

Central Oxford Low Emission Zone Traffic Regulation Condition

Guidance for bus operators

April 2014

This document provides additional guidance for bus operators affected by the Traffic Regulation Condition (TRC) to limit bus emissions in Oxford city centre. It should be read in conjunction with the TRC.

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1 Introduction

Oxfordshire County Council and Oxford City Council have agreed to create a low emission zone (LEZ) in Oxford city centre. Nitrogen dioxide levels in the city centre exceed EU and national limits and the LEZ is designed to tackle this.

[The LEZ currently affects buses, taxis and licensed private hire vehicles, but may affect other vehicles in future].

Bus emissions in the LEZ are limited by means of a Traffic Regulation Condition (TRC) requiring buses 1) to meet a certain emissions standard and 2) to switch off engines in certain circumstances.

A TRC is a condition introduced by the Traffic Commissioner which applies to registered local bus services in the area to which the TRC applies. The Transport Act 1985 gives the Traffic Commissioner powers to introduce a TRC for various reasons, including “to reduce or limit noise or air pollution”. Following a period of consultation, the TRC was brought into force by the Traffic Commissioner in February 2013

Should formal enforcement action be required, it will be carried out by the Traffic Commissioner. However, Oxford City Council, as Environmental Health Authority, will deal with matters relating to the emissions of each bus, including maintenance of a database of compliant vehicles, whilst Oxfordshire County Council, as local Transport Authority, will deal with day-to-day matters in relation to services operated. Operators of local bus services in Oxford city centre will therefore need to contact the local councils for most purposes related to this TRC. The guidance below describes this in detail.

2 Streets affected

The TRC applies throughout Oxford city centre (see map on back cover), including some streets not accessible to buses.

3 Bus emissions standard

The TRC requires local services operating in the streets affected after 1 January 2014 to meet the **Euro V standard for emissions of oxides of nitrogen (NOx)**. The standard is 2.0 grammes of NOx per kilowatt hour of engine power (2.0 g/kwh)

The Euro V standard became mandatory for new HGVs and buses/coaches in October 2009.

All buses with a '10' registration plate or later must have been first registered after October 2009. It will therefore be obvious from the registration plate that these buses are compliant. **If ALL of the buses which you intend to operate in central Oxford after 1 January 2014 have a '10' plate or later, you need take no further action to meet the emissions standard** (but must still switch off engines when stationary, see section 8 below). However, if you intend ever to use **any** other buses on Oxford services, please see sections 4 – 7 below.

4 Exemptions from emissions standard

The TRC exempts certain local services and certain vehicles **from the emissions standard only**. These are summarised in the table below. For full details please refer to the TRC.

Service/vehicle type	End date	Reason
Very low frequency services	Indefinite	These services have a minimal impact on air quality and compliance costs would be disproportionate to the benefits
Commercial services withdrawn after July 2013 and subsequently run with Oxfordshire County Council subsidy	Temporary – until 31 May 2014	To allow time for a compliant bus to be procured following any service withdrawals at short notice
Euro IV buses which were already operating regularly in the streets affected during the three months preceding the publication of the TRC for consultation	Temporary – until 1 January 2016	This exemption applies <u>ONLY</u> to buses which have <u>already</u> been registered as having been in use in the streets affected during the relevant period (NOT newly operated Euro IV buses).
Commercial services operated with an exempt Euro IV bus and withdrawn after July 2015 and subsequently run with Oxfordshire County Council subsidy	Temporary – until 4 June 2016	To allow time for a compliant bus to be procured following any service withdrawals at short notice

Further guidance on exemptions is in section 7.

5 Meeting the standard

Bus operators may meet the standard in two ways:

1. Use a bus with an engine that is type-approved as meeting the Euro V standard for all pollutants
2. Use an older bus that has been retrofitted with an exhaust treatment device that reduces emissions of NOx to a level comparable to Euro V.

Buses with a '10' registration plate or later must have been first registered after 1 October 2009, the date from which all newly registered buses had to meet the Euro V standard. Any bus with a 10 plate or later will therefore be deemed compliant. For these buses it will be obvious from the registration plate that the bus meets the standard, so no evidence of compliance will be required and there will be no need for the bus to be notified to the city or county councils or to appear on the database of compliant vehicles.

Buses with a '59' plate or earlier (or with a personalised plate) cannot be deemed compliant simply by reference to the registration plate. For these vehicles, Oxford City Council therefore keeps a database of compliant vehicles, which is published on its website.

There are several ways operators can prove to Oxford City Council that a vehicle meets the standard and have it included in the database of compliant vehicles. The amount of evidence needed depends on the vehicle's date of first registration, its engine standard, and whether or not an exhaust treatment device is being used. Table 2 sets out the evidence required.

For buses which do not have a 10 plate or later, and are already operating in the streets affected, evidence of compliance will need to be supplied before 1 January 2014.

For buses which do not have a 10 plate or later, which start operating in the streets affected for the first time after 1 January 2014, evidence of compliance will need to be supplied before the bus is first used.

Current vehicle engine standard and age	Compliance evidence required
<ul style="list-style-type: none">• Euro V or above• Displaying 10 plate or later	None – registration plate is sufficient – no need to notify Oxford City Council of this vehicle

Table 2 (continued)	
<ul style="list-style-type: none"> • Euro V or above • Displaying 59 plate or earlier, or personalised plate 	<p>Certificate from the supplier that the engine meets the Euro V standard, or</p> <p>(for buses first registered after 1 October 2009 only) evidence of date of first registration.</p>
<p>Euro I, II, III or IV</p>	<p>Certificate from the supplier or registration certification demonstrating what standard the original type-approved engine meets</p> <p>Confirmation from a reputable supplier that an exhaust treatment device has been properly fitted</p> <p>Test results demonstrating that, in this vehicle or an equivalent vehicle with an equivalent engine, the exhaust treatment device fitted has reduced NOx emissions sufficiently to achieve an emissions standard comparable to Euro V</p>

More information on retrofitting is in section 6.

6 Retrofitting

Operators with older buses in their fleet may wish to keep those vehicles in use with retrofitted exhaust treatment devices (“retrofits”) rather than replace them. Table 2 above lists the evidence required by Oxford City Council for a retrofitted bus to be considered compliant.

Operators wishing to use retrofits should contact retrofit equipment manufacturers and Oxford City Council at an early stage to discuss their plans. Contact details are in section 10.

The performance of retrofits varies according to the retrofit used and the engine to which it is fitted. The city council therefore needs evidence that a retrofit is

sufficiently effective with the particular engine with which it proposed to be used. Operators should note that retrofits may not physically fit in particular bus bodies. In some cases, it is not possible to fit a retrofit at all; in other cases the retrofit may need to be amended to fit, which could affect its performance.

The first step for operators wishing to use retrofits will therefore be to ask a retrofit manufacturer to survey the buses for which retrofits are proposed.

The city council's database of compliant vehicles will include details of any engine-retrofit combinations that have been submitted, meeting the required performance standard, and are considered to be compliant.

Retrofit performance

The performance of retrofits is normally measured as a percentage reduction of NOx achieved by the device. The absolute level of NOx produced at the exhaust pipe is very difficult to test in real world conditions. When certifying engine-retrofit combinations the city council will therefore be looking to see whether the device reduces NOx emissions from an engine of the type fitted to the bus by a sufficient percentage to achieve a standard comparable to Euro V in urban operating conditions.

Table 3 shows the percentage reductions required for engines to meet the Euro V standard. Please note that the city council will assume the original type-approved engine's emissions are at the level specified in the Euro standards. This is consistent with the treatment of type-approved Euro V buses, which will be accepted as compliant by virtue of their type-approval, without further testing or evidence.

Table 3 Retrofit performance needed to meet Euro V standard (2.0 g/kwh NOx)		
Current engine	Original NOx emissions (g/kwh)	% reduction required
Euro IV	3.5	43%
Euro III	5.0	60%
Euro II	7.0	71%
Euro I	8.0	75%

Retrofit certification

There is currently no national scheme for the certification of retrofits, so certification will be by Oxford City Council.

Operators wishing to use retrofits should contact the city council at an early stage to discuss certification.

The certification process will depend on whether the engine-retrofit combination proposed is identical to one that has already been tested and proven to comply, or is a new combination that has not previously been tested. Note that if a retrofit has to be modified significantly to fit a body, it could perform significantly differently from a previously tested retrofit with the same engine but a different body, and cannot be deemed proven.

Note that, whichever of the two processes below is applicable in respect of the testing of the engine-retrofit combination, it will always be necessary for operators to furnish (for each vehicle) a certificate from the supplier demonstrating what standard the original type-approved engine meets (or proof that it was first registered when that Euro standard was in force), plus confirmation from a reputable supplier that an exhaust treatment device has been properly fitted to that vehicle.

Proven engine-retrofit combinations

Engine-retrofit combinations already tested and proven (whether in Oxford or elsewhere) to perform sufficiently well to meet the Euro V standard in urban operating conditions may be used without further testing.

Operators will need to confirm with the city council that all the compliance evidence specified in Table 2 is in place and ask for the engine-retrofit combination proposed to be included in the database of compliant vehicles, if it is not included already. Where an engine-retrofit combination has already been approved, evidence of Euro standard of the original engine, plus evidence of satisfactory retrofit installation, will be required for each bus. The city council will confirm in writing that the proposed engine-retrofit combination has been certified as compliant.

New, untested vehicle-retrofit combinations

If an operator wishes to use a new engine-retrofit combination that has not previously been tested, the operator will need to arrange for suitable tests to be carried out, in urban operating conditions, to demonstrate compliance. Operators should discuss this at an early stage with the city council and potential retrofit suppliers. Operators must be able to demonstrate that the proposed retrofit device is capable of achieving the NO_x emissions reductions with a diesel engine, to the required levels as specified in table 5.

Buses must only be fitted and tested if the city council has confirmed in writing that there is a reasonable prospect of the retrofit achieving the required standard, and it is strongly recommended that only one vehicle of a particular specification is fitted and tested initially.

If the test vehicle does not meet the required standard, that **one vehicle** will be accepted as compliant, because it was fitted with a reasonable expectation that it would achieve the standard and because fitting costs have already been incurred. However **no further vehicles** of the same specification will be deemed compliant, so no further fitment of that device should be undertaken.

If the test vehicle meets the required standard, that engine-retrofit combination will be added to the city council's database of compliant combinations and certified in writing as compliant. Further vehicles of the same specification may then be fitted with the same device and can be certified using the process above for proven combinations.

National certification

If a national scheme for retrofit certification is established, the certification process adopted under the Central Oxford Low Emission Zone Traffic Regulation Condition (TRC) will be reviewed in light of this.

All engine-retrofit combinations previously certified by the city council will continue to be deemed compliant for the purposes of the Oxford TRC, following the introduction of a national retrofit scheme.

7 Exemptions – further guidance

Exemption 1a: Very low frequency services

It is the operators' responsibility to establish whether a low frequency service is exempt from the emissions standard. Oxfordshire County Council can give informal advice but operators must determine for themselves whether a service is exempt.

The TRC defines a very low frequency service as one which passes no point in the streets affected more than 25 times a week in any one direction. This will normally allow up to 25 inbound journeys, plus 25 outbound journeys, in a week.

Tourist services are not exempt, however infrequently they may run. A service will be considered to be a tourist service if the majority of users are travelling purely for tourism purposes, and/or if the service does not give free travel to holders of ENCTS passes (concessionary bus pass for older people) on the basis that it is a tourist service.

To qualify for exemption it must be a genuinely stand-alone service. In most cases this is likely to be self-evident – either the operator runs no other services into Oxford city centre, or those which are run follow routes which are clearly different.

However, there will be a few exceptions where more careful consideration may be needed. If, say, the operator runs another service which follows the same road in and out of the city, the mileage which is common to both routes will need

to be calculated to check that less than 50% of the operating mileage on the low frequency service is over the same roads as the other service. This definition is based on operating mileage; that is total weekly vehicle mileage on the low frequency service, not on route mileage. If it is a service on which all scheduled journeys cover the full length of the route this distinction will make no difference and the route mileage can be used. However, if some journeys cover only part of the route, the total vehicle mileage will need to be calculated.

So long as service frequency remains below the threshold (and no other service which substantially duplicates the service is introduced by the same operator), these services are exempt indefinitely from the emissions standard only (not the engine switch-off requirement) in the TRC.

Exemption 1c: Euro IV buses already operating in the streets affected

The closing date in the TRC for Euro IV buses to be notified for the purposes of this exemption was 19 February 2013. Any Euro IV vehicle which had not been notified by that date cannot be used on registered local services in the streets affected [unless the service qualifies for exemptions 1a, 1b or 1d]. Those buses which were notified by the due date are listed on the Oxford City Council website. They have been certified as exempt from the full Euro V requirement until 1 January 2016 only.

8 Engine switch-off

The engine switch-off condition applies to all local services operating in the streets affected, irrespective of frequency and engine type. **There are no exemptions.**

Drivers should switch off their engines whenever they pull up at the kerb in Oxford city centre for more than a few seconds. This applies at bus stops and bus stands (both timing points and other stops) and at any other place where a bus may wait. Any bus which stands, out of the traffic stream, for more than 60 seconds with its engine running is liable to be in breach of this condition.

However, it is recognised that passengers getting on (or, more rarely, getting off) may sometimes take longer than first expected, for reasons which are not within the drivers control. The TRC therefore identifies three circumstances in which the driver has no reasonable excuse for believing that he will be stopped for less than a minute, and all of which are measurable. These are:

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- if the stop is a timing point and the bus is not scheduled to leave until more than one minute after the time when it arrives;
- if there are more than 20 people already waiting at the stop when the bus comes to rest; or
- if there are no passengers boarding, alighting or interacting with the driver for 60 seconds or more, and the wait is therefore clearly not due to the unpredictability of passenger behaviour.

In monitoring compliance with this condition, enforcement officers will make records of these three circumstances, and if at least one of them applies and the bus is observed to stand for over 60 seconds with its engine running, the operator will be liable to enforcement action. Drivers will not of course be expected to exactly count waiting passengers, or to check the length of their wait to the second. For them, the message is:

'If there is any doubt at all, switch off'.

9 Enforcement

The county council's traffic enforcement cameras continuously monitor traffic movements into and out of the city centre. County and city council officers and others regularly observe bus movements in the city centre.

If a breach of one of the conditions is suspected, the county council, in liaison with city council officers, will initially contact the operator to discuss it.

If the suspected breach persists, the county council may refer the matter to the Traffic Commissioner. Evidence from traffic cameras and/or on-street observations may be supplied to the Traffic Commissioner.

10 Contacts

Oxford City Council

For advice on compliance certification, retrofits or other technical aspects of the scheme, contact the city council:

Roger Pitman
Environmental Development
Oxford City Council
St Aldate's Chambers
109 St Aldate's
Oxford OX1 1DS

01865 252380
rpitman@oxford.gov.uk

Oxfordshire County Council

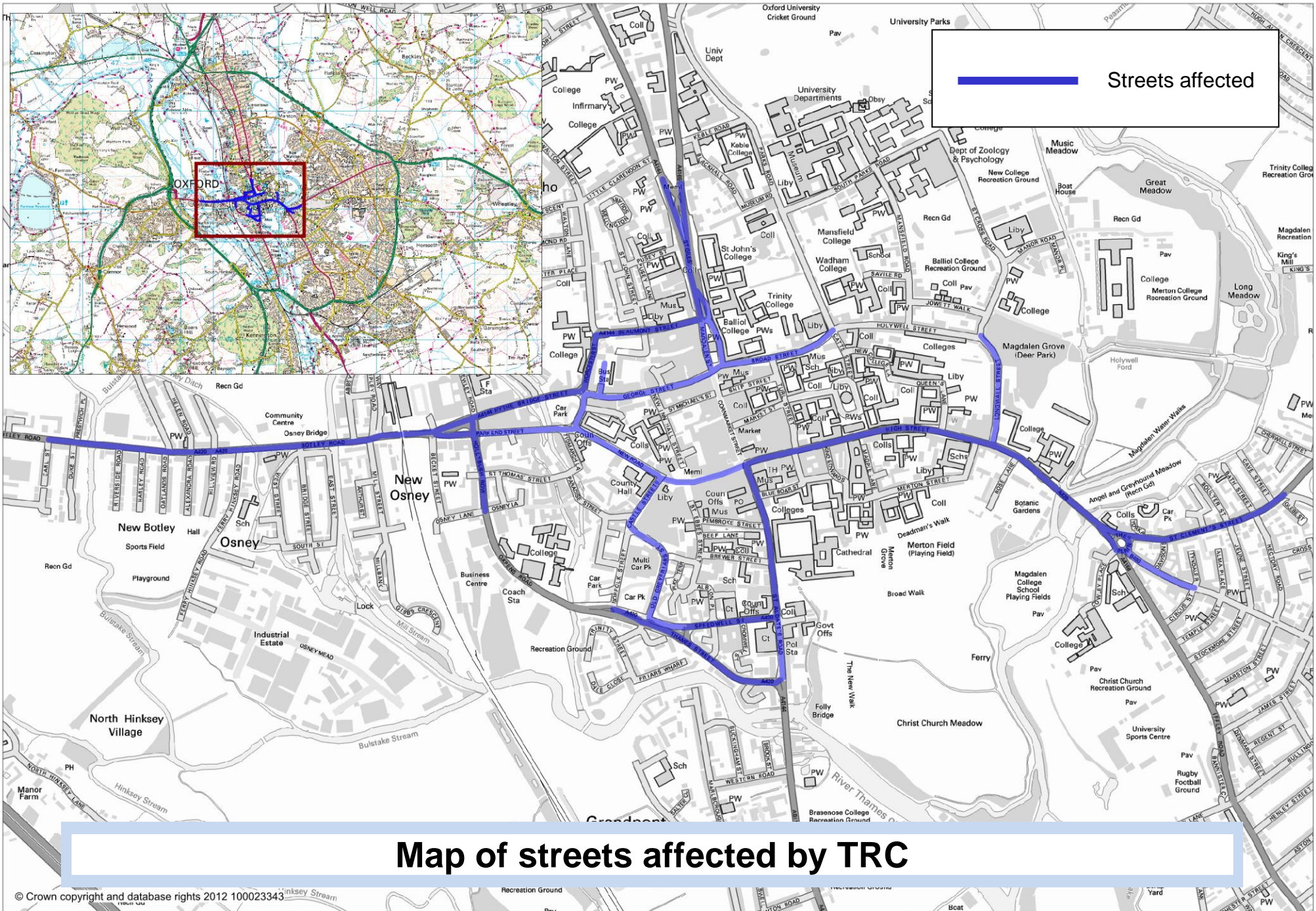
For advice on enforcement, exemptions or the engine switch-off condition, contact the county council:

Martin Kraftl
Senior Transport Planner
Highways & Transport
Oxfordshire County Council
Speedwell House
Speedwell Street
Oxford
OX1 1NE

01865 815786
martin.kraftl@oxfordshire.gov.uk

Exhaust treatment device manufacturers known to produce retrofit devices for buses

Supplier	Contact details	Web Address
Baumot UK Ltd	<p>Alan Barnard Baumot UK Ltd Tel: 01600 892694 Mob: 07879 867766 E mail: alankarnard@baumot.co.uk</p>	http://www.baumot.co.uk
Clean Diesel Technologies	<p>Dan Skelton Clean Diesel Technologies Ltd Direct: 01342 894402 Mobile: 07917 276005 Email : dskelton@cdti.com</p> <p>Local supplier: Marcus Randell Depot Manager APR Engineering Ltd (Soulbury) Unit 1, Chartmoor Road Leighton Buzzard LU7 4WG</p> <p>Tel: 01525 218940 Email: marcus@apengineering.com</p>	http://www.cdti.com
Dinex	<p>Dinex Exhausts Ltd. UK 14 Cheshire Grange, Woolston, Cheshire WA1 4 RE Warrington</p> <p>Tel: 01925 849849 Email : rva@dinex.co.uk</p>	www.dinex.dk/en/contact
Eminox	<p>Kathye-Ann Henderson Marketing Manager Eminox Limited North Warren Road, Gainsborough, Lincolnshire. DN21 2TU</p> <p>Tel: 01427 816816 Mob: 07909 870366 Email: kathye.henderson@eminox.com</p>	http://www.eminox.com
HJS Emission Technology	<p>Mark Cooper HJS UK Sales Engineer Emission Engineering Limited Summit House London Road Bracknell RG12 2AQ</p> <p>Tel: 01344 707335 Email: mark.cooper@hjs.com</p> <p>Local supplier: Wayne Bint Total Emission Control Solutions Ltd 268 Bath Road Slough Berkshire SL1 4DX</p> <p>Email: wayne.bint@tecsystems.co.uk Tel: 01753 303827</p>	<p>www.hjs.com</p> <p>www.tecsystems.co.uk</p>



Map of streets affected by TRC