

Air Quality Review and Assessment

**Air Quality Action Plan
For
Three Rivers District Council**

A report produced by Claire Betts for Three Rivers District Council



This document should be considered with specific reference to Stage 4 of the Review and Assessment for Air Quality

November 2006

Written by Claire Betts

Title

Air Quality Review and Assessment – Action Plan for Three Rivers District Council

Report number

1

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Draft1

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Approved by			

THREE RIVERS DISTRICT COUNCIL AIR QUALITY ACTION PLAN

DEFRA Action Planning requirements compliance checklist

This section has been introduced to indicate where the work expected by DEFRA has been undertaken in relation to our Action Plan.

Work area	Included or Considered?	Location within the Report and comments
Process Adherence to Guidelines and Consideration of Policies		
Have Statutory Consultees been consulted?	Not yet –next stage	Chapter 4.5
Have other LA departments been consulted?	Not yet –next stage	Chapter 4.5
Have other relevant consultees been consulted	Not yet–next stage	Chapter 4.5
Statement of problem causing AQMA?		Chapter 2.4
Have the principle sources of pollutants causing the exceedance been identified?		Chapter 2.4
Have other LA plans/policies been considered?		Chapter 4.6
Has an options timescale been included?		Chapter 8.1
Have cost of options/plan been set out?		Chapter 8.1
Have impacts been assessed?		Chapter 8.1 & throughout
Process – Checklist of Measures		
Have options been considered?		Throughout
How many options have been considered?	18 Actions	Chapter 8 & throughout
Have transport impacts been assessed?		Chapter 2
Have air quality impacts been assessed – modelled or measured?		Chapter 8 & throughout
Have Socio-economic impacts been assessed?		Chapter 8
Have other environmental impacts been assessed? (noise)		Chapter 8
Have costs been considered?		Chapter 8

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Appropriateness and Proportionality		
Do measures seem appropriate to the problem?		Discussed throughout
Have the measures been assessed?		Chapter 8
Are the measures likely to achieve the stated goal?		Chapter 2
Have the wider impacts been appraised appropriately?		Chapter 5
Was the method of assessing costs appropriate?		Chapter 8
Is it likely for LAQM objectives to be met?		Chapters 1 & 2
Do the chosen measures comply with wider Government Policies?		
Implementation		
Are measures realistic in light of the objective deadlines?		Chapter 5
Have responsibilities been assigned to the relevant party?		Chapter 7 – responsibility Matrix & Chapter 8 table
Does the assigned party have the necessary powers?		Yes
Has financing been secured and who will pay?		Chapter 5

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Translation services

Executive Summary

In the UK, air pollutants come from a range of sources. These include transport (with the bulk of transport related pollution coming from road transport), industry, domestic sources, aviation and natural sources.

The Environment Act 1995 places a duty on local authorities with regard to local air quality review and, where potential problems are identified, for the management of local air quality. If a local authority declares an Air Quality Management Area, Section 84 of the Environment Act 1995 requires the local authority to carry out a further assessment of existing and likely future air quality in the AQMA. This further assessment is called a Stage 4 air quality review and assessment, and is intended to supplement information the authority already has.

Local Authorities are required to prepare a written Action Plan for any areas designated as Air Quality Management Areas (AQMAs), setting out the actions that they intend to take to achieve the National Air Quality Strategy (NAQS).

The Action Plan should include simple estimates of the costs, the positive and negative effects of proposed actions and the feasibility of implementation of each scenario. The action plan may also consider the non-health benefits of implementing scenarios, for example, the reduction in road traffic accident deaths as a result of road improvements that may also reduce vehicle emissions. The local authority can then identify which scenarios offer the most cost-effective or cost beneficial way of improving air quality and prioritise accordingly.

Air Quality Action Plans ultimately provide the mechanism by which local authorities, in collaboration with national agencies and others, will state their intentions for working towards the air quality objectives through the use of powers they have available. The Action Plan should include all the measures in wider geographical scope than the area of any air quality hotspot, which may be its focus.

The Action Plan has therefore been divided into two main categories:

Primary Objective

To achieve the NAQS air quality objective for Nitrogen Dioxide (NO₂) within the Three Rivers District Air Quality Management Area by the compliance date of December 31st 2005. The air quality objectives are prescribed to take account of the level of pollutant in the air at outside locations where the public is regularly present. Three Rivers District Council aims to encourage direct action upon the motorway (the Highways Agency has full control over the M25). The success of this element of the action plan is dependant on the Highways Agency commitment to reducing road traffic air pollution.

Secondary Objective

The secondary objectives are actions that can be taken which contribute to improving air quality throughout the whole district which will obviously also have some impact on the AQMA.

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This document constitutes TRDC updated draft Action Plan. A decision was made to update the Action Plan written in April 2004 by Leigh Newman, following comments/feedback from Defra and a change of Officer at TRDC. As part of the updating process, the Highways Agency, the County Council and other Council sections and departments will be re-contacted and the information updated. This draft will be issued for wider consultation following approval from Defra.

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Appendix 1 – Air Quality Management Areas

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Abbreviations:

AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
DEFRA	Department for Environment, Food and Rural Affairs
EELGC	East of England Local Government Conference
EPAQS	Expert Panel on Air Quality Standards
EPA	Environmental Protection Act
GLA	Greater London Authority
GTP	Green Travel Plan
HA	Highways Agency
HDV	Heavy Duty Vehicle
IPPC	Integrated Pollution Prevention and Control
LDV	Light Duty Vehicle
LPG	Liquefied petroleum gas
NAQS	National Air Quality Strategy
NO	Nitric oxide
NO _x	Nitrogen oxides
NO ₂	Nitrogen dioxide
PM ₁₀	Particulate matter with an (equivalent aerodynamic) diameter of ten microns (10 µm) or less
EERA	East England Regional Assembly http://www.goeast.gov.uk/goeast/
TRDC	Three Rivers District Council
µg/m ³	Microgrammes per cubic metre of air

1. Introduction

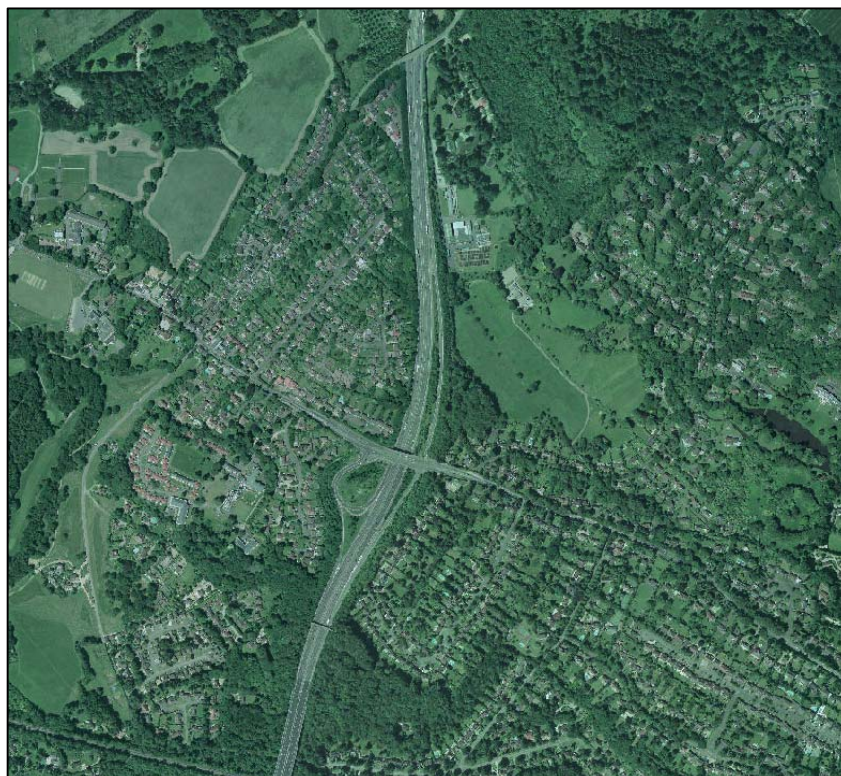
1.1. Three Rivers District

1.1.1. Three Rivers District is situated in southwest Hertfordshire and covers 85 square miles, which includes large rural areas, villages and small towns. It has a population of 85,000 and 65% of the district is in the “Green Belt”. Three small local rivers (Chess, Gade and Colne) run through the district as well as the Grand Union Canal.

1.1.2. The M25 runs through Three Rivers.

1.1.3. For Three Rivers, as with almost all the local authorities in Hertfordshire, the ecological footprint of personal travel is noticeably higher. In terms of distance travelled by car, the average resident travels 50% further than the average UK resident. Interestingly, Three Rivers residents’ demand for all modes of transport are higher, being on the outer fringes of London, close to the M1 and M25 and a reasonably rural LA, demand for travel is high (source: Page 47 of the Ecological Footprint of Hertfordshire Results and Scenarios July 2006).

1.1.4. “In terms of car use, the provision and protection of local services is essential to reduce the need to travel. The promotion of work at home can also have a significant effect. As a considerable percentage of the impact can be related to commuting, car sharing schemes can be extremely effective” (Source: Page 48 of the Ecological Footprint of Hertfordshire Results and Scenarios July 2006).



1.2. The Environment Act 1995

1.2.1. In the UK, air pollutants come from a range of sources. These include transport (with the bulk of transport related pollution coming from road transport), industry, domestic sources, aviation and natural sources.

1.2.2. The Government's Air Quality Strategy and The Expert Panel on Air Quality Standards (EPAQS) have identified 8 key pollutants:

- Nitrogen Dioxide
- PM₁₀ Particles
- Benzene
- 1, 3-Butadiene
- Lead
- Sulphur Dioxide
- Carbon Monoxide
- Ozone

A summary of the National Air Quality Standards is shown in Table 1.

1.2.3. A separate strategy exists for Carbon Dioxide, which is known to have a significant effect on climate.

1.2.4. Although ozone is to be addressed at a National level, the Environment Act 1995 places a duty on local authorities to review and assess the other key pollutants in their area, against air quality standards and objectives laid down in the Air Quality Regulations 2000.

Table 1. Summary of objectives of the National Air Quality Strategy

Pollutant	Objective	Measured as	To be achieved by
Benzene All Authorities	16.25 µg/m ³	Running Annual Mean	31 December 2003
Benzene Authorities in England and Wales only	5 µg/m ³	Annual Mean	31 December 2010
Benzene Authorities in Scotland and Northern Ireland only ^a	3.25 µg/m ³	Running Annual Mean	31 December 2010
1,3-Butadiene	2.25 µg/m ³	Running Annual Mean	31 December 2003

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Carbon monoxide Authorities in England, Wales and Northern Ireland only ^a	10.0 mg/m ³	Maximum daily running 8 Hour Mean	31 December 2003
Carbon monoxide Authorities in Scotland only	10.0 mg/m ³	Running 8 Hour Mean ^b	31 December 2003
Lead	0.5 µg/m ³	Annual Mean	31 December 2004
	0.25 µg/m ³	Annual Mean	31 December 2008
Nitrogen dioxide^c	200 µg/m ³ Not to be exceeded more than 18 times per year	1 Hour Mean	31 December 2005
	40 µg/m ³	Annual Mean	31 December 2005
Nitrogen Oxides**	(V) 30 µg/m ³	Annual Mean	31 December 2000
Ozone *	100 µg/m ³	Running 8 hour Mean Daily maximum of running 8 hr mean not to be exceeded more than 10 times per year	31 December 2005
Particles (PM₁₀) (gravimetric)^d All authorities	50 µg/m ³ Not to be exceeded more than 35 times per year	24 Hour Mean	31 December 2004
	40 µg/m ³	Annual Mean	31 December 2004
Particles (PM₁₀) Authorities in Scotland only ^e	50 µg/m ³ Not to be exceeded more than 7 times per year	24 Hour Mean	31 December 2010
	18 µg/m ³	Annual Mean	31 December 2010
Sulphur dioxide	266 µg/m ³ Not to be	15 Minute Mean	31 December

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	exceeded more than 35 times per year		2005
	350 µg/m ³ Not to be exceeded more than 24 times per year	1 Hour Mean	31 December 2004
	125 µg/m ³ Not to be exceeded more than 3 times per year	24 Hour Mean	31 December 2004
	(V) 20 µg/m ³	Annual Mean	31 December 2000
	(V) 20 µg/m ³	Winter Mean (01 October - 31 March)	31 December 2000

Notes:

- a. In Northern Ireland none of the objectives are currently in regulation. Air Quality (Northern Ireland) Regulations were scheduled for consultation early in 2003.
- b. The Quality Objective in Scotland has been defined in Regulations as the running 8-hour mean, in practice this is equivalent to the maximum daily running 8-hour mean
- c. The objectives for nitrogen dioxide are provisional.
- d. Measured using the European gravimetric transfer sampler or equivalent.
- e. These 2010 Air Quality Objectives for PM₁₀ apply in Scotland only, as set out in the Air Quality (Scotland) Amendment Regulations 2002.

µg/m³ - micrograms per cubic metre

mg/m³ - milligrams per cubic metre

*Ozone is not included in the Regulations

** Assuming NO_x is taken as NO₂

(V) These standards are adopted for the protection of vegetation and ecosystems. All of the remainder are for the protection of human health.

Source: <http://www.airquality.co.uk/archive/standards.php#std>

1.3. Air Quality Management Areas (AQMAs)

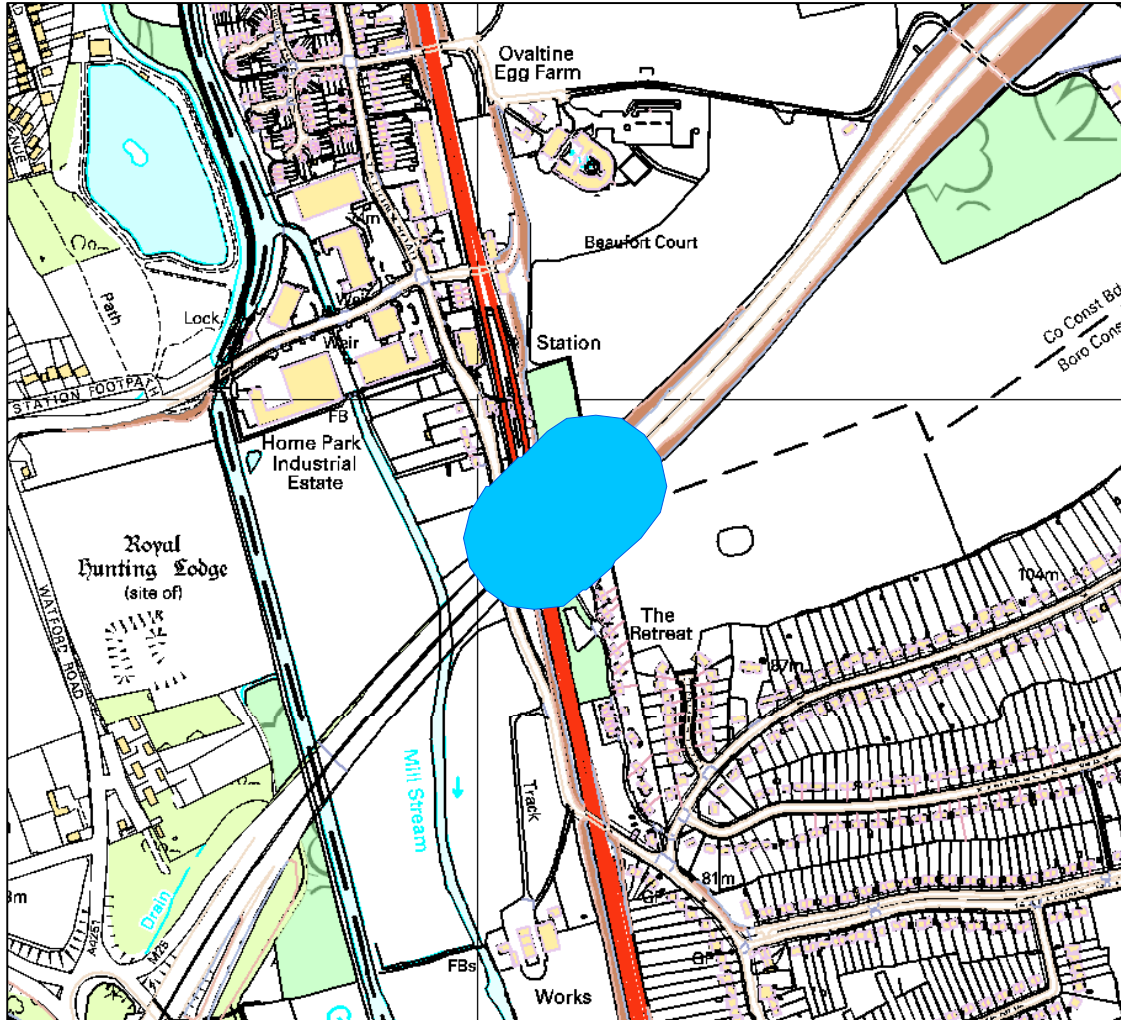
1.3.1. The first round of review and assessment for air quality within the Three Rivers District has already been completed. This involved three initial stages of the review and assessment process. The first three Stages concluded that there were three areas within the Three Rivers District that were likely to exceed the Government's objectives for Nitrogen Dioxide. As a result of this air quality review and assessment, Three Rivers District Council declared Air Quality Management Areas (AQMA's) for NO₂ and PM₁₀ at the locations near the M25. Following this, Section 84 of the Environment Act 1995 required a further review of air quality, concentrating on the specific areas highlighted in the Stage three report, in order to confirm or eradicate the previous concerns highlighted.

1.3.2. Stage 4. These AQMA's were reviewed in the light of updated information. The consultant recommended that the extent of the AQMAs for NO₂ could be reduced, and the AQMAs for PM₁₀ could be revoked. Figure 1 shows the location of the AQMA at Junction 18 of the M25 and figure 2 shows the modelled Nitrogen Dioxide concentrations using the 2005 objectives. In February 2004, the Council decided not to revoke or reduce in size any of the AQMAs.

1.3.3. Orders (Environment Act 1995 Part IV Section 83 (1)) designating the following AQMA's were issued as follows (see Figures 1.3.3.1 – 1.3.3.5):

- AQMA 1: Residential properties close to M25 at Kings Langley
- AQMA 2: Chandlers Cross
- AQMA 3: Chorleywood

Figure 1.3.3.1 AQMA 1: Kings Langley NO₂



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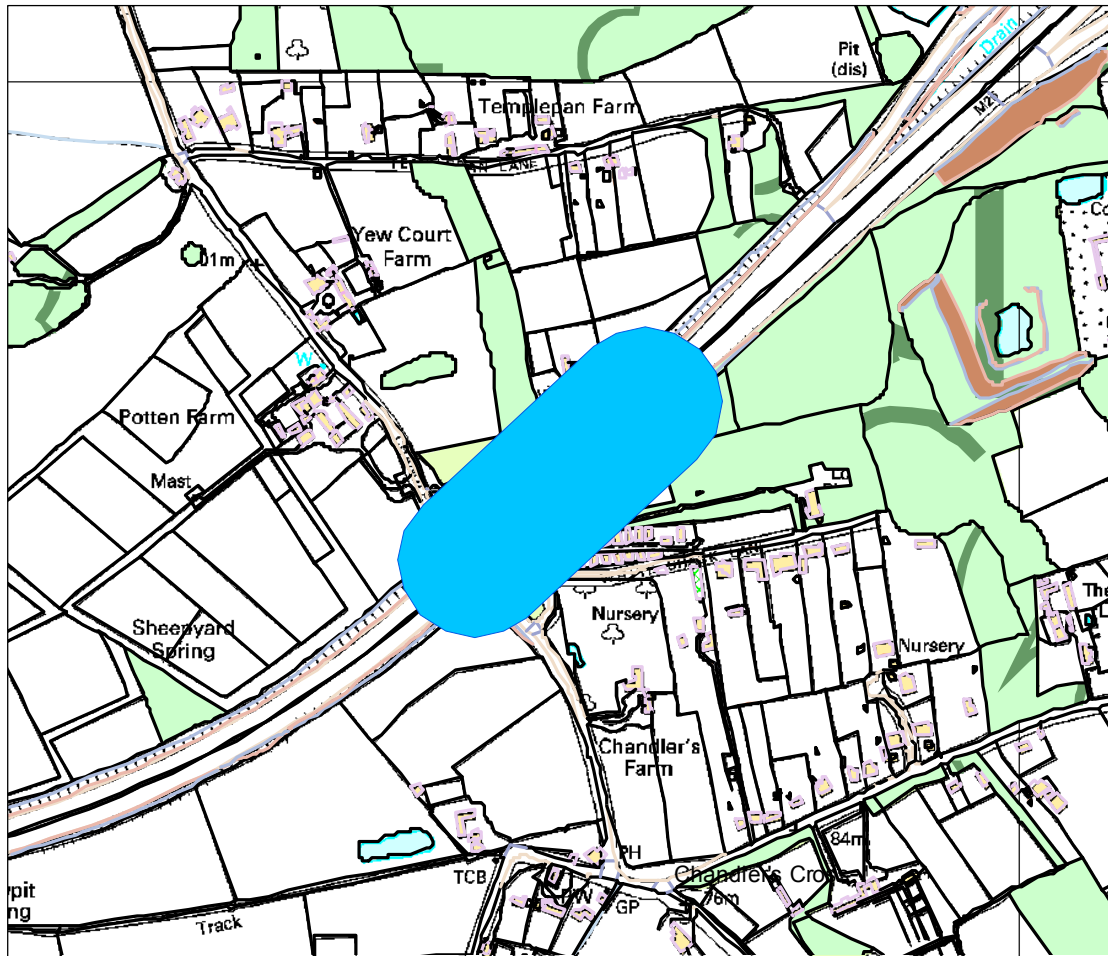
Figure 1.3.3.2 AQMA 2: Chandlers Cross PM₁₀



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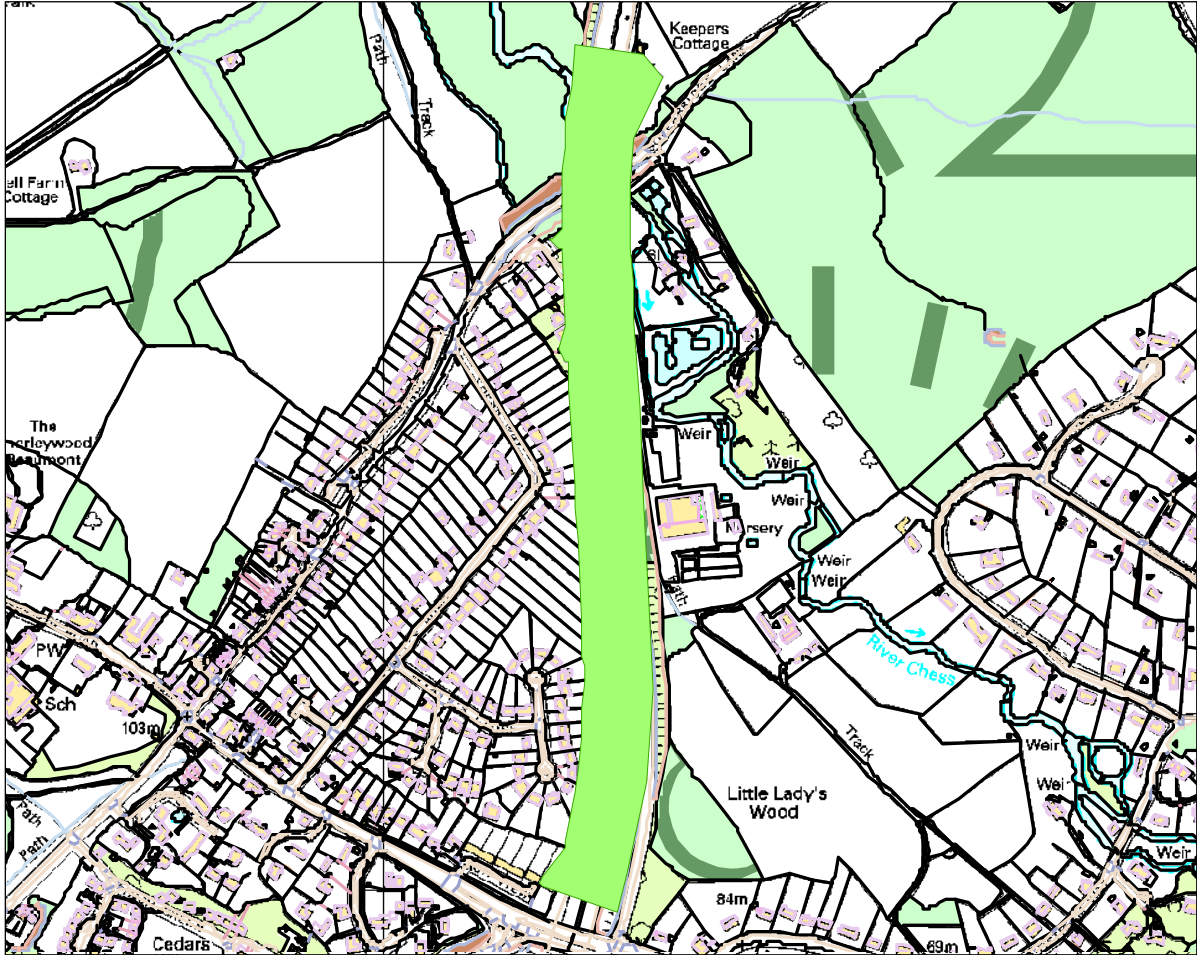
Figure 1.3.3.3 AQMA 2: Chandlers Cross NO₂



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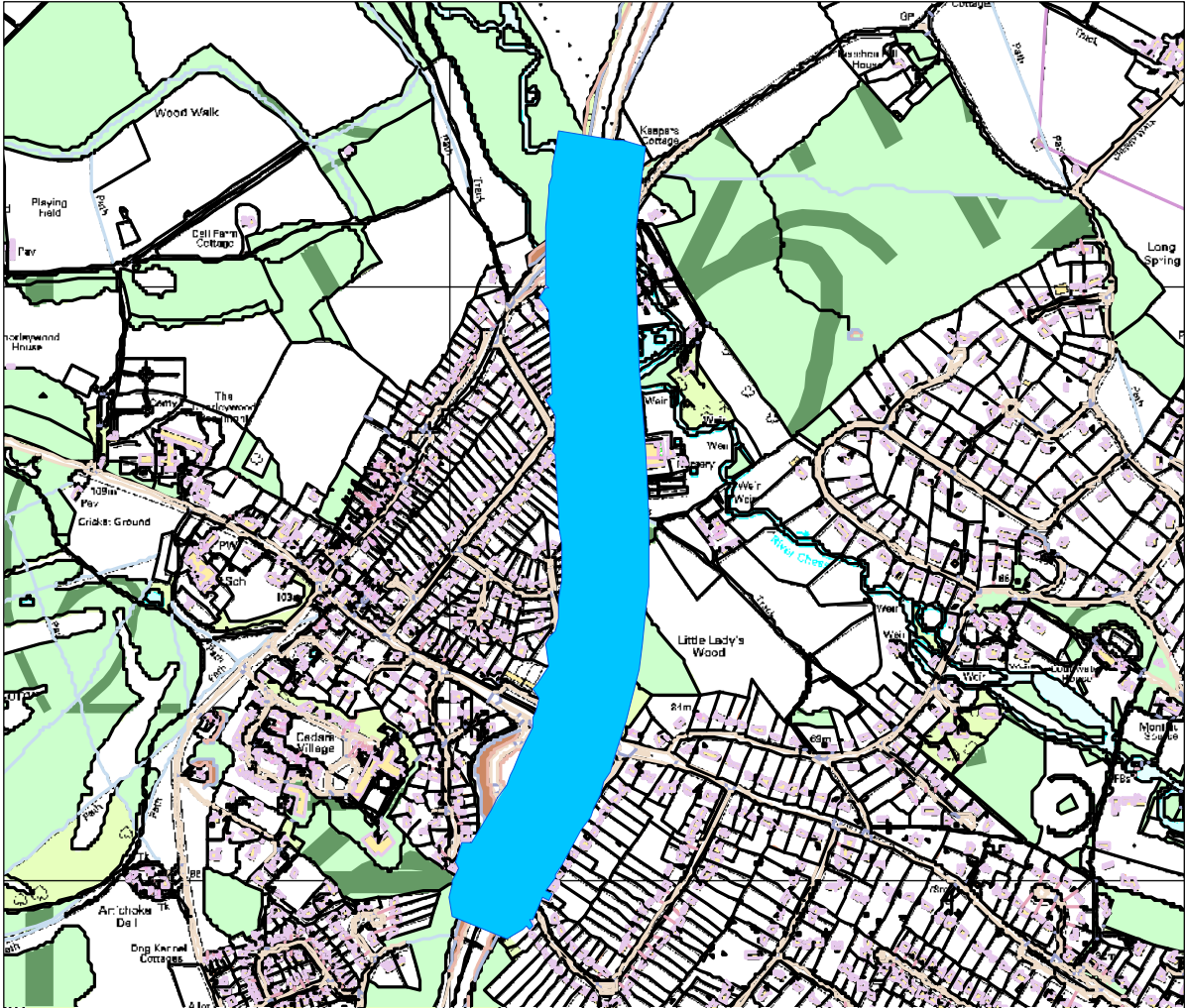
Figure 1.3.3.4 AQMA 3: Chorleywood PM₁₀



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Figure 1.3.3.5 AQMA 3: Chorleywood NO₂



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2. Sources of Air Pollution within the AQMAs

2.0.1. Local Authorities are required to prepare a written action plan for an AQMA, setting out the actions that they intend to take to achieve the national air quality objectives. Any new developments in the District, or outside the Local Authority that may impact on local air quality need to be considered. Key considerations should include:

- Industry
- Housing and redevelopment
- Road Network changes

2.0.2. Source apportionment is the process whereby the contributions from the sources of a pollutant are determined. In local air quality, the relevant sources include:

- Road traffic
- Local background
- Industrial
- Domestic

2.0.3. Contributions from the different types of vehicles (for example cars, lorries and buses) can also be considered to highlight which class of vehicle is contributing most to the emissions from traffic. Source apportionment allows the most important sources to be identified and options to resolve the surrounding concentrations of pollutants can then be considered and assessed as part of the air quality action plan.

2.0.4. The Stage 4 report identified that road traffic is the main source of Nitrogen Dioxide within the Three Rivers District. Table 1 shows the source apportionment for concentrations of NO₂ and NO_x. The source apportionment work was carried out on the base case for NO₂ in the relevant year of 2005 (no exceedences having been predicted for PM₁₀ in 2004).

Table 1a: Abbots Langley, source apportionment to concentrations of NO₂ and NO_x⁵

Source category	NO ₂ concentration, Contribution		NO _x concentration, Contribution	
	µg m ⁻³	%	µg m ⁻³	%
Local LDV	5	11	22	19
Local HDV	9	21	42	37
Total local traffic	13	32	63	56
Background	28	68	49	44
Total	41	100	112	100

Figures are rounded to the nearest whole number

⁵ Air Quality Review and Assessment Stage 4 ED48139 page 39

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Table 1b: Chandlers Cross, source apportionment to concentrations of NO₂ and NO_x⁶

Source category	NO ₂ concentration, Contribution		NO _x concentration, Contribution	
	µg m ⁻³	%	µg m ⁻³	%
Local LDV	6	13	27	23
Local HDV	9	22	44	38
Total Local traffic	15	35	71	63
Background	27	65	46	39
Total	42	100	117	100

Figures are rounded to the nearest whole number

Table 1c: Chorleywood, source apportionment to concentrations of NO₂ and NO_x⁷

Source category	NO ₂ concentration, Contribution		NO _x concentration, Contribution	
	µg m ⁻³	%	µg m ⁻³	%
Local LDV	6	14	28	25
Local HDV	9	21	41	37
Total Local traffic	14	35	69	61
Background	27	65	44	39
Total	42	100	113	100

Figures are rounded to the nearest whole number

2.0.5. Tables 1a – 1c show that the traffic in the 1km square containing the AQMA properties makes a significant contribution to the total oxides of nitrogen concentration. The major part of this local contribution comes from heavy-duty vehicles on the M25. However, local background levels arising from sources outside the 1km square are relatively high so that there is limited ‘headroom’ between the background nitrogen dioxide concentration (27-28 µg m⁻³) and the objective (40 µg m⁻³). Tables 1a – 1c also show that a reduction of approximately 2 – 3 µg/m³ is required to be achieved for attainment of the annual mean objective,

2.0.6. The local background is itself made up largely from road transport sources outside the immediate 1 km square. It may be concluded that reduction of the nitrogen dioxide concentration within the AQMAs may require the implementation of area-wide strategies to reduce emissions from road transport. Air quality is not restricted by local boundaries and it will be necessary to consider action over a wider area. All relevant sources impacting upon the AQMA therefore need to be considered.

⁶ Air Quality Review and Assessment Stage 4 ED48139 page 39

⁷ Air Quality Review and Assessment Stage 4 ED48139 page 39

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- 2.0.7.** It can be seen from Tables 1a – 1c that road traffic contributes up to 32 - 35% of the annual mean NO_x emissions within the AQMA. In considering relative contributions from different vehicle types, light duty vehicles (LDVs) contribute approximately one-third of the NO_x emissions and heavy duty vehicles (HDVs) contribute to approximately the remaining two-thirds of the road NO_x emissions. It can also be seen from the source apportionment work that background pollutant concentrations contribute to approximately 65 – 68% of the annual mean NO₂ concentrations within the AQMAs.
- 2.0.8.** There are no significant industrial sources of nitrogen dioxide in the Three Rivers District.
- 2.0.9.** According to TRDC Review and Assessment Stage 4 “As the M25 represented a large emissions source in an area of generally low background NO_x and PM₁₀ concentrations, these were taken from the NETCEN website www.airquality.co.uk in accordance with the method recommended in the new Technical Guidance LAQM.TG(03) and added to the road traffic emissions contribution”.



Source: Steve Farrell. Congestion Uxbridge Road.

3. Health Impacts of Air Pollution

3.0.1. The Government Air Quality Strategy and the Expert Panel on Air Quality Standards have identified 8 key pollutants:

- Nitrogen Dioxide
- PM¹⁰ Particles
- Benzene
- 1, 3 - Butadiene
- Lead
- Sulphur Dioxide
- Carbon Monoxide
- Ozone

3.0.2. Of these, Nitrogen Dioxide has been identified as the most significant pollutant within the district, however, most initiatives to reduce Nitrogen Dioxide will also have positive reductions on other air pollutants for example particulates. The implications of Nitrogen Dioxide are discussed below.

3.1. Nitrogen Dioxide (NO_x)

3.1.1. Road Vehicles are responsible for over 50% of the emissions of nitrogen oxides (NO_x) in the UK.

3.1.2. Burning fossil fuels in air produces both nitric oxide (NO) and nitrogen dioxide (NO₂), nitric oxide being the primary pollutant.

3.1.3. This is the first point in a complex series of chemical reactions, involving a range of other pollutants including ozone. Together the two oxides are referred to as NO_x. The concentration of the different elements of NO_x will depend on the oxidising capacity of the local atmosphere (i.e. the available amount of oxygen).

3.1.4. Nitrogen dioxide has been identified as having a number of possible adverse health effects focused around the respiratory system, in both asthmatic and non-asthmatic subjects. Short-term exposures can increase reactivity to allergens such as pollen. In some individuals high levels of nitrogen dioxide can precipitate or exacerbate episodes of asthma. Exposure of children to nitrogen dioxide may increase the risk of respiratory infections and possibly lead to poorer lung function in later life.

4. Action Plan

- 4.0.1.** Local authorities are required to prepare a written action plan for an AQMA, setting out the actions they intend taking to achieve the air quality objectives. This has to include a timetable for implementing the plan.
- 4.0.2.** The action plan should contain the scenarios that have been modelled in the Stage 4 review and assessment. It should contain a summary of the air quality improvements that might be possible from each of the scenarios identified. The Stage 4 provides the technical justification for the measures an authority includes in its action plan.
- 4.0.3.** The action plan should include simple estimates of the costs, the positive and negative effects and the feasibility of implementing those scenarios. The action plan may also consider the non-health benefits of implementing scenarios, for example, the reduction in road traffic accident deaths as a result of road improvements that may also reduce vehicle emissions.
- 4.0.4.** The local authority can then identify which scenarios offer the most cost-effective or cost beneficial way of improving air quality and prioritise accordingly.

4.1. Action Plan Aims and Objectives

- 4.1.1.** Air Quality Action Plans ultimately provide the mechanism by which local authorities, in collaboration with national agencies and others, will state their intentions for working towards the air quality objectives through the use of powers they have available.
- 4.1.2.** The overall aim of the Action Plan is to attempt to minimise the effects of air pollution on human health. The action plan should include all measures proposed by the Council to improve air quality and should be wider in geographical scope than the area of any air quality hotspot, which may be its focus.
- 4.1.3.** Due to the nature/source of the pollutants within our AQMAs (which consists mainly of motorway traffic), our Action Plan has been divided into two general parts:
- Direct actions upon the motorway (The Highways Agency has full control over the M25 motorway).
 - Actions that will benefit the AQMA and also contribute to improving air quality throughout the whole district.
- 4.1.4.** The objectives of Three Rivers District Council are therefore as follows:

4.2. Primary Objective

- 4.2.1. To achieve the NAQS air quality objective for Nitrogen Dioxide (NO₂) within the Three Rivers District Air Quality Management Area by the compliance date of December 31st 2005. The air quality objectives are prescribed to take account of the level of pollutant in the air at outside locations where the public is regularly present. Three Rivers District Council aims to encourage direct action upon the motorway (the Highways Agency has full control over the M25). The success of this element of the action plan is dependent on the Highways Agency commitment to reducing road traffic air pollution.

4.3. Secondary Objective

- 4.3.1. The secondary objectives are actions that can be taken which contribute to improving air quality throughout the whole district which will obviously also have some impact on the AQMA (even if not significant). These include:

- Schemes to reduce pollution as a whole within the district.
- Continue to inform and provide up to date information on air quality within the district and in co-ordination with other authorities in the Hertfordshire and Bedfordshire Air Pollution Monitoring Network.(HABAPMN)
- Ensure that all current and planned Council activities are considered with reference to their effect on air quality.
- To support national initiatives to improve air quality.

4.4. Future Development of the Action Plan

- 4.4.1. This Action Plan should be regarded as flexible and open to adjustment as new information or new techniques for pollution control become available. Prior to undertaking some of the options that are listed in the plan it will be necessary to commission specific feasibility studies, particularly where cost will be high. If any option is found impracticable, for example on cost grounds, or has impacts that were not foreseen or are far more significant than originally thought, the plan should clearly be adapted. Equally, if experience elsewhere (for example, London, with respect to congestion charging) shows that an option not included in the plan is more attractive than originally thought, it may be appropriate to introduce that option to the plan.

4.5 Consultees for the Action Plan

- DEFRA (Secretary of State)
- Highways Agency
- Environment Agency
- Hertfordshire County Council
- Dacorum Borough Council
- St Albans District Council
- Watford Borough Council
- London Borough of Harrow
- Hertsmere Borough Council
- London Borough of Hillingdon
- South Bucks District Council
- Chiltern District Council
- Three Rivers District Council - Planning Policy
- Three Rivers District Council - Development Control
- Residents in the AQMAs
- General Public
- Focus groups
- Parish council
- Local Businesses
- Other Stakeholders
- Three Rivers District Council Planning
- Three Rivers District Council Transport Plan
- Three Rivers District Council Sustainable Development etc
- Three Rivers District Council Housing
- Three Rivers District Council Engineering and Technical
- Three Rivers District Council Director

4.5.1 All comments from statutory and non-statutory consultees received from the draft action plan will be considered and incorporated where possible into the final action plan.

4.6 Other Related Policies/ Issues/ Initiatives

4.6.0 Where possible, the AQAP should support other plans and policies within the District/ County. The documents below contain information related to air quality and/ or ways to try and work towards reducing air pollution.

4.6.1 Strategic Plan

4.6.1.1 The Strategic Plan brings together the high level, medium- to long-term objectives which the Council considers its priorities for the District. They are informed by and support the priorities of the Three Rivers Community Plan, which was developed by a range of public and voluntary sector partners in order to bring about a whole range of improvements across the district. This plan focuses on those areas where the Council has a lead role, or can play a key part in delivering or influencing the outcomes.

4.6.1.2 The Three Rivers vision is that the district should remain a prosperous, safe and healthy place where people want and are able to live and work. The four **themes** in which we want to make our communities **safer, sustainable, prosperous** and **healthy** provide the framework for the areas where we believe we can help make a difference.

4.6.1.3 Priority 1 of Rogers Review of Regulatory Services is Air Quality, in 2005, the annual cost of health impacts from particulates was £9.1 - £21 billion.

4.6.2 The Community Plan

4.6.2.1 The Community Strategy (2003 – 2008) brings together the work of people from a variety of statutory and voluntary organisations across the District, led by the Local Strategic Partnership to approach the challenge of improving the quality of life of people who live and work in the Three Rivers District.

4.6.2.2 While a large amount of work that is currently taking place, the Strategy also gives local people the opportunity to get involved in developing and implementing “Local Community Plans” in their own part of the District.

4.6.2.3 The Community Strategy concentrates on four main themes, taken from the priorities of the Local Strategic Partnership and the communities they serve. These are:

- Healthy communities
- Prosperous communities
- Safer communities
- Sustainable communities

4.6.3 Local Development Plan

4.6.3.1 Three Rivers District Council is currently preparing a replacement for the Three Rivers Local Plan. The new plan will be called Three Rivers Local Development Framework (Source: Intranet).

4.6.4 Green Travel Plan

4.6.4.1 The Green Travel Plan (GTP) applies to all Council premises, services, elected Members and staff. The three major objectives of the GTP are:

- To promote alternatives to the car for Council Staff making trips to, from and during work
- To promote greener vehicles for Council service delivery
- To promote alternatives to the car for visitors travelling to Council premises

4.6.4.2 In implementing the GTP, the Council has adopted the following policies:

- Policy 1 Information and Awareness
- Policy 2 Facilities/ Parking Management
- Policy 3 Promoting Cycling
- Policy 4 Promoting Walking
- Policy 5 Promoting Public Transport
- Policy 6 Reducing Car Use
- Policy 7 Greening Work Trips and the Vehicle Fleet
- Policy 8 Greening Visitors Travel
- Policy 9 Administrative Mechanisms

4.6.5 Local Development Framework and Supplementary Planning Document on renewable energy

4.6.6 Hertfordshire County Councils Local Transport Plan

4.6.6.1 Hertfordshire's second Local Transport Plan covers the financial years 2006/07 to 2010/11. This Plan sets the framework for achieving the vision of a better transport system for all, and builds upon the successes of the first Local Transport Plan. This Plan is more focused on delivery, in particular, in delivering the Government's shared priorities of tackling congestion, delivering accessibility, providing safer roads, improving air quality and improving the quality of life for all of Hertfordshire's residents.

4.6.6.2 The key Transport objectives of the plan all contribute to the delivery of the shared priorities that the Department for Transport has outlined that Highway Authorities have to deliver. The nine LTP objectives are listed below under the shared priorities:

- **Safety**
- To improve safety for all by giving the highest priority to minimising the number of collisions and injuries occurring as a result of the transport system.

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- **Congestion**
 - To obtain the best use of the existing network through effective design, maintenance and management.
 - To manage the growth of transport and travel volumes across the county, and thereby secure improvements in the predictability of travel time. To develop an efficient, safe, affordable and enhanced transport system which is attractive, reliable, integrated and makes best use of resources.
- **Accessibility**
 - To develop a transport system that provides access to employment, shopping, education, leisure and health facilities for all, including those without a car and those with impaired mobility.
 - To ensure that the transport system contributes towards improving the efficiency of commerce and industry and the provision of sustainable economic development in appropriate locations.
- **Air Quality**
 - To mitigate the effect of the transport system on the built and natural environment and on personal health.
- **Quality of Life**
 - To raise awareness and encourage use of more sustainable modes of transport through effective promotion, publicity, information and education.
 - To reduce the need for the movement of people and goods through integrated land use planning, the promotion of sustainable distribution and the use of telecommunications.

4.6.7 Implementing E-Government Agenda

4.6.7.1 There have been significant developments in the ICT provision over recent years at Three Rivers District Council, which have assisted in giving the Authority a stable information base and one which has comprehensive ICT facilities to meet the business needs. The most significant developments that have occurred during this time have all assisted in providing more efficient ways of managing information effectively and subsequently providing the services based on this information to the public.

4.6.7.2 LOCAL ENVIRONMENT, To help improve the quality, cleanliness and safety of our public space by using technology to integrate relevant functions more closely

Shared Service / National Priority

- *Transforming our local environment*
- *Creating safer and stronger communities*
- *E-Planning*

Main Associated National Projects & Initiatives

- *Planning & Regulatory Services Online (PARSOL) / Planning Portal*
- *Knowledge Management*
- *LAWS*
- *E-Trading Standards*

- *Local Environment
National Land & Property Gazetteer (NLPG) / National Land
Information Service (NLIS)*

4.6.8 Sustainability

The need to cut our emissions has placed sustainable energy at the top of the political agenda, we need to use less energy and generate the energy we do need from more sustainable resources, Local Authorities have an important role to play, the Sustainable Energy Benchmark Document covers all activities that Local Authorities are engaged in that have a significant impact on energy use. TRDC are working toward improving our scores and ultimately improving energy outcomes through the Sustainable Energy Benchmark Document.

Furthermore, in order to continue to improve sustainability in our area we will make sure TRDC leads by example, we will provide clear information to residents about what they can do and give encouragement to do it, we will continue and develop existing good practice.

4.6.8 Energy and Water Strategy

There does not appear to be a form of Energy and Water Strategy in Three Rivers at this time. However in continuing to improve sustainability in our area, TRDC will need to look at its own buildings for sustainability, provide information to residents about what changes they can make to improve sustainability in their homes and lives and raise awareness of the need to reduce energy and water use.

5. Primary Objectives

5.1 Measures Identified to Achieve Primary Objectives of Reducing Air Pollution in the AQMA

- 5.1.1 The Government's 10-Year Strategy transport plan - "Transport 2010 - The Ten Year Plan" - was announced on 20 July 2000. It sets out the Government's long-term strategy for delivering a quicker, safer, more reliable and environmentally friendly transport system, setting out what can be achieved over this period . Full details of the plan can be found on the Department for Transport website - www.dft.gov.uk.
- 5.1.2 Multi-Modal Studies form an important part of the Government's 10-year strategy. Of these, the Orbit study considers the development of a long-term strategy for the M25 and the transport corridor around London.
- 5.1.3 As responsibility for the M25 is outside the control of the Council, it is important to look at current and future studies that consider the M25, such as the Multi Modal Study 'Orbit'. Such schemes will provide an important mechanism for national motorway improvements with regard to the air quality in our AQMA, such studies could be key in the long term to emissions from the motorway that are affecting parts of Three Rivers.
- 5.1.4 "The Department for Transport has undertaken a series of 'multi-modal studies' to consider future infrastructure needs on the main national transport corridors. The two main studies which affect Hertfordshire are: London Orbital, London and South Midlands. The outcomes of these studies will affect this and future Local Transport Plans".
- 5.1.5 The recommendations from these studies, which may include major transport investment schemes, will be directed to the East England Regional Assembly (EERA) for incorporation in the Regional Transport Strategy and the Regional Planning Guidance. In the case of Orbit, the recommendation will also be sent to the Greater London Authority (GLA) and the East of England Local Government Conference (EELGC). The 10-year plan for transport gives a clear signal that the Government will implement proposals that come out of multi-modal studies. Key points of the study are:

Study start date:	February 2000
Report date:	Autumn 2002
Study Website:	www.orbitproject.com
Purpose:	To develop a long-term sustainable management strategy for the M25 and transport corridor around London.

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What prompted the study: Congestion on the M25 London orbital and adjacent routes with very limited orbital rail alternatives and congested radial rail alternatives.

Results: The final study report was completed in Autumn 2002. Orbit is reporting to three Regional Planning Bodies; South East England Regional Assembly (SEERA), London Mayor and East of England Local Government Conference (EELGC). Orbit is nearing completion and consultation on the strategy is currently underway. The proposals include better ways of managing traffic, reducing the need to travel, new rail schemes and orbital coach services and some motorway widening. Area-wide charging on motorways has been recommended.

5.1.6 “The London Orbital multi-modal study considered transport movements around the M25 corridor and across the Greater London area. This study recommended the proposals to widen the entire length of the M25 through Hertfordshire to dual-4 lanes within the existing boundaries. This is of concern to the County Council, as along some stretches of the M25 it would mean the loss of the hard shoulder or narrower lanes. Since April 2004, the Highways Agency has been developing design, programming and procurement arrangements for the M25 Widening. The sections to be widened which pass through Hertfordshire are:

- M25 Jct 16 to 23 (M40 - A1 (M)) - 35 km
- I M25 Jct 23 to 27 (A1 (M) - M11) - 27 km”

5.1.7 A general option that would apply to all the scenarios considered is to reduce the general background concentrations (i.e. concentrations over a scale of hundreds of metres) of NO_x. This option would be particularly helpful in Three Rivers AQMAs. However Three Rivers District Council cannot act alone on reducing background concentrations and must rely on regional measures as outlined above.

5.1.8 The following options have been considered in the context of other proposals provided by the 10 year strategy to assess their potential to reduce the Nitrogen Dioxide concentration at closest properties to the M25 in Chorleywood AQMA (61 Chestnut Avenue).

The 2 options are:

- 1 A reduction in vehicle speeds to 80 kilometres per hour on the M25,
2. A 20% reduction in all traffic on the M25.

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Table 2 Reductions in Nitrogen Dioxide that might be possible if the scenarios that have been considered are fully implemented.⁸

Scenario	Nitrogen Dioxide concentration, $\mu\text{g m}^{-3}$
Baseline	41.6
Reduction in speed to 80 KPH on M25	39.1
20% reduction in all traffic on M25	39.4

- 5.1.9 5.1.7 None of the options considered will be effective in reducing concentrations to below the objective level completely. Reducing the vehicle speeds and reducing traffic flows by 20% will have only small marginal benefits.

According to Three Rivers Review and Assessment “The options considered may therefore decrease concentrations to below the objective level at the most sensitive receptors in the Chorleywood AQMA. Reducing the vehicle speeds or reducing traffic flows by 20% would have only minor benefits (less than 10% reductions in concentrations)”

⁸ Air Quality Review and Assessment Stage 4 ED48139 Page 41

5.2 Simple Assessment of the Feasibility of the Options Considered

- 5.2.1 This section of the report provides a simple assessment of the feasibility of the options considered to try and reduce or eliminate the chances of exceedences of the air quality objectives for NO₂ in Three Rivers. It is not intended as a full cost-benefit assessment; DEFRA do not require such an analysis in a Stage 4 assessment.
- 5.2.2 The feasibility of reducing traffic on the motorway network around London is the subject of regional multi-modal studies. The studies are not yet complete. However, it seems unlikely that reductions in traffic beyond the 20% considered above will be possible. It follows that it is unlikely that achievement of the objective for Nitrogen Dioxide at the properties closest to the motorways in the Three Rivers AQMA by means of realistic traffic reductions alone will be feasible.
- 5.2.3 Reducing emissions through speed reduction could also have non-air quality impacts such as reducing ambient noise levels; improving safety; reducing fuel consumption; increasing journey times although there could be economic consequences of increasing journey times; it could also reduce CO₂ emissions. Reducing emissions through reducing traffic could cause displacement of vehicles from main routes which could increase local traffic. Implementation and enforcement of variable speed limits is expensive. Blanket speed limits are probably more cost effective but still require enforcement.

Action 1

Three Rivers District Council is working in co-operation with Mouchel Parkman (consultants for the Highways Agency), in the provision of further passive monitoring for NO₂ within the largest AQMA at Junction 18 of the M25. Three Rivers Council will encourage and support the Highways Agency in any actions that will result in a reduction in pollution levels from the M25 motorway.

There is a further intention to locate a continuous monitoring station within this AQMA.

6. Secondary Objectives

6.1 Alternative Modes of Transport

6.1.1 Public Transport Schemes

6.1.1.1 The Hertfordshire Local Transport Plan 2006/07 – 2010/11 has been put together by the County Council in partnership with district authorities in the County and other key stakeholders and sets the framework for achieving the vision for a better transport system for all and will focus on delivering the Governments shared priorities (as below). Through these themes the Hertfordshire Local Transport Plan will continue to tackle the complex transport problems that face Hertfordshire, for example, the Hertfordshire Local Transport Plan introduces the concept of Accessibility Planning which will help to tackle the problem of getting to key services such as work, education, health and food shopping.

- tackling congestion;
- delivering accessibility;
- providing safer roads;
- improving air quality
- and improving the quality of life for residents.

6.1.1.2 Hertfordshire Local Transport Plan recognises transport as a local issue and proposes to deal with it along with other interlinked plans proposed for each of the main settlements within the district. The benefits gained from the schemes will be monitored and scenario-based air quality modelling should be used to gain a better understanding of the effects of schemes that are in the pipeline. From this, it should be possible to develop a priority list of schemes in terms of air quality improvement. Improved links between air quality experts and those responsible for improving public transport in Hertfordshire County Council should be developed to ensure that air quality is given due consideration in future evaluation of schemes. Options available to encourage public transport could include park and ride facilities or incorporation of designated bus lanes. Scenario based modelling would assist in gaining a better understanding of the effects of actions on air quality.

6.1.1.3 Three Rivers District Council will continue to support the County Council with its aim to encourage alternative modes of transport through its various initiatives, for example, through Support of Green Transport Week and through support of Car Free Days.

Action 1

Having established which options appear most likely to offer significant air quality benefits further action would be needed to:

- 1. Disseminate results of the analysis to promote adoption of such options**
- 2. Identify sources of funding**

3. Secure funding

4. Implement options

5. Monitor the success of selected scheme.

This process clearly needs full integration with the Local Transport Plan.

6.1.2 TravelWise Initiative

6.1.2.1 TravelWise is a partnership of highways authorities in the UK co-ordinated through the National TravelWise Association and which was started in Hertfordshire in 1993. The aim is to deliver the TravelWise initiative across the County in association with partner organisations by:

- Raising awareness of the problems associated with traffic growth particularly in relation to environmental, health, economical and social effects,
- Generating public acceptance for the need to change travel behaviour and reduce unnecessary car use,
- Promoting the benefits and availability of cycling, walking and passenger transport,
- Changing the modal split from car use to other modes,
- Promoting TravelWise through businesses, schools and community groups to encourage them to take action.

6.1.2.2 Delivery of the programme will be in the form of promotion to:

- the whole country population and within specific geographic locations,
- schools as part of “safer routes to school” projects and the national “walk to school” initiative,
- businesses within Herts. County Council and Hertfordshire Chamber of Commerce and Industry Business TravelWise Initiative,
- workers as part of green transport plans.

Action 2

Three Rivers District Council will continue to support the County Council with its aim to encourage alternative modes of transport through its various initiatives.

6.2 Mode of Transport and Average Distance by Journey Purposes

6.2.1 Table 6 shows the mode of transport by journey purpose for 2002 in Hertfordshire. The car is the dominant mode for all three journey purposes, but the other modes of transport vary in importance according to type of journey.⁹

Table 3. % mode of transport and average journey distance in Hertfordshire 2002 (Source: Hertfordshire Environmental Forum, Quality of Life Report 2005 Page 23)

Mode	Work	Shopping	Leisure
Walk	8	5	11
Bicycle	2	2	2
Bus	3	6	10
Train	4	10	1
Car Passenger	14	4	13
Car Driver	66	68	62
Taxi	1	1	0
Motorbike	0	1	0
Other	2	3	1
Mean Ave. Distance (miles)	10.6	13.1	5.8

6.2.2 Three Rivers District Council has a number of new cycle lane developments to increase the use of the bicycle as a mode of transport other than the car, including:

- Maple Cross to Rickmansworth town centre along the Uxbridge Road providing an off-road shared path,
- Abbots Langley to Bedmond area to include both off-road shared unsegregated paths and on road signed advisory route. This proposal also includes reducing the speed limit between Abbots Langley and Bedmond from 40 to 30mph.

6.2.3 The Three Rivers 'Cycling Strategy' states the broad aims for cycle planning in the District and defines a strategic network of routes. Increasing the number of people cycling regularly is a cost-effective way of reducing road congestion and pollution levels, improving public health and fitness, and reducing the overall demand for car parking space. 72% of all trips are less than five miles in length and half are less than two miles¹⁰. Cars and the environment suffer from short journeys as engines run cold, wear more, consume more fuel and produce more pollutants.

⁹ Hertfordshire Environmental Forum, Quality of Life Report 2005 Page 23

¹⁰ National Cycle Strategy 2003

6.2.4 The objective of this Cycle Strategy is to outline the role that Three Rivers District Council can play to achieve its aims to:

- Maximise the use of cycles as a mode of transport, in order to reduce reliance on the use of private cars,
- Develop a cycle network which is safe, convenient, attractive and efficient, and so encouraging and enabling cycling,
- Ensure that the needs of cyclists are represented in transport, land use, health, education, leisure and environmental proposals.

Action 3

The Council will continue to encourage cycling by:

Seeking to provide a network of cycle routes throughout the District, which is safe and convenient for all users.

Seeking to ensure that those responsible for the design of new roads or road improvements take the safety and needs of cyclists into account.

Investigate/ undertake shower improvements at Three Rivers House, including lockers and an additional shower.

Investigate/ undertake improved cycle parking facilities at Three Rivers House.

Stock pool bikes for staff to borrow on short journeys.

6.3 Greenways

- 6.3.1 Greenways are a network of largely car-free off-road routes, allowing people to reach facilities and open spaces in and around towns, and the countryside. They are designed for shared use by people of all abilities on foot, bicycle or horseback, for commuting, play or leisure.

Action 4

The Council will support and implement measures where appropriate to assist in the creation and maintenance of Greenways. The Council supports the implementation of a stretch of Greenway linking Mutton Wood, Oxhey Lane to the Marry Hill Woodland Trust land where appropriate land lies within the District boundary.



Source: Steve Farrell: Cyclist and Horse Rider

6.4 Indicator AQ1 – Number of days of Air Pollution

6.4.1 Indicator AQ1 (formerly QoL27) is used to show whether air quality is getting better or worse in Hertfordshire by illustrating air pollution levels in Hertfordshire. The indicator is calculated using accurate measurements collected continuously from a number of monitoring sites around the county (air quality monitoring in Hertfordshire is coordinated through the Hertfordshire and Bedfordshire Air Pollution Monitoring Network). However, because not all districts and boroughs in Hertfordshire have the facility to calculate these indicators, one overall set of indicator values has been calculated for the whole county and where possible, results from a number of districts are used to produce an average. Indicator AQ1 has five separate values:

- (1) The number of days in which ozone levels in rural areas exceeded the Government's standard;
- (2) The number of days in which particulate levels in urban areas exceeded the Government's standard;
- (3) The number of days in which particulate levels close to busy roads exceeded the Government's standard;
- (4) Annual mean nitrogen dioxide levels in urban areas and
- (5) Annual mean nitrogen dioxide levels close to busy roads.

6.4.2 "All of the indicators for 2004 were lower than 2003. Unlike 2003, there were no exceptionally extended pollution episodes during 2004 due to the more unstable weather conditions experienced. There were no incidences of 'moderate' carbon monoxide or nitrogen dioxide recorded by any network site during the year. There were a number of days where 'moderate ozone' was recorded across the network, the earliest of these widespread incidents occurred during mid-March, the last at the beginning of September" (Source Quality of Life Report 2005).

6.4.3 "Local pollution levels are dependent on a range of factors including traffic levels, vehicle technology, imported pollution from other areas such as London and continental Europe, and the weather. It usually takes a long time for emissions from traffic and other sources of pollution to change, so short-term variations in the indicator are largely due to weather conditions. The ozone is formed in the atmosphere by a chemical reaction in the presence of sunlight. As a result; a warm sunny summer will cause the rural ozone indicator to go up. A cold, still winter will cause the urban and roadside indicators to go up" (Source Quality of Life Report 2005).

Action 5

Three Rivers District Council, through membership of the Hertfordshire and Bedfordshire Air Pollution Monitoring Network, will continue to provide base line data from the monitoring station for this indicator to be in use.

6.5 Land Use Planning

- 6.5.1 Air quality can be a material consideration where it relates to the use or development of land. Air quality may be affected by the operational characteristics of the proposed development (industrial, commercial or domestic uses, for example). Also, even if the proposed use has no direct impact on air quality, air pollution from traffic generated by the development may be a significant consideration.
- 6.5.2 In considering the impact of proposed development on air quality, the Council will liaise with the pollution control authorities (the local environmental health authority or Environment Agency) and will have regard to the National Air Quality Strategy's objectives and results of any air quality review/assessment or action plan prepared under The Environment Act 1995.
- 6.5.3 If the operational characteristics of a development (or the traffic generated by it) seem likely to worsen local air quality in an area already identified by the pollution control authorities as being at risk, and the potential problem is incapable of being overcome by a condition or a planning obligation, then this may be cause for refusal of planning permission.
- 6.5.4 Where there is likely to be significant adverse impact on air quality resulting from the operational characteristics of, or traffic generated by a proposed development, the Council will consult with the appropriate pollution control authorities and have regard to their views.
- 6.5.5 The Council will take into account potential for the proposals to adversely affect the health and amenity of users of the development, nearby residential and other existing uses, and the potential for the proposals to prejudice the future development of surrounding sites with prior allocations or planning permission.
- 6.5.6 The Council may grant permission subject to conditions, or seek to enter into a planning obligation with the developer in order to mitigate the impact of a development.¹¹

Action 6

Air quality shall be taken into account when considering planning applications which fall into the major category or which involve business uses and particularly when these are within or closely adjoining any Air Quality Management Area. Air quality shall be taken into greater consideration in the future by greater inclusion in development plans which should follow current air quality responsibilities as outlined in the relevant current guidance on air quality.

¹¹ Three Rivers Local Plan 1996-2011

6.6 Alternative Fuels/Fuel Usage

- 6.6.1 Road traffic is the major source of air pollution in the Three Rivers District. Alternative fuel vehicles that produce fewer emissions can make an important contribution to improving air quality.
- 6.6.2 The Waste Services team currently have nine zero emissions refuse lorries. These are standard vehicles which have Euro II compliant engines and the exhausts are fitted with EMINOX (stainless steel exhaust and emission control systems for commercial diesel engined vehicles). After each MOT, the vehicles are given a certificate to show that they are zero emissions compliant.
- 6.6.3 The Waste Services team are monitoring new technologies and new types of fuel to get an idea of what is available on the market and what could be beneficial at Three Rivers and what may not be. This is being done with a view to updating the fleet as the team will be specifying vehicles in 2008 (as they take 6 months to build) changing the fleet will commence from 2009.
- 6.6.4 The Council is considering measures to enable its vehicle fleet to move towards cleaner fuels, reduced environmental impacts and improved cost-effectiveness.



Source: Jennie Moore: refuse

Action 7

Three Rivers District Council Waste Services Team will continue to explore suitable options to enable its fleet to move towards cleaner fuels.

6.7 Local Authority Staff

- 6.7.1 Local authorities often offer schemes for essential car users to purchase cars; these schemes may include for example lease cars or Council loans. Currently there is little incentive to encourage employees to purchase or drive energy efficient cars.

Action 8

Three Rivers District Council will explore suitable options to encourage staff in receipt of car allowance to switch or convert to low emission vehicles, such as LPG.

6.7.1 Reducing Car Use

- 6.7.1.1 The GTP has the following specific initiatives currently being undertaken or to be investigated:

- Encourage further home working through the use of remote working from home to enable key IT applications to be accessed via a home computer. Some modification of existing work patterns would be required.
- A special purchase scheme through PC World for the procurement of home computers for staff.

- 6.7.1.2 Other thoughts on possible actions that can be aimed at reducing car use or reducing the impact of car use include:

- Engage with local business to establish travel plans and car share schemes.
- Promote and raise awareness of greener driving techniques, for example, revs, speed, tyres, short journeys/ cold engines...etc
- Investigate the potential to develop a car sharing scheme or car sharing database for staff.
- From the results of a staff survey, investigate popular residential areas that staff commute from, whereby there could be the potential for staff -shuttle buses/ park and ride for staff from station or popular residential areas.
- Build upon the good liaison that currently exists, to improve resources for journey planning for car users (for example, if accidents occur, to enable re planning of route to avoid adding to congestion), or for both car users and non-car users develop improved provision of resources for better knowledge of public transport possibilities for the route to work instead of using the car. This will also involve building upon the

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good liaison that currently exists with county council so staff can plan in advance to avoid congestion due to road works.

- Explore the possibility of providing bus partnerships and fare concessions. Investigate whether there are accessibility problems or hard to reach areas and if so liaise with relevant organisations about more extensive bus routes, to reduce the need to use car, for example, to get to shops, doctor, town etc.

Action 9

Investigate and implement initiatives to reduce car usage or reduce the impact of car usage.

6.8 Car Pool Schemes

6.8.1 The availability of a small number of pool cars may result in a few staff not needing to drive to work (because they are only required to have use of a car during a short part of the day). The London Borough of Waltham Forest found that the introduction of pool cars dramatically reduced the amount of mileage claimed by staff.

6.8.2 This council does not encourage the use of larger engine vehicles. The maximum allowance payable is for a 1.4 petrol engine. It would be useful for other employers in Three Rivers to be encouraged to practice similar schemes. In such cases, it may be possible to abolish the upper rate of the car allowance and use the money released to invest in pool schemes or other alternatives such as lease car subsidies and preferential loan rates for clean fuel engines.

Action 10

Encourage employers to review the suitability of a car pool schemes and the current car allowance systems and establish the most effective system to include fairness and benefits to air quality.

6.9 Tendering Contracts

- 6.9.1 When tendering contracts that involve vehicle use, the emissions or fuel type of the vehicles should be incorporated into this. Over the length of the contract, vehicles could be required to meet more stringent requirements at certain dates. It could be useful to encourage suppliers to provide cleaner vehicles by including environmental considerations in the tender evaluation.

Action 11

Three Rivers Council will consider air quality as part of the assessment for any new tender and require contractors to use fuel-efficient vehicles.

6.10 Taxis and Private Hire Vehicles

- 6.10.1 These vehicles will be doing considerable local mileage and consequently add to air pollution within the District. There is therefore good reason to encourage the use of alternative fuels. It may be possible to reduce the licence fee for those taxis and private hire vehicles that are capable of running on an alternative approved fuel, for example LPG or petrol-electric (hybrid). Grants are available for some vehicles to help with the cost of conversion (there is an age limit on car conversion, it is 5 years of age) and more new vehicles are becoming available with LPG as an option?, the conversion must be undertaken at a facility recommended by the Powershift programme and LPG Gas Association and to be with the prior agreement of the Council's Licensing Officer.

Action 12

The Council will investigate into the possibility of reducing licensing fees for fuel-efficient vehicles. If considered suitable, the council will promote the uptake initially of LPG, petrol-electric or compressed natural gas by offering a reduction in Private Hire and Hackney Carriage vehicle licence fees upon conversion to LPG fuel. The Council will consider other alternative fuels to qualify for a reduction in the licence fees as technology improves.

6.11 Other Organisations

- 6.11.1 Local authorities need to work with other local organisations to encourage them to put together staff travel plans and green their fleet. The local authority may be able to initiate interest through partnership working or consultation when an air quality strategy or local transport plan/strategy is developed. Other encouragement can come in the form of award schemes for greener fleets. This may be done at a local level, however, it may be better for this to be conducted at a national level to encourage promotion across the country and achieve a recognised level of achievement and the attached kudos.

Action 13

The Council must promote the advantages and importance of energy efficiency and the role of reducing fuel usage would have on significantly reducing the quantity of air pollution generated.

6.12 Vehicle Engine Idling

- 6.12.1 Historically, complaints have been received about delivery vehicles, taxis, buses and private cars being left for excessive periods of time with their engines running. This has become less of a problem with modern vehicles having improved heating systems, and improved technology making cold starts less of a problem than in/ with older vehicles, however this has not resolved the issue of delivery vehicles, buses, taxis and maintenance contractors having their engines idling unnecessarily.

Action 14

Three Rivers Council will educate the public and businesses to discourage the continuation of this practice and to investigate the suitability of adopting the Road Traffic (Vehicle Emissions) (Fixed Penalty) (Engines) Regulations 2002.

6.13 Roadside Emissions Testing

- 6.13.1 Voluntary roadside emissions testing could be used along with the promotion of better driving techniques, educating drivers about the importance of driving techniques and regular car maintenance on fuel usage. English Councils with an AQMA can apply to the Secretary of State for Transport for the power to conduct roadside vehicle emissions tests. Councils that get approval can issue fixed penalties of £60 to drivers whose vehicles are found to be exceeding current emission limits.

Action 15

The Council will investigate the feasibility of introducing roadside emission testing, possibly in partnership with neighbouring stakeholders.

6.14 Emissions from Industry and Domestic Sources

- 6.14.1 Regulation of Integrated Pollution Prevention and Control (IPPC) Processes – Environmental Protection Act 1990/Pollution Prevention and Control Act 1999.
- 6.14.2 In 1990 the Environmental Protection Act (EPA) introduced new controls to a range of industrial processes with considerable pollution potential. Responsibility for industrial pollution control is split between agencies. The Environment Agency has responsibility for large-scale industrial processes with significant polluting power, known as Part A processes, and smaller scale potentially polluting industries, or IPPC processes, are regulated by Local Authorities. The regulation of industries by Local authorities is shortly being changed from the EPA 1990 to that of the Pollution Prevention and Control 1999.
- 6.14.3 Three Rivers District Council currently authorises approximately 17 IPPC processes throughout the district. There are no Part A processes within the District. The authorisation requires the operator to comply with set conditions which limits the substances emitted from the processes in accordance with the NAQA standards based on European Directives, and places them under a general obligation to use the “best available techniques” to prevent or minimise pollution.

Action 16

Three Rivers District Council will continue to provide comprehensive control over IPPC processes.

6.15 Industrial Smoke Control – Clean Air Act 1993

6.15.1 Three Rivers District Council also controls emissions from certain industrial processes or trade premises which fall outside the provisions of the Environmental Protection Act using the provisions of the Clean Air Act 1993 which includes powers to:

- Prohibit black smoke from a chimney of any building (subject to certain permitted periods and exemptions)
- Prohibit dark smoke from industrial or trade premises (subject to certain exemptions)
- Require notification of installations of industrial furnaces
- Approve chimney heights of certain installations

Action 17

Three Rivers District Council continue to control emissions using the provisions of the Clean Air Act 1993.

6.16 Statutory Nuisance Legislation – Environmental Protection Act 1990

- 6.16.1 The nuisance regime complements the more specific pollution control regimes of the Clean Air Act 1993, the Environmental Protection Act 1990 and the Pollution Prevention and Control Act 1999. Local authorities are able to use it to deal with domestic as well as industrial emissions that, by definition, are prejudicial to health or a nuisance.
- 6.16.2 Those industrial processes that are not defined as Part A or B Processes under Section 2(1) of the Environmental Protection Act 1990 can operate without authorisation but must ensure that their operations do not cause a statutory nuisance to those around them and base their actions on a concept known as “best practicable means”.
- 6.16.3 Statutory nuisance can cover: smoke, fumes, gases, dust, steam and odour emitted from premises, and where a local authority is satisfied that a statutory nuisance exists, the Council’s officers have a duty to take enforcement action requiring the abatement of the nuisance.



Action 18

The Council will continue to investigate complaints about nuisance, monitor air quality and relate this to the air quality strategy.

6.17 Bonfires

6.17.1 Bonfires that produce visible smoke can contribute to increasing the levels of air pollution. Fine particles (PM₁₀) as well as larger particles and other pollutants such as dioxins may also be produced if plastics or rubber are burnt. Where bonfires cause a statutory nuisance enforcement action can be taken under the Environmental Protection Act 1990.



Action 19

Improved information and advice will be given to residents and companies in the area about problems caused by bonfires, and enforcement action will be taken against persistent offenders who fail to comply with the Clean Air Act and Environmental Protection Act.

6.18 Energy Conservation/Promotion of Energy Reduction Schemes

- 6.18.1 Buildings contribute directly and indirectly to the consumption of energy and resources, to environmental pollution from materials used in construction (including the use of raw materials), to energy consumed from heating, lighting and ventilation, and to waste generated during construction and demolition. Energy efficient buildings and those incorporating sustainable design principles are now recognised as likely to provide healthier and more comfortable conditions.

Action 20

Building Control already encourage building designs and materials that have the least environmental impact as well as encouraging renewable energy.

This is done through:

- i. Continue to actively enforce Part L of the Regulations and any other Government drivers (Sustainable Homes etc).**
- ii. Continue to make an effort to reduce mileage when making visits around the district (for example, by dividing the district into 4 areas, with designated officers for each area).**
- iii. Continue to work with Watford Council on a Newsletter, Focus Groups and Seminars, which are aimed at Architects, Builders and Home Owners.**
- iv. Continue to promote Building Controls website www.threeriversbuildingcontrol.co.uk**

6.19 Air Quality Monitoring

6.19.1 Air quality monitoring in Hertfordshire is coordinated through the Hertfordshire and Bedfordshire Air Pollution Monitoring Network, for more information (including measurements, reports and daily bulletins) visit the Network's website: www.hertsbedsair.org.uk.

6.19.2 Three Rivers District Council currently conducts continuous air quality monitoring at the Rectory Road site (PM₁₀ and NO₂). However, in order to validate our modelled pollution predictions for the junction 18 area with real measured values, it is intended to relocate the station to the Highways Agency compound at Junction 18 of the M25, this will be subject to planning permission and construction activities will be needed to make the site suitable. The relocation is expected to take place around May 2007.



6.19.3 In November 2006 the Council reinstated its Diffusion Tube monitoring network for nitrogen dioxide at sixteen sites throughout the district. The data collected is interpreted and available for review on the Hertfordshire and Bedfordshire Air Pollution Monitoring Network Site (<http://www.hertsbedsair.org.uk/hertsbeds/asp/home.asp>).

6.19.4 It is intended to explore opportunity for increased provision of air quality information to the public for example text pilot project.

Action 21

Three Rivers District Council will continue to monitor air quality within the district (continuous monitoring and diffusion tubes) and will continue the membership of the local network.

i. Relocate monitoring station

ii. Increased provision of air quality information to the public

6.20 Public Awareness

Three Rivers Times will be used for promotion of air pollution issues and best practice to reduce air pollution. Other possible ways to promote awareness would include attending local events to educate about air quality and behaviour (e.g. canal fair in May); educating about air quality and behaviour ('what you can do') in schools, at community events and groups and; by producing leaflets about air quality and behaviour, awareness and 'what you can do'.

7.0 Summary of Actions

7.1 Primary Objectives

Action 1

Three Rivers District Council is working in co-operation with Mouchel Parkman (consultants for the Highways Agency), in the provision of further passive monitoring for N02 within the largest AQMA at Junction 18 of the M25. Three Rivers Council will encourage and support the Highways Agency in any actions that will result in a reduction in pollution levels from the M25 motorway.

There is a further intention to locate a continuous monitoring station within this AQMA.

7.2 Secondary Objectives

Action 1

Having established which options appear most likely to offer significant air quality benefits further action would be needed to:

- Disseminate results of the analysis to promote adoption of such options
- Identify sources of funding
- Secure funding
- Implement options
- Monitor the success of selected scheme.

This process clearly needs full integration with the Local Transport Plan.

Action 2

Three Rivers District Council will continue to support the County Council with its aim to encourage alternative modes of transport through its various initiatives.

Action 3

The Council will encourage cycling by:

Seeking to provide a network of cycle routes throughout the District, which is safe and convenient for all users.

Seeking to ensure that those responsible for the design of new roads or road improvements take the safety and needs of cyclists into account.

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Investigate/ undertake shower improvements at Three Rivers House, including lockers and an additional shower.

Investigate/ undertake improved cycle parking facilities at Three Rivers House.

Action 4

The Council will support and implement measures where appropriate to assist in the creation and maintenance of Greenways. The Council supports the implementation of a stretch of Greenway linking Mutton Wood, Oxhey Lane to the Marry Hill Woodland Trust land where appropriate land lies within the District boundary.

Action 5

Three Rivers District Council, through membership of the Herts. and Beds Monitoring Group, will continue to provide base line data from the monitoring station for this indicator to be in use.

Action 6

Air quality shall be taken into account when considering all planning applications and particularly when these are within or closely adjoining any Air Quality Management Area. Air quality shall be taken into greater consideration in the future by greater inclusion in development plans which should follow current air quality responsibilities as outlined in the relevant current guidance on air quality.

Action 7

Three Rivers District Council Waste Services Team will continue to explore suitable options to enable its fleet to move towards cleaner fuels.

Action 8

Three Rivers District Council will explore suitable options to encourage staff in receipt of car allowance to switch or convert to low emission vehicles, such as LPG.

Action 9

Investigate and implement initiatives to reduce car usage or reduce the impact of car usage.

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Action 10

Encourage employers to review the suitability of a car pool schemes and the current car allowance systems and establish the most effective system to include fairness and benefits to air quality.

Action 11

Three Rivers Council will consider air quality as part of the assessment for any new tender and require contractors to use fuel-efficient vehicles.

Action 12

The Council will investigate into the possibility of reducing licensing fees for fuel-efficient vehicles. If considered suitable, the council will promote the uptake initially of LPG, petrol-electric or compressed natural gas in Private Hire and Hackney Carriage vehicle licence fees upon conversion to LPG fuel. The Council will consider other alternative fuels to qualify for a reduction in the licence fees as technology improves.

Action 13

The Council must promote the advantages and importance of energy efficiency and the role reducing fuel usage would have on significantly reducing the quality of air pollution generated.

Action 14

Three Rivers Council anticipate educating the public and businesses to discourage the continuation of this practise and to investigate the suitability of adopting the Road Traffic (Vehicle Emissions) (Fixed Penalty) (Engines) Regulations 2002.

Action 15

The Council will investigate the feasibility of introducing roadside emission testing, possibly in partnership with neighbouring stakeholders.

Action 16

Three Rivers District Council will continue to provide comprehensive control over Part B processes. Income from permit subsistence fees is ring fenced to fund the enforcement programme for Part B processes.

Action 17

Three Rivers District Council continue to control emissions using the provisions of the Clean Air Act 1993.

Action 18

The Council will continue to investigate complaints about nuisance, monitor air quality and relate this to the air quality strategy.

Action 19

Improved information and advice will be given to residents and companies in the area about problems caused by bonfires, and enforcement action will be taken against persistent offenders who fail to comply with the Clean Air Act and Environmental Protection Act.

Action 20

Building Control already encourage building designs and materials that have the least environmental impact as well as encouraging renewable energy. This is done through:

- i. Continue to actively enforce Part L of the Regulations and any other Government drivers (Sustainable Homes etc).
- ii. Continue to make an effort to reduce mileage when making visits around the district (for example, by dividing the district into 4 areas, with designated officers for each area).
- iii. Continue to work with Watford Council on a Newsletter, Focus Groups and Seminars, which are aimed at Architects, Builders and Home Owners.
- iv. Continue to promote Building Controls website www.threeriversbuildingcontrol.co.uk

Action 21

Three Rivers District Council will continue to monitor air quality within the district, and will continue the membership of the local network.

- i. Relocate monitoring station
- ii. Increased provision of air quality information to the public

8.0 Approach to Impact Assessment of Proposals

- 8.0.1 According to the Review and Assessment Stage 4, The Action Plan should contain simple estimates of the costs and feasibilities of implementing scenarios. The Action Plan may also consider the non-health benefits of implementing scenarios in the Action Plan, for example, reductions in road traffic accident deaths as a result in road improvements that also reduce road emissions. This Action Plan endeavours to comply with requirements so that for each action/individual measure proposed, there is an evaluation the cost-effectiveness, appraisal of the wider environmental, economic and social consequences of each option and package of options. TRDC Air Quality Action Plan undertakes this as a simple perception approach at this stage and not as a finalised defined approach.
- 8.0.2 In this draft, consideration was given in terms of each measures impact on air quality, implementation timescales, broad anticipated cost range, non air quality impacts and after giving scores for each variable (air quality, timescales, cost), a rank order was given for each measure.

8.1 Table 5. Summary of Impact Assessment of Proposals

Measure	Description	Air Quality Impact	Timescale	Cost	Potential non-air quality impact (+=positive, -=negative, o = note/ neutral)	Rank 1 - 4
Primary						
1. Measures Identified to Achieve Primary Objectives of Reducing Air Pollution in the AQMA	TRDC is working in co-operation with Mouchel Packman (consultants for the HA), in the provision of further passive monitoring for N02 within the largest AQMA at Junction 18 of the M25. TRDC will encourage and support the HA in any actions that will result in a reduction in pollution levels from the M25 motorway. There is a further intention to locate a continuous monitoring station within this AQMA.	Moderate	Already existing	Low	<ul style="list-style-type: none"> Improved relationship with Highways Agency Better targeting 	1
Secondary						
1. Alternative Modes of Transport: Public Transport Schemes	Having established which options appear most likely to offer significant air quality benefits further action would be needed to: <ul style="list-style-type: none"> Disseminate results of the analysis to promote adoption of such options Identify sources of funding Secure funding Implement options Monitor the success of selected scheme This process clearly needs full integration with the Local Transport Plan 	Low	Medium term	Medium	<ul style="list-style-type: none"> Improved overall environment, health & public transport 	3

Measure	Description	Air Quality Impact	Timescale	Cost	Potential non-air quality impact (+=positive, -=negative, o = note/ neutral)	Rank 1 - 4
2. Alternative Modes of Transport: Travelwise Initiative	TRDC will continue to support the County Council with its aim to encourage alternative modes of transport through its various initiatives and through 2006	Medium	Ongoing	High	<ul style="list-style-type: none"> + Reduced congestion + Improved travel times + Reduced CO2 emissions + Improved website + Encourages behavioural change in travel patterns + Encourages health & fitness + Widens transport choice - Insensitive implementation can potentially alienate staff 	2
3. Alternative Modes of Transport: Mode of Transport and Average Distance by Journey Purposes	<p>The Council will encourage cycling by:</p> <ul style="list-style-type: none"> - Seeking to provide a network of cycle routes throughout the District, which is safe and convenient for all users. - Seeking to ensure that those responsible for the design of new roads or road improvements take the safety and needs of cyclists into account. 	Low	Ongoing	Medium	<ul style="list-style-type: none"> + Encourages improvements in fitness & health + Low level of investment/ minimal maintenance + Encourages greater social interaction + Reduces cost for commuters & travellers + Fuel efficient & low energy requirements 	2

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					<p>in comparison to other transport modes</p> <ul style="list-style-type: none"> + Safety, health, improved morale o Require work-based secure & safe facilities for employees – Potential conflict with other transport modes if sharing road or land space 	
Measure	Description	Air Quality Impact	Timescale	Cost	Potential non-air quality impact (+=positive, -=negative, o = note/ neutral)	Rank 1 - 4
4. Alternative Modes of Transport: Greenways	The Council will support and implement measures where appropriate to assist in the creation and maintenance of Greenways. The Council supports the implementation of a stretch of Greenway linking Mutton Wood, Oxhey Lane to the Marry Hill Woodland Trust land where appropriate land lies within the District boundary	Low	Long term	High	<ul style="list-style-type: none"> + Safety + Reduced congestion + Improved travel times + Health + Improved morale + Improved local environment & quality of life for local residents 	4
5. Indicator AQ1 – Air pollution	TRDC, through membership of the Herts. and Beds Monitoring Group, will continue to provide base line data from the monitoring station for this indicator to be in use	Low	Already existing	Low within existing	<ul style="list-style-type: none"> • Improved relations with local environment groups • Allows for benchmarking 	1

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6. Land Use Planning	Air quality shall be taken into account when considering all planning applications and particularly when these are within or closely adjoining any Air Quality Management Area. Air quality shall be taken into greater consideration in the future by greater inclusion in development plans which should follow current air quality responsibilities as outlined in the relevant current guidance on air quality	Low	Long term	Low within existing funding	<ul style="list-style-type: none"> • More innovation in development • Often secures general environmental improvements to the natural, urban & built environments (e.g. visual, noise) • Fosters sustainable development principles • Benefits often long term/ potential difficulty in evaluating competing interests 	3
7. Alternative Fuels/ Fuel Usage:	Three Rivers District Council Waste Services Team will continue to explore suitable options to enable its fleet to move towards cleaner fuels	Low	Medium	medium	<ul style="list-style-type: none"> • Improved environmental profile • Good publicity/ promotion of environmental issues • Reduction in gross polluting vehicles • Increases overall awareness 	3
Measure	Description	Air Quality Impact	Timescale	Cost	Potential non-air quality impact (+=positive, -=negative, o = note/ neutral)	Rank 1 - 4

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8. Alternative Fuels/ Fuel Usage: Local Authority Staff	TRDC will explore suitable options to encourage staff in receipt of car allowance to switch or convert to low emission vehicles, such as LPG	Low	Medium term	Medium	<ul style="list-style-type: none"> • Potential for reduced vehicle running costs • Better morale 	3
9.Car Usage	Investigate and implement initiatives to reduce car usage or reduce the impact of car usage.	Medium	Medium	Low	<ul style="list-style-type: none"> • Encourages increased personal awareness & accountability for travel behaviour 	
10. Alternative Fuels/ Fuel Usage: Car Pool Schemes	Encourage employers to review the suitability of a car pool schemes and the current car allowance systems and establish the most effective system to include fairness and benefits to air quality	Low	Medium term	High	<ul style="list-style-type: none"> • Potential for reduced vehicle running costs • Better morale 	3
11. Alternative Fuels/ Fuel Usage: Tendering Contracts	TRDC will consider air quality as part of the assessment for any new tender and require contractors to use fuel-efficient vehicles	Low	Medium term	Low	<ul style="list-style-type: none"> • CO2 reduction, improved relations with local businesses • Potential for noise-reduction • Improved environmental profile • Potential fuel efficiency & subsequent financial savings • Encourages local innovation • May increase CO2 & other greenhouse gas emissions • Requires substantial 	2

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					<p>investment in filling stations</p> <ul style="list-style-type: none">• LPG depots potentially require greater space	
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Measure	Description	Air Quality Impact	Timescale	Cost	Potential non-air quality impact (+=positive, -=negative, o = note/ neutral)	Rank 1 - 4
12. Alternative Fuels/ Fuel Usage: Taxis	The Council will investigate into the possibility of reducing licensing fees for fuel-efficient vehicles. If considered suitable, the council will promote the uptake initially of LPG, petrol-electric or compressed natural gas in Private Hire and Hackney Carriage vehicle licence fees upon conversion to LPG fuel. The Council will consider other alternative fuels to qualify for a reduction in the licence fees as technology improves	Low	Long term	Low	<ul style="list-style-type: none"> • Potential to reduce vehicle running costs • Improved morale • Reduced CO2 • Improved environmental profile • Good publicity/ promotion of environmental issues • Reduction in gross polluting vehicles • Increases overall awareness 	4
13. Alternative Fuels/ Fuel Usage: Other Organisations	The Council must promote the advantages and importance of energy efficiency and the role reducing fuel usage would have on significantly reducing the quality of air pollution generated	Moderate	Long term	Medium	<ul style="list-style-type: none"> • Lower fuel costs • Reduce fuel poverty 	3
14. Alternative Fuels/ Fuel Usage: Vehicle Engine Idling	TRDC anticipate educating the public and businesses to discourage the continuation of this practise and to investigate the suitability of adopting the Road Traffic (Vehicle Emissions) (Fixed Penalty) (Engines) Regulations 2002	Low	Long term	High	<ul style="list-style-type: none"> • Encourages increased personal awareness & accountability for travel behaviour • Increased revenue from fines • Difficult to enforce as 	4

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					driver not car details are required	
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Measure	Description	Air Quality Impact	Timescale	Cost	Potential non-air quality impact (+=positive, -=negative, o = note/ neutral)	Rank 1 - 4
15. Alternative Fuels/ Fuel Usage: Roadside Emissions Testing	The Council will investigate the feasibility of introducing roadside emission testing, possibly in partnership with neighbouring stakeholders	Moderate	Long term	High	<ul style="list-style-type: none"> + Safer vehicles on roads + Good publicity + Reduction in gross polluting vehicles + Increases overall awareness + Encourages increased personal awareness & accountability for travel behaviour – Difficulty with public relations for council • Financial cost potentially very high for implementation • Could socio-economically impact on sectors of community 	3
16. Emissions for Industry and Domestic Sources	TRDC will continue to provide comprehensive control over Part B processes	Medium	Already existing	Medium within existing funding	<ul style="list-style-type: none"> • Prevent nuisance • Encourages overall improvement in environmental management • Improved overall environment 	1

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					<ul style="list-style-type: none"> • May unduly burden smaller operators 	
17.	Three Rivers District Council continue to control emissions using the provisions of the Clean Air Act 1993	Low	Ongoing	Medium within existing funding	<ul style="list-style-type: none"> • Positive image • Improved relations 	2

Measure	Description	Air Quality Impact	Timescale	Cost	Potential non-air quality impact (+=positive, -=negative, o = note/ neutral)	Rank 1 - 4
18. Statutory Nuisance Legislation – Environmental Protection Act 1990	The Council will continue to investigate complaints about nuisance, monitor air quality and relate this to the air quality strategy	Low	Ongoing	Medium within existing funding	+ Positive image + Improved relations	2
19. Bonfires	Improved information and advice will be given to residents and companies in the area about problems caused by bonfires, and enforcement action will be taken against persistent offenders who fail to comply with the Clean Air Act and Environmental Protection Act	Low	Medium term	Medium within existing funding	• Reduced nuisance	3

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20. Energy Conservation/ Promotion of Energy Reduction Schemes	<p>Building Control already encourage building designs and materials that have the least environmental impact as well as encouraging renewable energy. This is done through:</p> <ul style="list-style-type: none"> i. Continue to actively enforce Part L of the Regulations and any other Government drivers (Sustainable Homes etc). ii. Continue to make an effort to reduce mileage when making visits around the district (for example, by dividing the district into 4 areas, with designated officers for each area). iii. Continue to work with Watford Council on a Newsletter, Focus Groups and Seminars, which are aimed at Architects, Builders and Home Owners. iv. Continue to promote Building Controls website www.threeriversbuildingcontrol.co.uk 	Medium	Already existing	Low	<ul style="list-style-type: none"> • Positive image • Reduction in fossil & conventional fuel use & associated reduction in emissions of acid rain precursors • Opportunity for innovation, technological advancement • Impact upon visual amenity • Potentially require extensive land-take 	1
Measure	Description	Air Quality Impact	Timescale	Cost	Potential non-air quality impact (+=positive, -=negative, o = note/ neutral)	Rank 1 - 4
21. Air quality monitoring	<p>TRDC will continue to monitor air quality within the district (continuous and diffusion tubes), and will continue the membership of the local network and:</p> <ul style="list-style-type: none"> i. Relocate monitoring station ii. Increased provision of air quality information to the public 	Medium	Already existing/ Ongoing	Medium	<ul style="list-style-type: none"> • Uniformity of approach • Improved promotion of environmental issues • Positive image for council • Data can be used for reassurance against perception of poor air quality 	1

8.2 Timescales

8.2.1 For this Action Plan, timescales for implementing measures range from those that already exist or are ongoing to those that are expected to be achieved in the short, medium or long term. The Action Plan shall endeavour to comply with Air Quality Action Planning principles, which include that:

- Action Plans should consider short, medium and long term (up to 10 years) and should not reject options simply because their implementation and/ or effect timescale extends beyond relevant air quality objective compliance data.
- Also that those responsible for implementing/ undertaking actions should be involved in the development of Action Plans at the earliest stage possible.

8.3 Cost Effectiveness – broad indication of costs

8.3.1 For this stage, precise calculations of cost effectiveness have not been conducted; instead consideration has been given for a range of options and attempts made to anticipate a broad indication of costs as high, medium or low and this was from a subjective view point.

8.4 Ranking

8.4.1 For Three Rivers Action Plan, scales have been devised appropriate to TRDC, based on our own Plans needs and based on professional judgement (as circumstances vary from one authority to the next). Table 8 summarises the approach to impact assessment.

Table 6. Approach to Impact Assessment for TRDC AQAP

Timescales	Air quality impacts	Costs	Score	Timescale + Air Quality Impact + Cost	Scores Ranked as follows
5 – 10 years = long term	Low	£50,000 or more = high cost	1	Scores will range between 3 and 9	score of 7-8, ranks as 1 (HIGH priority); score of 6, ranks as 2 (MEDIUM/ HIGH priority); score of 4 – 5, ranks as 3 (MEDIUM/ LOW priority); score of 3 ranks as 4 (LOW priority)

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2 – 5 years = medium term	Medium	£10,000 - £50,000 = moderate cost	2		
Less than 2 years = short term	High	Less than £10,000 = low cost	3		

For each measure the score for timescale, air quality impact and cost were added together, scores ranged between 3 and 8. Scores were then ranked as follows. A score of 7-8, ranked as 1; score of 6, ranked as 2; score of 4 – 5, ranked as 3 and; score of 3 ranked as 4. Rank 1 is high priority and Rank 4 is low priority. For example: Low air quality impact + Low cost + short term = score of 7, ranked as 1, high priority.

8.5 Monitoring the effectiveness of a plan when measures are implemented

8.5.1 As the main target of the AQAP is to reduce air pollution in an AQMA, to assess the long term effectiveness of the AQAP, TRDC will need to develop long term indicators of the AQAPs effectiveness. The basic indicator of whether an AQAP is having necessary effect is to measure the air quality in the AQMA to assess trends. Well defined baseline data on which to measure success is required and “adoption” of indicators already in use within other policy areas will also prove useful both in fostering links with these area and in obtaining necessary data.

8.5.2 Examples of potential indicators of the effectiveness of the plan once measures are implemented could include:

- Current air quality status
- Trends
- Source apportionment
- Variation in emission and air quality
- Locations affected
- Extent of exposure
- Traffic flow
- Journey times
- Road density
- Fleet mix
- Vehicle occupancy
- Road capacity
- Emission density
- Industrial process density
- Fuel sales (e.g. ultra low sulphur petrol or diesel)
- Decrease in car usage by staff
- Decrease in work trips by car
- Increase in % of green vehicles in the council fleet
- Increase in % of service users who are able to access services without travelling
- Reduction in energy consumption

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- 8.5.3 There will be various ways to obtain such data, for example, a staff survey could be conducted every few years to monitor progress or snap shot surveys conducted to gain better understanding, liaison with relevant departments will be necessary to see what data they record.
- 8.5.4 Table 7 summarises potential indicators for monitoring the effectiveness of the plan once measures are implemented.

Table 7. Summary of Effectiveness Indicators

Action Plan Measure	Possible performance indicators	Department to provide information
Primary		
<p>1. Three Rivers District Council is working in co-operation with Mouchel Parkman (consultants for the Highways Agency), in the provision of further passive monitoring for N02 within the largest AQMA at Junction 18 of the M25. Three Rivers Council will encourage and support the Highways Agency in any actions that will result in a reduction in pollution levels from the M25 motorway.</p> <p>There is a further intention to locate a continuous monitoring station within this AQMA.</p>	<ul style="list-style-type: none"> •Data/ trends/ reports 	<p>HA, EH, Transportation</p>
Secondary		
<p>1. Having established which options appear most likely to offer significant air quality benefits further action would be needed to:</p> <ul style="list-style-type: none"> • Disseminate results of the analysis to promote adoption of such options • Identify sources of funding • Secure funding • Implement options • Monitor the success of selected scheme. <p>This process clearly needs full integration with the Local Transport Plan.</p>	<ul style="list-style-type: none"> •Data/ trends 	<p>EH, Transport, Highways Engineers and Education Services</p>
<p>2. Three Rivers District Council will continue to support the County Council with its aim to encourage alternative modes of transport through its various initiatives and through 2004.</p>	<ul style="list-style-type: none"> •Conduct survey to see changes from year to year 	<p>EH, Transportation</p>

<p>3. The Council will encourage cycling by:</p> <ul style="list-style-type: none"> • Seeking to provide a network of cycle routes throughout the District, which is safe and convenient for all users. <ul style="list-style-type: none"> • Seeking to ensure that those responsible for the design of new roads or road improvements take the safety and needs of cyclists into account. • Investigate/ undertake shower improvements at Three Rivers House, including lockers and an additional shower. • Investigate/ undertake improved cycle parking facilities at Three Rivers House. 	<ul style="list-style-type: none"> • Conduct survey to see changes from year to year • % increase in distance covered by cycle routes • Statistics • Scenario based testing/ modelling 	<p>EH, Transportation</p>
<p>Action Plan Measure</p>	<p>Possible performance indicators</p>	<p>Department to provide information</p>
<p>4. The Council will support and implement measures where appropriate to assist in the creation and maintenance of Greenways. The Council supports the implementation of a stretch of Greenway linking Mutton Wood, Oxhey Lane to the Marry Hill Woodland Trust land where appropriate land lies within the District boundary.</p>	<ul style="list-style-type: none"> • % increase in distance covered by Greenways 	<p>EH, Transportation</p>
<p>5. Three Rivers District Council, through membership of the Herts. and Beds Monitoring Group, will continue to provide base line data from the monitoring station for this indicator to be in use.</p>	<ul style="list-style-type: none"> • Compare year to year trends etc / increases and decreases • Reports 	<p>HEF, EH</p>
<p>6. Air quality shall be taken into account when considering all planning applications and particularly when these are within or closely adjoining any Air Quality Management Area. Air quality shall be taken into greater consideration in the future by greater inclusion in development</p>	<ul style="list-style-type: none"> • % of measures implemented? 	<p>EH, Planning</p>

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plans which should follow current air quality responsibilities as outlined in the relevant current guidance on air quality.		
7. Three Rivers District Council Waste Services Team will continue to explore suitable options to enable its fleet to move towards cleaner fuels.	<ul style="list-style-type: none"> Progress made 	Waste
8. Three Rivers District Council will explore suitable options to encourage staff in receipt of car allowance to switch or convert to low emission vehicles, such as LPG.	<ul style="list-style-type: none"> Annual review of proportion using low emission vehicles/ clean fuel? Fuel sales e.g. LPG/ low sulphur petrol/ diesel 	EH, Transportation, all departments
9. Investigate and implement initiatives to reduce car usage or reduce the impact of car usage.	<ul style="list-style-type: none"> Statistics? Travel Survey? 	IT, all departments
10. Encourage employers to review the suitability of a car pool schemes and the current car allowance systems and establish the most effective system to include fairness and benefits to air quality.	<ul style="list-style-type: none"> % of clean fuel by annual review 	EH, Transportation, all departments
11. Three Rivers Council will consider air quality as part of the assessment for any new tender and require contractors to use fuel-efficient vehicles.	<ul style="list-style-type: none"> Fleet mix. e.g. proportion of Pre Euro I (pre 1992, non catalyst) vehicles registered in area/ ratio petrol: diesel/ vehicles of particular type using cleaner fuels etc 	EH, Transportation
Action Plan Measure	Possible performance indicators	Department to provide information
12. The Council will investigate into the possibility of reducing licensing fees for fuel-efficient vehicles. If considered suitable, the council will promote the uptake initially of LPG, petrol-electric or compressed natural gas in Private Hire and Hackney Carriage vehicle licence fees upon	<ul style="list-style-type: none"> Data comparisons year to year 	EH

conversion to LPG fuel. The Council will consider other alternative fuels to qualify for a reduction in the licence fees as technology improves.		
13. The Council must promote the advantages and importance of energy efficiency and the role reducing fuel usage would have on significantly reducing the quality of air pollution generated.	<ul style="list-style-type: none"> • Number of Renewable Energy Applications granted • Number of CFLs distributed • Energy consumption in Council owned properties 	EH, Building Control, Energy/ Sustainability
14. Three Rivers Council anticipate educating the public and businesses to discourage the continuation of this practise and to investigate the suitability of adopting the Road Traffic (Vehicle Emissions) (Fixed Penalty) (Engines) Regulations 2002.	<ul style="list-style-type: none"> • Numbers? Difficult? 	IT/ Council Parking Enforcement
15. The Council will investigate the feasibility of introducing roadside emission testing, possibly in partnership with neighbouring stakeholders.	<ul style="list-style-type: none"> • Statistics? 	Vehicle Inspectorate/ Police, EH, Transportation
16. Three Rivers District Council will continue to provide comprehensive control over Part B processes.	<ul style="list-style-type: none"> • Number of Part B's? • Number of notices? • Density? • Emission density/ inventory/ to see where pollutant levels have changed 	Consultant, EH
17. Three Rivers District Council continue to control emissions using the provisions of the Clean Air Act 1993.	<ul style="list-style-type: none"> • Pro-Active Statistics/ Reports 	EH
18. The Council will continue to investigate complaints about nuisance, monitor air quality and relate this to the air quality strategy.	<ul style="list-style-type: none"> • Pro-Active Statistics/ Reports 	EH
Action Plan Measure	Possible performance indicators	Department to provide information

<p>19. Improved information and advice will be given to residents and companies in the area about problems caused by bonfires, and enforcement action will be taken against persistent offenders who fail to comply with the Clean Air Act and Environmental Protection Act.</p>	<ul style="list-style-type: none"> • Statistics? • Number of enforcements? • Number of calls taken? • Number of visits? 	<p>EH, waste</p>
<p>20. Building Control already encourage building designs and materials that have the least environmental impact as well as encouraging renewable energy. This is done through:</p> <ol style="list-style-type: none"> i. Continue to actively enforce Part L of the Regulations and any other Government drivers (Sustainable Homes etc). ii. Continue to make an effort to reduce mileage when making visits around the district (for example, by dividing the district into 4 areas, with designated officers for each area). iii. Continue to work with Watford Council on a Newsletter, Focus Groups and Seminars, which are aimed at Architects, Builders and Home Owners. iv. Continue to promote Building Controls website www.threeriversbuildingcontrol.co.uk 	<ul style="list-style-type: none"> • % of new building work/ projects incorporating/ considering this • Number of rain water harvesters/ cavity wall and window replacements/ number of renewable energy type of features installed. 	<p>EH, Building Control</p>
<p>21. Three Rivers District Council will continue to monitor air quality within the district (continuous and diffusion tubes), and will continue the membership of the local network.</p> <ol style="list-style-type: none"> i. Relocate monitoring station ii. Increased provision of air quality information to the public 	<ul style="list-style-type: none"> • Compare reports? 	<p>EH</p>

Conclusions

- 9.0.1 It seems that generally the Actions proposed will have no enormous impact individually (mainly the measures impacts on air quality are low/moderate), but will result in small improvements, which when added together, a large number of small impacts could bring about a significant reduction in pollutants/ or a significant improvement over time collectively compared to the individual impact of each measure alone.

9.0 **References**

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Source: Page 48 of the Ecological Footprint of Hertfordshire Results and Scenarios July 2006

Hertfordshire's Local Transport Plan – 2006/7 – 2010/11, March 2006, Hertfordshire

Appendix 1 – Air Quality Management Area Maps

Map 1

AQMA 1: Residential properties close to M25 at Kings Langley

Map 2

AQMA 2: Chandlers Cross

Map

AQMA 3: Chorleywood