HERTFORDSHIRE COUNTY COUNCIL
ENVIRONMENT SCRUTINY COMMITTEE

TUESDAY 21 OCTOBER 2003 AT 10.00 A.M.

Agenda Item No:

5

NOISE LEVELS ON OUR TRUNK ROADS

Report of the Director of Environment

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1. Purpose of Report

This report arises from a motion to County Council regarding concern about increased road noise on trunk roads especially A1(M) and the Highways Agency (HA) apparent lack of progress in resolving.

2. Summary

2.1 The report provides details of the HA's policy regarding the use of low noise surfacing and acoustic barriers and the dates from which these policies came into force. It sets out the assessment criteria for the 79 sites included within the list of sites referred to as the 'Hansard' list published in 1999.

2.2 The progress made in mitigating road noise levels nationally and in Hertfordshire is explained from information supplied by the HA.

2.3 The report sets out the limited assistance received from the HA in supplying information which consequently has restricted the currency and extent of information upon which an analysis can be made

3. Conclusion

3.1 The information at the time of compiling this report was insufficient to draw any conclusions.

3.2 The report concludes that although progress has been made by the HA in the reduction in noise attributed to traffic on trunk roads nationally that progress is not reflected in Hertfordshire. The sections of the trunk and motorway network in Hertfordshire, particularly the A1(M), did not meet the criteria laid down in 1999 with one exception.

3.3 At present the only high priority site in Hertfordshire with works proposed is on the M1 at Jct 5 to 6. Works are programmed to commence within the financial year 2003/04.

3.4 Works are to be undertaken in Hertfordshire as part of general maintenance activities. Re surfacing, when undertaken will often result in the introduction of low noise surfacing. However no specific details are known regarding locations and effects.

3.5 The Scrutiny Committee is invited to consider the information provided in this report and take a view regarding the conclusions reached.

Further scrutiny could be undertaken by :-

i) The Director of Environment could write to the HA on behalf of the Committee to seek a fuller disclosure of information.

ii) Asking the HA to attend a subsequent meeting, to explain priority sites and the apparent lack of progress in Hertfordshire;

4. Background and Policy

4.1 This report arises from a motion to full council by C J White requesting that:-

'This Council remains concerned about the increasing noise levels on our trunk roads, especially the A1(M) and the lack of progress in introducing noise reduction measures such as special low noise surfaces and screening and accordingly resolves

- To express concern to Highways Agency
- To urge the Cabinet to give high priority to campaigning for road noise reduction.'

The County Council in considering the motion referred the matter to Environment Scrutiny Committee for consideration.

4.2 In March 1999 Lord Whitty the then Transport Minister announced that some of the UK's noisiest pre 1988 trunk roads were set to become quieter as a result of noise mitigation measures. These measures were to be applied to certain trunk roads opened before June 1988 where noise levels were far greater than previously predicted.

4.3 Noise mitigation measures were not required on roads built before 1969 and measures introduced on roads opened between 1969 and 1988 were often based on underestimated noise levels due to changes in the approach employed in the assessment of traffic noise.

4.4 To help identify the most serious and pressing cases a series of criteria were established to be used in an initial prioritisation process. These criteria have become known as the Hansard criteria. Where a case satisfied these criteria a further study was to be undertaken to determine if practical and cost effective noise mitigation measures could be introduced. An annual ring fenced budget of £5m has been allocated to deal with the most serious of the trunk road sites.

4.5 Broadly the criteria for noise mitigation measures in 1999 were:

- Trunk roads for consideration must have been opened before June 1988, but priority for attention is to be given to locations that have remained unaltered since 1969 (the qualifying date for the first noise mitigation measures)

- Current (i.e. 1998) noise levels immediately adjacent to the road to be at least 80 dB(A)

- For roads opened or altered after October 1969, the current (i.e. 1998) noise levels must be at least 3dB(A) greater than that predicted for the design year.

Details of assessment process are shown in Appendix 1 and the more detailed investigation process undertaken on sites meeting these criteria is included in Appendix 2.

The HA also operate a forward long term maintenance programme of major maintenance. Works are identified on a technical, condition driven, basis. The nature of work to be carried out will take into consideration the impact of surface treatment on noise levels.

4.6 Sections of concrete road are recognised as being 'louder' than bituminous sections. Prioritisation criteria exist for the resurfacing of concrete motorways and trunk roads and broadly these are as follows:

- Minimising whole life costs, i.e. providing the right treatment at the right time with minimum disruption, and achieving value for money; where ever possible programme works to fit in with maintenance needs.

- Dealing with the noisiest sites that affect the most people. Improve the situation for the maximum number of people who are closest to trunk roads in the earliest part of the programme.

- Minimising disruption to the public and network users by combining works with other planned works and to use construction, procurement and traffic management methods that will speed up work.

- Giving priority to roads opened since June 1988 and are shown to be noisier than predicted at the time of Public Inquiry.

5. Progress

Hansard list delivery

5.1 All the UK Motorway and trunk road network has been subject to assessment and initial sifting. Of these 79 have been chosen for further assessment.

Of these 79 sites, known as the 'Hansard' list, there is only one location in Hertfordshire. Site 33 M1 J5-6 Watford, Herts is programmed for noise mitigation works. Following review at this site, undertaken by the Building Research Establishment, the site has been given a priority rating of 1 (highest) with works programmed for completion in 2004/2005

An assessment of progress to date in addressing the Hansard list sites has been requested from the HA. Whilst a list has been received no clarification as to status and relationship to the original list has been provided. The latest Hansard progress statement provided was current as at April 2002. This is included at Appendix 3.

5.2 Monitoring is undertaken on an annual basis and new sites if selected can be added to the Hansard list as appropriate. In terms of priority new sites will always be set at a priority level below the original 79 sites. This ensures delivery of the majority of the original Hansard list prior to commencing mitigation measures at new sites. The HA have been unable to provide a position statement indicating the additional sites and whether any are in Hertfordshire.

6. Forward Maintenance programme

Details of Forward Maintenance Programmes have also been requested from the HA. An indicative programme has been obtained for the sections of motorways and trunk roads managed by HA Area 5 which includes the M25 and routes in it's vicinity. However no information has been made available from HA Area 6 which is responsible for the M1, A1(M), M11 and A5.

The information made available to date is shown at Appendix 4.

7. Financial Implications

7.1 In respect of undertaking noise mitigation measures there are no financial implications for the County Council. The Highways Agency manage the motorway and trunk road network. The financial burden of delivering mitigation measures on sites listed on the 'Hansard' list and for maintenance activities are funded by the HA and undertaken by their agents.

7.2 Not all necessary information has been provided by the HA. Any further technical investigation into this matter by the County Council will have a financial implication.

i) Undertaking further investigation into policy, progress and programme with regard to noise mitigation on the 'Hansard' sites would require additional time and resource allocation.

ii) Undertaking further noise analysis and further investigation at known 'loud' spots in order to compare results to the HA's own criteria would also have additional financial implications.

8. Rural Implications

8.1 The motorway and trunk road network in Hertfordshire runs through both rural and urban areas, any reduction in noise levels on the network would have a direct benefit to those areas.

9. Conclusions

9.1 The information provided by the HA at the time of compiling this report was insufficient to draw any final conclusions.

9.2 From the information provided it would appear that progress is being made nationally to reduce the impact of noise on trunk roads and motorways. However, the same cannot be said for progress in Hertfordshire. There is only one site on the Hansard list and this is due to be addressed during the financial year 2003/04. It is not possible to identify the extent of improvement that may be made as a result of other maintenance programmes but it is likely that some will be achieved.

9.3 At present the only high priority site in Hertfordshire with works proposed is on the M1 at Jct 5 to 6. Works are programmed to commence within the financial year 2003/04.

9.4 Works are to be undertaken in Hertfordshire as part of general maintenance activities. Re surfacing, when undertaken will often result in the introduction of low noise surfacing. However no specific details are known regarding locations and effects.

9.5 The Scrutiny Committee is invited to consider the information provided in this report and take a view regarding the conclusions reached.

Further scrutiny could be undertaken by :-

iii) The Director of Environment could write to the HA on behalf of the Committee to seek a fuller disclosure of information.

iv) Asking the HA to attend a subsequent meeting, to explain priority sites and the apparent lack of progress in Hertfordshire;

10. Supplementary Information

Appendix 1 Sift Criteria
Appendix 2 Detailed Noise Studies
Appendix 3 Hansard List
Appendix 4 Forward Maintenance Programme

Sift Criteria

Methodology for assessment against the sift criteria

The following method sets out the steps needed to assess whether a location brought forward as a result of the new policy meets the criteria for more detailed assessment. Only if all three criteria are met, will the case pass forward for more detailed study.

Step 1 – operative date

Was the road in the vicinity opened or altered before June 1988?

If yes, go forward to next step; if no, criteria not met.

Step 2 – roadside noise level

Is the roadside noise level calculated from the formula below greater than or equal to 80dB(A)?

If yes, go forward to the next step; if no, criteria not met.

Roadside noise level (4 metres from the edge of the running carriageway**)** is to be calculated from 1998 traffic data (AADT and H, the percentage of heavy vehicles) using the formula:

$$\text{Roadside noise level} = 10.\log_{10}\left[\text{AADT}.\left(1+\frac{5.\text{H}}{\text{V}}\right)\right]+\text{C}+\text{S}$$

This formula is based on “Calculation of Road Traffic Noise” in which the constant C represents the part of the calculation not dependent on traffic flow. It corrects the CRTN basic noise level for the increase attributable to the closer point of reception. C varies slightly with speed (V) and appropriate values for different classes of road are given below (together with percentage of heavy vehicles, H^* for use in step 3).

National Average values of basic parameters

Class	***V: km/hr***	***C: dB(A)***	***H* %***
Motorway	108	34.7	14
Dual All-Purpose Trunk Road	97	33.7	11
Single All-Purpose Trunk Road	88	32.8	9
All-Purpose Trunk Road with speed limit	80	32.0	8

Surface correction S

Surface	**S: dB(A)**
Hot Rolled Asphalt	0
Brushed Concrete	+1
Surface Dressing	+1.5
Thin Surface	-2.5

Step 3 – age or exceedence of noise above the predicted level

a) Has the road been physically altered since October 1969 (i.e. ever been assessed under the Land Compensation Act)?
If no, the case goes forward for detailed study.

b) If yes, does the calculated noise level exceed the design year prediction by 3dB(A)or more?

If yes, the case goes forward for detailed study, otherwise criteria not met.

The noise exceedence is to be calculated from the formula:

Current noise level – predicted noise level = N+S+G+L

Where the four parameters on the right hand side are:

1. N: the basic value of the difference between predicted level of noise for the design year and current noise levels for a given opening year. This can be read from Table 1, which tabulates values predicted from the average growth for motorways and trunk roads.

2. S: the surface correction as in step 2.

3. G: a correction for an underestimate of heavy vehicles. Assuming that the predicted flow of HGVs was based on average conditions for that class of road,

   G can be estimated from the formula:

$$G = 10.\log_{10}\left[\frac{V + 5.H}{V + 5.H^{*}}\right]$$

   where V the speed and H^{*} for the appropriate class of road are given in the data table for step 1. (If better information is available about the flow of HGVs originally expected, this may be substituted for H^{*} in the above.)

4. L: a correction for traffic growth deviating from the national average.
   This correction can be estimated from the cumulative sum of any differences between local and national average percentage growth year on year. The annual contribution will be negative for years in which local growth is less than the national average. Average annual growth for the years 1969-1998 consistent with the values of N in Table 1 for motorways and all purpose trunk roads are given in Table 2. L is can be estimated from the formula:

   L = 0.04 (sum of differences in annual growth rates)

TABLE 1

Opening **Year**	**Difference between predicted noise and estimate for 1998**	
	Motorway	**APTR**
1969	3.0	2.4
1970	2.9	2.1
1971	2.7	1.9
1972	2.7	2.0
1973	2.7	2.3
1974	2.3	2.2
1975	2.5	2.5
1976	2.5	2.4
1977	2.5	2.3
1978	2.5	2.1
1979	2.7	2.2
1980	2.8	2.1
1981	3.0	2.1
1982	3.0	1.9
1983	2.9	1.6
1984	2.6	1.5
1985	2.4	1.5
1986	2.3	1.3
1987	1.6	1.1
1988	1.2	0.9

TABLE 2

Year	**Annual growth percent**	
	Motorway	**APTR**
1969	6	6
1970	4	4
1971	5	5
1972	4	4
1973	5	5
1974	3	-5
1975	-1	-3
1976	1	4
1977	3	7
1978	1	4
1979	-2	-1
1980	2	4
1981	-4	4
1982	1	5
1983	4	6
1984	9	5
1985	7	2
1986	8	6
1987	12	6
1988	12	5
1989	8	9
1990	2	1
1991	-2	3
1992	0	-1
1993	4	1
1994	4	3
1995	6	1
1996	3	1
1997	4	3
1998	4	3

Examples

Example 1 : motorway with brushed concrete surface which opened in 1973, now carrying AADT 60,000 with 15% HGVs;

Criterion 1: pre 1988 – go to step 2

Criterion 2: C = 34.7, S = 1, V = 108, H = 14, AADT = 60,000
Therefore roadside noise level = 10.log(60000(1+70/108)) + 34.7 + 1 = 85.7 dB(A)

Go to step 3

Criterion 3: post 1969 – check exceedence:

1. N (from Table 1) = 2.7
2. S = +1
3. G = 0
4. Assume L = 0

The noise exceedence is greater than 3 dB and the case goes forward for further study.

Example 2 : motorway surfaced with HRA which opened in 1979, now carrying AADT 80,000 with 20% HGVs;

Criterion 1: pre 1988 – go to step 2

Criterion 2: C = 34.7, S = 0, V = 108, H = 20, AADT = 80,000
Therefore roadside noise level = 10.log(80000(1+100/108)) + 34.7 = 86.6 dB(A)

Go to step 3

Criterion 3: post 1969 – check exceedence:

1. N (from Table 1) = 2.7
2. S = 0
3. G = 10.log((108+100)/(108+70)) = 0.7
4. Assume L = 0

The noise exceedence is greater than 3 dB and so the case goes forward for further study.

Example 3 : all purpose dual carriageway surfaced with HRA which opened in 1978, now carrying AADT 50,000 with 13% HGVs; traffic increased by 25% in the period 1990-95.

Criterion 1: pre 1988 – go to step 2

Criterion 2: C = 33.7, S = 0, V = 97, H = 13, AADT = 50,000

Roadside noise level = 10.log(50000(1+65/97)) + 33.7 = 82.9 dB(A)
Go to step 3

Criterion 3: post 1969 – check exceedence:

1. N (from Table 1) = 2.1
2. S = 0
3. G = 10.log((97+65)/(97+55)) = 0.3

4. Average increase of traffic on trunk roads between 1990 and 1995 using annual figures from Table 2 was
   100.(1.01)(1.03)(0.99)(1.01)(1.03)(1.01) – 100 = 8.2%
   L = 0.04.(25-8) = 0.67

The noise exceedence is greater than 3 dB and the case goes forward for further study.

Example 4 : all purpose dual carriageway surfaced with HRA which opened in 1978, now carrying AADT 50,000 with 13% HGVs; traffic increased by 25% in the period 1985-90.

Criterion 1: pre 1988 – go to step 2

Criterion 2: C = 33.7, S = 0, V = 97, H = 13, AADT = 50,000

Roadside noise level = 10.log(50000(1+65/97)) + 33.7 = 82.9 dB(A)
- go to step 3

Criterion 3: post 1969, therefore check exceedence:

1. N (from Table 1) = 2.1
2. S = 0
3. G = 10.log((97+65)/(97+55)) = 0.3

4. Average increase of traffic on trunk roads between 1990 and 1995 using annual figures from Table 2 was
   100.(1.02)(1.06)(1.06)(1.05)(1.09)(1.01) – 100 = 32%
   L = 0.04.(25-32) = - 0.28

The noise exceedence is less than 3 dB and so the case fails the criterion.

Detailed Noise Assessment

Noise Problems on Existing Roads – Detailed Studies

As indicated in CHE Memorandum 72/99, cases which meet the sift criteria need to be carried forward for detailed studies of the actual impact of noise on adjacent residential properties to determine whether noise mitigation measures are justified and whether cost-effective action can be taken within the existing highway boundaries. This note sets out the requirements for undertaking the detailed studies. The procedure is similar to a noise assessment for an improvement scheme and should be progressed in stages as follows:

Stage 1 – locate and determine how many properties are potentially affected by the section of road identified by the sift. This can be done as a desk study from 1:2500 or 1:1250 scale plans. Only properties likely to be exposed to noise levels in excess of 68 dB(A) (18 hour L10) should be considered. The noise exposure can be estimated for the facade of properties facing the road as a rough guide (assuming no intervening obstacles) by reducing the roadside noise level arising from the sift criteria in accordance with distance as follows: attenuation (dB) = 10*log((distance + 3.5)/7.5) where distance is measured from the near edge of the running carriageway.

If the front line properties form a reasonably effective barrier, properties behind should only be considered if the front line exposure exceeds 75 dB(A).

Stage 2 – investigate the presence of any intervening features between the road and properties which already mitigate the effect of noise. This is likely to involve a site visit and a rough topographic survey to confirm angle of view, degree of screening as well as distance and ground cover.

Stage 3 – refine estimate of noise levels at the façade of typical properties, taking into consideration the distance from the road, angle of view and screening using CRTN methodology (end properties of each block or 10% sample should suffice).

Stage 4 – rank severity of problem in terms of nuisance as indicated in attached methodology part A.

Stage 5 – using the estimated change in nuisance following the attached methodology part B, rank the potential benefit of different levels of action which could reduce noise levels by varying degrees, for example:

a) sufficient to reduce exposures by the noise exceedence assessed under sift criterion 3;

b) a significant reduction (at least 2 dB) at the worst affected properties;

c) sufficient to ensure no property exposed to more than 75 dB(A).

d) ditto - 72 dB(A)

e) ditto - 68 dB(A)

Stage 6 – estimate the costs of mitigation measures which would achieve a reasonable degree of benefit from the above options. These may be compared with the notional cost of insulating affected properties (although this option is not available).

Note that all measures must be achievable within the highway. But there may be scope for accepting dedicated land in order to facilitate a barrier solution where there is a constraint within the existing verge width.

Methodology for assessing nuisance

A: Severity of noise problem.

Calculate the number of complaints which might be expected from the combination of number of properties and their exposure to noise, based on the relationship given on page 3/ 4 of DMRB Volume 11/3/7. The formula for the proportion of people P_X very much bothered by a noise level of X ($L_{A10,18hr}$) is :

$$P_X = \frac{1}{(1 + e^{-z})}$$

where z = 0.12*X – 9.08

The potential number of complaints can therefore be associated with the product of the number of properties in each noise exposure category and the proportion of people bothered at that level.

The severity of a problem S (in terms of intensity) may be assessed as the frequency of complaints expected per kilometre. Thus, for a frontage length** of L, where there are N_X properties exposed to any particular noise level X,

$$S = \text{sum}(P_X * N_X)/L$$

B: Expected reduction in nuisance provided by a given reduction in traffic noise

The immediate benefit of a noise reduction is underestimated by simply taking the difference between the severity before and after mitigation measures have been provided. It is appropriate to take account of the relationship given on page 3/ 6 of DMRB Volume 11/3/7. Provided there is a detectable reduction in noise (i.e. more than about 2 dB) the change C_Y in the proportion of people very much bothered by noise after a change in noise level of Y dB is approximately

$$C_Y = 0.2 + 0.025*Y$$

This implies that the law of diminishing returns is particularly the case for the perceived benefit of noise mitigation. After a 2 dB change in noise, about 25% fewer people are likely to complain than before. But the reduction in the percentage of potential complainers is only increased to 35% if the noise reduction 6 dB.

**frontage length has caused a little confusion, where using the actual frontage of a single property causes the rating to become unreasonably high. This difficulty arises for example when a line of properties is perpendicular to the trunk road. It is therefore appropriate for consistency to define the frontage length as the distance along the highway boundary which would need to be notionally screened to ensure the noise level at the adjacent properties does not exceed 68 dB(A).

Hansard List

Mitigation measures to treat some of the most serious and pressing cases of traffic noise on existing trunk roads, as identified by a list published on 11 November 1999 in the Official Report, Col 681-683.

1	A1 Wideopen, Tyne and Wear	
2	A1 Long Bennington, Lincolnshire	Programmed for treatment in 2002/2003
3	A1 Tuxford, Lincolnshire	Treated Prior to March 2002
4	A1 Walshford, North of Wetherby	
5	A1 (M) Doncaster BP Wadworth- Warmsworth	
6	A3 Ripley, Surrey	
7	A3 Hook Underpass, LB Kingston	
8	A3 Malden Underpass / Malden Way	Treated prior to March 2002
9	A3 Tolworth Underpass / Tolworth Rise	Treated prior to March 2002
10	A3 (M) Horndean / A3 Clanfield, Hampshire	
11	A4 Great West Road, Chiswick	
12	A12 Boreham Bypass, Essex	Treated Prior to March 2002
13	A12 Ingastone	
14	A12 Stanway Bypass, Essex	Treated Prior to March 2002
15	A14 Exning	
16	A14 Bury St Edmonds	
17	A14 Huntingdon Bypass, Northamptonshire	
18	A19 Billingham BP, Cleveland	Treated Prior to March 2002
19	A19 Castle Eden, Durham	Treated Prior to March 2002
20	A27 Portsbridge, Hampshire	
21	A31 Ringwood, Hampshire	
22	A34 Kingsworthy Link, Hampshire	
23	A34 Hinkseys / Botley, Oxford	Treated Prior to March 2002
24	A40 Whitchurch, Hereford and Worcester	
25	A46 Sherbourne, Warwickshire	
26	A46 Kenilworth Bp, Warwick	Treated Prior to March 2002
27	A52 Clifton, Nottinghamshire	Some treatment carried out by March 2002. Further treatment being considered.
28	A52 Spondon	Treated Prior to March 2002
29	A404 Marlow Bypass, Berkshire	
30	A404 (M) Maidenhead, Berkshire	Treated Prior to March 2002
31	A406 South Woodford (Waterworks –M11)	
32	A627 (M) Chadderton	
33	M1 J5-6 Watford, Hertfordshire	Programmed for treatment in 2002/2003
34	M1 J10-11 Luton, Bedfordshire	Treatment started in 2002/2003 and will complete in 2003/2004
35	M1 J11-12 Luton	
36	M1 near J25	Programmed for treatment in 2002/2003
37	M1 near J28	Programmed for treatment in 2003/2004
38	M1 J33-34 Brinsworth (Rotherham)	Treated Prior to March 2002
39	M1 J33-34 Tinsley (Rotherham)	Treated Prior to March 2002
40	M3 J4-4A Farnborough Street / Hawley	Treatment started in earlier years and will be completed in 2002/2003
41	M3 Basingstoke	Treatment started in earlier years and will be completed in 2002/2003
42	M3 Basingstoke	
43	M3 Camberley, Berkshire	

44	M3 Dummer, Hampshire	
45	M3 Winchester	
46	M4 J5-6 Dachet, Brands Hill	Treatment started in earlier years and will be completed in 2002/2003
47	M4 Chalvey, Lake End	
48	M4 J7-8/9 Holyport/ Bray, Dorney Reach	Treatment started in earlier years and will be completed in 2002/2003
49	M5 Upton St Leonards, near Gloucester	Programmed for treatment in 2002/2003
50	M6 J8-9	Treated Prior to March 2002
51	M6 J18 Holmes Chapel	Treated Prior to March 2002
52	M6 J26-27 Orrell	Treated Prior to March 2002
53	M6 J33-34 Lancaster	Treated Prior to March 2002
54	M6 J34-35 Carnforth	
55	M6 South of J42	
56	M6 Ash Green, Warwickshire	Programmed for treatment in 2002/2003
57	M6 Lune Bridge, Lancashire	Treated Prior to March 2002
58	M20 J2-3 Wrotham, Kent	
59	M20 J4-5 Ditton, Kent	Treated Prior to March 2002
60	M20 J10-11 Ashford, Kent	Treated Prior to March 2002
61	M25 West of J5, Westerham, Kent	Treated Prior to March 2002
62	M25 Clacket Lane, Kent	Treated Prior to March 2002
63	M25 Godstone, Surrey	
64	M25 Oxsted, Surrey	
65	M27 J1-2 Copythorne	
66	M27 J3 Nursling	
67	M27 J3-4 Rownhams	
68	M27 J4 Chilworth	
69	M27 J5-7 Swathling / West End	
70	M42 J1 Lickey End	Treated Prior to March 2002
71	M50 Bromsberrow Heath, Hereford and Worcester	Programmed for treatment in 2003/2004
72	M53 J4-5 Wirrall	Treated Prior to March 2002
73	M56 J11-12 Preston Brook	
74	M60 J12-13 Worsley	Treated Prior to March 2002
75	M60 J13-14 Swinton	
76	M61 J5-6 Lostock near Bolton	
77	M62 J18-19 Heywood	
78	M62 J30-31 Altofts, West Yorkshire	Treated Prior to March 2002
79	M602 J1-2 Eccles	Treated Prior to March 2002

Motorway and Trunk Road Maintenance Rolling Programme for Hertfordshire (Area 5)

PIN No.	ROUTE	SCHEME No	SCHEME TITLE	WORKS DESCRIPTION	2004/05	2005/06	2006/07	2007/08	2008/09
FF89452	M1	5/1998/17-5	M1 J7 - J5 SB	INLAY	YES				
FF89482	M25	5/1999/04-5	M25 J25 - J26 BOTH C/WAYS	RECON/RESURFACE+ LIGHTING	YES				
FF89454	A1M	5/1998/14-5	A1(M) J1 NB & SB	C & S & OVERLAY+ LIGHTING	YES				
FG79038	A1M	5/1998/18-5	A1M JUNCTION 1-2 N/B	STRENGTHEN	YES				
FF89450	M25	5/1998/16-5	JUNC24 - JUNC25 BOTH C/WAYS	CONC REPAIRS+TWC+LIGHTING		YES			YES
F100988	M10	5/1998/28-5	M10 BOTH C/WAYS	50 mm INLAY		YES			
F100992	A1M	5/2002/27	JUNCTION 2-4	RESURFACE		YES			
FF89634	M25	5/1998/29-5	JUNC19 - JUNC20 EB	RESURFACING		YES			
FF89649	M25	5/1999/11-5	JUNC 17 - JUNC 19	RESURFACING		YES			
FF89650	M25	5/1999/12-5	JUNC 20 - JUNC 21 BOTH C/WAYS	RESURFACING		YES			
FG89659	A1M	5/2000/08-5	MP 37/1 - 38/3 NB J5 - J6	RESURFACING		YES			
00F79039	M25	5/1997/18-5	JUNC22-JUNC23	100mm INLAY			YES		
00F91431	M1	5/2001/16-21	M1 JCT 4 TO 5	INLAY + LIGHTING			YES		
F101037	A1M	5/2002/34	A1M JUNCTION 4 - 5 SB	INLAY			YES		
F101038	A1	5/2002/35	M25 TO TFL BOUNDARY	RESURFACE			YES		
F103935	M1	5/2003/08	M1 JUNCTION 5-6A SB	RESURFACE CONCRETE			YES		
F103936	M1	5/2003/09	M1 JUNCTION 6A-8 SB	RESURFACE CONCRETE			YES		
-	M1	5/2003/17	M1 J5-J7 NB	STRENGTHENING				YES	
-	M25		M25 J19-20 WB + J20 SR	STRENGTHENING					YES
-	M25		M25 J21 SR	RESURFACE					YES
-	A1M		A1(M) J1-2 SOUTH BOUND	STRENGTHENING					YES
-	M25		M25 J26 SR	THIN WEARING COURSE					YES
-	M25		M25 J25 SR	THIN WEARING COURSE					YES