Draft Air Quality Action Plan 2013

Thanet District Council

Report for Thanet District Council

Executive summary

The Environment Act 1995 requires all Local authorities to review air quality within their districts. If it appears that any air quality "Objective" prescribed in the regulations and in the National Air Quality Strategy is not likely to be achieved then the local authority must designate the affected areas as Air Quality Management Areas (AQMAs). The Act then requires that an Action Plan be produced for any areas designated as AQMAs, setting out the actions that the District Council intend to take to achieve the National Air Quality Strategy.

Air quality across Thanet is excellent and well below health objectives set by government. However two small areas exceed the recommended annual objective level for nitrogen dioxide (NO_2): High Street, St Lawrence and The Square Birchington both are heavily trafficked junctions and on main routes coming in to Thanet. Both areas were declared AQMAs but following further consideration these were revoked and a much larger Urban Air Quality Management area was declared on 17th November 2011. This encompasses the two technical exceedence areas as well as a wider geographical area to enable the Action Plan to consider a broader approach to strategic planning, transport planning, sustainability and climate change measures. The Council will continue to work with the local highway authority, Kent County Council to help secure improvements to the network and has consulted widely with local organizations and the public in developing measures for inclusion in this Action Plan.

The Action Plan confirms the likely source of nitrogen dioxide is from transport and in particular from heavy goods vehicles, buses and congested traffic. Evidence suggests that a 21% reduction in traffic emissions of oxides of nitrogen (or NOx which is a precursor to NO_2) is necessary (based on 2009 figures) to achieve the air quality standard. The Action Plan recommends 8 measures for implementation or further feasibility study to improve air quality which are aimed at reducing levels of air pollution within the AQMA in Birchington and St Lawrence. It also sets out the framework of partnership working with other organisations, within which the actions have been developed and will be progressed and monitored.

The plan aims to reduce transport emissions in the AQMA by around 20% by 2015. It is anticipated that a reduction of this scale will lead to the achievement of the annual mean NO_2 air quality standard (40μg/m^3) at the Birchington and St Lawrence junctions in future years. Additional measures may be required if feasibility study for the recommended measures conclude that implementation is not effective. It is acknowledged that the Action Plan is a continuously evolving document involving numerous groups and Authorities, which may require revision in the future.

In compiling this Action Plan, Government Guidance LAQM.PG (09) and previous Review and Assessment reports produced by the District Council have been referred to. **The Action Plan is subject to statutory and public consultation and amended accordingly prior to formal adoption by the District Counci**l. All comments must be received by 14th March 2013.

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Table of contents

Appendices

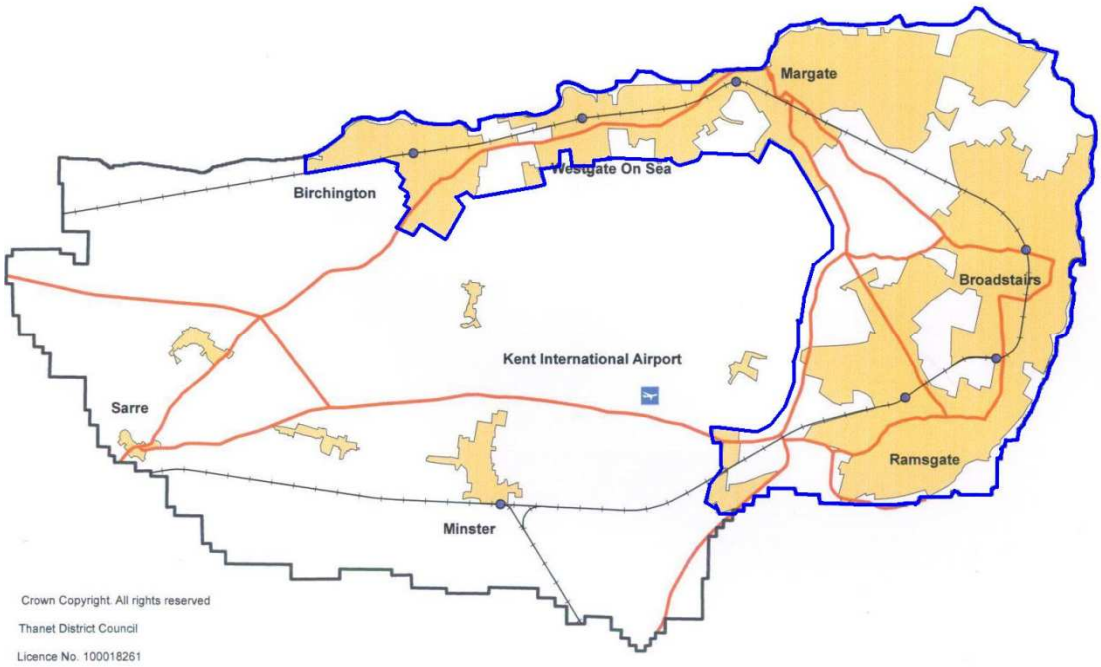
1 Introduction

This local Air Quality Action Plan sets out a work programme to improve air quality at The Square, Birchington and High Street, St Lawrence, and throughout the Thanet urban area by Thanet District Council in partnership with Kent County Council. Thanet District Council is consulting the public and other statutory consultees on the content of the plan in advance of a final plan being approved by central Government and both Councils and then implemented.

Thanet is located in the north east corner of Kent and is a diverse district incorporating coastal and rural environments, and urban areas dominated by the towns of Margate, Ramsgate and Broadstairs. (Figure 1.1).

While the quality of our air is generally very good and well within the limits set by Government for the protection of human health, there are now two areas within the district where levels of pollution give rise for concern. Until recently, two Air Quality Management Areas were declared in the District, one in Birchington and the other in St Lawrence. Following further consideration of air quality, an Order has been made to revoke both of these AQMAs, and create a new Thanet urban AQMA (Figure 1) which encompasses both Birchington and St Lawrence and surrounding urban areas. This Order comes into effect on the 17th November 2011. The District has a statutory duty to develop an Action Plan to improve air quality in these locations. There are 41 other areas within the county that also exceed these limits (40 µg m-3).

Figure 1. Thanet District Council, showing the Thanet urban Air Quality Management Area.



2 Air Quality in Thanet

This chapter sets out local authority duties in relation to Local Air Quality Management. These are the tasks that the District Council must complete as a statutory duty.

2.1 Health effects of poor air quality

There are various sources of air pollution in the UK. These can include transport (mainly road transport), energy – both use and production, commercial / industrial premises and natural sources.

This Action Plan is primarily aimed at reducing nitrogen dioxide (NO2), but the initiatives within it will have a positive effect on the reduction of other air pollutants, especially particulates. Road transport is responsible for approximately 50% of the emissions of NO2 in Britain. At high concentrations NO2 has been identified as having various adverse health effects particularly on the respiratory system and in both asthmatics and non-asthmatics. Short-term exposure to this pollutant can increase the likelihood of reaction to allergens such as pollen and has been known to increase asthma in some people. Children exposed to this pollutant may have increased risk of respiratory infections.

2.2 Principal Sources of Air Pollution in Thanet

Nitrogen dioxide (NO_2) and nitric oxide (NO) are collectively known as Nitrogen Oxides (NO_x). Nitrogen Oxides, which are the main source of poor air quality, are produced during all combustion processes in air. The pollutant is usually emitted from the source in the form of NO which subsequently reacts with ozone (O_3) to form NO_2. The predominant source of NO_x in Britain is road transport and it is thought that half of emissions in Europe originate from this source; certainly the highest concentrations of NO_2 are generally found close to busy roads in urban areas. NO_2 pollution levels within the District follow a similar pattern with the majority of NO_x emissions being road transport related. Commercial, industrial and domestic sources also make a small contribution to background.

In the UK, air pollution is currently estimated to reduce the life expectancy of every person by an average of 7-8 months with estimated equivalent health costs of up to £20 billion each year. Air pollution also has a detrimental effect on our ecosystems and vegetation (UK Parliamentary Environmental Audit Committee, March 2010). Clearly there are significant benefits to be gained from further improvements.

To protect the health of the population, the Government have set out a national air quality strategy which includes statutory objectives (standards) for some key pollutants. The objectives are expressed as a maximum ambient concentration not to be exceeded, either without exception or with a permitted number of exceedences within a specified timescale (see Appendix 1). The objectives have been set throughout the UK and European Union at levels that aim to protect the vulnerable members of society from the harmful effects of breathing pollution.

In response, a number of measures have been introduced at an international level (including the UK) to reduce this impact. They include:

- Incremental reductions in emissions from vehicles and industry
- Climate change programme policies
- Local Air Quality Management (see following section)

The UK government recognises the important role that local authorities have and continue to play in helping deliver the air quality objectives.

2.3 The legislative framework for air quality

The Environment Act 1995 gives local authorities duties and responsibilities that are designed to secure improvements in air quality, particularly at the local level. These include the review and assessment of key pollutants in their area in a series of rounds every three years. If it appears that any of the air quality objectives set by government are not likely to be achieved resulting in members of the public being exposed to the pollution, the local authority must by order designate any part of its area so affected, as an Air Quality Management Area (AQMA). They must then prepare and implement a remedial Action Plan of measures to reduce air pollution levels in that AQMA. A Review and Assessment round consists of local authorities initially undertaking an Updating and Screening Assessment (USA) and then carrying out the following stages if any objectives are found to be exceeded:

- Detailed Assessment of those areas identified in the USA as potential AQMA's
- Designation of AQMA
- Further Assessment of air pollution in the AQMA
- Amendment if necessary of AQMA boundaries
- Action Plan
- Annual Action Plan Progress Reports

The fifth round of Review and Assessment commenced in 2012 with the Updating and Screening Assessment concluding that no new potential exceedence areas other than those already considered had been identified. Thanet District Council has currently designated one AQMA covering the wider Thanet urban areas, declared in November 2011. Prior to this an AQMA was declared in Birchington in March 2006, and another more recently declared in St Lawrence, declared in 2010. Both of these have now been revoked and replaced with the Thanet Urban AQMA. Both Birchington and St Lawrence remain technical exceedence areas. The new Thanet Urban AQMA is the subject of this Action Plan.

2.4 Conclusions of previous review and assessment of air quality in Thanet

Thanet District Council has completed its Local Air Quality Management duties in compliance with the government guidance. The bulk of the work to date has been to review air quality in the district and to assess whether any problems with achieving the health based air quality objectives exist now or are predicted for the future. This section provides a summary of this work.

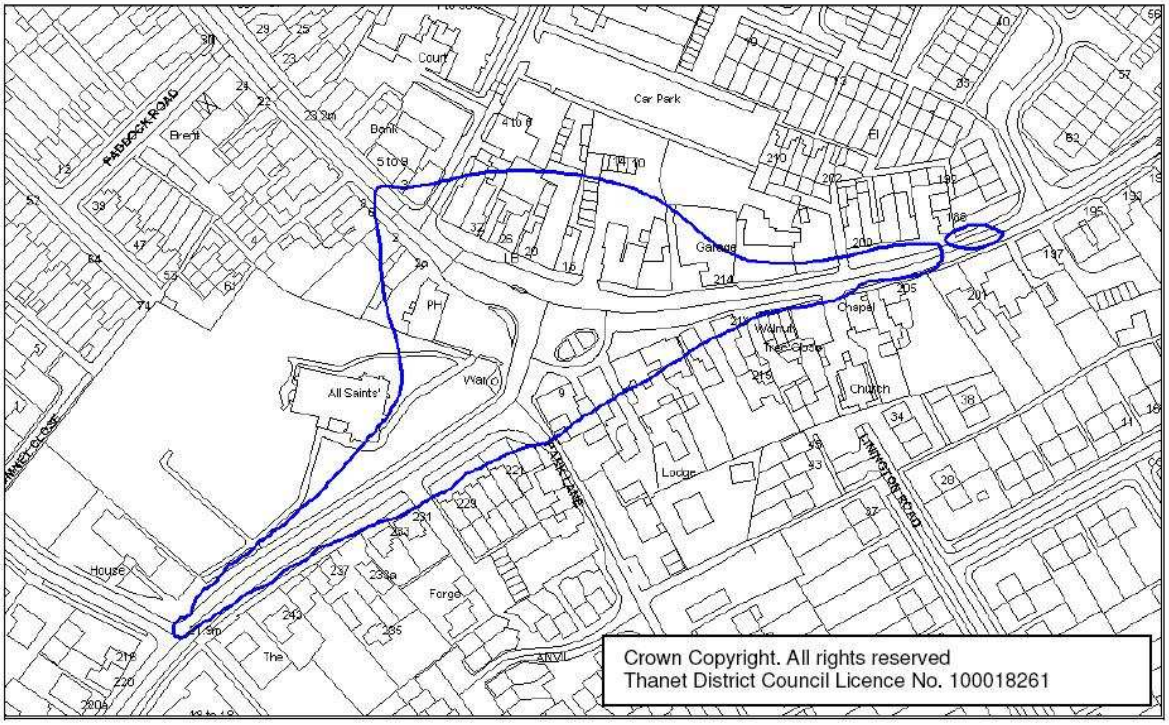
Initial assessment of air quality began in 1998, but it was not until the second round of review and assessment in 2004 that seven potential areas of NO_2 annual mean exceedence and five potential areas of PM_{10} annual mean exceedence were highlighted. These were:

- The Square, Birchington (NO_2 and PM_{10})
- King Street/Boundary Road/Hereson Road, Ramsgate (NO_2 and PM_{10})
- Marine Gardens, Margate (NO_2 and PM_{10})
- The Broadway, Broadstairs (NO_2)
- College Road, Margate (NO_2 and PM_{10})
- Queens Avenue/Ramsgate Road, Margate (NO_2 and PM_{10})
- Haine Road, Ramsgate (NO_2)

A Detailed Assessment undertaken in 2005 highlighted that one area, The Square, Birchington, was predicted to exceed these objectives and recommended that an Air Quality

Management Area (AQMA) should be declared due to emissions from local road traffic. This culminated in the declaration of the AQMA in March 2006 and the installation of an air quality monitoring station in 2007. Figure 2 shows the extent of the AQMA. This area comprises a roundabout on the A28 Canterbury Road (the primary Margate to Canterbury and Ashford route) and Station Road, which is the main shopping street in Birchington. Close to this junction Park Lane joins Canterbury Road. Park Lane carries a large proportion of the primary school traffic.

Figure 2. The Square, Birchington previous AQMA.



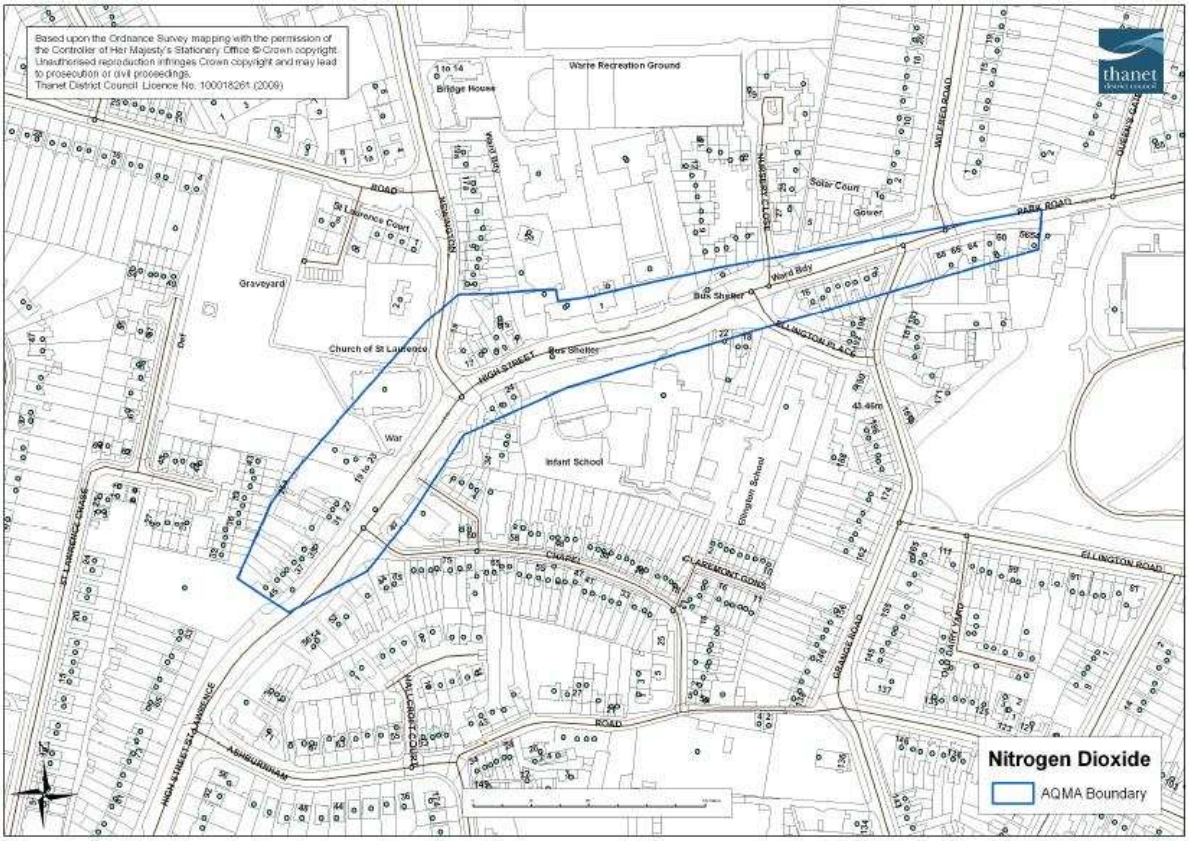
The Further Assessment undertaken for The Square, Birchington indicated that road traffic was the primary source of NOx emissions (71%) and of this approximately a third was due to Heavy Duty Vehicle movements, even though they comprised less than 5% of the vehicle fleet. Background concentrations of PM_{10} were found to make up 75% of the total concentrations with the remaining 25% originating from road traffic emissions.

A draft Action Plan was developed in October 2007 which set out the mechanisms through which the local authority would deliver measures to work towards meeting the Air Quality Objectives though joint working with the County Council and other organisations. This Action Plan now requires updating. This is addressed in this document.

The 2011 Annual Progress Report produced as part of the most recent round of Review and Assessment has found that concentrations of PM_{10} within the Birchington AQMA have been consistently well below the annual mean objective concentration since continuous monitoring began within the AQMA in 2007. The Council has revoked the PM_{10} AQMA declaration, and the declaration for NO_2 has been incorporated into the recently declared Thanet urban AQMA.

The USA undertaken at the start of the third round of review and assessment in 2006 concluded that a Detailed Assessment was required at two further locations, Hereson Road, Ramsgate and High Street, St Lawrence. This assessment, undertaken in 2008, predicted exceedance of the annual mean NO_2 objective at a small number of receptors on High Street, St Lawrence and an AQMA was declared in April 2010. Figure 3 shows the boundaries of this AQMA.

Figure 3. High Street, St Lawrence previous AQMA.



The Further Assessment undertaken in 2010 showed that five receptors were predicted to exceed the NO_2 annual mean objective. These are clustered on either side of Park Road close to the roundabout junction with Newington Road and High Street. This is demonstrated in *Figure 4*. Receptors 1 to 5 in Figure 4 were modelled to exceed the NO_2 Annual Air Quality Objective as presented in

Table 1.

The traffic data for the modelling were sourced for the A255 High Street / Park Road from Kent County Council traffic counts and completed with detailed fleet composition data for 2009. For Newington Road, data from automatic traffic counts carried out in October 2008 were used. Traffic data were projected to year 2010 using growth factors adjusted for the Thanet area.

Figure 4. High Street, St Lawrence previous AQMA showing modelled receptors. Map sourced from the 2011 Further Assessment[1].

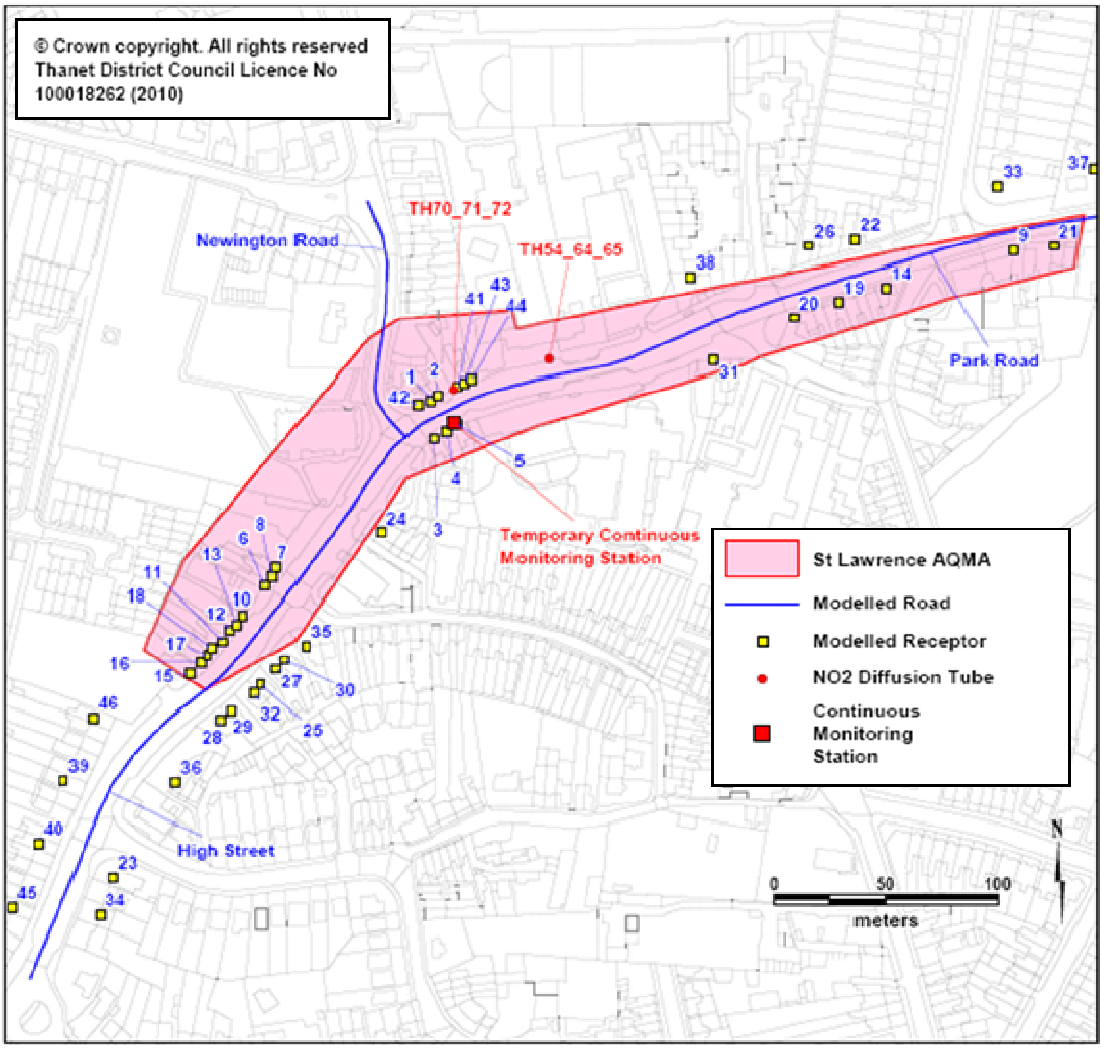


Table 1. Receptors on Park Road modelled to exceed the Annual NO_2 Air Quality Objective of 40 ug/m^3.

Receptor ID	Total Modelled NO_2 2010 µg/m^3
1	42.2
2	41.4
3	44.3
4	41.3
5	41

Source apportionment showed that, although background pollution levels contribute significantly, road traffic is the main emissions source contributing to elevated levels of NOx

[1] http://www.thanet.gov.uk/pdf/Thanet_DC_Further_Assessment2010_Final_word.pdf

and NO_2. Table 2 shows the results of the source apportionment calculations. Of the traffic emissions HDVs (HGV plus buses) are the most significant contributors.

Table 2. Source apportionment at highest predicted receptor.

Source	NOx %	NO_2 %
Local background	11.6	16.8
Regional background	19.3	27.9
Road traffic	69.2	55.3
Car	*26.5*	*21.2*
LGV	*13.3*	*10.7*
Bus	*9.6*	*7.6*
HGV	*19.8*	*15.8*

The reduction in NOx concentrations required to comply with the AQS objectives in the St Lawrence AQMA is approximately 13µg/m^3 (equivalent to a 21% reduction in road-NOx emissions). This equates to about 4µg/m^3 reduction in NO_2 (10% reduction). Measures formulated in the Local Action Plan should aim to reduce the levels of NOx / NO_2 within the AQMA by at least these amounts.

2.5 Recent trends in air quality within the previous two AQMAs

Table *3* shows annual mean concentrations of NO_2 at all monitoring sites located within the previous AQMAs. All diffusion tube data presented has been corrected for laboratory bias. The bias correction factor for each year has been calculated from collocation studies undertaken within the Thanet District Council area.

Table 3. Annual mean NO_2 concentrations (µg/m^3) at monitoring sites located within the AQMAs.

Site name	Monitoring method	2006	2007	2008	2009	2010	2011
The Square, Birchington previous AQMA							
The Square, Birchington	Automatic Monitoring Site	-	37	39	**40**	35	36
Birchington Square	Diffusion Tube TH13/46/47	**51**	**42**	**42**	**49**	**41**	**44**
Canterbury Rd, Birchington (A28) (Yew Tree)	Diffusion Tube TH48	32	32	33	37	31	31

Canterbury Rd, Birchington (A28) (Kent Gdns)	Diffusion Tube TH49	**46**	34	35	**43**	36	37
High Street, St Lawrence previous AQMA							
High Street, St Lawrence	Diffusion Tube TH54/64/65*	**54** (only TH54)	**40**	**41**	**45**	**40**	**40**
High Street, St Lawrence - Facade	Diffusion Tube TH66	-	29	29	31	29	27
High Street, St Lawrence Facade	Diffusion Tube TH70/71/72*	-	**43**	**42**	**47**	**42**	**41**

Table *3* shows that other than 2009, which saw a marked increase in concentrations at almost all the sites, the overall trend between 2007 and 2011 has been of fairly static annual mean concentrations. Concentrations in the year 2006 are elevated over subsequent years. This was a known high pollution year across the UK due to the meteorological conditions during the summer months.

Predicted background concentrations were expected to decrease over the past years and to continue to decrease into the future, as the national vehicle fleet gradually improved and other national policies to reduce emissions took effect. However, this expected decrease has not been seen in Thanet or indeed across the UK. It is now known that regulations introduced by the EU to reduce emissions from vehicles (Euro 1-3 standards) have not seen the reduction in emissions that were expected. In addition the introduction of particulate traps to reduce particle emissions on Heavy Goods Vehicles is believed to have led to a rise in direct NO_2 emissions leading to increased NO_2 concentrations at nearby receptors. This has resulted in projected reductions in pollutant concentrations not being realised in many areas of the UK, particular where concentrations are derived primarily from vehicle emissions. The resulting consequence of the reduction in emissions per vehicle not being realised is that it is important within the Action Plan to look at potential options for a reduction in vehicle numbers within the areas affected.

Table 4 demonstrates that concentrations on PM_{10} are well below the two UK Air Quality Objectives. This evidence is sufficient to support the District's decision to revoke the AQMA for PM_{10}.

Table 4. Results on PM_{10} monitoring within The Square, Birchington AQMA.

Site name	Monitoring method	2007	2008	2009	2010	2011
Annual mean concentrations (µg/m^3)						
The Square, Birchington	Automatic Monitoring Site	24	23	23	24	29
Number of exceedences of daily mean objective (50 µg/m^3)						
The Square, Birchington	Automatic Monitoring Site	11	6	10	6	31

2.6 Conclusions from 2011 Monitoring Data

Figure shows the bias-adjusted annual mean NO_2 concentrations measured at diffusion tube sites during 2011.

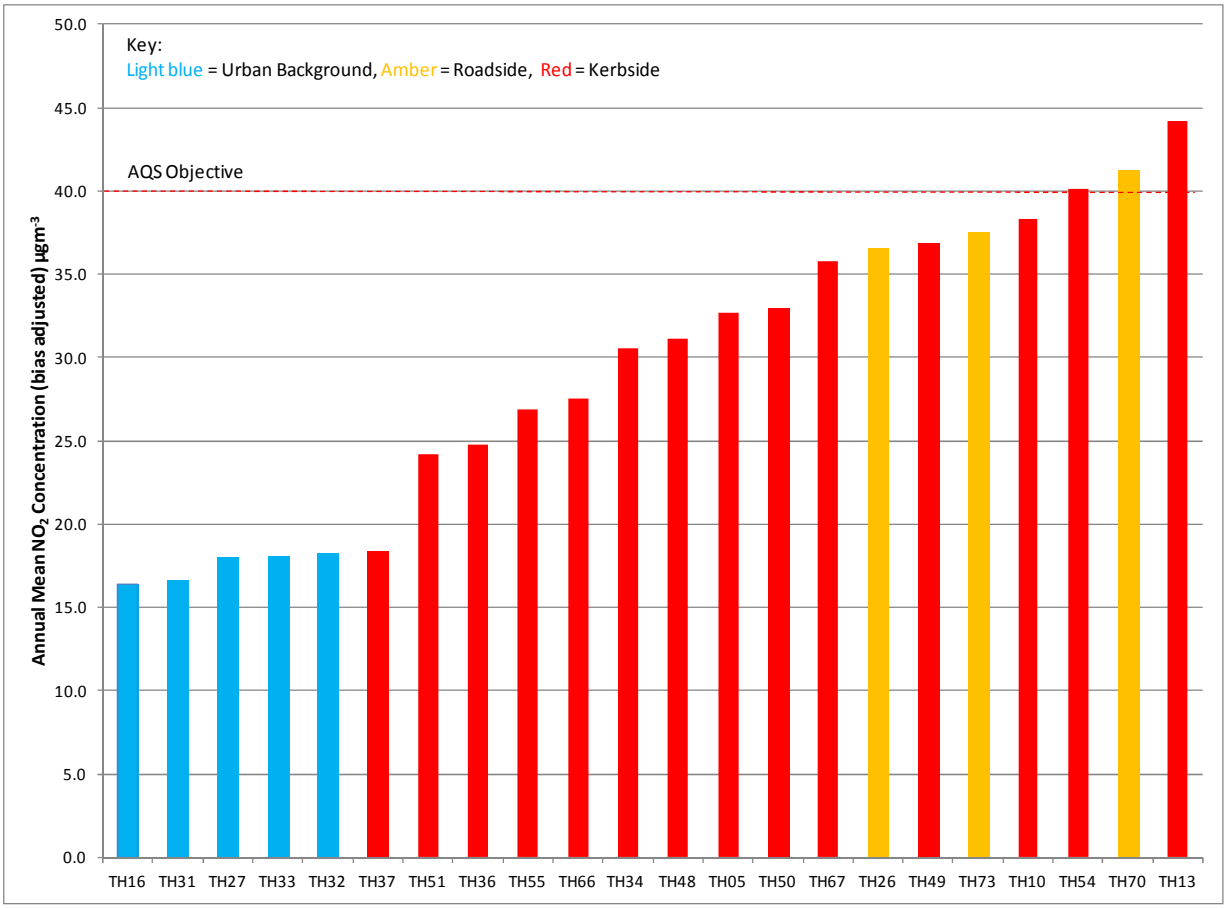


Figure 5: Annual Mean NO_2 at Diffusion Tube Sites in Thanet.

The majority of sites are kerbside, but (as in 2011) only two sites exceeded the AQS Objective of 40 µg m^{-3}. Highest concentrations were measured at TH13 at The Square, Birchington and TH70 on the High Street, St Lawrence. These sites also showed highest concentrations in 2008, 2009 and 2010. Figures 6A-C show diffusion tube co-location results at three Thanet automatic NO_2 monitoring sites – Thanet Airport (Urban Background), Thanet Birchington Roadside, and Thanet Ramsgate Roadside respectively. (Diffusion tubes were not co-located at the fourth automatic monitoring site, Thanet Margate.)

It should be noted that the tubes at Thanet Birchington Roadside are not truly co-located, as the diffusion tubes are 5m from the inlet of the automatic analyser. Also, the diffusion tubes are approximately 1m from the kerb, whereas the automatic analyser inlet is approximately 4m from the kerb.

Diffusion tubes at all three sites exhibit positive bias but it is more pronounced for Thanet Birchington, possibly due to site-related factors.

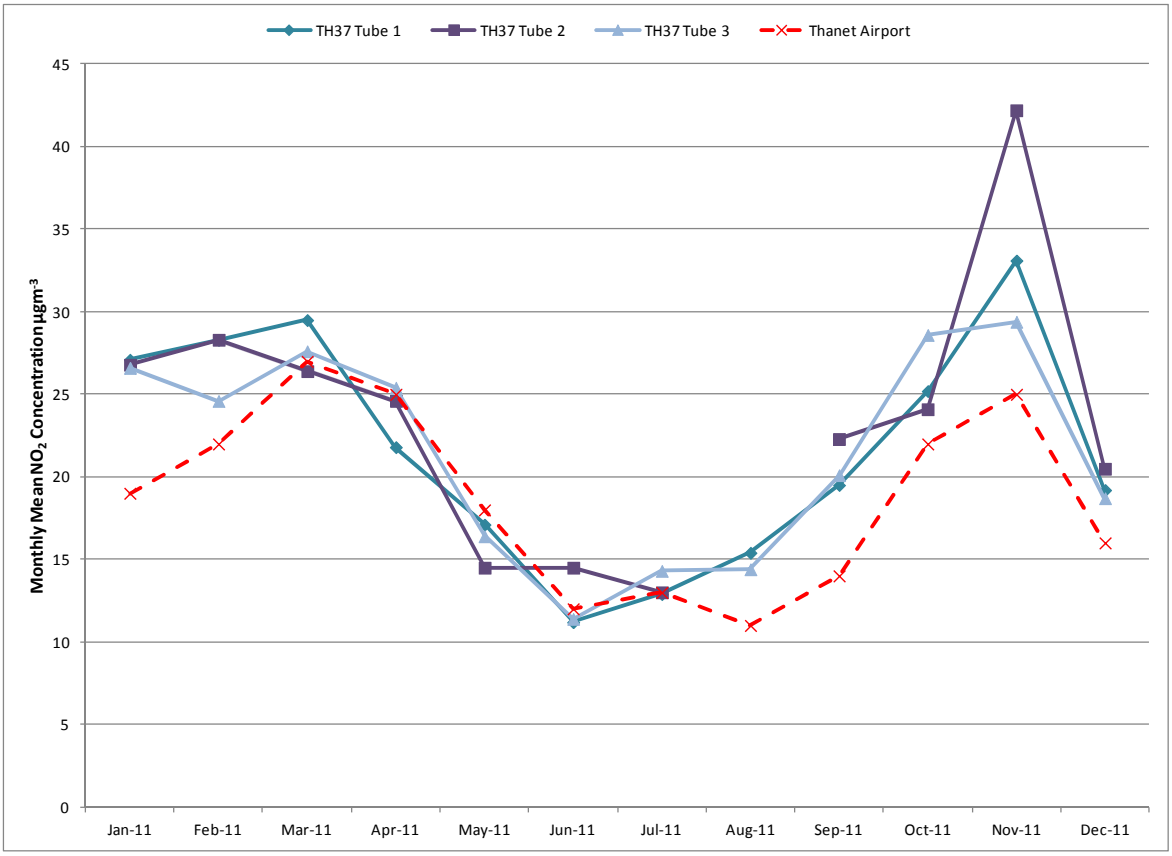


Figure 6A: Comparison of diffusion tubes and automatic analyser, Thanet Airport 2011 (no bias adjustment factor applied).

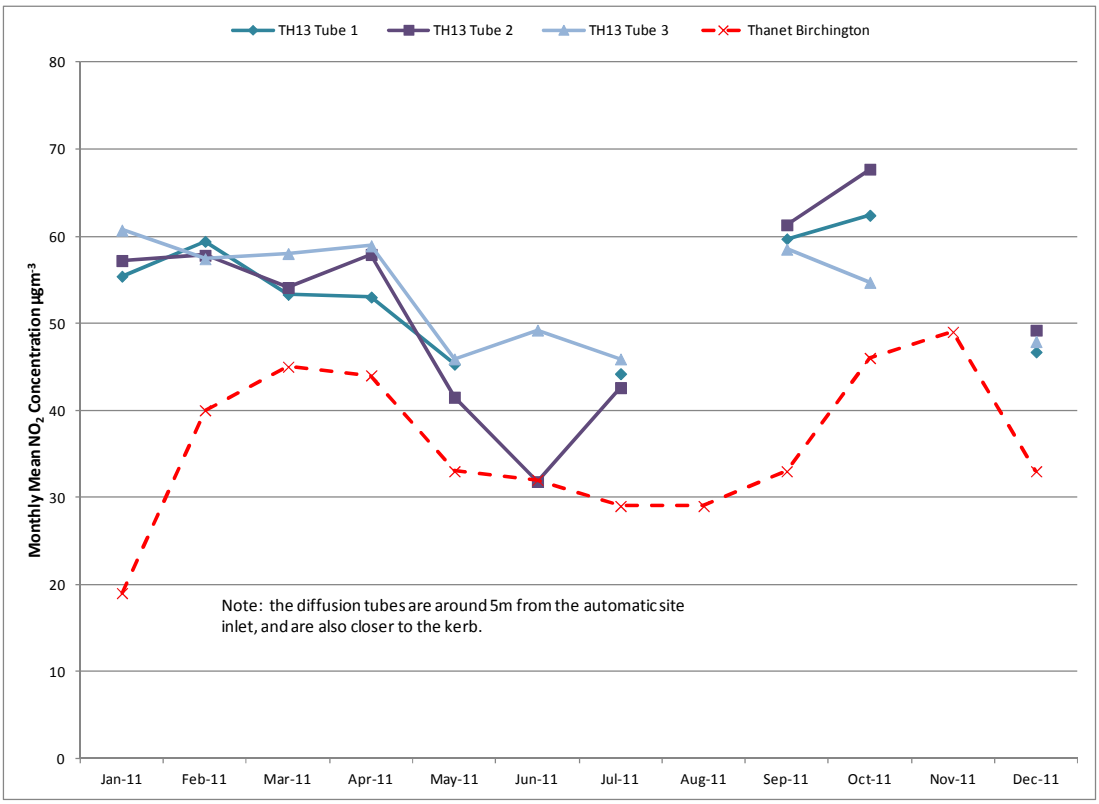


Figure 6B: Comparison of diffusion tubes and automatic analyser, Thanet Birchington Roadside 2011 (no bias adjustment factor applied). Nearby not co-located.

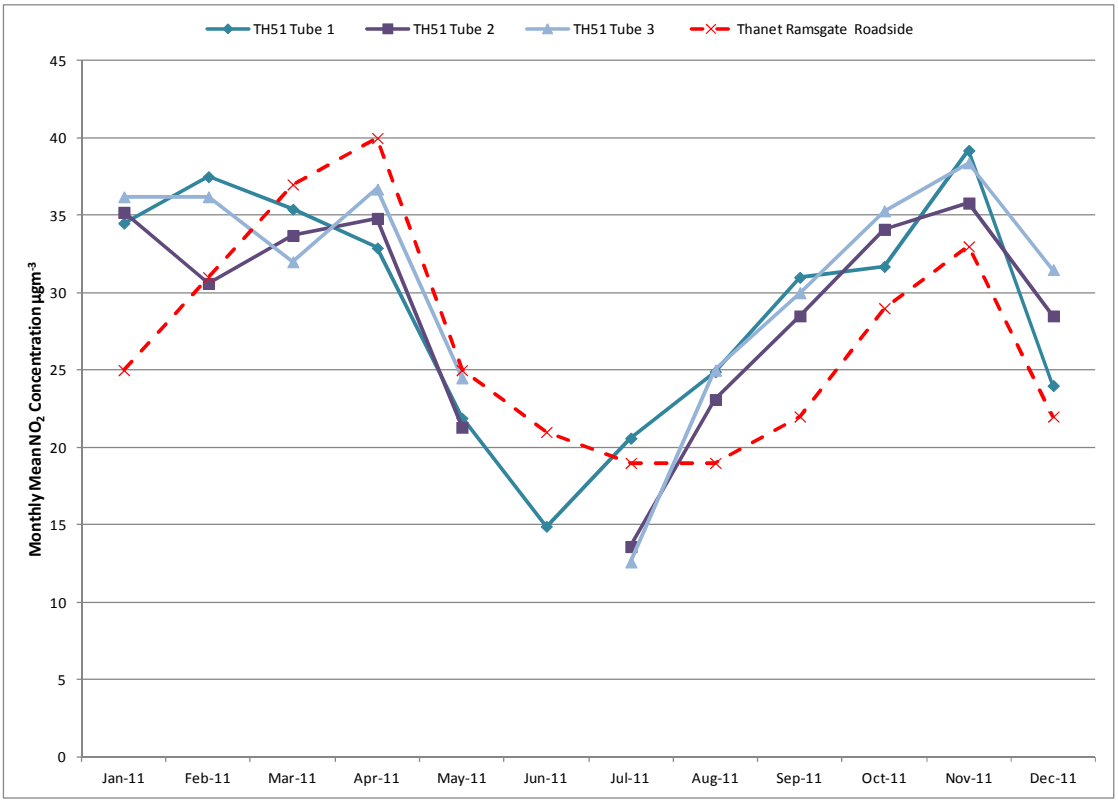


Figure 6C: Comparison of diffusion tubes and automatic analyser, Thanet Ramsgate Roadside 2011 (no bias adjustment factor applied).

Figure 7 shows a time series chart of mean concentrations. It includes means for all kerbside, all roadside and all urban background diffusion tube sites. Please note roadside sites are represented by just one long-running site, TH26. Urban background sites are represented by five long-running sites.

Also shown are the annual means for the four automatic sites and the diffusion tube sites co-located with them. The diffusion tube data are bias adjusted using the combined "national" bias adjustment factor. The diffusion tube data do not show any clear trend in NO_2 concentration. Similarly, the long-running automatic sites (Thanet Airport, Thanet Margate Background and Thanet Ramsgate Roadside) show no clear upward or downward trends.

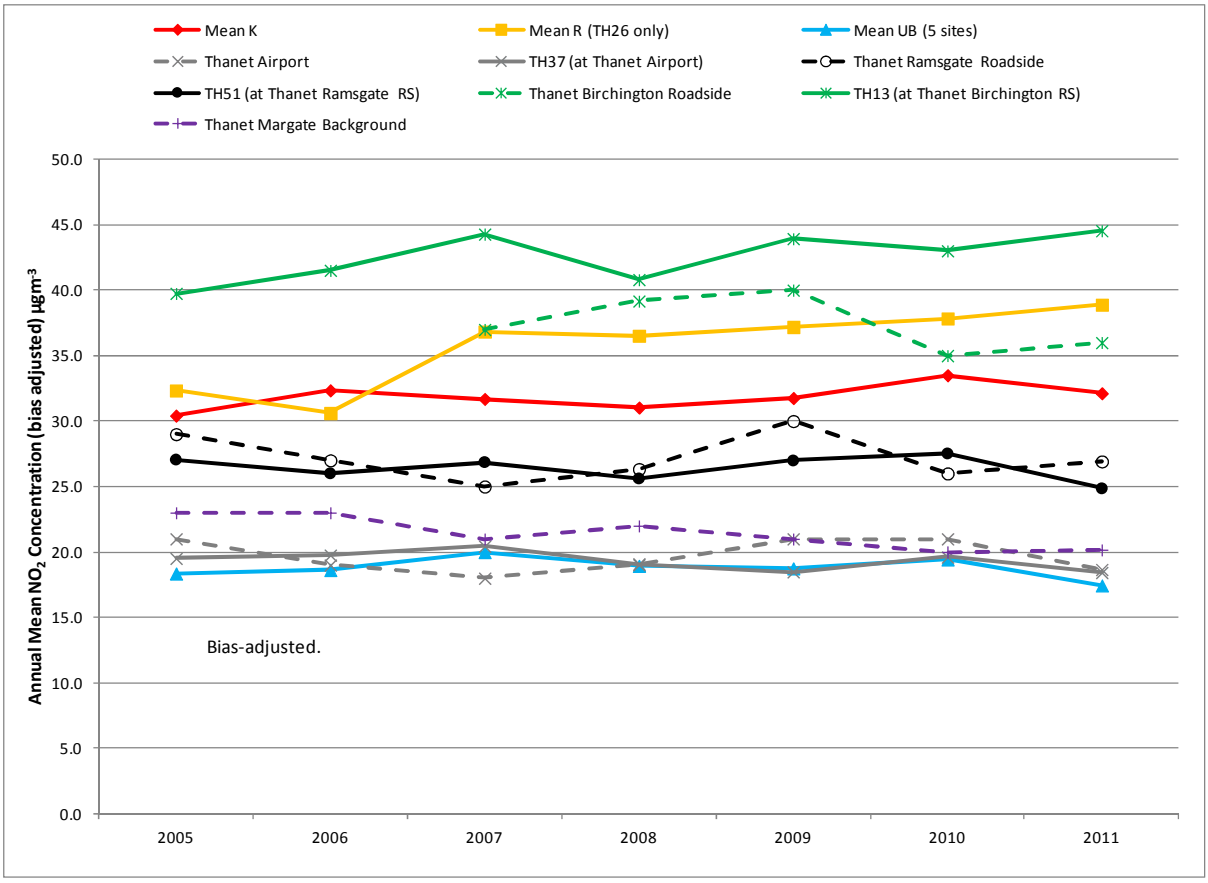


Figure 7: Time series of NO_2 concentrations in Thanet (diffusion tube data bias-adjusted).

2.7 Conclusions

1. Both junctions at The Square, Birchington and High Street, St Lawrence have a problem with local NOx emissions causing levels of NO_2 to be above the health-based annual mean standard of 40 µg/m^3.
2. Road transport at both junctions is the dominant local source of NOx emissions. Therefore it is intended that this Action Plan will be integrated into the Kent County Council Local Transport Plan (LTP).
3. Based on the source apportionment analysis, options to reduce traffic emissions should firstly focus on reducing HGV movements.
4. This may solve the air quality problem but if not then additional options that focus on improving the flow of traffic through the junctions may also be considered.
5. Based on 2008 values, measures at High Street, St Lawrence would need to reduce traffic NOx emissions by up to 21% to achieve the air quality standard.
6. Based on 2006 values, measures at The Square, Birchington would need to reduce traffic NOx emissions by up to 20% to achieve the air quality standard.
7. Although this Action Plan will focus on making progress towards achieving the annual mean objective for NO_2, it will have additional value for the Thanet District community if it also addresses other objectives relating to traffic emissions including: reducing exposure to fine particulate matter (PM_{10} for human health benefits) and reducing emissions of carbon dioxide (CO_2) as part of efforts to mitigate human-influenced climate change.

These conclusions will be referred to throughout the process of developing the Action Plan.

3 Development of the draft Action Plan

The Action Plan must include:

- Quantification of the source contributions to the predicted exceedences of the objectives; this will allow the Action Plan measures to be effectively targeted.
- Evidence that all available options have been considered on the grounds of cost-effectiveness and feasibility
- How the local authority will use its powers and also work in conjunction with other organisations in pursuit of the air quality objectives
- Clear timescales in which the District Council and other organisations and agencies propose to implement the measures within the plan
- Quantification of the expected impacts of the proposed measures and where possible an indication as to whether the measures will be sufficient to meet the air quality objectives and
- How the local authority intends to fund, monitor and evaluate the effectiveness of the plan.

Once the Action Plan is adopted, the District Council will also report progress on the implementation of the Action Plan annually and revise it from time to time depending on circumstances.

3.1 Partnership between the District Council and the Local Transport Authority (the County Council)

In Kent, the County Council is responsible for overall transport strategy. As the AQMAs in Thanet are dominated by emissions from transport, a partnership arrangement between the District and County Councils for the development of this Action Plan has been used. The County Council has put forward proposed actions, which they themselves can implement in pursuit of the air quality objectives.

3.1.1 Integration with Local Transport Plan (LTP)

Local Transport Authorities are required to submit a 5-year Local Transport Plan (LTP) for their area that sets objectives and targets for transport, and strategies for achieving them. The plans must cover all forms of transport and establish strategies to tackle congestion and poor air quality. The LTP provides the basis for allocating resources to the Local Transport Authority in order for them to implement their plans. The Local Transport Authority for Kent is the County Council.

The Department for Transport (Dft) included air quality as one of four shared priority areas to be reported in the Second Local Transport Plan (LTP2) which covered the period from 2006 to 2011. This was the first time that air quality was addressed separately as a priority alongside three other areas: congestion; accessibility; and road safety. The Kent County Council LTP2 recognised the impacts of transport emissions on public health and was integrated with the Air Quality Action Plans prepared by Kent's district councils in those areas where concentrations exceeded the Government's prescribed limit.

In contrast to the first and second round of LTPs, LTP3 will not be formally assessed by the Department for Transport and there are fewer mandatory targets to report against. There is also no requirement to renew every five years but instead the requirement to include a separate Strategy and Implementation Plan setting out objectives and how these will be met. For LTP3 DfT published a set of five key goals and related challenges for development of the UK's future transport policy and infrastructure. One of these, "Contribute to Better Safety, Security and Health", specifies the reduction of "social and economic costs of transport to

public health, including air quality impacts in line with the UK's European obligations" thus maintaining the importance of reducing air quality impacts with the transition from LTP2 to LTP3.

Kent County Council has recently adopted its third Local Transport Plan which covers the period from 2011 to 2016[2]. The Plan presents five themes based on the five Government Goals. These are:

1. Growth without Gridlock;

2. A Safer Healthier County;

3. Supporting Independence;

4. Tackling a Changing Climate;

5. Enjoying Life in Kent.

The document states that the implementation Plan for a Safer and Healthier County includes measures to protect communities from pollution and that these will be targeted at Air Quality Management Areas. Furthermore the Implementation Plan for Tackling a Changing Climate looks to reduce transport emissions which will indirectly lead to improvements in air quality. This will be achieved through a combination of promoting greener forms of transport, reducing the length of, and necessity to make, a journey and reducing the carbon footprint of KCC as the manager of the local road network.

The technical exceedence areas within the AQMA in Thanet are characterised by road geometry which do not lend to extensive infrastructure improvements or traffic management schemes – essentially they are pinch points in the road network. Previously traffic management via traffic lights were trialled at the Birchington exceedence area but results indicated that this was not an effective means of easing congestion and hence lowering emissions and improving air quality.

Focus during the preparation of this draft action plan has therefore been directed towards increasing sustainable transport in the whole district. This relies on the existing bus, walking and cycling strategies but includes new focus from Kent County Council on their successful Local Sustainable Transport Fund (LSTF) award from the Department of Transport.

Included in the LSTF are sustainable transport improvements to encourage sustainable access between the new High Speed 1 service, Margate town centre and seafront:

- Improved access to existing bus stops (see attachment 'Margate bus stop accessibility');
- Improved information for public transport users (racks for bus timetables etc);
- Improved forecourt area to enhance interchange facilities (part of Margate public realm scheme – see attachment 'Margate Station Forecourt').
- Revenue support for creation of 'Cycle Hub' within the station building; with the potential for establishment and/or expansion of existing local businesses to cover bike maintenance, recycling, storage, cycle hire, education, volunteer support, led rides, crime reduction, health initiatives.

This initiative aims to encourage modal shift from the passenger car to public transport and cycling which should result in lower emissions.

[2] http://www.kent.gov.uk/roads_and_transport/highway_improvements/our_transport_vision/local_transport_plan/local_transport_plan_3.aspx

3.2 Partnership with Development Planning

The planning system plays a key role in protecting and improving the environment. Land use planning and development control can become an effective tool to improve air quality by first locating developments in such a way as to reduce emissions overall, and secondly reducing the direct impacts of those developments. Although the presence of an AQMA makes consideration of the air quality impacts of a proposed development more important, there is still a need to regard air quality as a material factor in determining planning applications in any location. This is particularly important where the proposed development is not physically within the AQMA, but could have adverse impacts on air quality within it, or where air quality in that given area is close to exceeding guideline objectives itself.

The Government's commitment to the principles of sustainable development were set out in 'A Better Quality of Life – A Strategy for Sustainable Development for the UK', May 1999. Eight principles of particular relevance to planning and pollution control were set out: -

- Taking a long term perspective;
- Putting people at the centre;
- Taking account of costs and benefits;
- Respecting environmental limits;
- Applying the precautionary principle;
- Using scientific knowledge;
- Following procedures which are based on transparency, access to information, effective participation by stakeholders and access to justice; and
- Making the polluter pay.

The national air quality strategy reiterates that the government strongly believes that air quality issues should be dealt with in a holistic and multi-disciplinary way. In developing an air quality Action Plan the District Council has engaged with land-use and transport planners to ensure the actions are supported by all parts of the authority.

The District Council is currently preparing the Local Plan and air quality is acknowledged as an important consideration in the planning process. Where proposed development is likely to impact on air quality, it may be expected to contribute proportionately towards measures to implement the Action plan.

3.3 Formation of steering group

A steering group was established to develop the Action Plan, which included officers from Environmental Protection and Development Planning within the District Council and Transport Planning manager at the County Council.

3.4 Action Plan options and their assessment

The steering group, in developing the draft Action Plan, has considered a full range of relevant options to change traffic at the Birchington and St Lawrence exceedence areas. The process has been one of narrowing down the range of potential options to ones that are focussed on the problem, feasible, do not adversely impact on other locations or vulnerable highway users, and are cost-effective compared to others. This section summarises how this was done.

Essentially the steering group adopted the following procedure:

- Consideration was given to the full range of potential options.

- Initial decisions were made to determine whether any options were unfeasible or unacceptable and they were eliminated from the options list.
- Remaining options were defined further and underwent a detailed assessment.
- The results of the assessment identified those options to prioritise and to adopt as measures in the Action Plan.

There is a very wide range of options available to reduce the emissions from road transport. The District and County Councils do not necessarily have the power to implement them all directly but potentially they do have a role in attempting to influence those bodies or individuals who could implement them. Therefore, it is appropriate to initially consider all options.

3.5 Measures to improve air quality

Nine key measures were identified via assessment for inclusion in this Action Plan as priorities for the improvement of air quality at the Birchington and St Lawrence and wider exceedence areas. These include:

1. Specific options aimed at promoting more sustainable travel choices and reducing queues at the Birchington and St Lawrence junctions
2. Strategic options aimed at integrating air quality into all relevant areas of decision making within the District and County Councils.

The measures in the Action Plan are detailed in the following section and a summary is presented in Table 5. This Plan is:

- Focussed – road transport is the dominant source of emissions in the AQMA and queuing vehicles and HDVs are particularly significant sources.
- Proportionate – the plan puts most emphasis on reducing queuing from all vehicles and contains specific measures to attempt to address HDV emissions.
- Realistic – the measures in the plan have been assessed as being the more feasible, acceptable and cost-effective among many options.
- Strategic – key measures to be implemented include improving the District Council's capacity to manage air quality in order to avoid worsening air quality and to make progress towards the air quality standards.
- Sustainable – we believe that the plan can contribute to the District Council community aims to reduce CO_2 emissions, improve quality of life (by improved health) and not compromise the local economy or pedestrians and cyclists.

The 9 measures in this Action Plan are the ones that the District and County Councils have considered for adoption and implementation in pursuit of the air quality standards within the Thanet urban AQMA. Detailed information on the 9 measures is presented below. Some of the identified measures require further study to facilitate which ones are most cost effective. After these studies are complete, the Councils will be able to decide which of the measures are fully warranted for implementation.

In summary, the Action Plan aims to reduce transport emissions in the AQMA by around 10%. Further reductions of up to another 10% are anticipated upon implementation of measure 1, though this will depend on the outcome of the feasibility of junction signal study. It is anticipated that a reduction of this scale will lead to the achievement of the annual mean NO_2 air quality standard (40μg/m^3) within the AQMA based on 2010 monitoring data. No

additional measures are thought to be required. However, it should be noted that 2009 data were significantly higher, and further measures would be required if this year is used as the basis for reduction. Air quality is significantly influenced by weather conditions, with calm weather giving rise to higher concentrations. The District Council will continue to review and assess air quality to monitor this situation.

Funding for the implementation of this Action Plan is through the Local SustainableTransport Fund and the Local Transport Plan where existing projects complement the Action Plan. Further funding will be sought through the Defra air quality grant annual award scheme for the implementation of specific tasks within measures.

3.5.1 Measure 1: Investigate Traffic Signal and Junction Configuration to improve traffic flows

Stationary vehicles give rise to a high proportion of emissions relative to moving traffic. Consequently, measures to reduce traffic queues are likely to reduce emissions. Both The Square Birchington and High Street St Lawrence are busy junctions which regularly suffer from congestion issues. Initial consideration has been given to this with previous trials to optimise traffic flows to reduce congestion having been undertaken at the Birchington junction. Further detailed consideration of this measure at Birchington and St Lawrence should be undertaken to ascertain if any further option is available to reduce congestion. The location of pedestrian crossings and bus stops also warrants some consideration with respect to the impact on traffic flows. TDC will work in partnership with the relevant highways authority KCC to investigate what additional traffic management measures could be implemented to improve flows in the vicinity of these junctions.

Neither The Square Birchington nor High Street St Lawrence are served by traffic lights but for those other junctions within the urban AQMA which are served by traffic lights the installation of a MOVA system - Microprocessor Optimised Vehicle Actuation (MOVA) is a self optimizing control system for traffic signals developed by the Transport Research Laboratory (TRL) should be investigated. Such improvements have been successful when implemented at Victoria Traffic lights, Margate in 2010. Using an online microprocessor MOVA maintains the optimum green stage, cycle time and control strategy to accommodate prevailing conditions and therefore minimise queuing at signalised junctions. TRL tests have shown on average a 13% delay saving for the motorist over conventional vehicle actuation controlled traffic signals. This reduction in queuing traffic should lead to a reduction in Nitrogen Dioxide levels at the junction. MOVA has been reported to produce emission reductions up to 15% (McCrae, 2009).

With regard to The Square, Birchington, there is currently one traffic management scheme proposed in the LTP, for Park Lane, linked to the Birchington Church of England Primary School Travel Plan. Selective speed reduction measures are proposed through speed humps to help overcome perceived ‘rat-running’ problems and assist with access to Birchington Church of England Primary School. B2048 Park Lane lies directly to the south-west of The Square and is a main route for school related traffic. At the junction of Park Lane/A28 Canterbury Road, Park Lane has single vehicular access resulting in queuing at peak times and adding to congestion issues in the area. Although this scheme has not been conceived with consideration to queuing at this junction and the potential air quality impacts, any reduction in traffic using this route as a result of traffic calming measures could have potential benefits.

3.5.2 Measure 2: Improving Movement of Freight

HGV movements within both technical exceedence areas are not significant in their number. However, HGVs give rise to a corresponding high emission of NOx and it was demonstrated

in a previous study that 5% HGV movements in Birchington resulted in about one third of the total NOx emissions.

The current Freight Strategy is outdated; KCC Traffic Management Team has been working on a draft Kent Freight Action Plan (FAP) that will effectively help to address concerns with the movement of freight both through and within the county. The FAP sets out the vision to: Promote safe and sustainable freight distribution networks into, out of and within Kent, which support local and national economic prosperity and quality of life, whilst working to address any negative impacts on local communities and the environment both now and in the future. It has several objectives but of most relevance to air quality are:

- Objective 4: To take steps to address problems caused by freight traffic to communities i.e. use positive signing to direct HGVs onto the strategic road network.
- Objective 6: To encourage sustainable freight distribution.
  Many people use home delivery for goods but a large proportion of deliveries fail and have to be redelivered. This primarily uses smaller vehicles but there is great potential to reduce the number of these on the roads and, therefore, their impact on congestion, air quality and noise.

The FAP should give consideration to include signage for freight movement within Thanet and consideration should be given to setting up a Freight Quality Partnership with major freight hauliers in local and regional areas which aims to address local environmental concerns with those of the haulage industry of meeting journey times.

To help identify substantial contributors to NO2 a vehicle emissions study to characterise the distribution of on-road vehicle fleet emissions, including estimates of primary NO2 emissions, classified by vehicle type (Car, Van, Light and Heavy Commercial Vehicle, Bus), age, fuel type, and emission standard (e.g. Euro 0-5) will be carried out. This will enable Thanet Council to identify the abundance and significance of high emitting vehicles and encourage improvements e.g. through eco-driving, which is the technique of driving in a smooth controlled manner, has been demonstrated to reduce fuel consumption and hence lower emissions of both air pollutants and carbon. For the haulage industry, a key benefit is fuel cost savings.

Consideration of eco-driving training should be investigated and promoted for selected haulage operators and also for the District Council refuse collection vehicle fleet.

The District Council will seek an air quality grant from Defra to undertake a vehicle emissions survey to characterise characterise the distribution of on-road vehicle fleet emissions, including estimates of primary NO2 emissions, classified by vehicle type (Car, Van, Light and Heavy Commercial Vehicle, Bus), age, fuel type, and emission standard (e.g. Euro 0-5). The study will identify the abundance and significance of high emitting vehicles and enable a targeted approach to improving identified heavy HGV polluters.

3.5.3 Measure 3: Encouragement of Public Transport Use

Generally in the UK, 25% of Britain's car journeys are less than 2 miles, which is a distance that can be covered by walking or cycling. Also, 17% of car journeys are travelling to and from work while school journeys are estimated at 17.5% of morning peak traffic in urban areas in term time. Indeed, if half of UK motorists received a lift one day a week, pollution would be reduced by 10% and traffic jams by 20%. It is therefore important to consider the promotion of public transport uptake, car sharing and travel planning within the Birchington and St Lawrence areas and Thanet in general. Passengers boarding within Thanet District have increased from 4m to 8m between 2004-5 and 2011-12, and whilst some of this is an inevitable result of reduced fares for pensioners and secondary school children, most can be attributed to the investment in buses, bus infrastructure and frequency.

A quality bus partnership is an agreement between the principal bus company, Kent County Council and the district or borough council. The partnership aims to develop all aspects of bus travel and to increase the number of passengers using bus services, with the aim of bringing about significant improvements in the quality of bus services in the county, through co-ordinating investment from different parties in the bus routes.

Within a bus quality partnership local authorities aim to invest in improvements such as bus lanes and bus priority at traffic lights. There are also bus stop improvements such as raised kerbing and traffic restrictions known as bus stop "clearways". The bus companies aim to invest in easy-access low-floor buses and improving the frequency, punctuality and reliability of their services. The planning authority will consider the potential for providing public transport (or other sustainable measures) as part of any planning consent to facilitate commercially sustainable public transport.

The first quality bus partnership in East Kent was formed in Thanet and helped to pioneer the development of these in the rest of the county. The Thanet Quality Bus Partnership provided the framework for the introduction of 'The Loop' service linking Margate, Westwood Cross, Ramsgate, Broadstairs and Margate, which was supported with Kickstart funding from the Department for Transport and Kent County Council.

The success of The Loop in attracting new bus passengers and the growing of the bus business is an example of an effective quality bus partnership in action. This involves Thanet District Council providing bus stop clearways and enforcing them, Stagecoach in East Kent operating new vehicles to a higher frequency, and the County Council providing bus stop infrastructure improvements. A greater emphasis will be placed on the link between new planning permissions and the provision of a commercially sustainable and publicly attractive sustainable transport measures by the district, whilst the County's next step is to consider improving the flow of buses in congested areas.

There have already been significant improvements to the bus stops within the Birchington and St Lawrence. The frequency on the Loop has increased from every 10 minutes to every 7 minutes. Birchington has for some years been served by buses every 10 minutes to Margate, and every 30 minutes to Minnis Bay and Canterbury. Following major service improvements by Stagecoach on a commercial basis in 2004 and 2009 frequencies are now an average of every 7.5 minutes to Margate and every 15 minutes to both Minnis Bay and Canterbury.

Buses on the Loop and small buses used for some of the St Lawrence and Birchington operations are Euro 3 standard for emissions. Buses on route 8 to Canterbury are Euro 4 standard. In spring 2013 all Loop buses will be replaced with new Euro 5 standard vehicles and this will allow midibuses serving Birchington to be upgraded to Euro 3 standard. Some Euro 1/Euro 2 standard large vehicles will be retained for rural and school peak routes into and around Thanet, but all of these will be replaced as DDA regulations require fleet replacements for various sizes of bus in 2014-2016. By January 2017 all local buses will require DDA certificates and the local Stagecoach fleet will therefore all be Euro 3 standard. KCC has provided Euro 4 buses for route 38 – the other local bus service in Birchington – as this is operated on behalf of KCC.

Stagecoach use Low Sulphur diesel fuel and vehicles are serviced more frequently than the licensed requirement with VOSA (every 21 days rather than every 28 days), and this includes a check on exhaust emissions and rectification if required. Stagecoach's "spot check" record with VOSA throughout Kent is extremely good, with all vehicles spot checked this financial year having been passed with "no apparent defects". Stagecoach therefore considers that their present day operation in Birchington is being as friendly to the environment of Birchington Square as they are reasonably able to provide.

All Stagecoach services through Birchington Square are operated commercially by Stagecoach, i.e. without direct support from KCC. Stagecoach has improved both overall frequency and more specifically evening and Sunday services since the advent of the Thanet

QBP. This makes the service on this route and others in Thanet one of the most frequent and comprehensive to be operated in Kent evenings and Sundays without subsidy from KCC. If KCC and TDC are able to provide a funding stream for the route then options to improve it further could be considered.

Stagecoach has voiced their concerns at what they consider as the general lack of consideration for impact on road transport and congestion when planning development decisions are made. Bus services are gradually operating at slower average speeds and new residential and commercial build are considered to play a significant part in this.

The KCC contribution to the Quality Bus Partnership in terms of Integrated Transport Measure funding, as part of the LTP process, is ongoing and reviewed annually and any associated 'new' need to emerge e.g. at the A28 Birchington Square AQMA or High Street St Lawrence, will be investigated and could figure prominently in terms of justification and priority with respect to LTP objectives. Similarly as an active partner, TDC may consider a supplementary contribution to any physical measures identified and the operating partner Stagecoach would be encouraged to share-in the joint aspirations. Bus quality success indicators are included in the Table 5.

3.5.4 Measure 4: Car Sharing and Travel Planning

The encouragement of travellers to plan their journey and share transport when possible is likely to lead to fewer vehicle trips and, therefore, lower emissions. Car sharing and travel planning are therefore important measures to improve air quality. Car sharing schemes operate in urban areas around the UK, and have been reported to reduce driver days by up to 36% (Jones, 2009).

Car Club

Kent has developed a successful contractual partnership with car club operator Zipcar over the last four years to implement a car club scheme in Maidstone. This is linked to the need to provide a cost effective and resource efficient pool car solution for County Hall based employees. The existing three cars are available as pool cars for KCC employees during office hours and help to provide a reliable and effective alternative to driving to work, enabling employees to travel by public transport, walking, cycling or car sharing. The financial viability of the scheme is ensured by making the cars available to local residents at evenings and weekends, providing an alternative to car ownership for those only requiring occasional usage of a car.

More recently, Section 106 monies have been secured from a nearby residential development, enabling the transfer of a vehicle to that site, supporting the aspirations of the developer to provide reduced levels of parking. KCC is currently working with Zipcar to develop opportunities to expand the car club network in Maidstone and to launch it in other parts of Kent. It is recommended that the use of a car club in Thanet be investigated with KCC.

Car Sharing

Kentjourneyshare.com is KCC's online car-sharing database operated under contract by Liftshare.com, the UK's largest provider of these services. The scheme enables car drivers and prospective passengers to log details of their journeys online and to search for matches to share their trip. To date, Kentjourneyshare.com has over 3,500 registered members and is estimated to save over 3.7 million car miles and 1,200 tonnes of CO2 a year. Investigations should be undertaken to review the current usage and promotion of Kentjourneyshare.com scheme in Thanet.

Workplace travel plans

A Travel Plan (sometimes referred to as a green travel plan) is a package of measures designed to influence the travel behaviour of individuals, businesses, schools or other organisations through promoting sustainable travel. The general aim is to reduce the negative effects of traffic by encouraging alternatives to single-occupancy car-use.

The County Council is working with businesses, schools, developers and individuals by promoting sustainable travel through travel planning.

Within the District Council's Local Development Framework travel plans are to be sought under the Development Control Policy. Proposals for new development that would have significant transport implications should be accompanied by a Green Travel Plan'. It is not necessarily the size of the development that would trigger the need but more the nature of the use. It could include:

• new employment sites employing over an agreed threshold

• a use which is aimed at the public (eg retail, leisure activities)

• major residential development

The Travel Plans should seek to:

(a) reduce the use of cars by encouraging car sharing;

(b) provide links to enable the use of public transport;

(c) improve road safety for pedestrians and cyclists; and

(d) Identify any mitigation works to be funded by the developer in conjunction with the proposal.

Once a travel plan has been prepared as part of the planning approval process, there is often limited follow up to ascertain the success of the plan from the end user. As part of the LSDF, the County Council is developing an initiative called 'New Ways 2 Work' which aims to match the 'sticks' secured through planning with a range of corporate and individual travel and leisure benefits which participating organisations can access on behalf of their employees. The scheme will be open to those organizations which demonstrate a clear commitment to encouraging sustainable travel choices and would be renewable on a 12 monthly basis. KCC has already secured the support of four district councils, a major bus operator and a cycle retailer in this proposal.

In addition, KCC is developing a website resource hub, an award and accreditation scheme and a more co-ordinated approach to sustainable travel campaigns, whilst retaining flexibility for their local interpretation and implementation.

It is recommended that the District Council liaises with the County Council on this issue to encourage more active participation in Thanet.

School Travel Plans

The County Council has worked with all schools in Thanet to develop a travel plan, aiming to encourage sustainable modes of transport for all school children. To build on this initiative the District Council will work with the County Council to establish a 'Diamond School Travel Plans' initiative that builds on the existing Gold and Platinum accreditation program and is intended to focus on schools identified as having the greatest potential for mode shift following a detailed analysis of school census data. All schools will continue to be asked for

an annual review of their School Travel Plan whilst the Diamond Schools initiative will build on focused and exemplar Plans, providing case studies and good practice examples to be emulated by others.

TDC Travel Plan

To implement a staff travel plan was a priority measure in Thanet District Council Transport Plan 2005-2011. A number of the actions proposed in the Plan have been implemented but as yet no travel plan has been introduced. As a major employer in the District, the Council is developing its own Staff Travel Plan, to set an example of best practice to other employers as well as making a contribution to reducing traffic congestion and pollution.

3.5.5 Measure 5: Promotion of Cycling and Walking

Measures to encourage cycling and walking rather than using car especially for local journeys are important to reduce emissions and hence improve air quality.

The provision of facilities to encourage people to make short trips on foot or by bicycle, rather than by car is very important. Within the Local Transport Plan, the County Council has set out programmes of improvements to walking and cycling routes, with crossings in the centres of the larger market towns to make it easier for people to access schools, shops and other local services. This measure comprises two tasks:

Task 1: Review the current walking and cycling routes across Birchington and St Lawrence and identify where improvements can be made

Task 2: Prepare a detailed implementation programme for such works in Birchington and St Lawrence.

Thanet Council published a walking strategy in back in 2005 called ‘Feet First– enabling and promoting walking in Thanet’. The strategy recognises that walking has health benefits; is socially inclusive and contributes to reduced congestion and improved air quality.
The strategy has three objectives

- *To ensure that the appropriate infrastructure is provided and maintained to enable those wishing to walk to do so safely and conveniently.*
- *To promote and encourage walking as an healthy alternative to the private car for short work and leisure journeys and as a means of recreation.*
- *To identify priorities for implementing a planned programme of high quality walking routes in Thanet.*

Much of the planned program of work for creating/improving pedestrian routes outlined in the strategy has been completed.

3.5.6 Measure 6: Development Planning

The planning system plays a key role in protecting and improving the environment. Land use planning and development management can become an effective tool to improve air quality by first locating developments in such a way as to reduce emissions overall, and secondly reducing the direct impacts of those developments. As air quality is a material planning consideration and in view of the new urban wide AQMA and the withdrawal of the general planning guidance on air quality (planning Policy Statement 23: Planning and Pollution Control) as part of the National Planning Policy Framework, (NPPF), there is a need for local guidance on air quality.

The Kent and Medway Air Quality Partnership have produced Air Quality and Planning Technical Guidance document (Appendix 2). The Council and developers shall have regard to this guidance. It provides technical advice on how to deal with planning applications that could have an impact on air quality and human health. The guidance document will help to ensure consistency in the approach to dealing with air quality and planning across Kent. It will require developers to offset the impact of development on air quality.

Current planning policy for Thanet includes the 'saved' policies of the Thanet Local Plan (2006). It is fundamental to the achievement of the aims of the Air Quality Action Plan to have a Local Plan that recognises the importance of air quality in terms of the environmental impact of development and the need for sustainable transport measures. The Thanet Local Plan addresses air quality issues in the following "saved" policy (summarised below):

Policy EP5 Local Air Quality Monitoring

"Proposals for new development that would result in the national air quality objectives being exceeded will not be permitted.

Development proposals that might lead to such an exceedence, or to a significant deterioration in local air quality resulting in unacceptable effects on human health, local amenity or the natural environment, will require the submission of an air quality assessment, which should address:

(1) The existing background levels of air quality;

(2) The cumulative effects of further emissions;

(3) The feasibility of any measures of mitigation that would prevent the national air quality objectives being exceeded, or would reduce the extent of air quality deterioration"

Policy TR15 Green Travel Plans

"Development proposals likely to generate significant travel demand and/or travel movement will be required to demonstrate, through green travel plans, specific measures to encourage and facilitate use of walking, cycling and public transport in preference to private car travel. The Council will seek to approve measures which will assist implementation of green travel plans and school travel plans."

Policy TR12 Cycling

"In order to promote increased use of cycling:

A) The Council will seek the provision at the earliest opportunity, of a network of cycle routes. Planning permission will not be granted for any development which would prejudice the implementation of proposed cycle routes.

B) The Council will see the incorporation of facilities for cyclists into the design of new and improved roads, junction improvements and traffic management proposals.

C) Substantial development generating travel demand will be required to provide convenient and secure cycle parking and changing facilities. Proposals to provide such facilities as part of development proposals in town centres and at transport interchanges, schools and places of employment will be permitted.

D) In new residential development facilities for the secure parking and storage of cycles should be provided or, in exceptional circumstances where not provided, the design should facilitate the provision in future."

The Council is developing a new Local Plan and will be reviewing all policies as part of that process.

The South East Plan

The Secretary of State published the final version of the South East Plan (also known as the Regional Spatial Strategy for the South East) on May 6 2009. It sets out the long term spatial planning framework for the region to help achieve more sustainable development, protect the environment and combat climate change. It provides a spatial context within which Local Plans and Local Transport Plans need to be prepared, as well as other regional and sub-regional strategies and programmes that have a bearing on land use activities. These include the regional economic and housing strategies as well as strategies and programmes that address air quality, biodiversity, climate change, education, energy, community safety, environment, health and sustainable development.

The South East Plan is currently subject to an environmental assessment in light of the Government's policy intention to revoke exiting regional strategies under the Localism Bill. However, the South East Plan remains a material planning consideration until such time as a revocation is confirmed.

The relevant policy in terms of air quality is NRM9 which acknowledges the actions that can be taken through local planning policy and development management to improve air quality and reduce transport emissions.

Policy NRM9: Air Quality

Strategies, plans, programmes and planning proposals should contribute to sustaining the current downward trend in air pollution in the region. This will include seeking improvements in air quality so that there is a significant reduction in the number of days of medium and high air pollution by 2026. Local development documents and development control can help to achieve improvements in local air quality through:

i. ensuring consistency with Air Quality Management Plans

ii. reducing the environmental impacts of transport, congestion management, and support the use of cleaner transport fuels

iii. mitigating the impact of development and reduce exposure to poor air quality through design, particularly for residential development in areas which already, or are likely to, exceed national air quality objectives

iv. encouraging the use of best practice during construction activities to reduce the levels of dust and other pollutants

v. assessing the potential impacts of new development and increased traffic levels on internationally designated nature conservation sites, and adopt avoidance and mitigation measures to address these impacts.

3.5.7 Measure 7: Promotion of air quality issues

To monitor the impact of this Action Plan on the improvement of ambient air quality it is important that the District Council measures the air pollutant concentration and reports this into the public domain. With effective communications the District Council can raise awareness about the air pollution problem to encourage more sustainable travel in the AQMA.

The District Council will continue to raise the level of knowledge of air pollution in Birchington and St Lawrence and release press statements when appropriate to promote sustainable travel options.

The District Council will continue to undertake routine monitoring of air pollution in the existing AQMA and locations around the District and increase the number of monitoring points as necessary. The District Council will continue to report progress on air pollution monitoring.

3.5.8 Measure 8: Parking Enforcement

Unlawful and indiscriminate on-street parking in Birchington and St Lawrence exacerbates the traffic flow constraints and resulting air quality problems in the AQMA by obstructing the highway and causing congestion. Thanet District Council will tackle illegal on-street parking and help reduce congestion problems.

Thanet District Council Parking Strategy (currently at consultation stage) will ensure adequate enforcement of unlawful on-street parking in the vicinity of The Square, Birchington and St Lawrence to help relieve congestion problems.

3.5.9 Measure 9: Feasibility Studies and Funding

In preparing this Action Plan the District Council and the County Council have not had all relevant traffic data available to undertake a detailed analysis of all measures. Target emission reductions for each measure that have been derived are therefore uncertain for

some measures and have been based on judgement and available information. It is therefore important that the Councils undertake some further feasibility studies for example to determine if junction alteration (measure 1) is appropriate. Funding streams have to be identified to enable such feasibility studies.

Thanet District Council and Kent County Council will work together to undertake identified feasibility studies of measures to determine more robustly the effectiveness and cost of options. These feasibility studies will require traffic counts to be undertaken which will be used in transport modelling to investigate the impact of the measure on traffic flows and emission reduction.

Table 5 Summary of the measures included in the draft Action Plan for the Thanet Urban AQMA.

No	Measure description	Focus	Lead Authority	Planning phase	Implementation phase	Indicator	Target emission reduction
1	Investigate Traffic Signal and Junction Configuration	Reduce queuing traffic at the lights	KCC/TDC	2011/12	2012-2015	Peak queue lengths	To be confirmed on completion of feasibility study (~10%)
2	Improving movement of freight	Update Freight Strategy and develop Freight Quality Partnership to reduce HGV movements Vehicles Emissions Study	KCC/TDC	2011/12	2012-2013	% HGV on roads through AQMA	2%
3	Encouragement of public transport use	Reduce emissions from buses through the District through development of bus quality partnerships	KCC/TDC	2012	2012-2015	Number of Euro IV or above buses, bus patronage, number of bus infrastructure improvement projects	5%
4	Car sharing and travel planning	Reduce car trips	TDC/KCC	2011/12	2012-2013	Number of registered users of scheme or travel plan	2%
5	Promotion of cycling and walking	Reduce traffic flows through the AQMA	TDC/KCC	2011/12	2012	Number of cyclists/walkers	1%
6	Development planning	Avoid worsening AQ and open the S106 funding stream	TDC	2011/12	2011/12	Kent wide Supplementary Planning Document on Air Quality adoption and	1%

						use of S106 funds in implementing the Action Plan	
7	Promotion of air quality issues	Reduce traffic flows in AQMA	TDC	2011/12	2012	Number of press releases, reports on websites	-
8	Parking Enforcement	Reduced congestion	TDC	2012	2013	Number PCN served	-
9	Feasibility Studies and Funding	To fully understand the impact of identified measures	TDC	2011/12	2012	Feasibility studies completed	-

4 Implementation Plan

4.1 Consultation

Consultees for the Action Plan

This draft Action Plan will be issued to the following consultees and as appropriate, the plan will be amended to reflect their views and comments.

All properties in the Air Quality Management Areas
Kent County Council
Defra
All Parish and Town Councils within the Thanet District
Local Chambers of Commerce
Federation of Small Businesses
Bus Operators in Thanet
Neighbouring District Councils
All Thanet District Council Departments
Highways Agency
Environment Agency
English Nature
Freight Transport Association

Monitoring the Action Plan: The Action Plan will be monitored annually and the results collated for the yearly progress report on the implementation of the plan.

5 Conclusions

This Action Plan describes the air quality assessment process that has taken place in Thanet to date, identifies the role of traffic in the current problem and sets out a range of transport-focussed measures that could help improve air quality. In total, 9 measures have been recommended for implementation or further feasibility study. Some of these are based on measures already under consideration, and have been drawn from existing plans and policies. Additional measures have been suggested to complement planned and ongoing activity.

The objective of this Action Plan is to improve air quality at the Birchington and St Lawrence exceedence area and throughout the Thanet urban AQMA to work towards meeting the national air quality objective for the protection of human health. To this end, target emission reductions for the measures have been estimated and indictors to demonstrate progress have been identified. Prior to the implementation of this Action Plan a consultation process as described will be undertaken. Following the receipt of comments, a final plan will be produced followed by plan implementation.

6 Glossary of Terms

Abbreviation	Full name
AQMA	Air Quality Management Area
AQS	Air Quality Strategy
BAT	Best Available Technology
DEFRA	Department for Environment, Food and Rural Affairs
DETR	Department for Transport and Regions
DOE	Department of the Environment
HGV	Heavy goods vehicles
KCC	Kent County Council
K&MAQN	Kent & Medway Air Quality Network
K&MAQP	Kent & Medway Air Quality Partnership
LA21	Local Agenda 21
LAQM	Local air quality management
LDD	Local Development Documents
LDF	Local Development Framework
LEZ	Low Emission Zone
LTP	Local Transport Plan
NAQS	National Air Quality Strategy
NO_2	Nitrogen dioxide
NOx	Oxides of nitrogen
NSCA	National Society for Clean Air
PM_{10}	Fine particle matter less than 10µm diameter
$\mu g/m^3$	Micrograms per cubic metre
TDC	Thanet District Council
UTMC	Urban Traffic Management Control
VMS	Variable Message Signage

Appendices

Appendix 1: UK air quality standards and objectives

Appendix 1 - UK air quality standards and objectives

Objectives included in the Air Quality Regulations 2000 and (Amendment) Regulations 2002 for the purpose of Local Air Quality Management

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene All authorities	16.25 μg/m^3	running annual mean	31.12.2003
Authorities in England and Wales only	5.00 μg/m^3	annual mean	31.12.2010
Authorities in open areas and coastal areas should be cleaner as air changes more frequently and Northern Ireland only	3.25 μg/m^3	running annual mean	31.12.2010
1,3-Butadiene	2.25 μg/m^3	running annual mean	31.12.2003
Carbon monoxide Authorities in England, Wales and Northern Ireland only	10.0 mg/m^3	maximum daily running 8-hour mean	31.12.2003
Authorities in Scotland only	10.0 mg/m^3	running 8-hour mean	31.12.2003
Lead	0.5 μg/m^3 0.25 μg/m^3	annual mean annual mean	31.12.2004 31.12.2008
Nitrogen dioxide[b,e]	200 μg/m^3 not to be exceeded more than 18 times a year 40 μg/m^3	1 hour mean annual mean	31.12.2005 31.12.2005
Particles (PM_{10}) (gravimetric)[c] All authorities	50 μg/m^3 not to be exceeded more than 35 times a year 40 μg/m^3	24 hour mean annual mean	31.12.2004 31.12.2004
Authorities in Scotland only[d]	50 μg/m^3 not to be exceeded more than 7 times a year 18 μg/m^3	24 hour mean annual mean	31.12.2010 31.12.2010
Sulphur dioxide	350 μg/m^3 not to be exceeded more than 24 times a year 125 μg/m^3 not to be exceeded more than 3 times a year 266 μg/m^3 not to be exceeded more than 35 times a year	1 hour mean 24 hour mean 15 minute mean	31.12.2004 31.12.2004 31.12.2005

b. The objectives for nitrogen dioxide are provisional.
c. Measured using the European gravimetric transfer standard sampler or equivalent.
d. These 2010 Air Quality Objectives for PM10 apply in Scotland only, as set out in the Air Quality (Scotland) Amendment Regulations 2002.
e. The annual average and 1 hour average nitrogen dioxides objectives are the same as the EU Limit Values but the EU Limit Values have to be achieved by the 1 January 2010 and maintained thereafter

Efforts to achieve these objectives should be focussed on locations where members of the public are likely to be exposed over the averaging period of the objective. The table below summarises the locations where these objectives should and should not apply.

Typical locations where the objectives should and should not apply			
Averaging Period	**Pollutants**	**Objectives *should* apply at …**	**Objectives should *not* generally apply at …**
Annual mean	1,3 Butadiene Benzene Lead Nitrogen dioxide PM_{10}	All background locations where members of the public might be regularly exposed. Building facades of residential properties, schools, hospitals, libraries etc.	Building facades of offices or other places of work where members of the public do not have regular access. Gardens of residential properties. Kerbside sites (as opposed to locations at the building facade), or any other location where public exposure is expected to be short term
24-hour mean and **8-hour mean**	Carbon monoxide PM_{10} Sulphur dioxide	All locations where the annual mean objective would apply. Gardens of residential properties	Kerbside sites (as opposed to locations at the building facade), or any other location where public exposure is expected to be short term.
1 hour mean	Nitrogen dioxide Sulphur dioxide	All locations where the annual mean and 24 and 8-hour mean objectives apply. Kerbside sites (e.g. pavements of busy shopping streets). Those parts of car parks and railway stations etc. which are not fully enclosed. Any outdoor locations to which the public might reasonably be expected to have access.	Kerbside sites where the public would not be expected to have regular access.
15 minute mean	Sulphur dioxide	All locations where members of the public might reasonably be exposed for a period of 15 minutes or longer.	

Appendix 2 – Kent and Medway Air Quality Partnership Air Quality and Planning Technical Guidance

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