheme
28 th May 2009	Dungannon Public Realm Scheme Meeting	AQMA Draft Action Plan – Objectives and Reduction Measures

19 th June 2009	Dungannon Public Realm Scheme Meetings	AQMA Draft Action Plan
1 st October 2009	Dungannon Public Realm Scheme Meetings	Progress on integration of AQMA objectives with scheme. Delivery of planning maps for consultation
9 th November 2009	Meeting with SGEHC	Review of first draft of AQMA Action Plan
10 th March 2010	Dungannon Public Realm Scheme Meetings	Progress on integration of AQMA objectives with scheme. Delivery of planning maps for consultation
21 st March 2010	Meeting with DRD Roads Service at County Hall, Omagh	Appraisal of Actions attributed to DRD Roads Service within Action Plan
9 th April 2010	Meeting with Operations Manager of Dungannon and South Tyrone Borough Council	Appraisal of Actions attributed to Operations Division of Dungannon and South Tyrone Borough Council within Action Plan



DUNGANNON & SOUTH TYRONE



Borough Council