THURROCK COUNCIL

Local Air Quality Action Plan

November 2004

EXECUTIVE SUMMARY

The system of Local Air Quality Management started in 1998 as a result of the Environment Act 1995. It requires local authorities to identify and take action to tackle local air quality problems arising from the following pollutants: sulphur dioxide, nitrogen dioxide, fine particles (PM10), benzene, 1,3-butadiene, carbon monoxide and lead.

Local authorities have a statutory duty to assess the levels of these pollutants against air quality standards and objectives laid out in the Air Quality Regulations (2000). These objectives are based on the pollutants' effect on health. Where these objectives are unlikely to be met, the Local Authority is obliged to declare an Air Quality Management Area (AQMA), and prepare an Action Plan detailing how it intends to improve air quality for the health of residents in these areas.

In April 2001 Thurrock Council declared twenty AQMAs, for nitrogen dioxide and particulates (PM10). All pollution problems are related to emissions from traffic, with Heavy Goods Vehicles being the major contributors in most areas. Subsequently, a Draft Air Quality Action Plan was published in summer 2002.

The air quality in Thurrock has now been reassessed. The Detailed Assessment was completed in October 2004. The aim was to identify with reasonable certainty whether or not a likely exceedence of the air quality objectives will arise. It identified 7 AQMAs that should be revoked and 2 to be declared.

This final Air Quality Action Plan reflects the latest changes and details how the Council intends to improve air quality within its fifteen remaining AQMAs. It responds to previous appraisal comments. Each measure is assessed in terms of cost, feasibility, impact on air quality, and other resulting impacts. The measures are grouped into four categories:

1. Traffic engineering and management schemes.
2. Actions to reduce road vehicle emissions.
3. Actions to reduce traffic volumes.
4. Public awareness raising and education.

These measures alone will not be sufficient to meet the air quality objectives in all of the AQMAs. Six of the AQMAs are caused by strategic roads and therefore are regulated by the Highways Agency. The Government must develop policies for residents living alongside strategic roads. In addition, background roads, including roads outside the Council boundary, contribute to poor air quality in all AQMAs. Further action at the national level is vital to reduce background concentrations, especially for particulates, where background concentrations contribute between 70 and 90%.

The remaining nine AQMAs are caused by traffic on roads managed by Thurrock Council. Solving air quality problems must be a multidisciplinary approach, particularly with transport and planning departments within the Council. Air quality is now one of the Government's "shared priorities" for transport. It will therefore be an important part of the Council's second full Local Transport Plan to be submitted in July 2005. The Council also relies on residents and businesses to understand their role in improving air quality.

Thurrock Council consulted key stakeholders on the measures contained in this Action Plan, including residents, transport groups, local businesses, neighbouring boroughs and relevant authorities- Environment Agency, Highways Agency and Local Health Authority. A summary of the responses received through this consultation and how they influenced the content of the action plan is included in this document.

List of Abbreviations

AQMA	Air Quality Management Area
BAT	Best Available Techniques
CNG	Compressed Natural Gas
COMEAP	Committee on the Medical Effects of Air Pollution
DEFRA	Department of the Environment, Food and Rural Affairs
DTLR	Department of Transport, Local Government and the Regions
EA	Environment Agency
EPAQS	Expert Panel on Air Quality Standards
ERG	Environmental Research Group, Kings College London
EST	Energy Savings Trust
GLA	Greater London Authority
HGV	Heavy Goods Vehicle
IPC	Integrated Pollution Control
IPPC	Integrated Pollution Prevention and Control
ITP	Integrated Transport Strategy
LA	Local Authority
LAQM	Local Air Quality Management
LEZ	Low Emission Zone
LGV	Light Goods Vehicle
LTP	Local Transport Plan
LNG	Liquid Natural Gas
LPG	Liquid Petroleum Gas
g/m^3	micrograms per cubic metre
NAQS	National Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2000.
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NSCA	National Society for Clean Air and Environmental Protection
PM_{10}	Fine Particles (less than 10 micrometers in diameter)
ppb	parts per billion
PPC	Pollution Prevention and Control Regime
PPGs	Planning Policy Guidance notes
SO2	Sulphur Dioxide
UDP	Unitary Development Plan
ZIPs	Zones of Industrial Pollution

1.0 The Challenge

1.1 The National Air Quality Strategy

The Environment Act 1995 provides the framework for the UK National Air Quality Strategy. The aim of this is to improve air quality by reducing concentrations of certain pollutants, which are harmful to health. It was first published by the Government in 1997 and then reviewed and republished in 2000. The Air Quality Regulations 2000 and Air Quality Regulations (Amendment) Regulations 2002 provide objectives for seven key pollutants. These give concentration limits for each pollutant and the date by which this limit must be achieved (Table 1.1). These air quality standards are based on the effect of the pollutant on health.

Table 1.1: Air Quality Objectives for consideration by Local Authorities, as stated in The Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2000

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu g/m^3$	running annual mean	31/12/2003
1,3 Butadiene	2.25 $\mu g/m^3$	running annual mean	31/12/2003
Carbon monoxide	10 mg/m^3	running 8-hour mean	31/12/2003
Lead	0.5 $\mu g/m^3$	annual mean	31/12/2004
	0.25 $\mu g/m^3$	annual mean	31/12/2008
Nitrogen dioxide	200 $\mu g/m^3$ not to be exceeded more than 18 times a year	1 hour mean	31/12/2005
	40$\mu g/m^3$	annual mean	31/12/2005
Particles (PM_{10})	50 $\mu g/m^3$ not to be exceeded more than 35 times a year	24 hour mean	31/12/2004
	40 $\mu g/m^3$	annual mean	31/12/2004
Sulphur dioxide	350 $\mu g/m^3$ (132ppb) not to be exceeded more than 24 times a year	1 hour mean	31/12/2004
	125 $\mu g/m^3$ (43.7ppb) not to be exceeded more than 3 times a year	24 hour mean	31/12/2004
	266 $\mu g/m^3$ (100ppb) not to be exceeded more than 35 times a year	15 minute mean	31/12/2004

Table 1.1a: New air quality objectives included in the Air Quality Strategy for protecting human health: England and Wales, published in the Addendum 2003

Pollutant	Concentration	Measured as	Date to be achieved by
Benzene	5 $\mu g/m^3$	annual average	31/12/2010
Carbon monoxide	10 mg/m^3	Maximum daily running 8-hour mean	31/12/2003
Polycyclic Aromatic Hydrocarbons	0.25ng/m^3 B[a]P	As annual average	31/12/2010
England (apart from London) and Wales			
Particles (PM_{10})	50 $\mu g/m^3$ not to be exceeded more than 7 times a year	24 hour mean	31/10/2010
	20 $\mu g/m^3$	annual mean	31/10/2010
London			
Particles (PM_{10})	50 $\mu g/m^3$ not to be exceeded more than 10 times a year	24 hour mean	31/10/2010
	23 $\mu g/m^3$	annual mean	31/10/2010

These new objectives are not currently included in Regulations for the purpose of local air quality management.

1.2 Local Authority Responsibility

The National Air Quality Strategy sets out a process of local air quality management (LAQM) to be implemented by all local authorities since January 1998. The process for implementation of LAQM is prescribed in Government guidelines. It requires all Local Authorities to review and assess the quality of their air in a staged process. If this confirms that any of the objectives will not be met by the dates set in the Strategy, the Local Authority must designate air quality management areas and produce a Local Air Quality Action Plan setting out how it intends to improve air quality in these areas.

1.3 Local air quality management in Thurrock

The third stage Review and Assessment of air quality report, confirmed that exposure to 24-hour mean PM_{10} and annual mean NO_2 were predicted to exceed the national objectives at several relevant locations in the borough, in 2004 and 2005 respectively. Following public consultation, in April 2001 Thurrock Council designated 20 separate Air Quality Management Areas (AQMA) based on several ribbons, clusters and isolated residential properties situated close to the busiest roads in the borough.

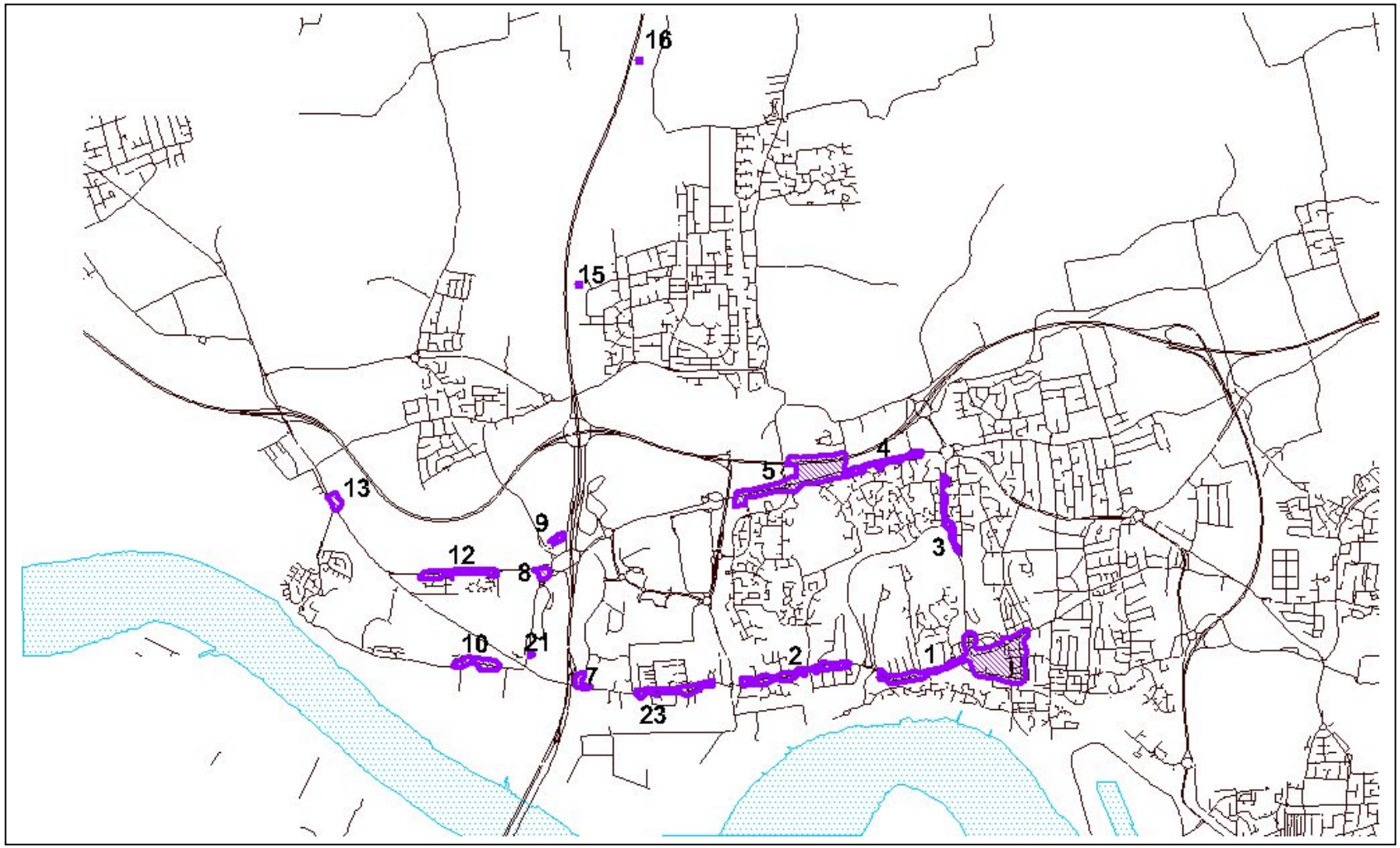
Subsequent to the 2001 AQMA Order, further reviews and assessments of air quality have been carried out in Thurrock, namely the Stage Four, Updating and Screening and Detailed Assessments. These have incorporated continuing developments in modelling methods and the government technical guidance, as well as further monitoring data. The Council is confident in the conclusions of these studies and will be amending its AQMA Order accordingly. These AQMAs are described in Appendix 2. The following table summarises these changes.

1.3.1 Summary of AQMAs

Table 1.2 Summary of current Air Quality Management Areas and the reduction in air pollution required to achieve National Air Quality Objectives.

AQMA No.	Pollutant	Maximum concentration of NO_2 at property facades ($\mu g/m^3$)	No. of days 24-hour PM_{10} mean is exceeded at property boundaries	Description of Air Quality Management Area
1	NO_2	42	35 or less	479 properties in Grays town centre and London Road Grays
2	NO_2	42	35 or less	220 properties on London Road South Stifford and adjoining roads
3	NO_2	40	35 or less	60 properties on the east side of Hogg Lane and Elizabeth Road
4	NO_2	40	35 or less	56 properties to the west of Chafford Hundred Visitor Centre
5	NO_2 and PM10	50	36	65 properties surrounding Warren Terrace, A13 and A1306
7	NO_2 and PM10	59	46	2 hotels next to M25
8	NO_2 and PM10	44	36	1 hotel next to Jct 31 of the M25
9	NO_2	42	35 or less	1 Hotel next to Jct 31 of the M25
10	NO_2 and PM10	50	37	76 properties on London Road Purfleet near to Jarrah Cottages
12	NO_2	40	35 or less	15 properties on Watts Wood estate next to A1306
13	NO_2	42	35 or less	15 properties on London Road Aveley next to A1306
15	NO_2	46	35 or less	1 listed building near to M25 on edge of Irvine Gardens, South Ockendon
16	NO_2	50	35 or less	1 Cottage next to M25 off Dennis Road
21	NO_2	42	35 or less	1 hotel on Stonehouse Lane
23	NO_2	42	35 or less	115 properties next to London Road West Thurrock

Map of Thurrock showing 15 Air Quality Management Areas



1.3.2 Source Apportionment - Nitrogen Dioxide

The Stage 4 source apportionment study identified the different sources of air pollution experienced at 10 different locations around the Borough. Locations were chosen as they are next to a monitoring site within an AQMA or near to a proposed development.

The assessment was for NOx rather than nitrogen dioxide as the latter is a secondary pollutant. On average, 56% of NOx comes from road transport; this rises to 83% at the worst affected location. In particular, the contribution from HGVs is significant, contributing between 33% and 63% to the total NOx concentration at the worst polluted locations. The remaining 44% is ascribed to background sources. Two thirds of the background sources have also been ascribed to road transport (including roads outside the Council's boundary).

1.3.3 Source Apportionment – Particulates PM10

For PM10 it is necessary to understand the primary, secondary and coarse components, which contribute to the total concentration. Primary particles are emitted directly into the air, whereas secondary particles are formed in the atmosphere by chemical reaction of gases.

In Thurrock, the background concentrations contribute the largest source of particulates (70% to 90%), with a concentration of between 22.6 and 25.1μgm^{-3} predicted as an annual mean. The majority of background PM10 is secondary and coarse components (20.9μgm^{-3}), with roads the second largest contributor (1.4 to 2.5μgm^{-3}). The Council cannot directly effect background concentrations.

At the worst polluted locations, with a predicted concentration of 32-37μgm^{-3}, primary particles dominate the remainder of the emissions. Road transport, in particular HGVs, is the largest source. At the worst locations, 25 to 34% of total particulates come from road transport, with 7.1 to 10.3μgm^{-3} coming from HGVs.

Actions that the Council can take to reduce both nitrogen dioxide and particulate emissions must therefore concentrate on reducing road traffic emissions, particularly from HGVs.

1.3.4 Action Plan Scenarios

The Stage Four report investigated three scenarios to improve air quality in Thurrock. As road transport is the major source of emissions, the scenarios tested were the current major traffic management schemes in the Borough. The traffic schemes are described in section 2.2. Three of the source apportionment locations were chosen to model the scenarios.

The following table summarises the scenarios modelled:

Table 1.3. Action Plan Scenarios

	Nitrogen dioxide (µg/m^3) (2005)		**Particulates (days>50µg/m^3) (2004)**	
	Before	After	Before	After
Grays town centre regeneration scheme				
London Road (West Thurrock)	42.0	42.0	32	32
Purfleet bypass	42.0	42.0	33	33
AQMA 13 (London Road, Aveley)	58.6	58.6	50	50
West Thurrock marshes relief road				
London Road (West Thurrock)	42.0	38.8	32	31
Purfleet Bypass	42.0	42.0	33	33
AQMA 13	58.6	58.3	50	49
Hedley Avenue extension				
London Road (West Thurrock)	42.0	38.8	32	32
Purfleet bypass	42.0	48.7	33	33
AQMA 13	58.6	58.6	50	50

The Grays town centre scheme has no effect on any of the modelled locations. This is perhaps not surprising as modelling of the town centre showed no exceedences, although monitoring results show high concentrations.

The West Thurrock marshes relief road (St Clement's Way) and the Hedley Avenue extension were both found to reduce the nitrogen dioxide (NO_2) concentrations at London Road West Thurrock to below the objective. However the Hedley Avenue extension increases NO_2 concentrations at the Purfleet bypass. The West Thurrock marshes relief road also reduces the number of days that the particulate objective was exceeded at this location and at AQMA 13.

None of the schemes have a large effect on AQMA13.

1.4 Impact of Air Pollution on Health in Thurrock

In Thurrock, the 15 Air Quality Management Areas were designated in respect of nitrogen dioxide. Four of these were also designated for particulates PM_{10}. These are harmful to human health at high concentrations, however the levels of air pollution we usually experience in the UK are unlikely to have any serious short-term effects. Table 1.4 shows the health impacts associated with each pollutant at these rare high levels.

Table 1.4: Impact on Health of National Air Quality Strategy Pollutants

Pollutant	Health Impact at high levels
Nitrogen dioxide; Sulphur dioxide Ozone	These gases irritate the airway of the lungs, increasing the symptoms of those suffering from lung diseases.
Particle PM_{10}	Fine particles can be carried deep into the lungs where they can cause inflammation and a worsening of heart and lung diseases.

1.5 Thurrock Local Health Plan

Statistical analysis was used to identify health issues in Thurrock and to inform the Thurrock Local Health Plan. Some of these health problems could be linked to exposure to high levels of air pollution:

Death rate from chronic heart disease in persons under 65 years and 65-74 years – both categories rank second highest in South Essex.

Death rate from stroke in persons 65-74 years – second highest rate in South Essex, and above national average.

(2002 Statistics provided by South Essex Health Authority-Information department)

Environment, health and deprivation are often closely linked. The pattern of deprivation in the borough can be assessed using the Indices of Deprivation, which were published by the Department for Environment, Transport and Rural Affairs in August 2000. Thurrock's overall position in the national ranking is 101st out of 345 authorities. Thurrock is the most deprived district in South Essex with Basildon ranked at 117 and Southend at 145.

By pursuing achievement of National Air Quality objectives at all relevant locations of exposure in the borough, Thurrock Council will help to improve the health of its community.

1.6 Introducing the Action Plan

The draft air quality action plan was produced in summer 2002. It was drawn up in response to the original stage four assessment. This final action plan draws on the draft plan, and provides details of progress towards objectives since. It takes into account the amendments to the AQMAs proposed in the Detailed Assessment, as well as comments received in consultation. It sets out how the Council intends to use its powers in pursuit of the achievement of the National Air Quality Objectives, within Air Quality Management Areas. The measures included are divided into five categories:

- Traffic engineering and management schemes
- Actions to reduce vehicle emissions
- Actions to reduce traffic volumes
- Actions to reduce emissions from non-road sources
- Public awareness raising and education

The majority of the measures are already in place within existing policies, particularly the Local Transport Plan and the Unitary Development Plan. This document serves to highlight what the council is already doing that improves air quality.

The Council must take a multidisciplinary approach to improve air quality in Thurrock. In particular, the strategic transport and planning sections have an important role. In addition, external agencies, such as the Highways Agency, as well as local residents and businesses all have their part to play to improve air quality.

These local measures will not be sufficient to improve air quality so that the objectives are met in all of the AQMAs. The Council looks to the Government to develop national and international policies to reduce background concentrations of pollutants.

2.0 Actions to Reduce Traffic Volumes

2.1 Traffic Engineering and Management Schemes

Traffic management schemes that promote free-flowing traffic and smooth driving will generally reduce emissions. Schemes which force repeated acceleration and deceleration, or which require drivers to travel very slowly (the catalyst cools down), will increase emissions.

There are a number of engineering projects planned or ongoing in Thurrock, which have the potential to significantly affect air quality in Air Quality Management Areas within the target deadline of 2005.

The Grays town centre regeneration scheme, West Thurrock Marshes Relief Road (St. Clement's Way) and Hedley Avenue Extension have all been modelled within the Stage 4 Review and Assessment to assess their effect on predicted future air quality. The results indicate that there will be a significant improvement in the air quality experienced on London Road, West Thurrock and London Road, Grays and are presented in section 1.4.4. This could lead to AQMAs 1, 2 and 23 being reduced in size or revoked.

Action 1
The pollution team will ensure that it is consulted about future traffic management schemes so that the effect on air quality is considered. This will be through attendance of Local Transport Plan and Traffic Liaison meetings.

2.2 Highways Agency Responsibility

The Highways Agency is the regulating body for the M25, A13, A1089 and part of the A282. Six of the fifteen AQMAs in Thurrock include these roads. One is due to the A13 (5), and five are due to the M25 (7, 8, 9, 15, 16). The Council has consulted with the HA at each stage of the review and assessment process and liaison meetings have been held. The HA have started monitoring in AQMAs 5 and 8 using nitrogen dioxide diffusion tubes.

As the flow of traffic on the M25 and A13 cannot be attributed entirely to traffic generated within Thurrock, it was felt by the Council that the Action Plan and Local Transport Plan would have limited effect on the volume of traffic using these major roads. Therefore we rely heavily on HA strategies to improve air quality in these AQMAs. The HA includes Local Authorities in its consultation exercises for strategic roads.

2.2.1 Route Strategy A13 (T)/A1089 (T) GLA Boundary to Tilbury RMS

The Highways Agency has prepared a Route Strategy for the section of the A13 trunk road in Thurrock, and the A1089. This covers 8.5 miles from the Greater London Authority boundary at the junction with the A1306 (New Road/London Road) near Wennington, to the entrance of the port of Tilbury (Highways Agency website, Aug 2004). One of the route objectives is to improve air quality by investigating options to relieve congestion on the approaches to and at, M25, J30. It is hoped that the general improvements will have a positive effect on AQMAs 5, 8 and 9.

2.2.2 Orbit Multi-Modal Study

'Orbit: Transport solutions around London' was a study commissioned by the Government to look at the existing and future problems of orbital travel around London, and to recommend what could be done to address them. The study assessed the impact of congestion on the M25 motorway and looked at the problems of using other types of transport for getting round London. It has been recommended that a combination of road widening and area-wide road user charging be put in place, along with improvements to the public transport system. The Secretary of State for Transport approved the recommendations in July 2003.

Action 2
The Council will liaise with the Highways Agency to ensure that air quality in the Borough is a consideration in the Environmental Impact Assessment for all relevant strategic road projects.

2.3 Local Transport Plan

The Stage Four Review and Assessment confirmed that the major causes of poor air quality in Thurrock are transport related. The amount of transport in Thurrock continues to rise with the economic regeneration of the area. This has led to a reduction in walking and cycling, increased social exclusion and severance, and increased environmental problems.

The Local Transport Plan (LTP) for Thurrock (2001-2006) is a five-year programme to deliver sustainable transport to Thurrock. It recognises the impact of transport on the environment and air quality. Actions in the LTP that have a positive effect on air quality have been included in the Air Quality Action Plan.

The Council is currently preparing its second full Local Transport Plan for the period 2006/7 to 2010/11, to be completed by summer 2005. The pollution team is part of the core working group. Air quality is now considered a government “

shared priority" outcome in the LTP. This highlights the importance of a multidisciplinary approach to solve air quality problems. The government's latest recommendations are that authorities with primarily transport-related AQMAs should integrate their air quality action plans into the LTP.

Action 3
The pollution team will continue to liase with the strategic transport team to ensure that improving air quality is an integral part of the Local Transport Plan.

2.4 Road Traffic Reduction Plan

The Road Traffic Reduction Act 1997 requires Local Traffic Authorities to review and report upon existing and forecast levels of traffic on local roads within their area. Thurrock Council prepared a report detailing targets to reduce the level of traffic growth.

Thurrock is a major growth area within the Thames Gateway. Large increases in housing and jobs mean that reductions in traffic levels will have to be assessed against those that would have occurred in an unconstrained situation.

Thurrock Council will seek, in the next few years, a traffic growth reduction based upon:

- Encouraging people to use their vehicles less
- Restriction of the motor vehicle within new developments and the provision of sustainable alternatives.
- Selective application of capacity restraint measures upon the road network.
- Introduction of public transport improvements designed to promote increased ridership.
- Introduction of parking restraints.

The Council is due to update this report to take into consideration unprecedented growth as a result of Thames Gateway South Essex (Section 2.4.2).

Action 4
The Council will work towards reducing traffic levels, using the strategies laid out in the Road Traffic Reduction Plan.

2.5 Freight Transport

Following discussions with the Strategic Rail Authority, Railtrack, rail freight companies, Thurrock's Freight Forum and local companies it was decided that a new Freight Terminal in the West Thurrock Area would require an anchor company in order to make it viable. Procter and Gamble are the only company who could realistically fulfil this role and are now actively investigating the possibility of a rail freight facility. Thurrock Council will continue to work closely with Proctor and Gamble on this initiative. Thurrock Council will work with other private companies to reduce road freight traffic by encouraging greater use of rail freight in support of Central Government tax policies providing incentives to move freight by rail rather than road.

Essex County Council are currently preparing a Sustainable Distribution Strategy. One of the first actions within the proposed Strategy is to create an Essex Freight Forum for industry, trade associations, regional and local authorities. As a unitary authority Thurrock will be represented at the Essex Freight Forum and will participate in relevant actions.

From 2002 to 2003, locally generated rail freight increased from 2.8 to 3.05 million tonnes.

Action 5
The council will continue to work towards a rail freight terminal in Thurrock.

2.6 Parking Strategy

The Thurrock Council Parking Plan was published in 2001. The objectives of the parking plan are:

- To improve the operating environment for public transport.
- To contain demand for travel by the private car.
- To encourage developer contributions to transport initiatives.
- To reduce road traffic accidents and improve air quality.

Parking policies, including vehicle-parking standards for new developments, have been reassessed and incorporated into the draft Unitary Development Plan. Those policies likely to have the most significant effect on air quality are summarised below: -

Resident parking schemes – will protect the amenity of local residents where relocation of parking, intended to encourage use of more sustainable methods of transport, has attracted long stay parking to residential areas.

Motorcycles – free parking bays for motorcyclists will be provided in Thurrock Council car parks to encourage the use of an efficient form of transport that uses up less road space when parked and moving and produces lower exhaust emissions than the average car. Due to the potential for motorcycles to be involved in personal injury accidents the Council is working to ensure that motorcyclists are aware of the dangers.

Pedal cycles – parking facilities are provided for cyclists at all main destinations, including local shopping parades, to improve security and avoid cycles becoming hazards to pedestrians.

Review of waiting and loading restrictions – current restrictions have been reviewed across the Borough and will be changed where the benefits of decreasing congestion outweighs the possible negative effects on residents.

There are currently five controlled parking zones in Thurrock. Parking restrictions require an appropriate level of enforcement. Effective enforcement of parking restrictions allows more efficient use of existing parking provision and can improve parking flow, because drivers have to spend less time finding a parking space. Thurrock Council intends to introduce decriminalised parking by 2005. Funding has been secured and the application is shortly to be submitted to government. Decriminalisation transfers responsibility for enforcing most parking restrictions from traffic wardens to parking attendants employed by the local authority and funded by revenue received from penalty charges and paid parking.

Parking policies that reduce congestion and encourage use of more sustainable methods of transport, contribute to improvements in air quality.

Action 6
The Council will aim to reduce congestion by effectively enforcing parking measures as soon as it has the powers to do so.

2.7 Promoting Sustainable Modes of Transport

The role of Thurrock Council's Passenger Transport Unit (PTU) is to promote public transport use. It does this through subsidising socially necessary bus and ferry services, supporting Transvol (a charity providing community transport), administering the concessionary fares scheme and by publicising the public

transport network. It also manages home-to-school transport on behalf of the Education Department

The following PTU initiatives are contributing to improved air quality:

2.7.1 Subsidised Bus Services

In 2003/04 local bus patronage increased by approximately 5%. From September 2004 all new local bus contracts will use vehicles that are less than ten years old at the start of the contract. There is no age restriction on contracts that commenced prior to this date. This policy will gradually result in lower emissions from subsidised vehicles, as all existing contracts expire (the maximum term of existing contracts is five years).

Bus route 364 links four Air Quality Management Areas in Purfleet to Grays town centre, also an AQMA. From September 2004, it will no longer be a subsidised service on Mondays to Saturdays, but will operate as a commercial service. This demonstrates the growth in patronage on this service. The Council will continue to subsidise it on Sundays.

Bus route 364 is one of four services that will benefit from environmental measures being installed on London Road. These measures have been designed to promote bus travel, for example with the use of bus-friendly speed humps and new bus boarders and bus stops. Increased bus use along this key bus corridor should help reduce traffic in this area.

2.7.2 School Buses

School buses are managed by the PTU on behalf of the Education Department. A Service Level Agreement has been signed by the PTU and the Education Department. The PTU provides home-to-school transport for mainstream primary and secondary pupils; special educational needs pupils and college pupils. The Education Department or the college determines eligibility for free transport. Approximately 4,500 pupils use the service every day. The contracts mainly use buses, but some taxis are used for example for special needs pupils. Currently about 70 buses or coaches (Public Service Vehicles) are used on these contracts. Wherever possible, local bus and rail services are used, to reduce the need for contract vehicles. This also helps to reduce emissions.

2.7.3 Trans-Vol

Trans-Vol is Thurrock's community transport organisation. It receives financial support from the Council. The Council and Trans-Vol have recently signed a Service Level Agreement. The aim of Trans-Vol is to provide a door-to-door

service for those unable to use local bus services or without access to a private car – for example the elderly and people with disabilities. It uses a mix of cars (driven by volunteer drivers) and minibuses. In 2003/04 there were approximately 49,000 passenger journeys carried. During 2004 Trans-Vol benefited from four new wheelchair-accessible minibuses. Three of these were diesel powered; one was a dual-fuel (petrol and liquid petroleum gas) vehicle.

2.7.4 Concessionary Fare Scheme

A concessionary fare scheme is operated for all those aged 60 or over and for people with disabilities. In February 2004 the Council launched 'Travel Thurrock': free local bus travel for these groups. Over 12,000 new passes have been issued and ridership has increased sharply. The scheme has helped reduce emissions by encouraging car users to use the bus. However its main objective has been to reduce transport-related social exclusion in the borough.

2.7.5 Bus Quality Partnerships

The Council currently has one Quality Partnership in operation. This is with First Group and applies to Route 100 to Basildon and Chelmsford. The operator has agreed to use newer, low-floor, wheelchair-accessible vehicles, while the Council is improving bus priority and investing in real time information systems. Both parties are publicising the route. Patronage increased by about 7% in 2003/04. By promoting the use of newer vehicles, the partnership is helping to reduce emissions. The Council is planning to sign a further Quality Partnership in 2004/05.

2.7.6 Ferry services

The Council and Kent County Council jointly subsidise the Tilbury to Gravesend ferry service. This provides an alternative to a circuitous car or bus journey via the Dartford Crossing. In 2003/04 there were approximately 64,000 passenger journeys on this service.

Action 7
The Passenger Transport Unit will continue to promote sustainable modes of transport by implementing the Council's Local Transport Plan. Details of performance are contained in the Annual Progress Report.

2.8 Cycling Strategy

The Cycling Strategy for Thurrock was published in 1998, and the new draft strategy will be in place in early 2005. Targets for increasing cycle use and implementation of a cycle friendly infrastructure were included. The Strategy considers cycle use for commuting, school and leisure trips, trips combined with public transport and cycle security. A Cycling Forum was developed to facilitate better communication between Thurrock Council and local cyclists. Proposed schemes are discussed at the Forum and their views are used to formulate the programme of cycle schemes.

A cycle network has been prepared and agreed by Committee. It is anticipated that the key elements of the network will be completed by 2006. Route 13 of the National Cycle Network from Rainham to Southend passes through the Borough, where possible close to the River Thames. This route incorporates the newly opened Two Forts Way linking Tilbury Fort to Coalhouse Fort through a three mile pedestrian and cycle route, developed in partnership with SUSTRANS, the Ramblers Association, Tilbury Riverside Project, The Tilbury PORT project, various environmental trusts and the former South Essex Health Authority. There are now 27 kilometres of cycle route in Thurrock, and the A1306 route (a spine from East to West) is near completion. The Thurrock Cycle Map has also been produced and circulated to over 3000 people.

Thurrock Council, Thames Chase, SUSTRANS and adjacent Local Authorities are promoting a new east to west multi-user route through the borough utilising and opening up the Mar Dyke Valley. Named the South Essex Way this project has received initial funding for the preliminary work.

Action 8
The Council will continue to implement the cycle network across Thurrock.

2.9 Walking Strategy

Thurrock Council has shown its commitment to walking with the publication of its Local Walking Strategy in 2000. A specific budget has now been set up for pedestrian measures. Improvements made over the last two years include:

- New footways and footpaths
- New pedestrian crossings
- Greater provision of tactile paving

- Improved street lighting and greater use of 'white' high pressure sodium lighting
- Area traffic calming and 20 mph zones
- Safer Routes to Schools
- TravelWise and Walk to School Week initiatives
- Footway maintenance

A Local Access Forum, aimed at generating wider community involvement in the management and maintenance of Public Rights of Way and Access Land under Thurrock Council's control, was established in 2003. A Rights of Way improvement plan has been published. The amount of pedestrian trips went up from 8130 in 2000 to 9818 in 2003, and 77% of footpaths are now classified as "easy to use".

2.9.1 Working with Local Companies to improve footpaths

During 2001, part of Public Footpath 141 from Hedley Avenue to Public Footpath 170 at the seawall was improved. The works to the path were undertaken in conjunction with the construction of a car park for staff and visitors to Procter and Gamble Ltd. It also provides improved access to St Clements Church.

Prior to the improvement, the route was a mixture of a gravel and mud. The path is now partially diverted and a new surfacing material installed, made from recycled plastic and planted with grass, which will withstand use by pedestrians, wheelchairs and vehicles. Continued liaison with Procter and Gamble Ltd., during the development of the new route proved beneficial to both parties and a much-improved Public Footpath 141 now exists for the community.

Action 9
The Council will continue to make walking an attractive option by providing street furniture and a public rights of way map. It will explore the possibility of working with local companies to improve local footpaths.

2.10 Safer Routes to School

Safer Routes to School is a nationwide project to provide a safe alternative to the school run. For those living near to schools, walking and cycling is encouraged. For those living further from schools, bus travel is promoted.

In Thurrock, the project is outlined in the Road Safety Plan. The Plan prioritises areas for area traffic calming schemes and 20mph zones. Traffic calming

measures have been introduced near to 17 schools so far. This reduces the speed of traffic to create a safer environment.
In terms of air quality, any measures that reduce the amount of trips taken by the private car will improve air quality. However, measures that prevent cars from being driven smoothly may worsen air quality. Studies have been commissioned at government level about the air quality effects of traffic calming.

2.11 Road Safety Education

The Road Safety Team support Walk to School Week, and in 2004 provided resource packs to 32 participating schools. Road safety training at schools includes cycle proficiency and practical road safety training. The Council is piloting a scheme called 'kerb craft' which has been designed to provide Year 1/ 2 pupils with progressive training to enable them to find safer places to cross, safer routes, cross safely in an area where there are parked cars and crossing at junctions.

2.12 School Travel Plans

School Travel Plans are a Safer Routes to Schools project. It is a document that sets down a package of measures aimed at reducing the number of car trips made to school by parents and staff, and to improve safety on the school journey.

Measures can include:

- Walking Bus Scheme,
- Car sharing,
- Provision of a safe drop off system to encourage parents to drop their children and then leave the premises,
- Safe routes identified for parents and children,
- Parking spaces for bikes,
- Provision of storage for helmets and books and a continuous programme of road safety and cycle training.

In Thurrock, twenty-one primary schools and three secondary schools now have school travel plans.

Thurrock Council in partnership with Essex County Council provide a sustainable transport teaching pack, which is provided to all secondary schools in Thurrock. The pack includes information on air quality, planning and transport with activities for pupils to highlight the relationship between transport and pollution.

Action 10
The Council will continue to implement Safer Routes to School as outlined in the Road Safety Plan. It will support schools that are preparing School Travel Plans.

2.13 Land Use Planning

The land use planning system can do much to improve local air quality in the long term, in terms of strategic and development control planning. The most relevant Government policies with regard to pollution and planning are set out in Policy Planning Guidance 23, Planning and Pollution Control.

2.13.1 Strategic Planning - Unitary Development Plan

The Town and Country Planning Act requires Local Planning Authorities to prepare a development plan for their area in order to provide a framework for planning decisions. Thurrock became a unitary authority on 1st April 1998; the Unitary Development Plan was put on second deposit in 2004. It sets out how the Council thinks Thurrock should develop up to 2016. There is a planning policy specific to air quality in the UDP (BEN32 Air Quality).

The strategic planning function of the Council is undergoing considerable change. The latest regional growth study proposed 19000 more homes and 26000 more jobs for the region. This will be consulted on and built into a new Local Development Framework over the next three years. As a consequence, the UDP is currently suspended. The pollution control team will be part of this process.

UDP policy "BEN32 Air Quality"

"In determining planning applications which the Council considers may significantly affect air quality, (i.e. where one or more of the target pollutants' air quality objectives are likely to be breached), an air quality assessment shall be made by the developer and development will not be permitted unless it can be shown to avoid unacceptable detrimental effects to the air quality (and microclimate) in the surrounding area caused either directly or by generating increased traffic."

There is a list of criteria that defines whether a development would significantly affect air quality, and potentially be a material planning consideration:

- The proposal is sited alongside a road that has an AQMA.
- The proposal involves generating traffic along a road that has an AQMA.
- The proposal involves generating significant traffic along any road within the Borough. A Transport Impact Assessment would be required.
- The proposal involves generating a point source of pollutants.
- The proposal runs counter to the current Air Quality Action Plan.

It is not intended that the existence of an AQMA should stifle all development, and how much weight is attached to air quality considerations varies with each individual case.

Supplementary Planning Guidance

Additional guidance for developers has been provided to specify what should be in the air quality assessment:

- Define the area that may exceed the national air quality objectives. This can be by either using the Council's latest modelling results or doing their own modelling.
- Specify how the application will address new sites that have the potential to cause relevant exposure to exceedences of the objectives. Identify areas of exposure.
- Detail how the development will reduce its impact on local air pollution.

2.13.2 Development Control

The development control section processes planning applications. Applications for new development are referred to the pollution control team for comment as part of the consultation process. An air quality assessment may be required, as explained above.

As a consequence, it might be appropriate to add a condition to the planning permission to tackle the impact of the development on air quality. Where the objection to the proposal cannot be overcome by a condition, then a "Section 106" planning obligation may be agreed. Section 106 agreements are increasingly being used by Local Authorities to fund air quality initiatives.

Examples of practical conditions and Section 106 agreements (taken from defra Air Quality Review and Assessment website):

- Encourage companies to invest in clean fuel fleets.
- Promote improvements in public transport, walking and cycling.
- Specify numbers of parking spaces.
- Encourage companies to operate environmental management systems, and implement Travel Plans.
- Require developers to monitor air quality prior to and following development.
- Require developers to install mechanical ventilation systems in residential property in the most polluted locations. (The Council would have to ensure that this does not conflict with sustainability).
- Restrict or prohibit the use of specific classes and types of vehicles.
- Control air quality impacts during the construction phase.

Action 11
The pollution control team will continue to work with planning colleagues to ensure that air quality policy in the UDP is updated and relevant. It will continue to develop supplementary planning guidance for air quality assessments.

Action 12
The Council will continue to take into account a development's impact on air quality when considering planning applications, and use conditions to mitigate these impacts where appropriate. It will also investigate the possibilities of using Section 106 agreements for air quality.

2.14 Thurrock Urban Development Corporation

In February 2003, the Deputy Prime Minister set out an action programme to deliver sustainable communities for all. To accommodate the economic success of London and the wider South East and ensure that the international competitiveness of the region is sustained, four growth areas were identified as a focus for targeted regeneration activity: Milton Keynes, Ashford, Stanstead-Cambridge Corridor and the Thames Gateway.

Thurrock sits at the heart of the Thames Gateway, which spans East London, North Kent and South Essex. The Sustainable Communities Plan outlined a vision for a new approach to regeneration and supporting the growth areas. The issues of delivery and funding were paramount to achieving this shift.

Therefore, the Thurrock Urban Development Corporation was created which received Parliamentary approval in October 2003 and became operational in January 2004. The UDC's area is coterminous with the Borough's boundaries, in effect encapsulating the whole of Thurrock in any future regeneration plans as appropriate.

The UDC is tasked with securing the regeneration of the area, to be achieved in particular through:

- bringing land and buildings into effective use;
- encouraging the development of existing and new industry and commerce;
- creating an attractive environment; and
- ensuring that housing and social facilities are available to encourage people to live and work in the area.

The UDC is currently developing a Regeneration Strategy, which will set the scene for the future regeneration of Thurrock over the next 10/20 years.

Action 13
We will work with the new Urban Development Corporation to ensure that air quality is considered as a priority in the regeneration of Thurrock

2.15 Green Grids

The Green Grids initiative has been developed by the Council to facilitate access to urban green spaces and the countryside for people and wildlife. Through planning agreements, the Council intends to secure green spaces in urban areas and provide access via footpaths, cycle ways and ecological green corridors. Green Grids have been devised to connect residential areas, urban centres and the countryside, integrating routes to schools. The areas currently being focused on are West Thurrock, Purfleet and South Stifford.

The Strategic Environmental Planning Team are implementing a number of other programmes to improve and promote access to the countryside, including the Access Strategy, community projects, and promotional material including a bridleway pack and a regular newsletter about footpaths, bridleways and cycle ways, (available from Thurrock Council on request). It is working together with Sustrans (a sustainable travel charity) to deliver more cycle ways in the Borough.

Action 14
The Council will continue to promote the Green Grids initiative, to provide non-car access to the countryside.

2.16 Travel Plans

Travel Plans are a tool for employers to manage the travel needs of their staff. Employers reduce the environmental impact of their businesses by developing a package of measures in consultation with employees and unions that achieve the following aims:

- Reduce traffic volumes generated by employees commuting to work by car.
- Improve environmental quality and health for staff, visitors and the community in general.
- Increase and encourage diversity of travel choices and reduce reliance on the car for all organisation activities.
- Improve utilisation of the organisation's own vehicle fleets, including cars and freight vehicles.

New developments which are likely to generate a significant amount of traffic are obliged to enter into Section 106 agreements which require them to prepare and implement a Travel Plan for their proposed development. The Integrated Transport Officer provides enforcement and monitoring of planning agreements. Travel Plans have been prepared for Blue Star Engineering, Curran Packaging, South Essex House, Procter and Gamble, The Village and Thurrock F.C.

Action 15
The council will assist local businesses in drawing up Travel Plans. It will ensure that they are implemented.

3.0 Actions to Reduce Road Vehicle Emissions

The source apportionment work found that Heavy Goods Vehicles (HGVs) are the major source of both nitrogen dioxide and particulates in the Air Quality Management Areas. Cars account for between 7% and 35% of emissions of NO_X. Actions that reduce the emissions from each vehicle using the roads in Thurrock will reduce the overall air pollution. Two main forms of action are therefore proposed:

- Promote clean fuel technologies for both private and commercial vehicles
- Ensure that vehicles on the road are complying with the current exhaust standards.

3.1 Promote Cleaner Fuel Technologies

Cleaner vehicles

European emissions standards, known as Euro standards, have been in place since 1st January 1993. All vehicles manufactured after this date had to achieve Euro I standard. The standards have become incrementally tighter, with the next standard Euro IV from 1st January 2005. The Euro standards have been the most important Europe-wide instrument for reducing vehicle emissions and improving air quality.

Cleaner fuels

Cleaner alternatives to the traditional petrol and diesel engine vehicles include liquefied petroleum gas (LPG), natural gas, electric and petrol-electric hybrids. Clean fuel vehicles can significantly reduce the concentration of air pollutants from vehicle exhausts. The Government is promoting clean fuels through grants available from TransportEnergy, which is an initiative run by the Energy Saving Trust. Powershift grants, for private cars, offset some of the expenses of converting a vehicle to clean fuel or buying a new clean fuel vehicle. The aim is to create a sustainable market in the UK for clean fuel vehicles. Clean fuels benefit from reduced fuel tax, incur lower excise duty, company car tax discounts and reduced London congestion charge. There are four garages in Thurrock that currently sell LPG.

CleanUp is a grant programme run by TransportEnergy to cut harmful emissions from commercial diesel vehicles. Grants are available for technologies such as particulate traps, oxidation catalysts, conversion to natural gas, conversion to liquefied petroleum gas, re-engining, exhaust gas recirculation and selective catalytic reduction. Many heavy-duty vehicles, when fitted with emissions

reduction equipment, qualify for a Reduced Pollution Certificate. In addition, a lower level of excise duty is paid.

Action 16
The Council will publicise the availability of grants for cleaner vehicles to individuals and businesses.

3.2 Low Emission Zone

A Low Emission Zone (LEZ) limits access to a defined area to those vehicles that achieve high standards of exhaust emissions, for instance a Euro standard. A London-wide LEZ has undergone a feasibility study, with one option using the M25 as its boundary. This would have consequences for Thurrock by forcing a change in the standard of vehicles passing through the Borough to destinations within the London Low Emission Zone. In October 2004, the London Mayor confirmed his commitment to having a LEZ in place by 2007.

Action 17
The Council will look at the results of the London-wide LEZ feasibility study. It will make sure the implications for air quality in Thurrock are considered and will make representations as appropriate

3.3 Reducing Emissions From the Council's Own Fleet

Thurrock Council has a large fleet of vehicles for providing services. It consists of grounds maintenance, street cleaning, building maintenance and social services vehicles. Fleet management have been working over the past few years to achieve environmental improvements including:

- Bunkering low sulphur diesel, when it was not commercially available, for use by the entire fleet.
- Saving on tyre production and wastage by ordering every other vehicle without a spare tyre and
- Testing new vehicle technologies. Fleet management have used several clean vehicles on trial over the last five years, running LPG, hybrid and electric vehicles.
- Retrofitting of constantly regenerating particle traps to be fitted on their fleet of Highways Tippers to reduce the emissions of PM_{10} particulate.
- Two stroke lawn mowers are currently being phased out and replaced with unleaded petrol versions.

This year (2004/5), TransportEnergy consultants will be providing free advice to the Neighbourhood Services department in order to develop a workplace travel plan. A principle aim is to support and contribute to the corporate sustainable transport agenda. The pollution team will provide the consultants an overview of the Council's air quality policies, and how they link with fleet management.

Neighbourhood Services have been allocated some money through the Dartford Toll Programme. It is planned to use this money to fund some cleaner fleet vehicles in 2004/5.

Action 18
The Council will continue to lead by example and reduce the emissions from its own fleet of vehicles.

3.3.1 Thurrock Council Lease Car Scheme

Thurrock Council operates a lease car scheme for all eligible employees. The scheme allows Council workers to lease a new car for a 3-year period after which they are returned to the lease-hire company. Under the current contracts, lease car companies will provide alternative fuelled vehicles on request. Vehicles eligible for Powershift grants can be provided and in some cases the lease company will apply for the grant themselves and the money will be taken off the price of the car as quoted. At present there are no further incentives for an employee to choose an alternative fuelled car to another one. Nor are there incentives to choose cars with more economical, smaller engines. The Council can provide information to lease car users about alternative vehicles to encourage their use.

Action 19
The council will encourage the take-up of alternatively fuelled lease car vehicles by providing information to employees.

3.3.2 Thurrock Council Travel Plan

The Council is one of the biggest employers in Thurrock and therefore has an opportunity to both lead by example and make a real difference to improving air quality. Car sharing and Bike Week have proved successful. An initial Travel

Plan for the Council was drafted in 2000 and updated in 2003. However, it has not been approved, and lacks real commitment.

Action 20
The council will continue to work towards a Travel Plan for its employees.

3.3.3 Reducing Emissions From Contractors' Vehicles

Procurement services undertook the tendering exercise for contracting out Integrated Waste Management Services. This was awarded to Cleanaway in 2003. Companies tendering for the contract were encouraged to use alternative fuels and clean fuel technologies.

All services used by the Council must demonstrate a commitment to the environment, as outlined in the procurement strategy 2004-2007. Sustainability is considered as an evaluation criterion on larger contracts. This is important, as the expenditure in 2003/2004 by the Council externally on goods and services was £125 million.

Procurement Services within the Customer Services and Procurement directorate have achieved certification of ISO 14001 (1996). The goal of this work is to protect, manage and enhance Thurrock's environment, which achieves real improvement and contributes to a better quality of life for the community. This initiative should help to improve air quality through more efficient use of transport and travel.

Action 21
The Council will continue to use procurement strategies to buy goods and services from providers who show a commitment to the environment.

3.4 Reducing Emissions From Local Businesses

In September 2003 the Council hosted a Clean Fuel Seminar at the Thurrock Hotel. This was presented by the Transport Research Laboratory.

The Council works with businesses to raise awareness of air quality issues. The Pollution Team regularly presents at the Industry, Commerce and Environment Action group meeting of the Thurrock Business Forum. This is an invaluable opportunity to both raise awareness, and ask for the views of business leaders in Thurrock.

At the meeting in July 2004, business leaders commented that there was not enough awareness about grants for cleaner vehicles. This could be remedied by sending out information in the form of a best practise guide.

Action 22
The Council will continue to work with businesses. It will provide information on best practise, including using cleaner fuel technologies.

3.5 Driver Behaviour and Driving Patterns

Driver behaviour has an effect on overall emissions. Short journeys are the most polluting; this is especially true for current petrol cars fitted with catalysts. The catalyst only works effectively at its operating temperature, which is achieved after the first 2-3 miles of a journey Cars manufactured after 2001 are required to have catalysts, which warm up more quickly as part of the Euro III standard. Tips for cleaner driving and improved fuel efficiency were distributed during the Council's 2004 Green Transport Week.

3.6 Vehicle Exhaust Emissions Testing

The Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) Regulations 2002 enables Local Authorities that have declared air quality management areas to apply for powers to test vehicles emissions at the roadside and impose fines on those vehicles failing to meet the MOT vehicle exhaust emissions standards. The power to stop vehicles remains with the police. A programme of testing was carried out in 2003/2004 in the London Boroughs. It concluded that there was no direct improvement in air quality as a result of the testing. However it was a valuable awareness raising exercise.

An alternative, or additional, measure to adopting regulatory powers is to provide a programme of voluntary exhaust emission testing. It would provide free

exhaust emission tests and either adjustment to ensure emissions pass the test, or advice on what action is required to reduce emissions.

Since the publication of the draft action plan, voluntary emissions testing has been carried out during transport week in September 2003 and September 2004. This has been done in supermarket car parks and service stations, and over 100 cars tested during the week. Consultation on the draft Action Plan showed support for both voluntary testing (46% of respondents) and roadside testing by the Vehicle Inspectorate (43%).

Action 23
The Council will continue to test emissions on a voluntary basis. It will explore the possibility of using the Vehicle Inspectorate for issuing Fixed Penalty Notices.

3.7 Reducing Emissions From Taxis

Thurrock Council's Licensing Team licenses hackney carriages and private hire vehicles. Licensed vehicles must be no older than 8 years and must have an MOT certificate to prove that the vehicle is roadworthy. The test confirms that the vehicle has passed the vehicle exhaust emissions standards.

The Licensing Team make regular safety inspections of the taxi fleet and have developed a routine programme with the Vehicle Inspectorate to randomly test 10 - 20 vehicles per month on average. These will occasionally include vehicle exhaust emission testing. Those vehicles that fail the tests are served with an enforcement notice, which requires the fault to be rectified within a prescribed period of time, or in the case of serious faults the car is taken off the road, until the fault has been mended.

The Licensing Team prepare a quarterly newsletter for the local taxi trade. Articles on saving money, alternative fuels and air pollution have appeared in previous issues. Most taxis operating in the Borough run on diesel although Lakeside operates one Mondeo on lpg.

Action 24
The Licensing Team will continue to work with the Vehicle Inspectorate to test the emissions of taxis in Thurrock.

4.0 Actions to Reduce Emissions From Non-Road Sources

4.1 Industrial Emissions

4.1.1 Regulation of Process Emissions

Environment Agency

The Environment Agency regulates eighteen processes in Thurrock under the Integrated Pollution Control system (IPC). IPC Regulations were introduced through the Environmental Protection Act 1990 and are currently being updated through the progressive implementation of the Pollution Prevention and Control Regulations. In setting the authorisation conditions, under which companies operate, the Agency takes into account national air quality standards and objectives as well as European environmental standards. Information about industrial processes regulated by the Environment Agency can be obtained from the public register, held at Thurrock Council Civic Offices, and on their website – www.environment-agency.gov.uk.

Local Authority

The system of Local Air Pollution Control (LAPC) was introduced under Part I of the Environmental Protection Act (EPA) 1990. It will gradually be replaced by the similar LAPPC system under the Pollution Prevention and Control Act 1999. Local Authorities have powers to control emissions from certain potentially polluting, industrial processes listed in legislation and not already regulated by the Environment Agency. This is achieved through a system of prior authorisation, given subject to certain conditions. These conditions ensure that pollution is minimised. Authorised officers periodically inspect these processes, of which there are currently 79 in Thurrock. Information about industrial processes regulated by Thurrock Council can be obtained from the Council's website.

Action 25
The Council will continue to inspect all of its authorised processes to ensure compliance. Authorisations will be updated as and when appropriate so that operation conditions are up to date.

4.1.2 Grit and Dust

Grit and dust are frequently emitted from demolition and building sites. They can be a source of great annoyance as well as an air quality issue. Under the Environmental Protection Act 1990 the Council investigates all complaints of nuisance arising from grit and dust, and if a nuisance is substantiated the Council serves notice upon the persons responsible to abate the nuisance by suppressing the dust in an appropriate manner. Major construction works are given standard planning conditions to control the emission of dust from site and prevent its transfer onto the local highway.

Action 26
The Council will continue to use planning conditions to control dust emissions.
The Council will continue to take action to abate nuisance from fugitive dust emissions.

4.2 Energy Efficiency

Energy generation creates pollutant emissions as a result of combustion, both from power stations and building heating systems. Any measures that reduce energy consumption or use a cleaner fuel to produce energy will improve the background air quality.

There are several Thurrock Council initiatives in place to help residents spend less money on utility bills and save energy and therefore emissions. These initiatives are directed both at Council owned housing stock and privately owned and rented accommodation.

4.2.1 Thurrock Council Energy Strategy

The Energy Strategy contains aims and objectives to improve energy efficiency in Thurrock. The Council has a dedicated Energy Officer to progress this work. Partnerships include the Essex Energy Efficiency Advice Centre, local businesses, schools, private landlords, housing associations and other Councils. Targets include the increased use of renewable energy and the reduction of carbon dioxide measures from homes.

4.2.2 Private Sector Housing Strategy

The private sector housing service has prepared a Private Sector Housing Strategy for 2001 – 2005. It details the measures taken to increase 1) the number of residents having affordable and adequate heating in their homes 2)

reduce the total amount of energy consumed; 3) reduce the level of carbon dioxide emissions and 4) increase awareness of key issues and options available to householders to sustain the improvement achieved.

4.2.3 Affordable Warmth Campaign

The private sector housing service set up a successful Affordable Warmth Campaign, in partnership with a private independent energy company. This has ensured that discretionary Home Repair grants are now widely used for installing energy efficiency measures. The use of grants for such measures will be continued using a 'fuel poverty' means test. The Council intends to expand the campaign to reach residents in the private sector, who are not eligible for grant assistance.

4.2.4 Building Standards

The Building Regulations 2002 aim to ensure minimum standards of health, safety and welfare of people in and around buildings; they also cover access to buildings and the conservation of fuel and power. The three main concerns are: -

1. Every element of a building, roofs, walls, floors, windows and doors, need to achieve adequate resistance to heat loss.

2. Sufficient controls need to be provided for occupants to be able to turn off electric lighting and for low energy lights to be used.

3. Adequate controls are required to be provided in the use of boilers to avoid inefficient usage and waste.

The standards apply to new buildings, extensions on buildings and changes of use.

Action 27
The Council will continue to work to improve energy efficiency in the Borough. Details of this improvement can be found within the Council's annual HECA (Home Energy Conservation Act) report.

4.3 Clean Air Act

Smoke emissions from both commercial and domestic chimneys can give rise to large levels of particulates and sulphur dioxide. This problem resulted in the smogs of the 1950s, which were caused by the large volume of domestic and commercial properties burning low-grade coal. This gave rise to high levels of sulphur dioxide, and ultimately led to the premature deaths in London, of several thousand people.

The result of these incidents was the clean air act, the latest version of which was issued in 1993. This Act gives Local Authorities the power to make smoke control orders for all or certain parts of their area. These orders make the burning of anything other than smokeless fuel an offence within the smoke control area. There are certain appliances upon which burning of wood and other substances is permitted, these are known as exempted fire places as they are able to achieve smokeless combustion, and therefore allow the house holder to comply with the smoke control legislation. Like many other Local Authorities, Thurrock Council has several smoke control orders in place. The orders mean that any resident in the Borough who has an open fire must burn smokeless fuel, or use an approved exempted appliance capable of achieving smokeless combustion.

Action 28
The Council will continue to enforce the Clean Air Act 1993 and encourage local businesses to dispose of waste in a responsible manner, so as to prevent dark smoke bonfires.

Action 29
The Council will continue to educate residents and businesses to use smokeless fuel or an approved appliance for smokeless combustion.

4.4 Bonfires

Bonfires are a source of pollution that can give rise to large levels of particulates. There are no bylaws in the Borough preventing the public having domestic bonfires, however nuisance legislation does allow the Council to take action when fires cause a nuisance to surrounding premises. Residents are encouraged to take their waste to a local amenity site or compost instead of having a bonfire.

Any trade or industrial premise that creates dark smoke from a bonfire automatically commits an offence under the 1993 Clean Air Act. For this reason

any such premises in the Borough found to be having a fire are warned about the possible consequences and are advised to dispose of waste in an appropriate manner.

Action 30
The Council will continue to promote alternatives to domestic bonfires. We will encourage residents to recycle or compost as much waste as possible or dispose of it responsibly at a civic amenity site.

4.5 Environmental Management Systems

ISO 14001 is the International Standard Organisation's environmental management system specification. It was first published in 1996. This standard is applicable to any organisation that wishes to:

- Implement, maintain and improve an environmental management system.
- Assure itself of its conformance with its own stated environmental policy.
- Demonstrate conformance.
- Ensure compliance with environmental laws and regulations.
- Seek certification of its environmental management system by an external. third party organisation
- Make a self-determination of conformance.

(ISO14000 Environmental Management Group website, 2004)

EMAS - the Eco-Management and Audit Scheme, is a voluntary initiative designed to improve companies' environmental performance beyond ISO14001, established by a European Regulation. Its aim is to recognise and reward those organisations that go beyond minimum legal compliance and continuously improve their environmental performance. (EMAS website, 2004). http://www.emas.org.uk/aboutemas/mainframe.htm

Thurrock Council's Procurement and Property Services, and Building Services departments achieved ISO14001 Certification in May 2002 and have maintained the standard showing continuous improvements. All procurement for Thurrock Council is now compliant with environmental law and the impacts to the environment are minimised. The Council's Management System includes initiatives to encourage local businesses to bid for contracts to reduce the transport miles of goods and services.

4.5.1 Eco Schools

Eco Schools is an Encams program for environmental management in schools. It includes looking at energy, recycling and other environmental issues in the school itself. The number of schools that have achieved Eco School status in Thurrock increased to three in 2003/2004.

Action 31
The Council will investigate the feasibility of pursuing Environmental Management Systems in other departments. It will also work to disseminate EMS to local businesses and other parts of the public sector.

4.6 Local Agenda 21 Initiatives

Local Agenda 21 (LA21) details the approach the local community can take to ensure that the area in which we live is maintained for future generations. In Thurrock, the Quality of Life Strategy for LA21 covered all the social, economic and environmental issues of sustainable development. Due to evolving Government guidance, the LA21 process is now incorporated into the Community Strategy process. A sustainable development strategy will be developed in 2005 to bring together environmental and LA21 issues not covered within the overarching community strategy. The implementation of the air quality action plan is an action in the Community Strategy. .

Examples of initiatives with a positive effect on air quality:

- Installation of on demand lighting on two floors of the Civic Offices. This will reduce energy wastage in the building and reduce the volume of CO_2 and air pollutants emitted to atmosphere.
- Solar panels to power continuous lighting circuits have been installed at two sheltered housing complexes owned by the Council.
- Chafford Hundred School has agreed a contract with a Green Electricity provider that only uses renewable power generation sources from solar, wind, water, biomass and waste. This increases the purchase of green energy by the Council to 29% of all electricity purchased.

Action 32
Air quality will remain an integral part of the Community Strategy.

4.7 Work with the Local Health Authority

The Healthy Thurrock Alliance (HTA) consists of representatives from the Health Authority, Thurrock Council, the NHS Trusts, Primary Care Groups and voluntary organisations. The partnership monitors the progress of the Locality Action Plan. The environment is a key area within the Plan, and air quality has been specifically highlighted as an important issue that affects the health of residents. An objective is to reduce the number of AQMAs by supporting the implementation of the Air Quality Action Plan.

Action 33
Achievement of Air Quality Objectives will continue to be included in the Local Health Plan

4.8 Air Quality Monitoring

A good monitoring campaign is essential as it provides the technical justification for air quality policy in Thurrock. Air quality in Thurrock has been monitored since the 1960s when the first black smoke and sulphur dioxide monitoring station was installed. Two such stations are still in operation today.

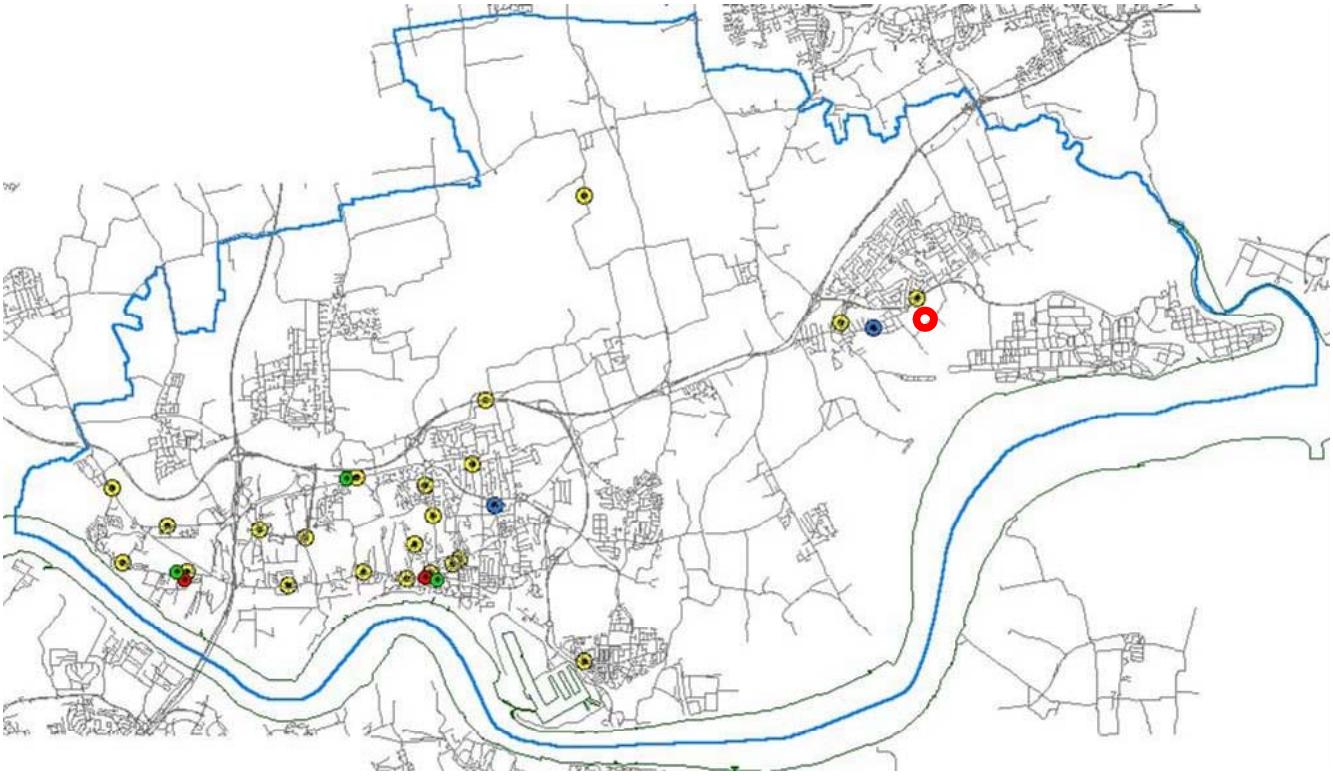
The Council operates a continuous monitoring station in Grays, which has been affiliated to the National Automatic Urban and Rural Network since 1996. It monitors particulate (PM_{10}), nitrogen dioxide, ozone, carbon monoxide and sulphur dioxide. The levels of pollution measured in Grays can be found on the website - www.airquality.co.uk.

Two new monitoring stations were installed in 2003 to provide more information about the levels of air pollution in two specific areas. The first was installed to assess the amount of pollution that is being emitted by heavy HGV traffic on London Road, Purfleet (AQMA 10). It monitors nitrogen dioxide. There is also a portable PM10 monitor located next to it to give an indication of the levels of fine particles residents are being exposed to. The second station is located near to the Manorway in Stanford-Le-Hope and will be used to monitor changes in air pollution levels that could result from redevelopment of the Shell Haven Refinery Site. It monitors nitrogen dioxide, particulate (PM_{10}) and sulphur dioxide. The results from all three monitoring stations can be found on the London Air Quality Network website – www.erg.kcl.ac.uk/london/asp/home.asp

Nitrogen dioxide diffusion tubes are located at four national survey sites, and the results are included in the annual monitoring reports. Over the last year the Pollution Control Team (PCT) have extended their network of nitrogen dioxide diffusion tubes, which monitor roadside and background emissions, into air

quality management areas to corroborate the results from the air quality modelling. Three new mobile PM_{10} monitors have been installed in areas of high pollutant concentration. The data is used to evaluate particulate pollution episodes measured at our automatic station to determine whether they are local sources or area sources.

Figure: Map of Thurrock showing locations of monitoring sites



Key
Yellow = nitrogen dioxide diffusion tubes
Green = Portable PM_{10} monitor (correct at April 2004)
Red = continuous automatic monitoring station
Blue = black smoke and sulphur dioxide monitors

5.0 Public Awareness Raising and Education

5.1 Education in Schools

For the first year in 2002 a teaching session was prepared for the Crucial Crew Education Initiative held for all Year 6 pupils in July. The session combined Sustainable Development, Energy Saving and Air Quality issues through a 10-minute scenario explaining global warming in terms of the Greenhouse Effect. Every Year 6 pupil who attended was asked to make a pledge to save energy or use more sustainable modes of transport.

All secondary schools in the borough receive a Sustainable Transport education pack prepared by Essex County Council in partnership with Thurrock's Road Safety Team. These packs provide teacher guides and exercises for pupils to explore transport planning, engineering measures, road safety, passenger transport and technological developments in road transport.

5.2 Public Events

A successful campaign of awareness-raising events has been carried out in Thurrock. Many of these events have been in partnership with sustainable development, energy efficiency and transport colleagues. Some are part of national campaigns. The following table summarises these events.

Table 5.1. Summary of Public Awareness Raising Events

Clean Fuel Roadshow, July 2002	33 cars emissions tested. Information provided about alternative fuel cars and TransportEnergy grants.
Crucial Crew, July 2002	Two weeks of talks about air quality related issues to 1500 school children.
River Festival, June 2003	The air quality display included clean fuel vehicles and information about air pollution. A clean vehicles questionnaire was handed out.
Clean Fuel Seminar, Sept 2003	A fuel saving seminar for local businesses, presented by the Transport Research Laboratory.
Orsett Show, every	A large country show. The air quality stand provides

September	information; clean vehicles are on display.
Car-Free Day, September 2003	Information about air quality given out. Questionnaires completed.
Emissions Testing week 2003 and 2004	150 cars had emissions tested voluntarily at supermarkets. Information about air quality, cycling and public transport was given out.
Green Festival, June 2004	Air quality display and lpg and hybrid vehicles. Plus a day for schools. Pupils washed leaves from trees next to both a busy road and from a country park location. This highlighted how dirty the air was.
Hospital Radio magazine, 2004/05	Advert taken out in hospital magazine to highlight air quality issue.

Action 35
The Council will continue to promote air quality issues at public awareness events.

6.0 SUMMARY OF AIR QUALITY ACTION PLAN

The following is a list of actions to improve air quality within the AQMAs and wider measures that aim to improve air quality in Thurrock in general.

Impact on Air Quality

An action plan should indicate, where possible, what the anticipated air quality improvements are likely to be for each measure. It should be noted that none of the measures would have a significant impact on air quality. Therefore no in depth quantification was undertaken and a guideline rating of low, medium or high impact has been given. The Council is unlikely to achieve the UK Air Quality Objectives in all of the AQMAs by the relevant dates.

Cost Effectiveness and Feasibility

The council is not required to undertake a full cost and benefit analysis of the measures. However costs must be considered. Most of the measures already exist, and so the cost is covered within existing strategies. As such, these actions have been costed as "zero". The other measures have been ranked from "low " to "high" to give an indication of relevant cost. Low costing measures are those that primarily require more officer time (less than £5000). Medium cost measures may require the employment of more specialist equipment or a consultant (£5000 to £20000). High cost measures are those over 20K, which will require funding from outside the department. All measures are considered to be feasible.

Time to implement

Time-scales for implementation must be included in order for future benchmarking purposes.

Responsibility/Partners

Many of the measures will require the co-operation of two or more partners:

SP = Strategic Planning	DC = Development Control
CP = Corporate Policy	ST = Strategic Transport
PTU = Passenger Transport Unit	P = Planning
EA = Environment Agency	PE = Planning Enforcement
EH = Environmental Health	W&R = Waste and Recycling
CLA = Car Lease Administration	Pr = Procurement

Annual Progress Report

Progress on the action plan will be reported in April of each year.

Action		Impact on Air Quality	Other Impacts	Cost	Time to implement	Responsibility	Monitoring effectiveness of action
Traffic Engineering and Management Schemes							
	Action Plan scenario: West Thurrock marshes relief road. (Affects AQMAs 1,2, and 23	High: >2µg/m3 reduction in NO2 on London Road. Could revoke AQMAs 2 and 23.	Road should be quieter as HGVs diverted.	Zero	Finish date end 2004	ST&P	Before and after traffic count surveys and air quality monitoring
	Action Plan scenario: Grays town centre regeneration scheme. (Affects AQMA 1)	High: should reduce size of AQMA 1	Less congestion. Improved access for buses.	Zero	Finish date end 2004	ST&P	Before and after traffic count surveys and air quality monitoring

Action		Impact on Air Quality	Other Impacts	Cost	Time to implement	Responsibility	Monitoring effectiveness of action
	Action Plan scenario: Hedley Avenue extension. (Affects AQMA 2, 23)	High: >2µg/m3 reduction in NO2 on London Road. Could revoke AQMAs 2 and 23.	Road should be quieter as HGVs diverted.	Zero	To start by 2005.	ST&P	Before and after traffic count surveys and air quality monitoring
1	The Pollution Team will ensure that it is consulted about future traffic management schemes so that the effect on air quality is considered. This will be through attendance of Local Transport Plan and Traffic Liaison meetings.	High	Improved relations with transport	Low	Already exists	ST&P, PCT	
2	The Council will liaise with the Highways Agency to ensure that air quality in the Borough is a consideration in the Environmental Impact Assessment for all relevant strategic road projects.	Low: Potential to affect 5, 7, 8, 9, 15 & 16	Improved relations with HA	Low	Already exists	HA, PCT	Traffic data provided by HA and DfT

Action		Impact on Air Quality	Other Impacts	Cost	Time to implement	Responsibility	Monitoring effectiveness of action
Actions to Reduce Traffic Volumes							
3	The Pollution Team will continue to liase with the strategic transport team to ensure that air quality is an integral part of the local transport plan (LTP).	High	Improved overall environment, health, public transport	Low	Inform the 2006-2010 LTP	PCT, ST	Local Transport Plan
4	The Council will work towards reducing traffic levels, using the strategies laid out in the Road Traffic Reduction Plan.	Medium – less traffic = less pollution	Reduce noise levels; improve safety of roads	Zero	Already exists	ST&P	
5	The Council will continue to work towards a rail freight terminal in Thurrock.	High	Quieter – less HGVs	Zero		ST	LTP PI No. 23 (%age increase in locally generated rail freight)

Action		Impact on Air Quality	Other Impacts	Cost	Time to implement	Responsibility	Monitoring effectiveness of action
6	The Council will aim to reduce congestion by effectively enforcing parking measures as soon as it has the powers to do so.	Medium	Reduced congestion and noise from traffic; might not be popular	Zero	2005	Highways	LTP PI No. 20 (No. of controlled parking zones introduced)
7	The Passenger Transport Unit will continue to promote sustainable modes of transport by implementing the Council's Local Transport Plan. Details of performance are contained in the Annual Progress Report.	Medium	Reduce congestion	Zero	Already exists	PTU	LTP PI No. 45 (No. of bus passenger journeys)
8	The Council will continue to implement the cycle network across Thurrock.	Low	Healthier residents	Zero	Already exists	ST&P	LTP PI No.34 (%age increase in cycle trips)
9	The Council will continue to make walking an attractive option by providing street furniture and a public rights of way map. It will explore the possibility of working	Low	Healthier residents	Zero	Already exists	ST&P	LTP PI No.35 (%age increase in pedestrian trips)

Action		Impact on Air Quality	Other Impacts	Cost	Time to implement	Responsibility	Monitoring effectiveness of action
	with local companies to improve local footpaths.						
10	The Council will continue to implement Safer Routes to School as outlined in the Road Safety Plan. It will support schools that are preparing School Travel Plans.	Low	Healthier children	Zero	Already exists	Highways	LTP PI Nos. 1, 2 and 3; 4 (No. of school children travelling to school by cycle, car and walking; no. of school travel plans)
11	The Pollution Team will continue to work with planning colleagues to ensure that air quality policy in the UDP is updated and relevant. It will continue to develop supplementary planning guidance for air quality assessments.	Medium – will prevent further deterioration in air quality		Low	Already exists	PCT, SP	Content of UDP
12	The Council will continue to take into	Medium –	Brings in money	Low	Already	PCT,	No. of S106s

Action		Impact on Air Quality	Other Impacts	Cost	Time to implement	Responsibility	Monitoring effectiveness of action
	account a development's impact on air quality when considering planning applications, and use conditions to mitigate these impacts where appropriate. It will also investigate the possibilities of using Section 106 agreements for air quality.	ensures mitigation measures are used	for air quality work		exists	DC	
13	We will work with the new Urban Development Corporation to ensure that air quality is considered as a priority in the regeneration of Thurrock	Low		Low	2004	PCT, UDC	
14	The Council will continue to promote the Green Grids initiative, to provide non-car access to the countryside	Low		Zero	Already exists	SEP	
15	The council will assist local businesses in drawing up Travel Plans. It will ensure that they are implemented.	Low	Improved environmental awareness	Zero	Already exists	ST&P	LTP PI No. 5 (No. of GTPs implemented)
Actions to reduce road vehicle emissions							

Action		Impact on Air Quality	Other Impacts	Cost	Time to implement	Responsibility	Monitoring effectiveness of action
16	The Council will publicise the availability of grants for cleaner vehicles to individuals and businesses.	Low – awareness raising	Improved relations with businesses	Low	Dec 2004	PCT	Council website; no. of packs sent to businesses
17	The Council will look at the results of the London-wide LEZ feasibility study. It will make sure the implications for air quality in Thurrock are considered and will make representations as appropriate	High – potential for good impact in Thurrock	Could be detrimental to small businesses	Zero	2006	Mayor of London	
18	The Council will continue to lead by example and reduce the emissions from its own fleet of vehicles.	Low	Improved image of council; reduction in CO2 emissions	High	2006	PCT, FM	No.s of alternatively fuelled vehicles
19	The council will encourage the take-up of alternatively fuelled lease car vehicles by providing information to employees.	Low	Reduction in CO2 emissions;	Low	Leaflet in 2003. Ongoing program me	CLA and PCT	Employee travel survey; No.s of alternatively fuelled vehicles

Action		Impact on Air Quality	Other Impacts	Cost	Time to implement	Responsibility	Monitoring effectiveness of action
20	The council will continue to work towards a Travel Plan for its employees.	Low	Improved image of Council; promotes environmental awareness with staff	Zero	2005 onwards	ST	Employee travel survey
21	The Council will continue to use procurement strategies to buy goods and services from providers who show a commitment to the environment.	Low	Encourages businesses to be greener	Zero	Already exists	Pr	Conditions of contract
22	The Council will continue to work with businesses. It will provide information on best practise, including using cleaner fuel technologies	Low	Improve relations with business community; companies could save money	Low	Already exists	PCT	No. of packs sent to businesses

Action		Impact on Air Quality	Other Impacts	Cost	Time to implement	Responsibility	Monitoring effectiveness of action
23	The Council will continue to test emissions on a voluntary basis. It will explore the possibility of using the Vehicle Inspectorate for issuing Fixed Penalty Notices.	Low – awareness raising	Fixed penalty notices may penalise the poorest residents	Low	Already exists	PCT	Monitor No. of vehicles failing test and No. corrected
24	The Licensing team will continue to work with the Vehicle Inspectorate to test the emissions of taxis in Thurrock.	Low		Zero	Already exists	EH Licen sing Team	Monitor failure rate
Actions to reduce emissions from non-road sources							
25	The Council will continue to inspect all of its authorised processes to ensure compliance. Authorisations will be updated as and when appropriate so that operation conditions are up to date.	Low	Prevents pollution emergencies, prevents nuisance	Zero	Already exists	PCT/ EA	Annual returns to Environment Agency on inspection regime
26	The Council will continue to use planning conditions to control dust emissions. The Council will continue to take	Medium – however, impacts will be localised	Prevents nuisance	Zero	Already exists	DC, PE& PCT	Number of complaints relating to construction dust received

Action		Impact on Air Quality	Other Impacts	Cost	Time to implement	Responsibility	Monitoring effectiveness of action
	action to abate nuisance from fugitive dust emissions.						by EH
27	The Council will continue to work to improve energy efficiency in the Borough. Details of this improvement can be found within the Council's annual HECA (Home Energy Conservation Act) report.	Low	Decreased CO2 emissions	Zero	Already exists	Housing	Annual HECA Returns
28	The Council will continue to enforce the Clean Air Act 1993 and encourage local businesses to dispose of waste in a responsible manner, so as to prevent dark smoke bonfires.	Low	Reduced nuisance	Zero	Already exists	PCT, EH	No. of complaints about dark smoke bonfires
29	The Council will continue to educate residents and businesses to use smokeless fuel or an approved appliance for smokeless combustion.	Low	Financial burden on residents	Zero	Already exists	EH	

Action		Impact on Air Quality	Other Impacts	Cost	Time to implement	Responsibility	Monitoring effectiveness of action
30	The Council will continue to promote alternatives to domestic bonfires. We will encourage residents to recycle or compost as much waste as possible or dispose of it responsibly at a civic amenity site.	Low	Meet recycling targets easier; reduced nuisance	Zero	Already exists	W&R	No. of bonfire complaints
31	The Council will investigate the feasibility of pursuing Environmental Management Systems in other departments. It will also work to disseminate EMS to local businesses and other parts of the public sector.	Low	Improved general; environment	Zero	Already exists	CP	NO. of EMS implemented
32	Air quality will remain an integral part of the Community Strategy.	Low	Improves awareness of air quality	Zero	Already exists	CP	
33	Achievement of Air Quality Objectives will continue to be included in the Local Health Plan	Low		Low	Exists since 2002	Healthy Thurrock Alliance	Changes in air quality reported to HTA

Action		Impact on Air Quality	Other Impacts	Cost	Time to implement	Responsibility	Monitoring effectiveness of action
							annually
Public awareness raising and education							
34	The Council will continue to explore and implement the best ways of working together with schools to improve awareness of air quality issues in Thurrock.	Low	Improved relations with business	Low	Already exists	PCT	
35	The Council will continue to promote air quality issues at public awareness events.	Low	Chance to consult with public directly	Low	Already exists	PCT and Environment Officer Working Group	No. of roadshows held per year

References

Cantique	*Non Technical Measures* (2001)
Cleaner Vehicles Task Force	*An Assessment of the Emissions Performance of Alternative and Conventional Fuels* (2000)
Committee on the Medical Effects of Air Pollution	*The Quantification of the Effects of Air Pollution on Health in the United Kingdom* (2000)
Department of Environment, Food and Rural Affairs.	*Air Quality Review and Assessment website* http://www.uwe.ac.uk/aqm/review/planning.html (June 2004)
Department of Environment, Food and Rural Affairs	*The Air Quality Strategy for England, Scotland, Wales and Northern Ireland: A consultation document on proposals for air quality objectives for particles, benzene, carbon monoxide and polycyclic aromatic hydrocarbons* (2001).
DETR	*Local Air Quality management*; *Developing Local Air Quality Action Plans and Strategies –the main considerations; Air Quality and Transport; Air Quality and Land Use Planning.* Guidance Notes (2000)
DETR	*An Economic Analysis of the National Air Quality Strategy Objectives* (1998)
EMAS	EMAS website http://www.emas.org.uk/aboutemas/mainframe.htm (2004)
Environmental Research Group	*Stage 3 Review and Assessment of Air Quality in Thurrock* (2000)
Environmental Research Group	*Stage 4 Review and Assessment of Air Quality in Thurrock* (2002)
Environmental Research Group	*Air Quality Assessment in London and the East Thames Corridor* (2000)
EU Transport RTD Programme	*An Evaluation of Transport Measures to Meet NAQS Objectives* 1999) W S Atkins
Highways Agency website	The Role of the Highways Agency in Local Air Quality Management, November 2003. http://www.highways.gov.uk/roads/projects/misc/airqual/02.htm.

	Accessed Aug 2004
ISO14000 Environmental Management Group	http://www.iso14000-iso14001-environmental-management.com/ (2004)
National Society for Clean Air and Environmental Protection	*Air Quality - Interim guidance for local authorities* (2000)
Transport Research Laboratory	TRL Report 482: *The impacts of traffic calming measures on vehicle exhaust emissions* (2001) Boulter, Hickman, Latham, Layfield, Davison and Whiteman.
WHO European Environment Agency	*Air and Health* (1997)

Bibliography

Draft Air Quality Strategy for London 2001. Mayor of London

Environment Act, 1995

Environmental Protection Act, 1990

Local Agenda 21 Strategy

Local Plan

Local Transport Plan and Annual Progress Reports, Thurrock Council, 2000 - 2005

National Atmospheric Emissions Inventory 2002, AEA Technology

Proposed Unitary Development Plan

The Air Quality (England) Regulations, 2000

The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, 2000.

The Air Quality Strategy for England, Scotland, Wales and Northern Ireland: Addendum 2003

The Road Traffic (Vehicle Emissions) (Fixed Penalty)(England) Regulations 2002 (S.I. 2002 No 1808)

Thurrock Local Health Plan 2002-2003

Appendix 1. Action Plan Consultation

The Pollution Team, in partnership with Strategic Planning, Development Control, Transport Planning and Sustainable Development developed a list of proposed actions to address the sources of air pollution in Thurrock. This list was presented to key stakeholders at an air quality seminar held at the Civic Offices on 13th June 2002. Amongst those invited were representatives from local businesses, transport forums, residents groups, neighbouring authorities, Environment Agency, Highways Agency, Local Primary Care Trust and relevant departments in the Council. Participants were invited to feed back their views on the areas of action proposed through feedback forms. The results of this feedback were used to shape the draft Local Air Quality Action Plan published in September 2002.

Public consultation was carried out in Summer 2002 and a leaflet outlining the major elements of the action plan was sent to every home in Thurrock. 17 residents responded to this leaflet with comments and queries and these were acknowledged accordingly. In addition, a 12-page colour brochure providing more detail about the current air quality in Thurrock and the key proposed actions were produced. It included a questionnaire and a freepost envelope for residents to express their views on the proposed actions. 10,000 brochures were distributed to houses near to areas with poor air quality and to concerned residents via public events, libraries, doctors' surgeries and council offices. 133 responses were received, the results from which are summarised in the table below. The views expressed by residents and stakeholders determined the actions that were adopted in this final Local Air Quality Action Plan.

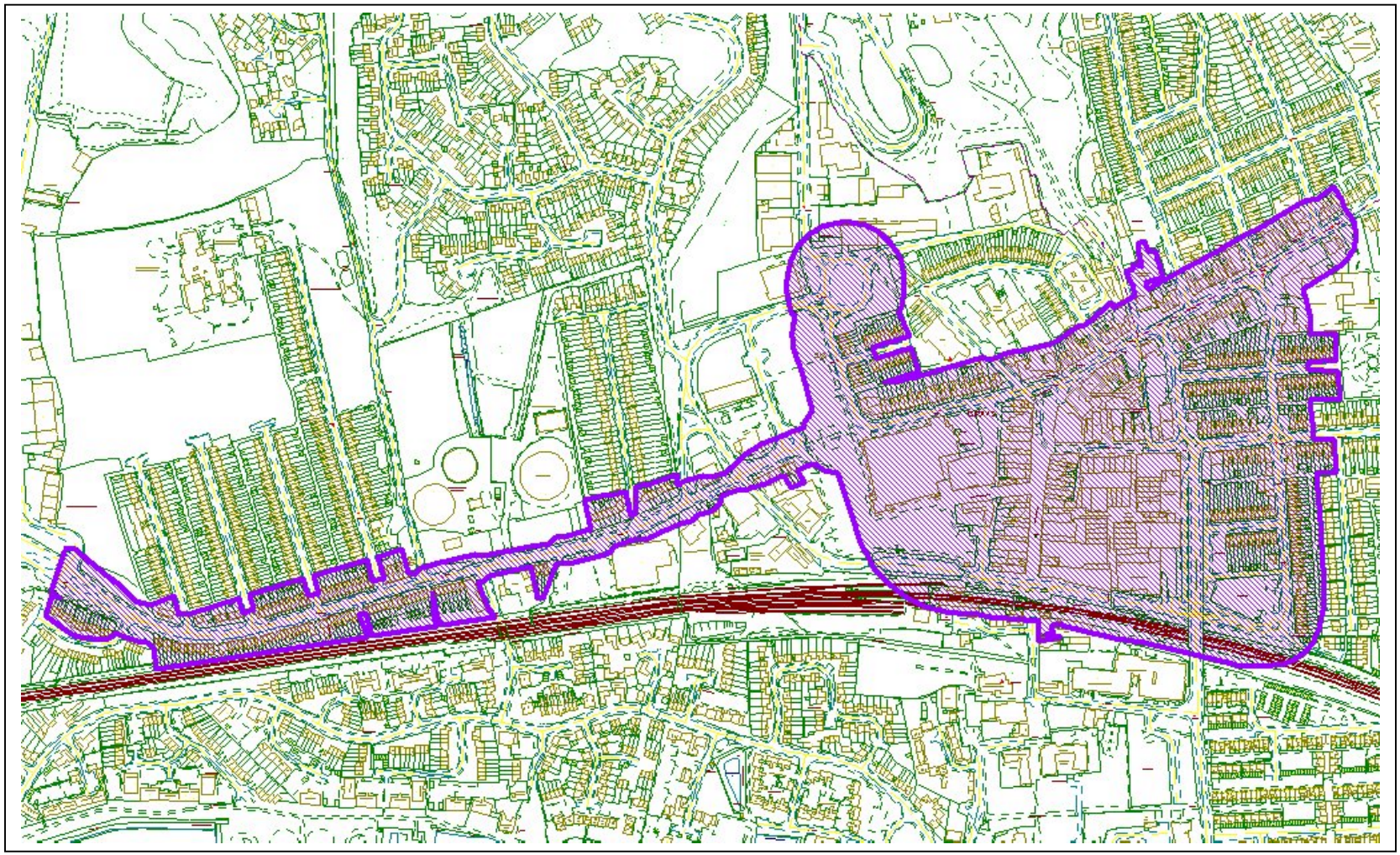
Summary of results from public consultation exercise

Comment	Result
Over 50% of respondents felt that their quality of life is significantly affected by Thurrock's air quality. Only 3% of respondents felt that air quality in Thurrock was not a problem.	Air pollution is a significant issue for residents of Thurrock
80% of respondents would like to see information about local air quality in the local newspaper and libraries were the most popular alternative location	Council need to support public information and awareness campaigns
50% of respondents requested further information on alternative fuels and how to reduce vehicle exhaust emissions.	65 information leaflets were distributed and are now included with other environmental awareness campaigns
46% felt that vehicle exhaust testing should be carried out on a voluntary basis	Voluntary exhaust testing and public information campaign was

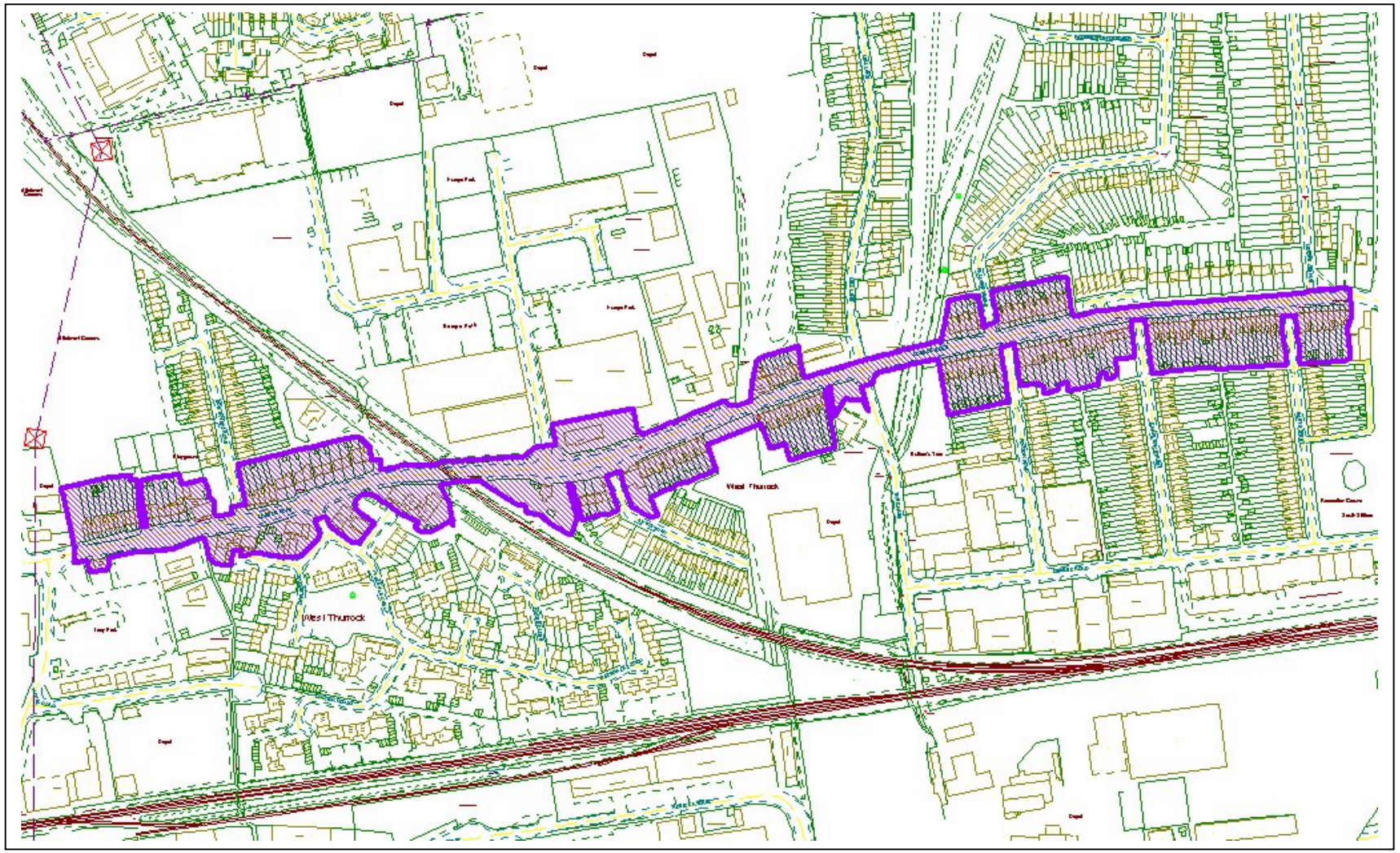
and it was suggested that this could be combined with public information 11% felt that no testing was necessary and it was suggested that the MOT test was sufficient	successfully carried out in Summer 2003 with over 150 tests completed.
Over 50% were willing to adopt a smooth driving style but many felt that traffic calming measures prevented them doing so	Report on impact of traffic calming measures on air pollution indicates that minimising braking and acceleration while negotiating traffic calming measures will reduce vehicle emissions.
12% of respondents felt that traffic calming measures would make walking and cycling more attractive whereas 60% wanted new routes avoiding vehicles and 45% wanted dedicated cycle routes	…
Over 70% felt that the reliability of public transport needs improving, and 60% felt that improved frequency would encourage them to use public transport more	…
Only 7% of respondents were not willing to take more trips by walking and cycling?	Raise awareness on air pollution reductions and health benefits associated with walking or cycling for short journeys
30% of respondents suggested that they would be willing to travel to work or school by alternative modes of transport	Support Green Travel Plans and School Travel Plans within the Borough
63% were willing to implement energy saving measures and 34% had already implemented such measures	Support Energy Officer in reducing energy usage in the home
62% would support voluntary exhaust emission as a public awareness raising exercise, and 38% would support local events in Thurrock and national awareness raising campaigns	Car Free Day 2003, exhibition on sustainable transport and a questionnaire on local events for 2004

Appendix 2 - Maps of the 15 Air Quality Management Areas

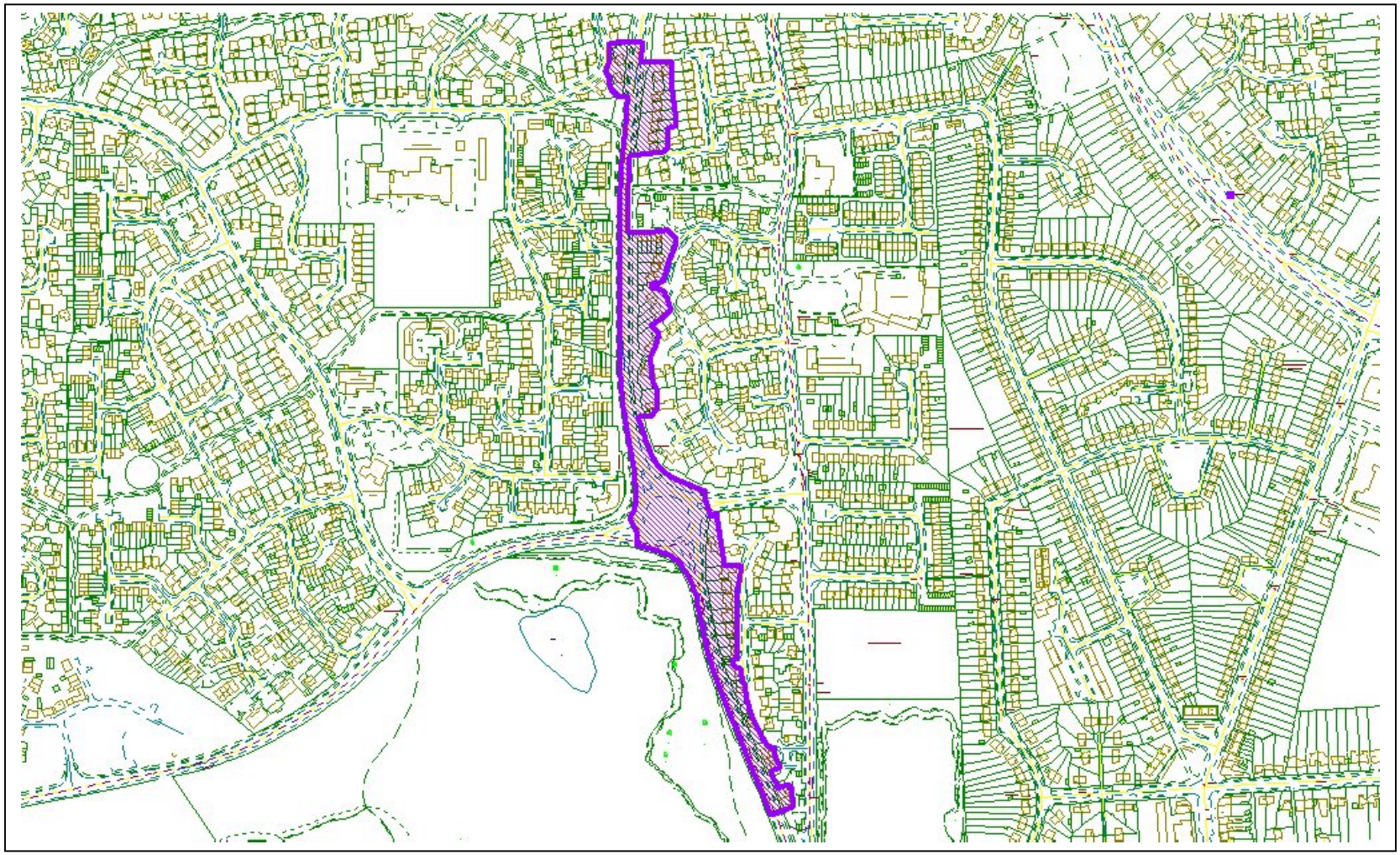
AQMA 1. Grays Town Centre and London Road Grays



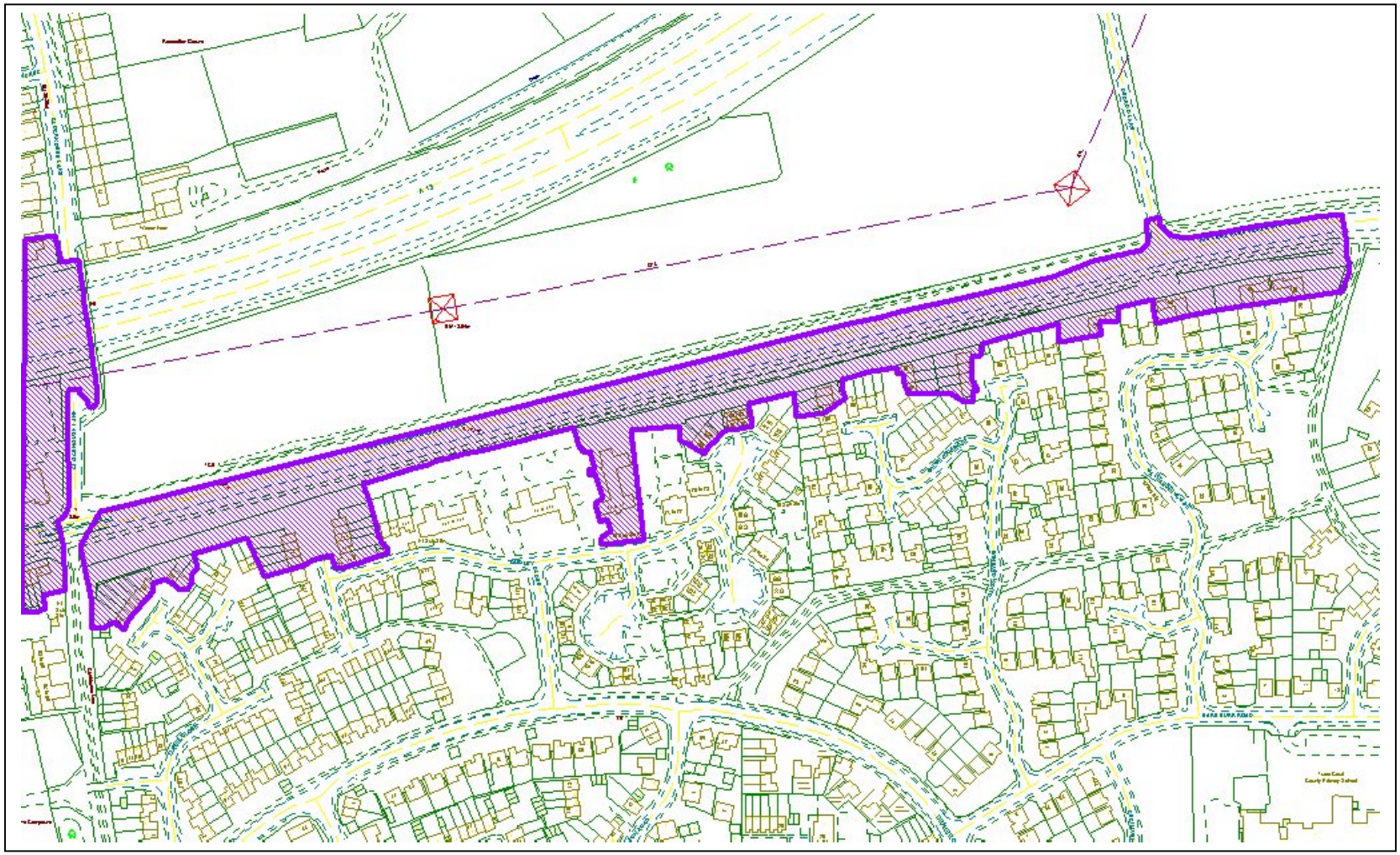
AQMA 2. London Road South Stifford



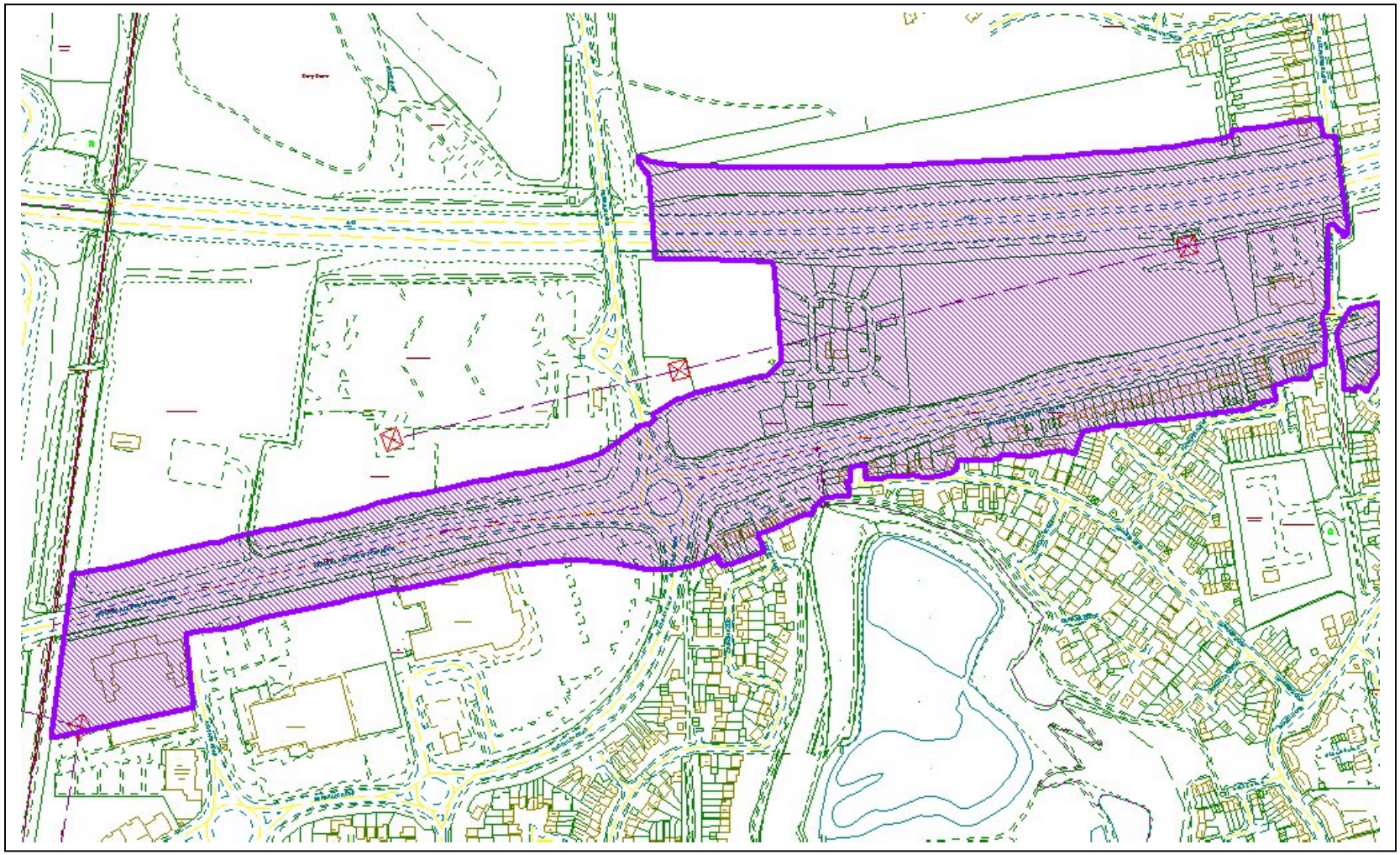
AQMA 3. Hogg Lane Grays



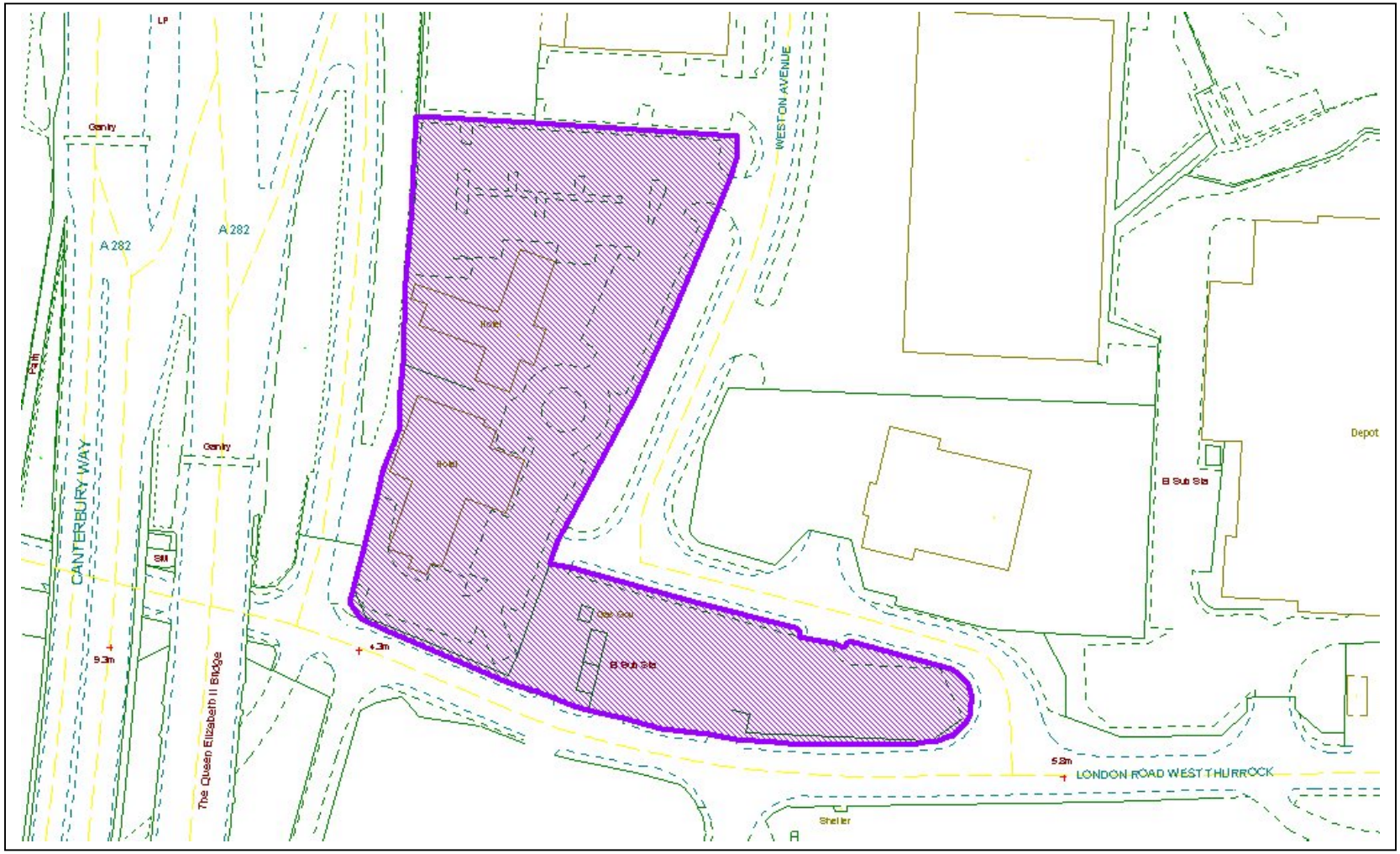
AQMA 4. Chafford Hundred



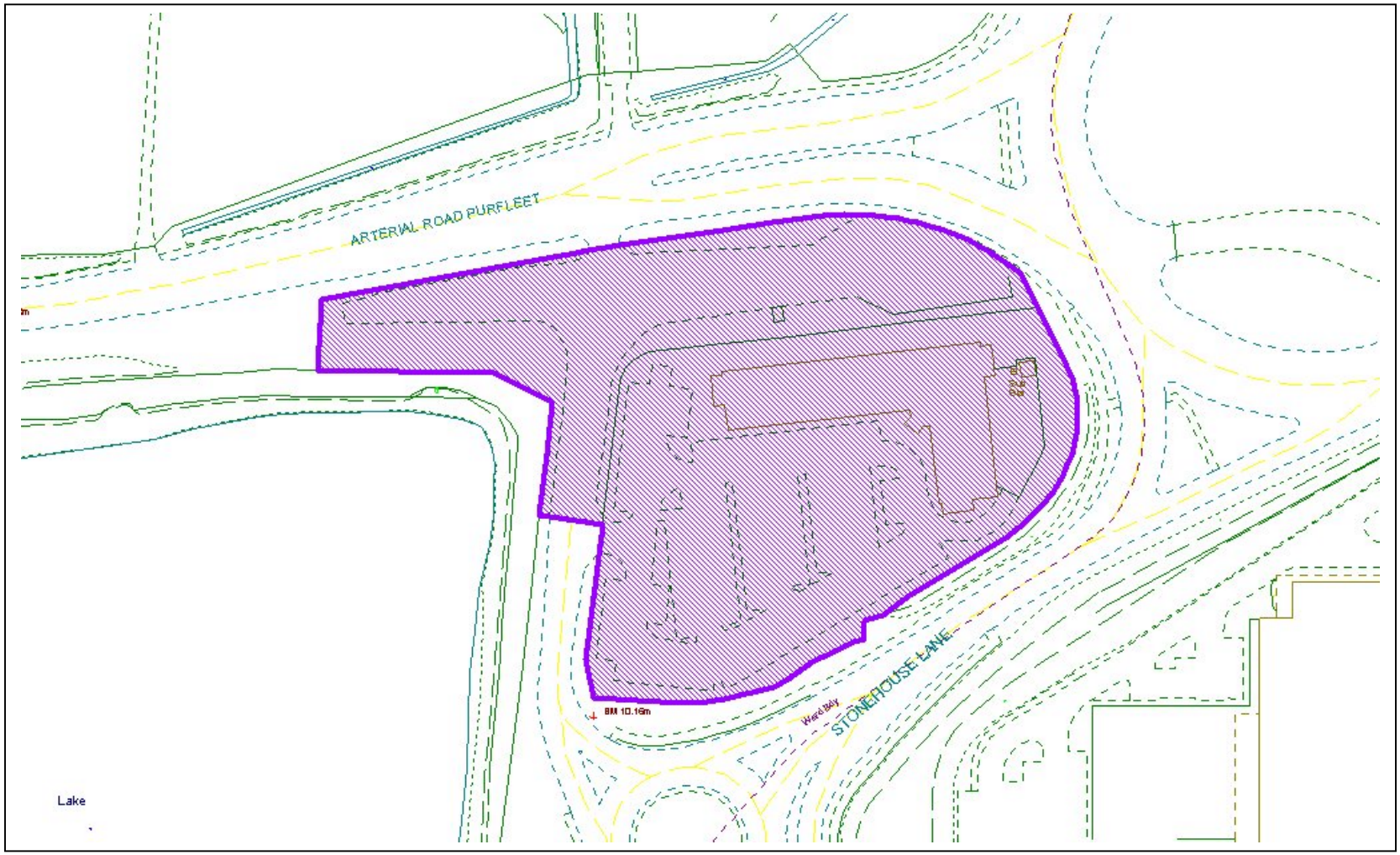
AQMA 5. South Stifford



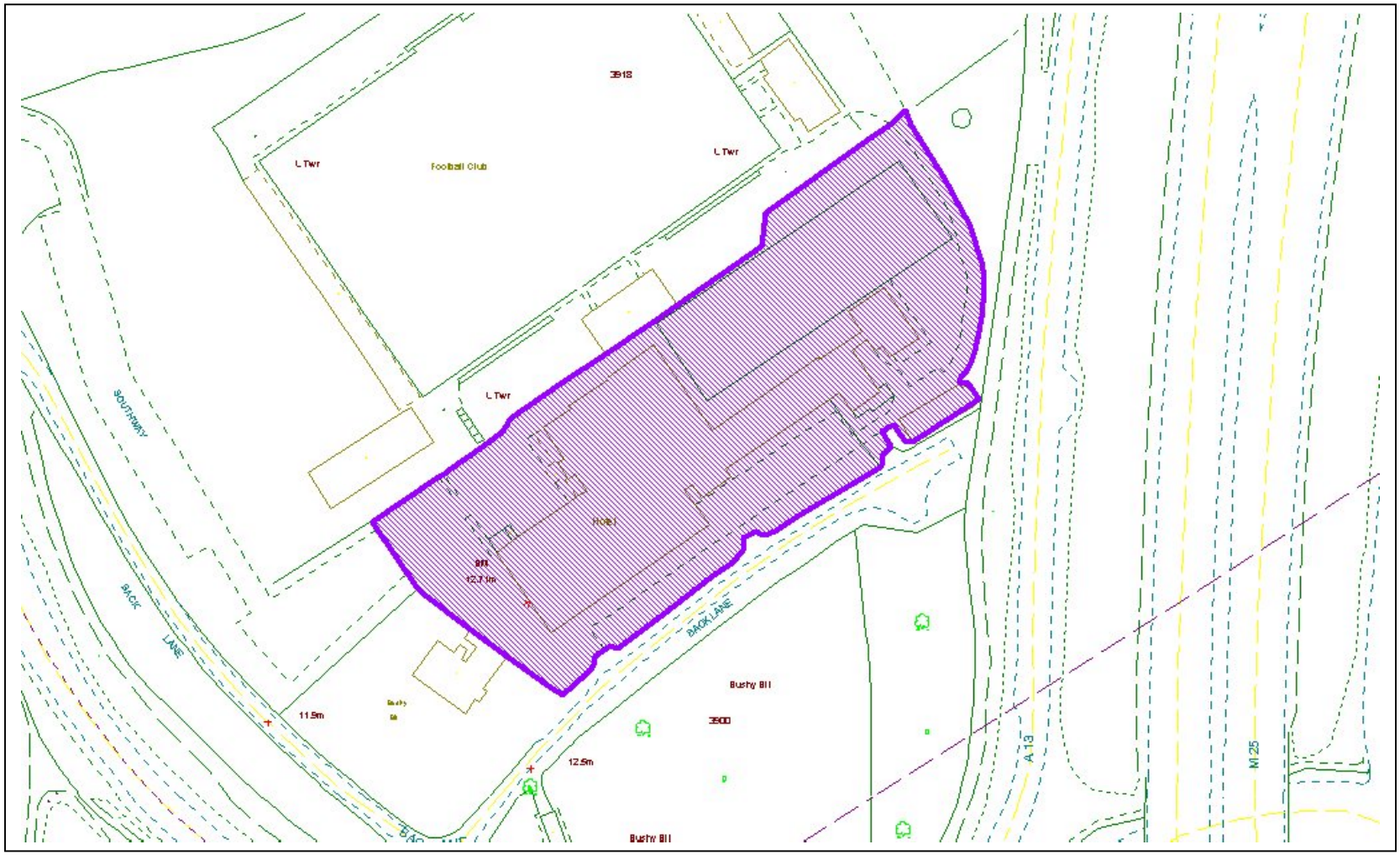
AQMA 7. Weston Avenue, Lakeside



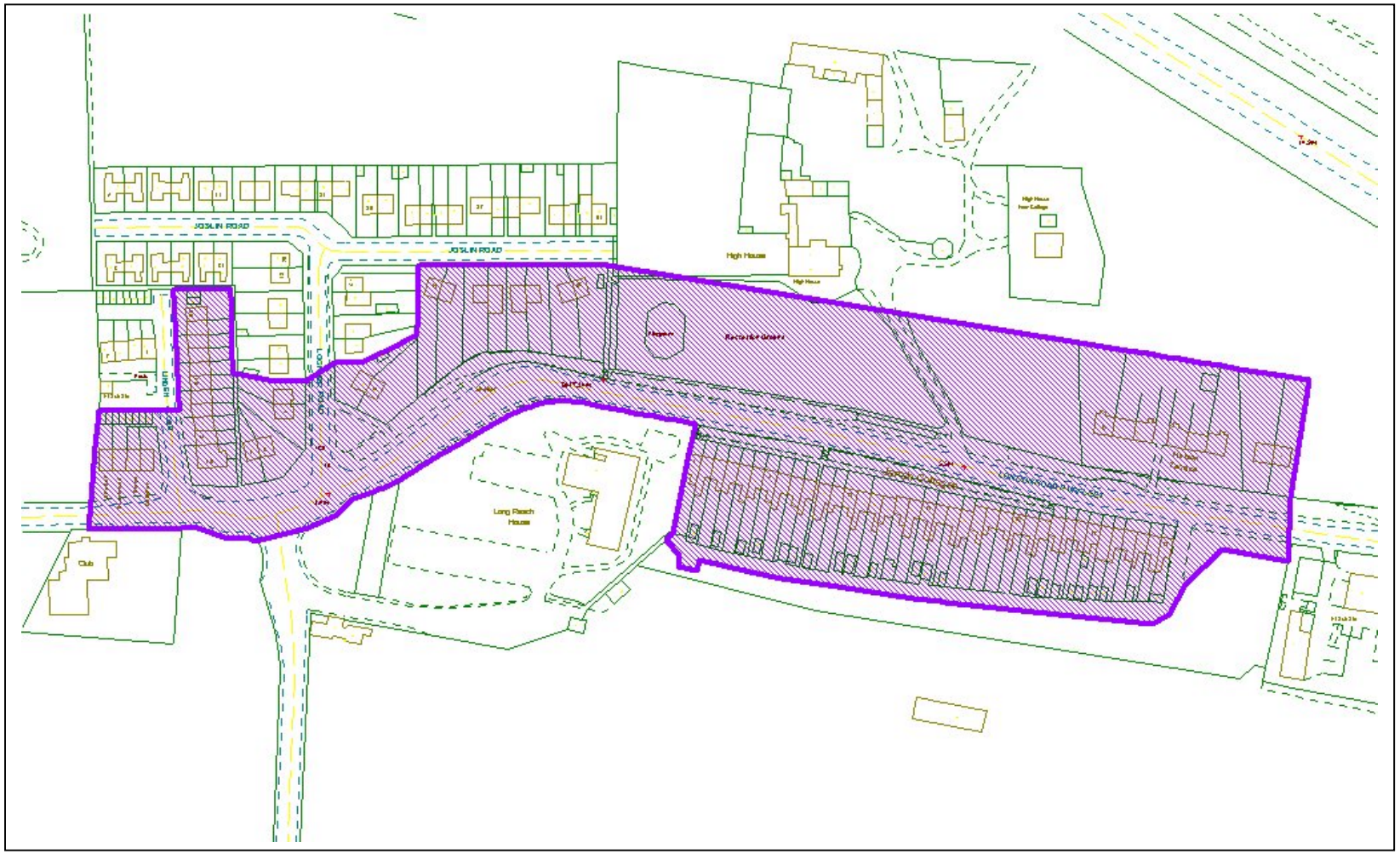
AQMA 8. Junction 31 M25, Premier Hotel



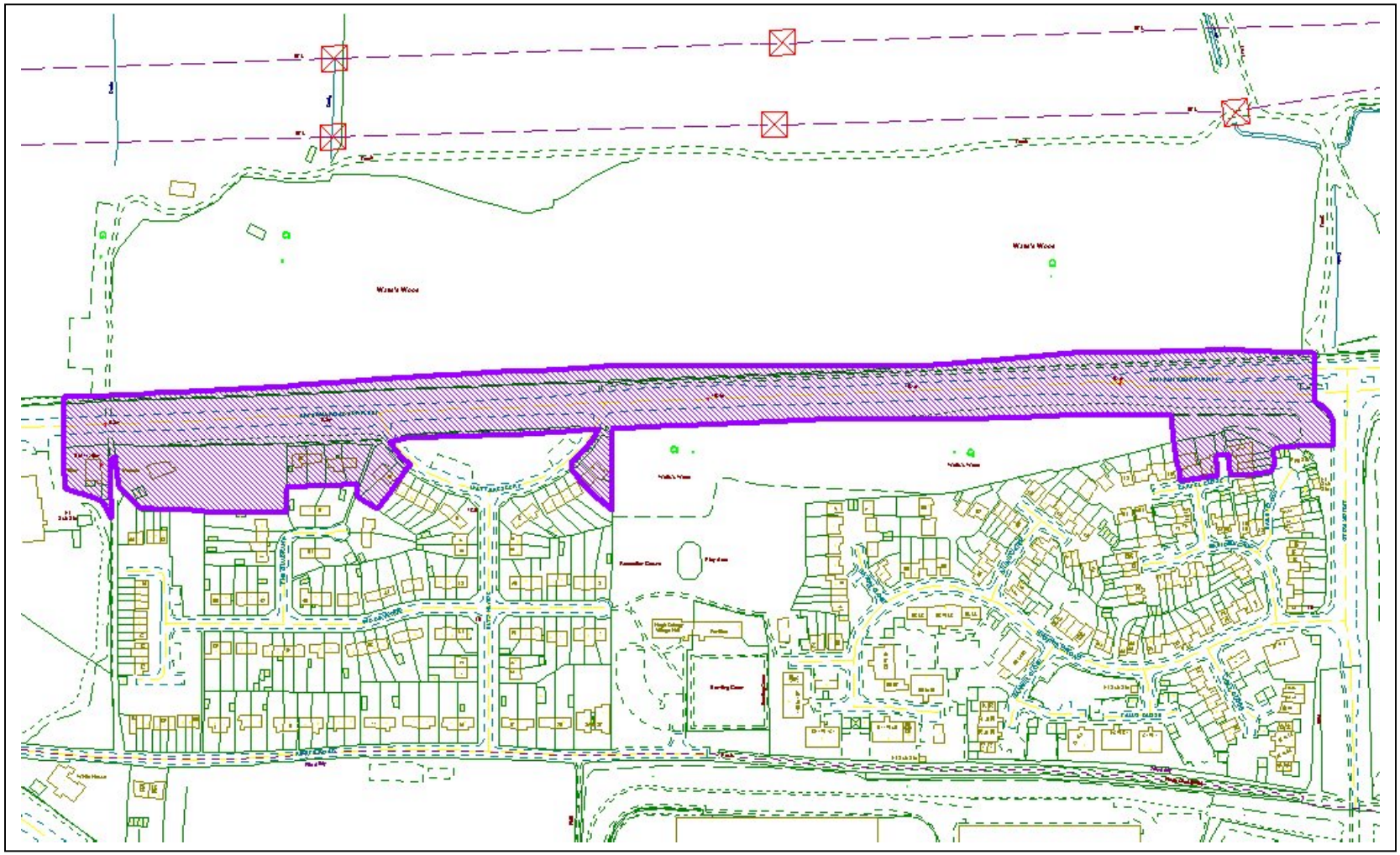
AQMA 9. Thurrock Hotel Ship Lane



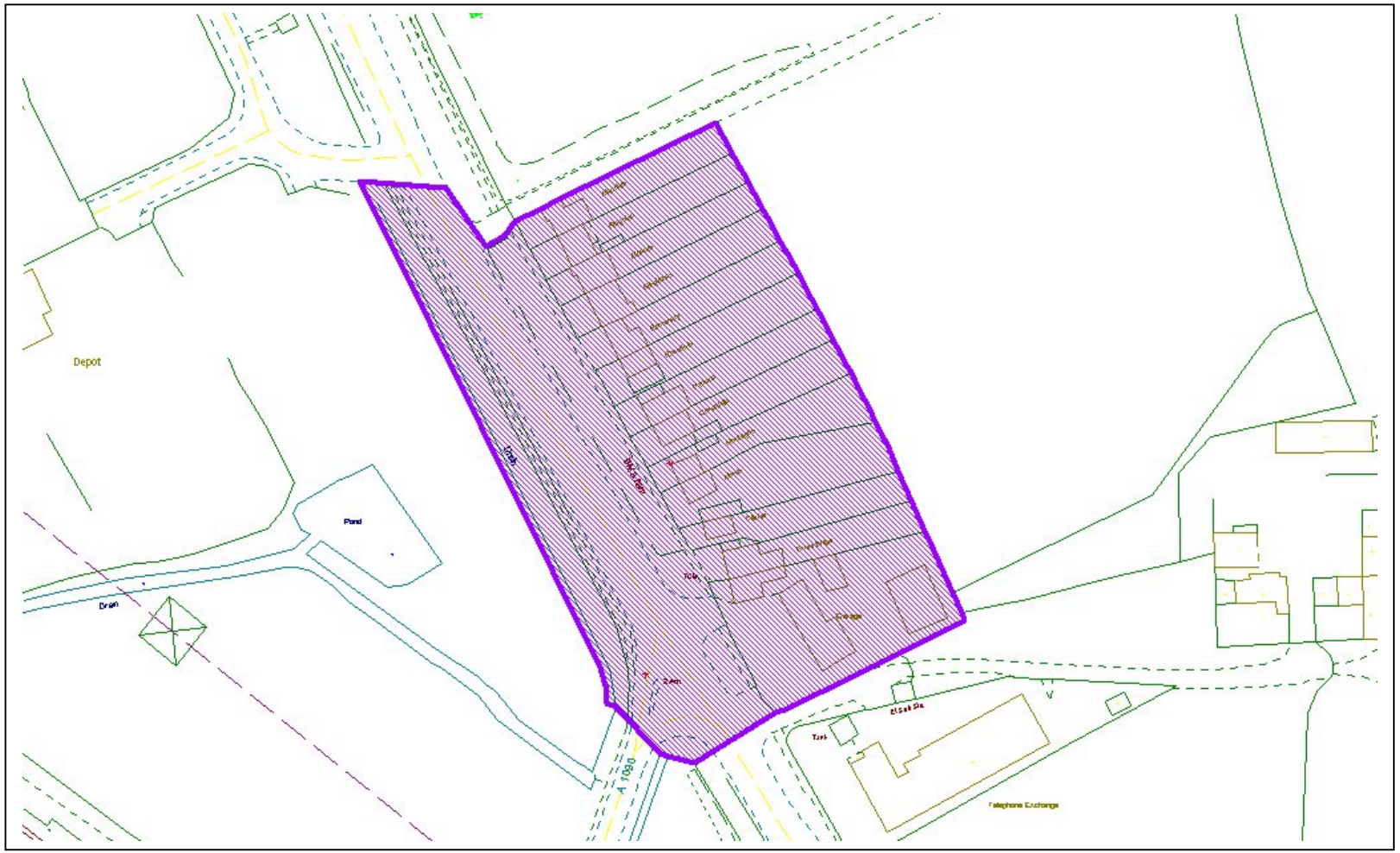
AQMA 10. London Road Purfleet



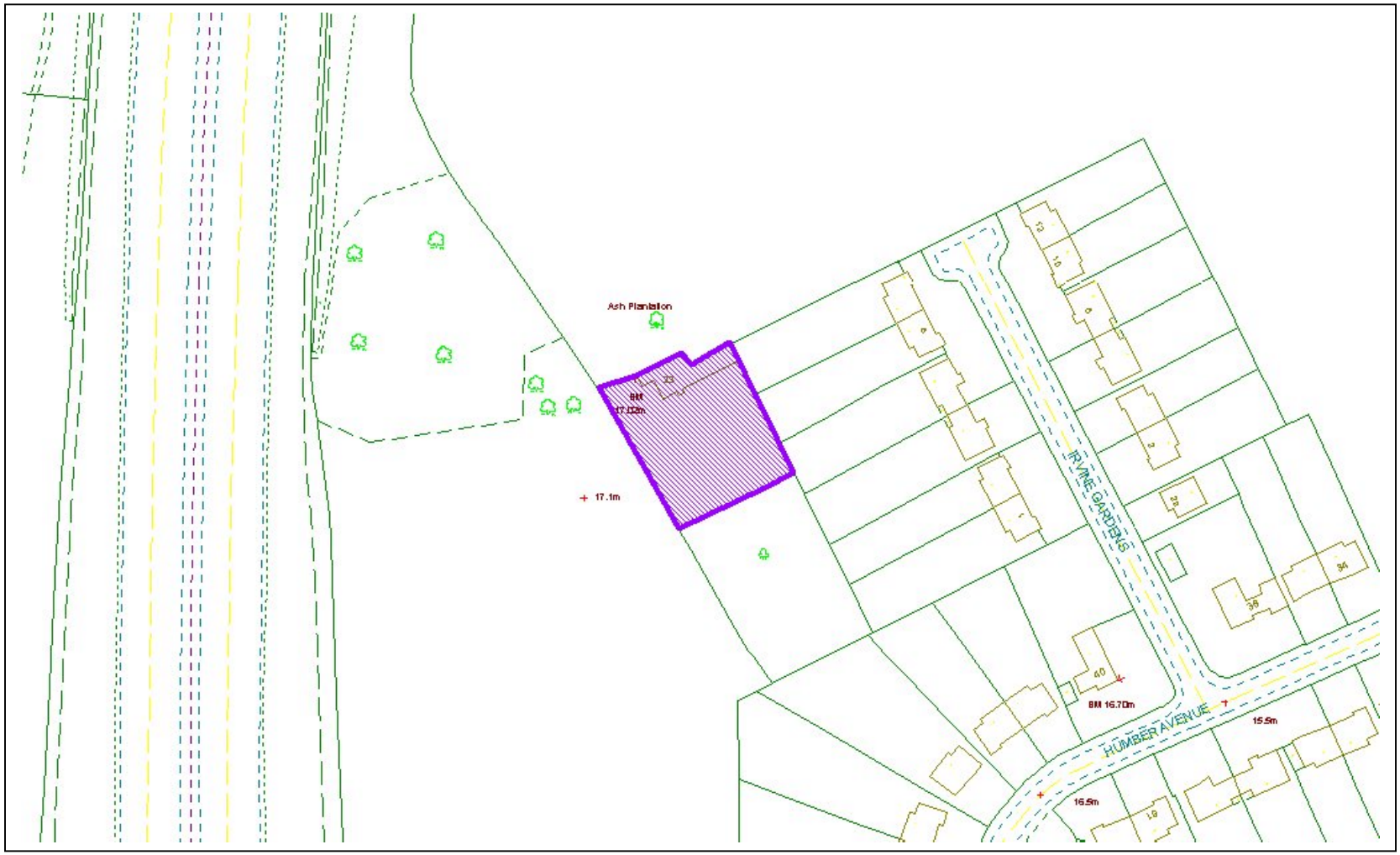
AQMA 12. A1306 London Road Uplands/ Watts Wood Purfleet



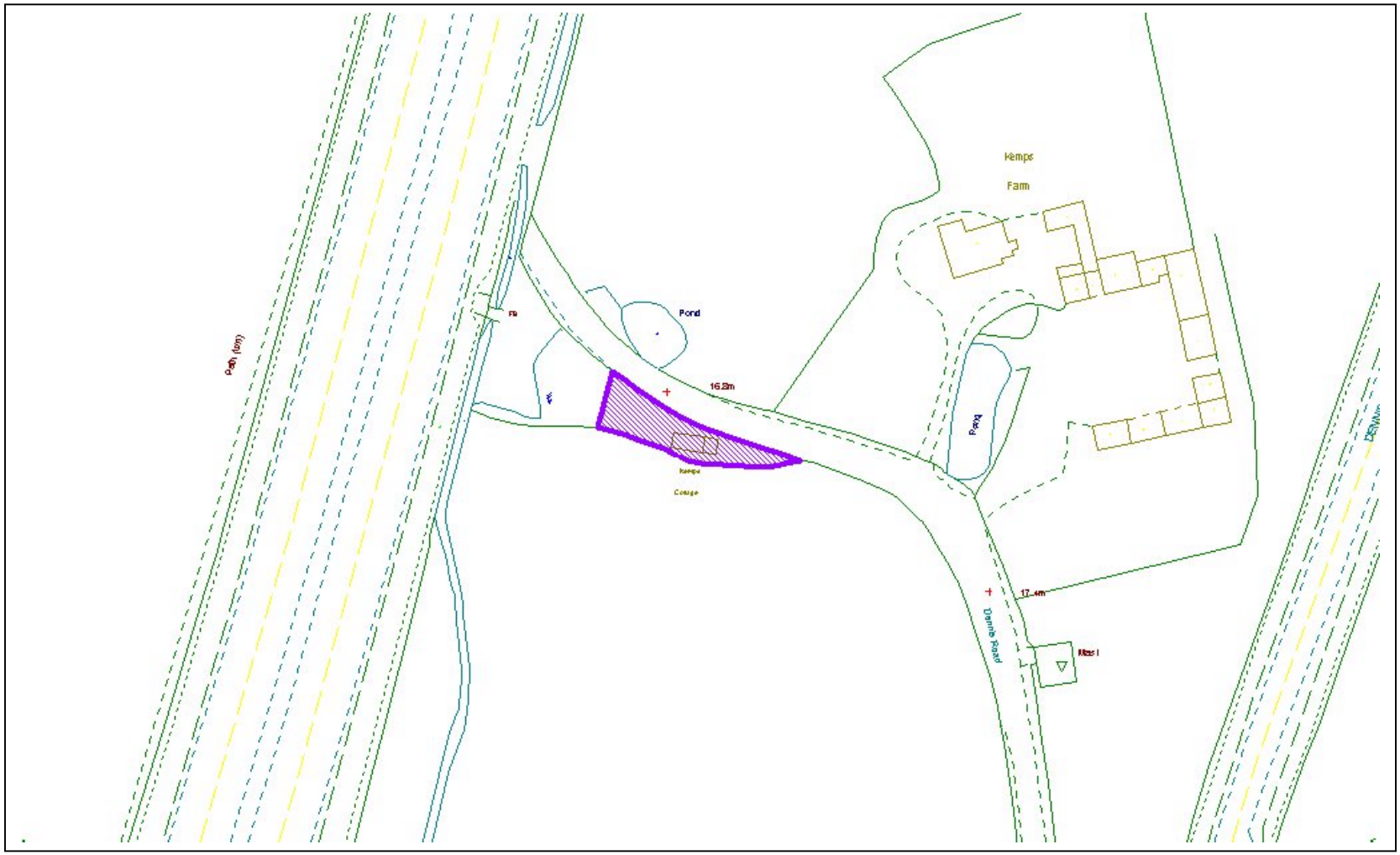
AQMA 13. A1306 London Road Aveley



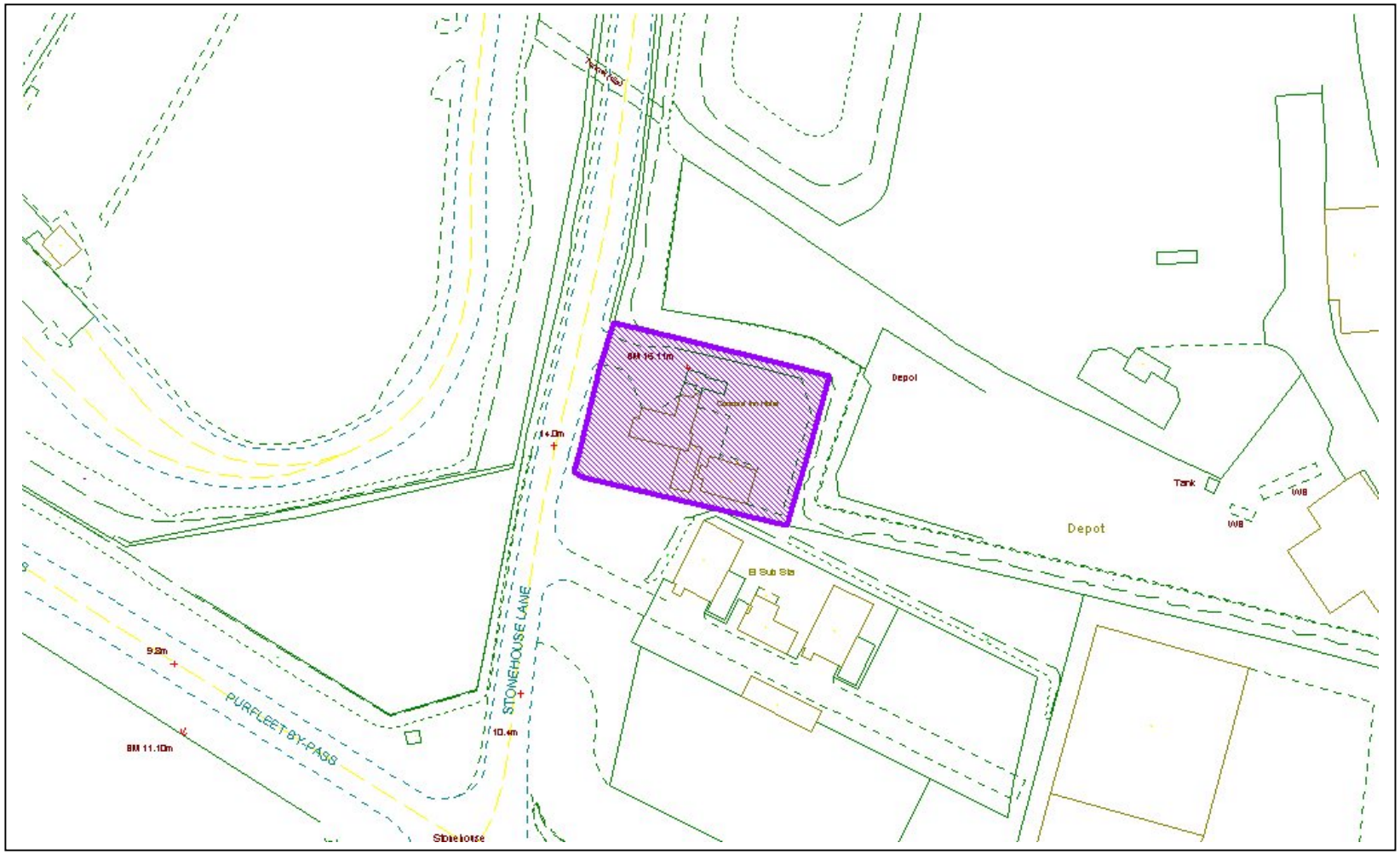
AQMA 15. Gatehope Drive, South Ockendon



AQMA 16. Kemps Farm Cottage, Dennis Road, South Ockendon



AQMA 21. Concord Inn Hotel



AQMA 23. London Road West Thurrock