

AIR QUALITY ACTION AREAS

1.0 Introduction

- 1.1 Members will be aware from previous Air Quality reports that Local Authorities have a statutory duty under the Environment Act 1995 to review and assess the air quality in their district against objectives set by Government for 7 defined pollutants. This assessment is undertaken by following Government guidance and by utilising monitoring and modelling techniques.
- 1.2 If it is found through this process of continuous assessment that an air quality objective is exceeded or unlikely to be met, then an Air Quality Management Area must be declared (AQMA). It is then a duty to produce of an Air Quality Action Plan which must include evidence that all available options have been considered and how the local authority will use its powers and also work in conjunction with other organisations **in pursuit of the air quality objectives**. It should be stressed that Local Authorities are not obliged to meet the objectives but they must show that they are working towards them.
- 1.3 In June 2005 AQMA's were declared for Lyndhurst High Street and Junction Road, Totton as in each case the annual mean objective ($40\mu\text{g}/\text{m}^3$) for the transport related pollutant nitrogen dioxide was likely to be exceeded. In December 2005 a further AQMA was declared for Fawley village but in this case the objective related to the exceedance of the 15 minute mean for sulphur dioxide ($266\mu\text{g}/\text{m}^3$ not to be exceeded more than 35 times a year) which is associated with industrial activity on the Waterside.

2.0 Air Quality Action Plans

- 2.1 A draft AQAP has been produced for each of the AQMA's and following consultation with key stakeholders all three plans now require formal adoption by the Council. This is the main purpose of this report but it also serves to update members on the progress with air quality issues in the district.
- 2.2 The AQAP's for Totton, Lyndhurst and Fawley are available on the Council's website at <http://www.newforest.gov.uk/index.cfm?articleid=185> with a summary of each outlined in subsequent paragraphs. Maps showing the extent of the AQMA boundaries are produced in Appendix 1, 2 and 3 for Totton, Lyndhurst and Fawley, respectively.
- 2.3 There are commonalities between all three Action Plans in that each contains options which are specifically targeted, either individually or in combination, at the reduction of the required pollutant (i.e. traffic management schemes in respect of nitrogen dioxide, abatement measures in respect of sulphur dioxide etc) or designed to promote greater public awareness of air quality issues. In addition each Plan has been subject to an extensive consultation exercise with members of the public, Town and Parish Councils, local members and businesses, Defra, Hampshire County Council in respect of the transport related AQMA's in Totton and Lyndhurst and the Environment Agency in

relation to the sulphur dioxide levels in Fawley. Defra has endorsed all three plans and any comments, such as the inclusion of targets and performance measures (where appropriate), have now been included in the finalised document.

- 2.4 In the case of the traffic related problems in Totton and Lyndhurst the options have been ranked according to a cost benefit analysis undertaken in line with Defra guidance. For example, an option with a high air quality benefit and low cost would rank higher than one with high cost and a high air quality benefit. It is recognised by Defra that the implementation of traffic management options may be outside the Local Authority remit and accordingly the production of both Plans has involved close liaison with Transport Planners at District and County level and the air quality issues in these areas forms an integral part of the Local Transport Plan produced by County for the period 2006 – 2011.
- 2.5 A cost benefit analysis was not carried out for the options contained in the Fawley AQAP and their ranking is purely based on an air quality assessment with those likely to lead to the greatest reduction in sulphur dioxide ranked highest.

3.0 Totton Air Quality Action Plan

- 3.1 Based on the monitoring results for 2007 of the 7 monitoring locations within the Totton AQMA the one located south of the level crossing gates in Junction Rd is exceeding the annual mean objective for nitrogen dioxide.
- 3.2 This Plan contains 18 options for further consideration which are detailed in Table 1 below. The exceedance of the annual mean objective for nitrogen dioxide in this AQMA is associated with traffic queuing with engines running at the railway level crossing when the barriers are down. On occasion the barrier downtime can extend to in excess of 10 minutes and as can be seen those options receiving the highest ranking relate to measures intended to encourage drivers to switch of their engine whilst stationary and the installation of variable message signing to warn of the closure of the barriers – the aim being for drivers to use an alternative route.
- 3.3 Restrictions for vehicles over 7.5 tonnes not making a delivery are already in place on the majority of roads in the vicinity of and within the AQMA but traffic surveys have indicated a higher than expected number of such vehicles in the area, particularly in Rumbridge Street. Given that this class of vehicle is a significant contributor to nitrogen dioxide concentrations a further option has been included within the amended Plan which looks at the enforcement of the restrictions. The cost benefit analysis has ranked this of highest importance and traffic surveys are already being undertaken by Hampshire County Council to assess this option further.

3.4 Table 1 – Options Appraisal for Totton AQAP in Ranked Order

Option	Impact	Lead Role	Rank
Enforcement of HGV restriction.	Reduces number of HGV's travelling through AQMA	Police	1
Review static signs.	Encourages motorists to turn off their engines when waiting at the railway barrier.	HCC / NFDC	2
Reducing traffic congestion in Totton.	Reduces through traffic in town centre.	HCC / NFDC	3
Installation of variable messaging system.	Reduce vehicles travelling through AQMA. Encourages motorists to turn off their engines when waiting at the railway barrier.	HCC	4
Review car parking in Totton	Reduces unnecessary car travel through Totton town centre	NFDC / HCC	5
Increase use and awareness of public transport	Reduce the need to use cars in Totton.	HCC	6
Planned developments.	Assess impact of development on air quality.	NFDC	7
Vehicle emissions testing	To enforce powers to emission test vehicles which travel through AQMA.	NFDC	8
Consultation on the urban design framework	Improved working between departments	NFDC	9
Increase public awareness of air quality.	Publicise air quality and related issues throughout the District.	NFDC	10
Review air quality monitoring.	Ensure the correct monitoring of air quality is being undertaken.	NFDC	11
Pedestrianisation of Junction Road.	Remove vehicles from travelling down Junction Road and through AQMA.	HCC	12
Improvements to pedestrian routes.	Reduce the need to use cars in the centre of Totton	HCC	13
Review cycle routes in Totton.	Reduces number of vehicles on road.	HCC	14
Development of Asda travel plan.	Reduces the need for staff and customers to drive own vehicles to store and through AQMA.	Asda	15
New Forest District Council fleet management	Review council fleet and lease cars. Promote eco driving.	NFDC	16
Road bridge	Reduces the need for barrier control and therefore stationary traffic	HCC	17
Installation of NOx absorbing paving surface	Absorbs NOx from the atmosphere	Currently being trialled by other LA's	

4.0 Lyndhurst Air Quality Action Plan

- 4.1 The problems of traffic congestion in Lyndhurst are well known and these are closely linked to the air quality issues caused by stationary traffic with idling engines at the traffic lights at the junction of the A35 (High Street) with the A337 (Romsey Road). The canyon effect produced by the tall buildings and narrow street at the top end of the High Street impairs dispersion of the pollutants, and as a consequence levels in excess of the annual mean objective for nitrogen dioxide occur. Based on the 2007 monitoring results, 3 out of the 8 monitoring locations within the AQMA exceeded the annual mean objective for nitrogen dioxide (those within the upper part of the High Street within the canyon) with a further one just below the limit (Romsey Road).
- 4.2 It would be fair to state that there has been strong local support for a bypass for the village for many years and the Action Plan would not be complete without its inclusion as an option. However, of the 18 options listed in Table 2 below it can be seen that a bypass does not rank highly due to the cost implications of its construction and the environmental impact associated with its implementation. In addition following the recent Lyndhurst Bypass Scrutiny Review undertaken by Hampshire County Council, it was resolved at their Cabinet meeting on the 31st March 2008 that the prioritisation of either a Lyndhurst focused bypass or a New Forest wide bypass could not be supported at the present time.
- 4.3 Therefore, while a bypass is still included as an option it should be stressed that there is no intention to pursue it in the foreseeable future. Other traffic management options (such as the enforcement of HGV restrictions, improvements to the A35/A337 junction, installation of variable messaging system etc) having a lesser environmental effect attract higher ranking and are likely to undergo further feasibility studies to assess whether either individually or in combination they will bring about the required improvement in nitrogen dioxide concentrations i.e. ~ 18% reduction in oxides of nitrogen.

4.4 Table 2 – Options Appraisal for Lyndhurst AQAP in Ranked Order

Option	Impact	Lead Role	Rank
Enforcement of HGV restriction.	Reduce number of HGV's cutting through the centre of Lyndhurst.	Police	1
Review signage in Lyndhurst.	Improvements to signs directing visitors into Lyndhurst town centre car park.	HCC	2
Development of NFDC Travel Plans.	Reduction in vehicles being driven through Lyndhurst. Reduction in congestion in Lyndhurst.	NFDC	3
New road schemes on A35 / Shrubbs Hill Road junction.	Reduce congestion in High Street through highest levels of NO ₂ .	HCC	4
Enforcement of parking restrictions.	Improve traffic flow through AQMA.	NFDC	5
Installation of variable messaging system.	Diverting traffic from M27 into Lyndhurst via A35 (Ashurst).	HCC	6
Improvement of A337 / A35 junction	Improve flow of traffic on A35 and A337. Reduce congestion in Lyndhurst.	HCC	7
Vehicle emissions testing	To enforce powers to emission test vehicles which travel through	NFDC	8

	AQMA.		
Increase public awareness of air quality.	Publicise air quality and related issues throughout the District.	NFDC	9
Review air quality monitoring.	Ensure the correct monitoring of air quality is being undertaken.	NFDC	10
Planned developments.	Assess impact of development on air quality.	NFDC NPA	11
Review car parking charges.	Continue charging to park in Lyndhurst village centre car park.	NFDC	12
Development of school travel plans.	Reduction in vehicles being driven through Lyndhurst. Reduction in congestion in Lyndhurst.	HCC St. Michaels school	13
New Forest District Council fleet management	Review council fleet and lease cars. Promote eco driving.	NFDC	14
Review bus routes.	Reduce congestion in Lyndhurst. Reduce tourist journeys throughout New Forest.	HCC Solent Blue Line Wilts and Dorset	15
By-pass	In line with Defra guidance this remains as an option within the Plan but following the recent HCC Scrutiny Review this option will not be pursued in the foreseeable future.		16
Review cycle routes.	Encourage cycling as an alternative to car use into Lyndhurst. Reduce congestion in Lyndhurst.	HCC	17
Installation of NOx absorbing paving surface	Absorbs NOx from the atmosphere	Currently being trialled by other LA's	

5.0 Fawley Air Quality Action Plan

- 5.1 The main aim of this Action Plan is to consider and secure the implementation of options which will reduce the short term concentrations of sulphur dioxide to within the 15 mean objective for this pollutant.
- 5.2 Past air quality modelling has established that the main contributor to the sulphur dioxide emissions in Fawley is industry. As such the Action Plan focuses very closely on industrial processes in the area, particularly the Esso Petroleum refinery. Following the 2005 results Esso Petroleum has already introduced an operating procedure which switches certain parts of the refinery processes from oil to gas whenever predetermined weather conditions occur. It is also worthy of note that since the declaration of the AQMA there has been no further exceedance of the 15 minute mean objective for this pollutant and if this positive trend were to continue in future years then consideration would be given to the revocation of the AQMA.
- 5.3 The proposed options are listed below and many mirror those already contained in the Permits issued by the Environment Agency (EA) on local industry operators, such as the Esso refinery, as they are the regulator for such premises. Their implementation over time is intended to bring about an overall reduction in sulphur dioxide emissions and this Authority will therefore be working closely with the EA and local industry, particularly Esso Petroleum, to monitor performance in this respect.

5.4 Table 3 – Options Appraisal for Fawley AQAP in Ranked Order

Option	Impact	Lead Role	Rank
Changes in industrial fuel	Conversion from oil to gas in SP4 at the refinery to reduce SO ₂ emissions from refinery.	Esso Petroleum	1
Reduction in mass emission	Reduction in the emissions of SO ₂ from refinery.	Esso Petroleum	2
Installation of abatement equipment; FCCU	Reduction in the emissions of SO ₂ from refinery.	Esso Petroleum	3
Installation of abatement equipment; SRU 3/4 (Super Claus Units)	Reduction in the emissions of SO ₂ from refinery.	Esso Petroleum	4
Introduction of bubble limit	Reduction in the emissions of SO ₂ from refinery.	Esso Petroleum	5
Air quality management plan	Improved management of emissions focusing on SO ₂ .	Esso Petroleum	6
Changes in industrial operating pattern	Plan to reduce the number of exceedances of the 15 min mean for SO ₂ .	Esso Petroleum	7
Enforcement of permitted conditions	To ensure industrial processes operate within their permitted conditions.	EA	8
Working with EA and industry	To improve communication.	NFDC / EA / Esso Petroleum	9
Changes to industrial process technology	Reduction in the emissions of SO ₂ from refinery.	Esso Petroleum	10
Areas for industrial development	To ensure the impact of SO ₂ emissions are considered.	NFDC	11
Increase public awareness of air quality issues	To improve communication.	NFDC	12
Review air quality monitoring	To ensure good monitoring results are collated.	NFDC	13
Relocation of industrial process	In line with Defra guidance this will remain as an option but it is highly unlikely to ever be implemented.		14

6.0 Air Quality Action Plan Progression

- 6.1 Once adopted each Action Plan will become a working document and may involve further air quality modelling or feasibility studies to assess the full impact of the implementation of any of the options or the inclusion of others. The aim being to reduce pollutant levels in pursuit of the air quality objectives. In each case the pollutant of interest will continue to be monitored to assess any change in the situation and annual reports on the progression of the Action Plan have to be submitted to Defra.
- 6.2 A key part of the Action Plan process is to engage with key stakeholders so that they are kept informed of progress and the intention is to set up a working group for each Plan.
- 6.3 The Action Plan will therefore be an evolving document and the AQMA can be amended or revoked or an additional one created at any time, if this is considered appropriate

7.0 Environmental Implications

- 7.1 There are health effects associated with both nitrogen dioxide and sulphur dioxide and both pollutants can act as an irritant to the respiratory system, particularly in cases where people are already predisposed to conditions such as asthma. In the case of nitrogen dioxide long term exposure to low concentrations may increase reactivity to allergens. However, the aim of the respective Action Plans is to reduce the pollutant concentrations thus leading to an improvement in local air quality and as such their implementation should therefore only have positive environmental outcomes.

8.0 Equality and Diversity

- 8.1 Following on from the environmental implications, it can be seen that some people, such as the elderly and very young, could be more sensitive than others to the effects of the air pollutants and again any measures to secure improvements in the air quality in the district can only be beneficial. It is also recognised that better air quality can lead to an improved quality of life in that it serves to encourage people outdoors either for recreation or walking to school etc.

9.0 Financial Implications

- 9.1 It is considered that the current air quality monitoring programme can be continued within the existing budgetary arrangements and the cost of implementing many of the options contained within the AQAP will fall to other bodies such as Hampshire County Council in the case of any traffic management schemes and the Esso Petroleum refinery in the case of the Fawley AQAP.

- 9.2 However, the cost of any modelling to assess the air quality impacts of the options is likely to rest with this Council and this could not be funded out of the existing budget. As such a bid for further expenditure to cover such work will be included in the forthcoming expenditure programme. In addition the current budget includes very little for promoting air quality awareness and consultations with the public and similarly a bid will be made for additional funding for this purpose as it seen as a key part of the process. At this stage the bid is likely to be in the region of £10,000.
- 9.3 Defra do make grants available to cover air quality expenditure in certain cases and this Council was awarded £17,000 under the scheme for 2007/08. This has been used to carry out further monitoring in Totton and Lyndhurst and for the production of consultation leaflets for Fawley advising residents of the contents of the draft Air Quality Action Plan and requesting comments. Applications for funding will continue to be made on an annual basis, as and when necessary, but they are always over subscribed and cannot be relied upon as a source of funding.

10. Crime and Disorder

- 10.1 None

11.0 Portfolio Holder Comments

- 11.1 The Portfolio Holder fully supports these actions. The three areas have been looked at thoroughly and comprehensive action plans are in place to address the reduction of the associated pollutants in pursuit of the air quality objectives. I would fully endorse the recommendations put forward and the excellent work undertaken to date.

12.0 Recommendations

- 12.1 It is therefore recommended that:

12.1.1 The following Air Quality Action Plans, detailing options aimed at reducing pollution in pursuit of the air quality objectives, are adopted:

- Totton Air Quality Action Plan
- Lyndurst Air Quality Action Plan
- Fawley Air Quality Action Plan

12.1.2 A bid in the forthcoming expenditure plan process for £10,000 is supported to facilitate modelling work and public consultation to progress the implementation of the Plans in line with our statutory duty to review and assess the air quality in the district.

Further information can be obtained from:

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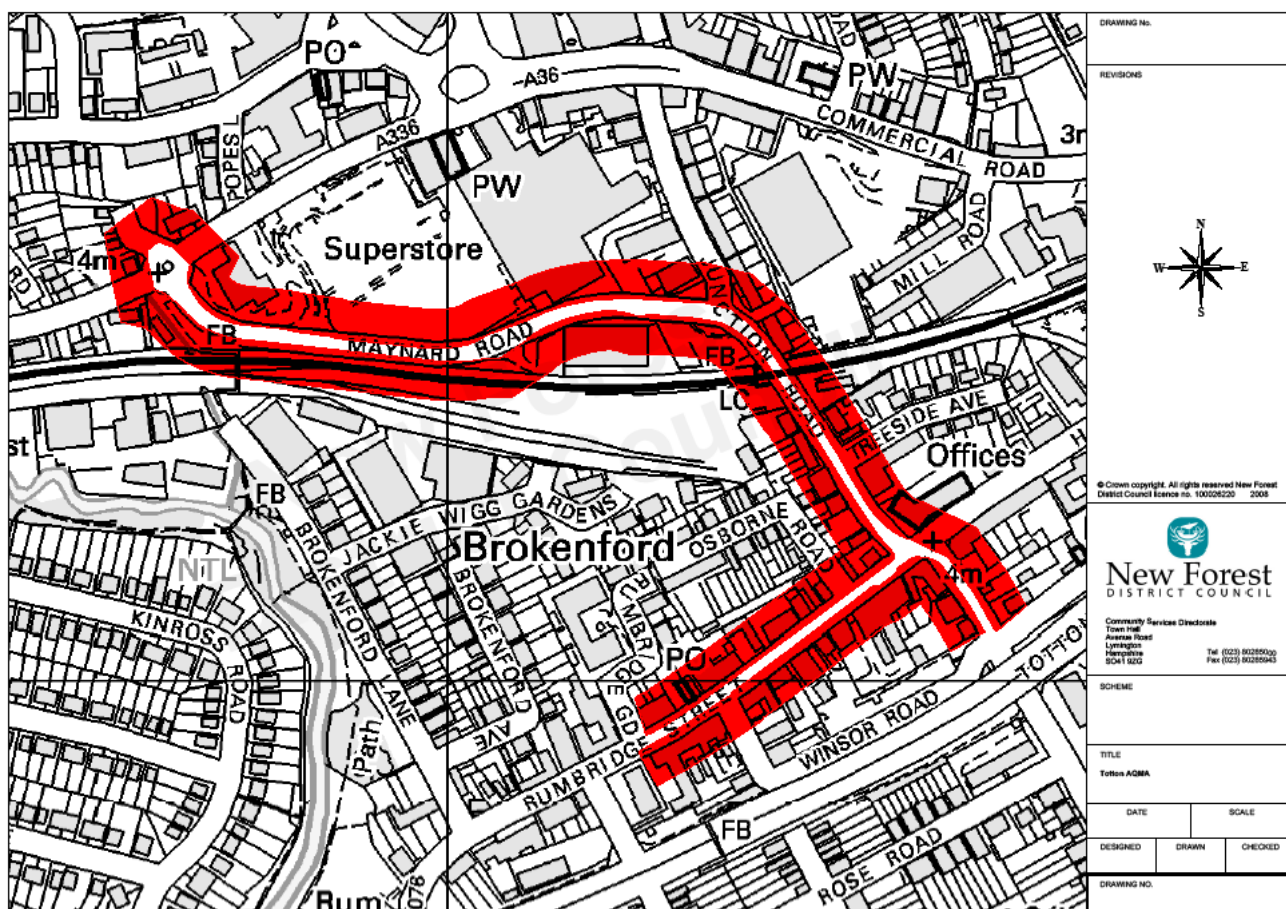
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Background papers:

Totton Air Quality Action Plan
Lyndhurst Air Quality Action Plan
Fawley Air Quality Action Plan
All available on: <http://www.newforest.gov.uk/index.cfm?articleid=185>

APPENDIX 1

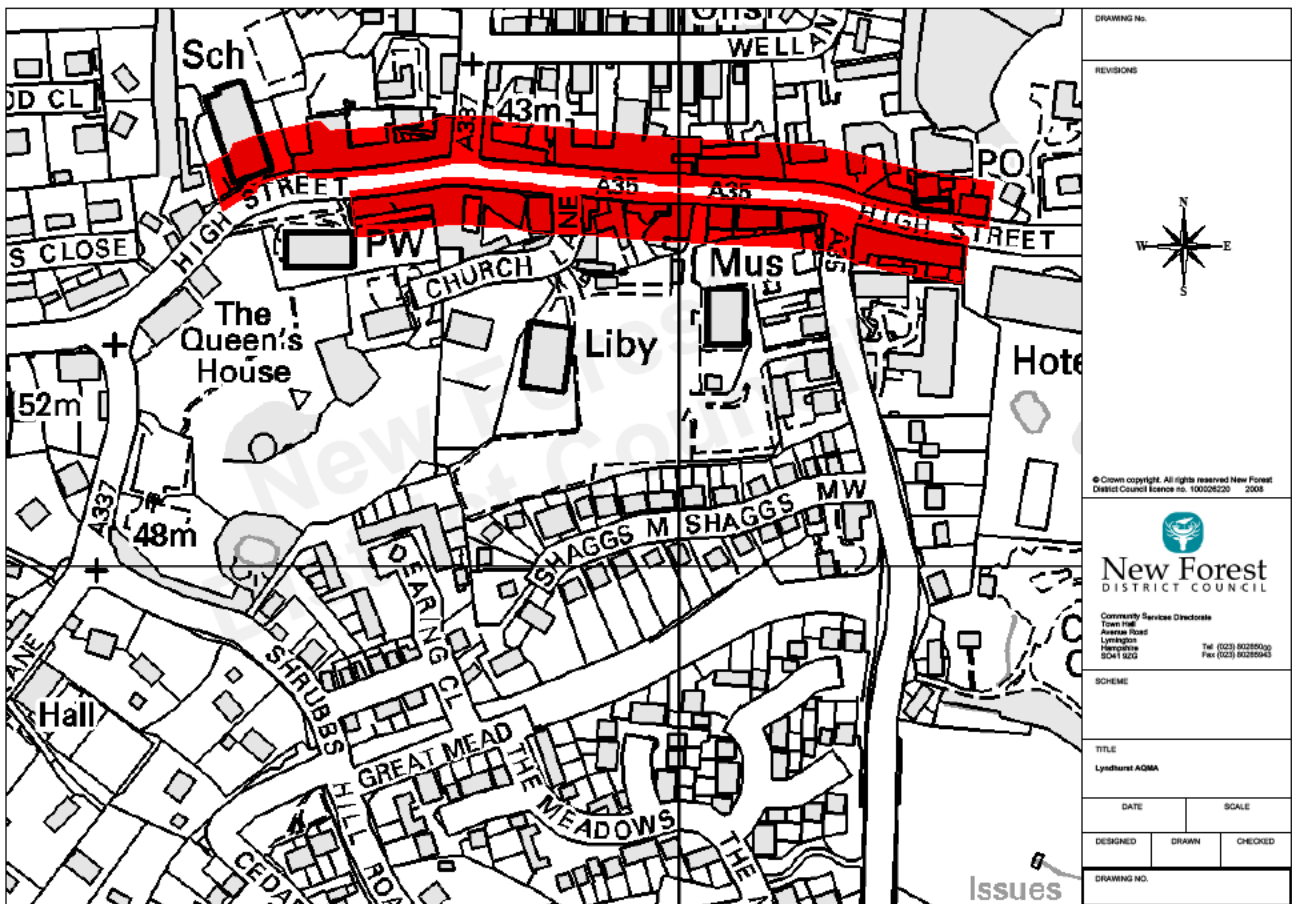
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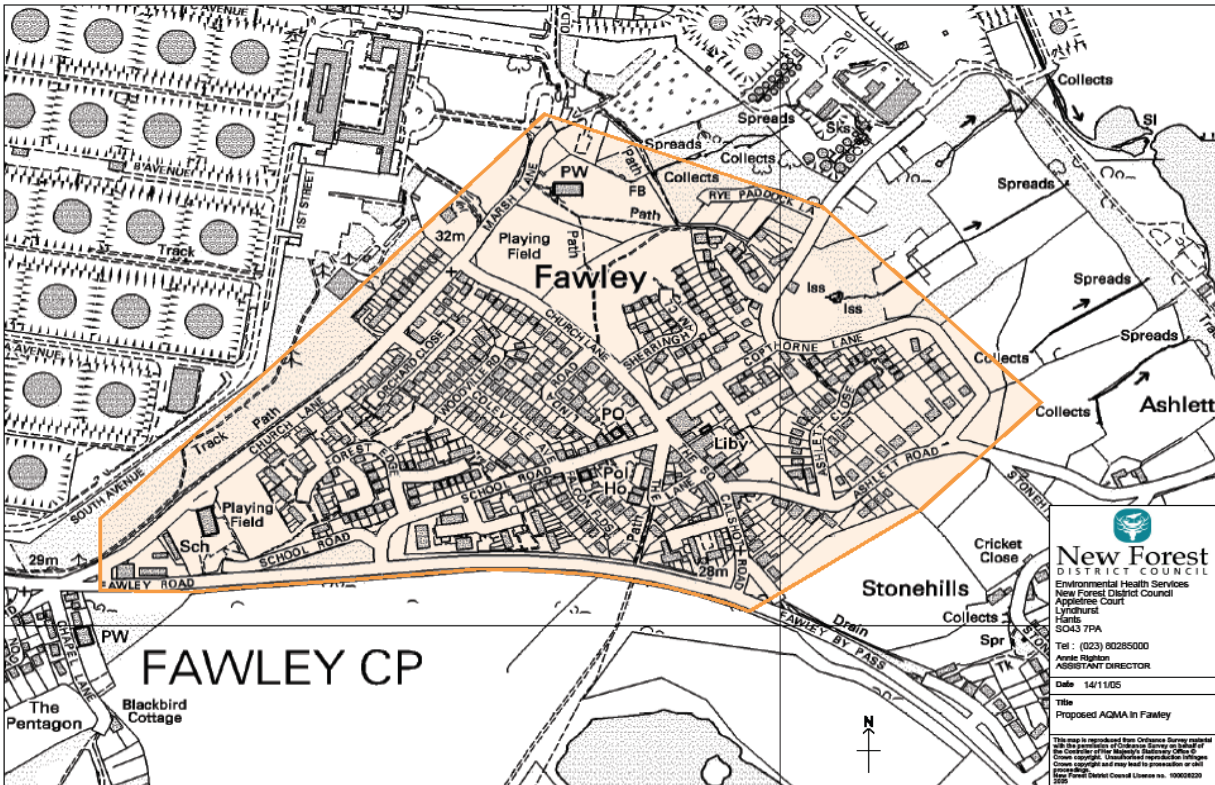
APPENDIX 2

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Fawley Air Quality Management Area



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