

HERTFORDSHIRE COUNTY COUNCIL

ENVIRONMENT SELECT COMMITTEE

TUESDAY, 10 JULY 2001 AT 2.15 P.M.

Appendix

A

STATUS REPORT ON HIGHWAY CONDITIONS

Report of the Director of Environment

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Executive Member: Iris Tarry

Local Member: All

1. Purpose of the Report

- 1.1 The Executive member has requested that the Environment Select Committee comment on flooding in Hertfordshire and the adverse effects that the recent spells of inclement weather have had on Hertfordshire's highway network.

2. Summary

- 2.1 At its meeting on 20 March 2001, the Environment Select Committee were updated on the flooding of roads in Hertfordshire and heard that the combination of an excessively wet and at times cold winter had led to unprecedented levels of deterioration of the highway network.
- 2.2 Over the latter part of the winter there were over 50 locations on the network under water, some of which necessitated complete closure of roads. Currently there are 26 locations still under water resulting in six closures.
- 2.3 Elsewhere on the network the constant presence of water has resulted in significantly accelerated wear. Initial analysis shows the acceleration in deterioration of the local road network alone to be equivalent to two years worth of decay occurring in a single winter.
- 2.4 Despite increases in funding allocations for road repairs during 2001/02 the damage caused during the past winter have highlighted a need for immediate action to source additional funding. Without a positive response to the problem the County Council will be exposed to short term risk and liability.
- 2.5 Any response to the current problem will need to be additional to ongoing programmes of short and long term structural maintenance aimed at tackling the "normal" deterioration of the wider road asset.

3. Conclusions

- 3.1 The damage arising as a consequence of flooded roads will require major refurbishment works totalling £1.277 million
- 3.2 Repairs to address those roads which have experienced accelerated damage and where current levels of short term maintenance are unable to contain the situation require refurbishment works totalling £6.344 million.
- 3.4 Officers consider that action is needed to address the flood damage and the short term measures needed to contain the accelerated wear. Funding could be achieved by means of transferring £2.5 million from the 2001/02 LTP allocation for Capital sustainable projects together with £0.3 million earmarked for advance design in preparing next years roads refurbishment programme to this years active maintenance programmes.
- 3.5 The Select Committee are asked to comment on the highway condition issues raised in this report.

1. Background

- 1.1 The winter started wet and mild but the later part of the season saw many sub-zero nights and wintry spells. Snow falls in Hertfordshire during the Christmas/New Year holiday period were the worst since February 1991, with temperatures plummeting to a minimum of -10°C on several nights. Snow fell on a further two occasions, with increased incidents of cold temperatures being forecast during wet surface conditions, all prompting greater than expected winter maintenance activity. As a result 58 precautionary salting outings were undertaken against a budgeted average of 42.
- 1.2 Rainfall was greater than normal throughout the winter period. Intense periods of rain led to widespread flooding across Hertfordshire on three occasions. The prolonged spells of rain led to waterlogged land and a rise in the water table resulting in increased river levels and the re-emergence of ground water springs. Records show that the area received double the average winter rainfall which in turn led to a trebling of the recharge of the aquifer. As a result ground water levels throughout Hertfordshire have been, and continue to be, at unprecedented levels causing a giant underground lake to form which has caused surface lakes to form at vulnerable low spots. The Environment Agency issued numerous flood warnings across Hertfordshire. Activity to sign floods and provide sandbags was greater than has ever been experienced in Hertfordshire.
- 1.3 The combined effect of increased prolonged periods of rain water and the freezing action of the sub zero temperatures during the winter rapidly deteriorated many parts of the highway network. In addition to causing deep-seated damage to the construction layers, countless potholes formed resulting in an unprecedented increase in public complaints and insurance claims.

2. Highway Conditions at Beginning of Winter

- 2.1 The situation at the start of the winter reflected the trend which has been apparent for some time of an overall network that showed continuing signs of deterioration in line with national trends but which was serviceable across all hierarchies.
- 2.2 Previous calculations of need in excess of £100m based on HCC criteria were this year replaced by National United Kingdom Pavement Management System (UKPMS) standards therefore comparisons with past years are now arbitrary.
- 2.3 The Government has set out Best Value Performance Indicators (BVPI) for Principal Roads. Results of condition surveys for Hertfordshire show that around 5% of the Principal Road Network has no structural residual life and around 10% has less than 5 years. This indicates that significant programmes of major refurbishment work are needed to prevent further deterioration and to improve the condition of this asset. Such programmes are currently in

place.

- 2.4 Similarly there are BVPI's for the Non-Principal Roads. Currently these cover the classified (B & C road) part of the network but are expected to be extended next year to the whole local road asset. Results of condition surveys show that around 4% of classified local roads are below the minimum level stipulated by the proposed national indicator and around 10% of unclassified local roads are below the minimum indicator anticipated from Government. It should be stressed that both of these indicators provide a numerical value and do not necessarily represent a clear measure of condition which members would perceive to be an acceptable target. Work is underway to define acceptable service levels as part of preparing the Asset Plan to be presented in October.
- 2.5 All sets of condition surveys were undertaken in the summer months of last year before the impact of the winter weather. Current condition surveys are underway and results are anticipated to confirm the adhoc and anecdotal evidence currently available regarding accelerated deterioration.

3. Maintenance Policy

- 3.1 The policy for prioritising investment on the highway infrastructure was subject to member scrutiny during the Pilot Best Value Major Service Review into highway standards approved in January 2000.
- 3.2 The policy acknowledged that it would not be possible to eradicate all the defects uniformly across the entire network at the same time. The aim is to arrest deterioration and invest in an ongoing prioritised refurbishment programme. The priority adopted deals with the roads taking the heaviest traffic in terms of weight and volume first. These routes are the most important in ensuring the economic and social well being of the County and which, if subject to major failure, would create severe disruption for the free movement of travel within Hertfordshire.
- 3.3 As the condition and maintenance management on this part of the network is brought to a steady state ensuring safety, budget would be progressively freed to fund improvements on other parts of the road hierarchy. This strategy has provided the basis for investment decisions in the last and current year.

4. Budgetary Provision for 2001/02

- 4.1 Based on the policy outlined in Section 3 above, bids were made to central government via the Local Transport Plan (LTP) process and to the County's own Capital Panel, in addition to the current levels of revenue funding.
- 4.2 The outcome of these processes resulted in the largest settlement for a decade and a summary of the distribution of this funding is set out in Figure 1 below. Additionally, in response to concern regarding the state of the national highway asset, the Government in awarding the LTP, included provision for

local roads for the first time but without the benefit of detailed condition and priority data from local authorities.

- 4.3 Acknowledging the wider inclusion of local roads the Local Transport Panel in setting its recommendations for proportioning the LTP settlement, suggested that the requirement for meeting the five year target for main roads should be met in full. This would allow a proportion for the County settlement to be earmarked for local roads rather than accelerate the main road programme.

Fig 1

Funding Allocated for Road Repairs 2001/02

	Principal Roads £000's	Non-Principle Roads £000's	Footways £000,s
Short Term Structural Maintenance (e.g. patching, potholes, minor repairs, surface dressing)	600	6,200	N/A
Long Term Structural Maintenance			
Refurbishment	4,400	3,300	2,000
Drainage	-	1,100	N/A

5. Highway Condition after Winter

5.1 The unusual combination and unprecedented nature of the weather patterns described in Section 1 together with the high use of Hertfordshire's highway infrastructure has led to a rapid deterioration of road conditions which could not have been foreseen.

5.2 The problem currently being experienced can be considered under two headings.

5.2.1 Flooding

Flooding has occurred from a combination of sources:-

- Rising river levels spilling onto highways
- Saturated surrounding land causing increased run off onto highways
- Inadequacy of the highway drainage to deal with highway run off
- Heightened ground water levels causing springs or lakes to form

5.2.2 An initial analysis of this problem in March indicated that over 50 locations on the network were under water, which in a number of locations necessitated the complete closure of roads. Currently, there are some 26 locations still, or newly, under water of which half dozen remain closed for

public passage. A further four remain at risk of sudden flooding after heavy rainfall, with consequent closure.

- 5.2.3 An analysis of the impact of repairing these flood damaged roads has now been made. This is necessarily approximate as with many locations it has not yet been possible to undertake a full engineering analysis as waters have not sufficiently receded. A full list of sites is provided at Appendix 1.
- 5.2.4 In particular the major flooding problems which caused great local public concern at Kimpton, Sandridge and Redbourne of which the Environment Select Committee were told at the meeting held on 20 March 2001. At this stage it is not possible to determine whether the problem is a “one off” due to normal variation in weather patterns or whether or not it heralds a sustained change which will see the problem becoming a reoccurring event. Consequently there may be only a limited solution available and the best that can be achieved in the short term is one of containment and contingency plans to deal with future reoccurrence.
- 5.2.5 Options for action in Kimpton, Sandridge and Redbourne are detailed at Appendix 2 for members consideration.
- 5.2.6 In the past flooding has not been a significant problem in Hertfordshire and this winter’s events highlighted a number of problems arising from the complex shared responsibilities that various agencies have in addressing land drainage issues.

5.2.7 Carriageway Damage

The conditions described in the preceding paragraphs has meant almost constant presence of water on Hertfordshire’s roads. As a result, surface damage has reached unprecedented levels with large potholes forming on much of the network. In order to respond during February and March, normal practices were abandoned and search and repair gangs were employed to deal with over 10,000 cases of severe potholing and edge damage. Many of these repairs could only be carried out on a temporary basis due to the poor surface conditions.

- 5.2.8 Although emergency repair practices have reverted to normal, many areas of the network have sustained damage which has significantly increased the deterioration of the network. An immediate analysis has highlighted a large number of locations where existing practices of short term and temporary repairs would either be financially ineffective or which would not be able to hold the condition of roads in a safe and serviceable condition. Over 150 roads exhibiting this state have been identified. They present a potential risk to users and a liability in insurance terms. A full list of these sites is provided at Appendix 3.

6. Need for Immediate Action

- 6.1 The requirement for publishing performance indicators and condition targets, which in turn justify the County's bid to government for highway funding, means that the impact of any change in emphasis when reacting to the winter damage must be well justified in order to secure highest possible level of funding.
- 6.2 Whilst the impact of the weather is clearly visible on the local road network, the scale of investment needed to bring these roads to a suitable and sustained condition can only be provided and delivered over a long term timeframe. It is important to recognise that focusing solely on roads exhibiting the worst defect, whilst important from a risk and service perspective, may only lead to other roads being starved of minor and preventative maintenance and ending up in an equally poor state over time. The Highway Asset Management Plan, due for completion in October this year, will for the first time comprehensively address the problem from a perspective of minimising the whole life cost of maintaining the network i.e. a blend of "worst first" and preventative approach.
- 6.3 The importance of the main road network and the fact that this too has been subject to accelerated damage suggests that it is essential to maintain the momentum of refurbishment on this element of the network if targets are to be met. Special contracts have already been let for this work and the published programme is now well advanced. Officers consider that there should be no change to this policy nor to the order of implementing individual schemes within the five year rolling programme set out in the LTP, but consideration does need to be given to their phasing in order to satisfy network operational constraints (e.g. need for statutory undertakers work).
- 6.4 However, there is also a pressing need to address both the impact of flood damage and accelerated deterioration. In this respect, the damage due to surface, scour, submergence and infiltration has been such that the comprehensive repairs identified in Appendix 1 and 3 are necessary to effectively restore the integrity of the road in the long term.
- 6.5 Undoubtedly the restoration of carriageway damage effectively represents a substantial investment comparable to the Long Term Structural Maintenance programme at current funding levels. In effect, the acceleration in deterioration of the local road network could be seen as two year's worth of decay occurring over a single winter.
- 6.6 In respect of the accelerated carriageway damage (shown in Appendix 3) a substantial increase in short term repairs appears necessary. There can, however, be no guarantee that such repairs would help long term solutions but they may substantially reduce the short term risk and liability issues.

7. Finance

- 7.1 Financial allocations approved as part of the 2001/02 budget settlement were

set to meet the targets for the main road network and to allow a start to be made on the highest priority local roads identified as part of the previous year's condition survey and for which contracts procedures have been initiated.

- 7.2 The additional cost of refurbishment work to restore the condition of flood damaged roads is £1.277 million. The Government Office for the East of England (GOEE) has invited bids from Highway Authorities in respect of financial support towards damage caused to roads by flooding. A bid is being made for this amount but the criteria set and the limit of the level of funding available nationally suggest that this may, at best, have limited success. In any event, the GOEE have indicated that the full cost of damage will not be covered.
- 7.3 The most effective cost of refurbishment work to restore the condition of damaged roads experiencing accelerated deterioration is £6.344 million. This represents the cost of major refurbishment to restore the condition of these roads for the long term. Given limitations on available funding, the alternative would be a smaller injection of £1.5 million for this financial year. This would still require, however, additional spending of £6 million in the following year (2002/03) to eliminate a recurrence of these problems permanently.
- 7.4 It must be stressed that these levels of investment are additional to ongoing programmes of short and long term structural maintenance aimed at tackling the 'normal' deterioration of the wider road asset.
- 7.5 Officers consider that action is needed to address the flood damage and the short term measures needed to contain the accelerated wear. Funding could be achieved by means of transferring £2.5 million from the 2001/2002 LTP allocation for Capital sustainable projects together with £0.3 million earmarked for advance design in preparing next years roads refurbishment programme to the current years active maintenance programmes.
- 7.5 The final contribution required from the County towards longer term solutions to the major flooding problems identified in Appendix 3 can not be determined at this stage. The details provided give an indication of the scale of the problem. Some highway repair costs where details have been established are included in the appropriate appendices.

8. Conclusions

- 8.1 The damage caused to the highway network as a result of flooding and weather action has been substantial. The impact leads consequentially to increased programmes of refurbishment to address this deterioration which, if not undertaken immediately, represents a potential risk to users and a liability to the County Council.
- 8.2 Repairs to flood damaged roads should be by way of major refurbishment

works totalling £1.277 million. These works should be undertaken in the current financial year.

- 8.3 Repairs to accelerated damage to other identified roads where current levels of short term maintenance cannot cope or is an inappropriate solution also require action. The damage resulting represents a potential risk to users and a liability to the county council. The most cost effective solution is a programme of major refurbishment works totalling £6.344 million. Given limitations on available funding, a smaller injection of £1.5 million towards increased short term measures may minimise the risk situation. This would not represent the most cost effective solution and an extensive additional programme of long term solutions would still be necessary over time.
- 8.4 It must be recognised that the backlog of repairs to the local road network has long been indicated at levels exceeding £100 million. Although the recent substantial injection of funding has been positive the impact of weather conditions has further deteriorated an asset in already inadequate condition.

9. Options

- 9.1 The Select Committee are invited to comment on the following options to address the problems identified in the report:
- 9.1.1 Introduce additional funding to address the repair backlog and build in ongoing programmes as part of the Asset Management Plan. £7.621 m
- 9.1.2 Seek contributory funding from the GOEE towards the damaged road refurbishment programme. This is unlikely to provide a substantial source of income to resolve all problems experienced. Subject to GOEE priority processes
- 9.1.3 Switch funding from existing maintenance programmes. This would undoubtedly reduce progress towards other published targets. Additionally, the need for these programmes has already been legitimately identified and failure to deliver could lead to increased deterioration and consequential risk on sites in current programmes. £2.777 m - £7.621 m
- 9.1.4 Switch funding from the £12 m LTP allocation for Capital Sustainable Projects budgets which are resource intensive in terms of consultation and feasibility work. Some schemes within this programme are currently experiencing resourcing difficulties in meeting the enhanced programme. Any strategy to amend the recommended distribution of LTP funding will need to be discussed with GOEE

- in order to safeguard the Authority's future funding awards. £2.5 m
- 9.1.5 Switch funding from maintenance allocations currently earmarked for advanced design and preparation of the 2002/03 maintenance programmes. This could minimise the effectiveness of delivering this programme within the next financial year. £0.3 m
- 9.2 From the above options, officers consider that the most practical are those identified under 9.1.4 and 9.1.5. By taking this action it should be possible to address in full the flood damaged roads listed in Appendix 1 (£1.277 m) and the remainder (£1.523 m) could be used to contain conditions at the sites listed in Appendix 3.
- 9.3 The Select Committee are invited to comment on the issues contained within this report.

Background papers used by the author in compiling this report

<u>ROAD REPAIRS – ROADS UNDER WATER</u>		<u>APPENDIX 1</u>	
<u>AREA</u>	<u>LOCATION</u>	<u>STATUS</u>	<u>ROAD REPAIR COST £000'S</u>
Broxbourne	<u>Nil</u>	-	<u>Nil</u>
Dacorum	Longcroft Lane, Bovington Wharf Lane, Dudswell Valley Lane, Flamstead Flauden Lane/Flauden Bottom	Now clear of flooding. Flooding reoccurs with heavy rain Now clear of flooding. Flooding reoccurs with heavy rain Passable with care Now clear of flooding	Nil Nil 25 Nil
East Herts	B158 Lower Hatfield Road (j/w Robins Nest Hill) Brickendon Lane, Hertford Clay End, Walkern Watton to Datchworth Road Walkern Road, Watton-at-Stone Robins Nest Hill, Little Berkhamstead Church Lane, Watton-at-Stone Whempstead Road White Horse Lane B1387 Stanstead Road, Bishop's Stortford Nether Street, Widford Bromley Lane, Much Hadham B1383 Thorley Street, Bishops' Stortford A1184 Harlow Road, Sawbridgeworth Danebridge Road, Much Hadham B1004 Rye Street, Bishop's Stortford A414 Eastwich Road Eastwich Hall Lane, Eastwick Green Tye Cat Lane, Eastwick Spellbrook Lane East	Road closed Road closed Road often closed Occasional flooding reoccurs Now clear of flooding Continuous running water. Drainage system failure Now clear of flooding Carriageway breaking up due to flooding Carriageway breaking up due to flooding No flooding for 2 months Now clear of flooding No flooding for 2 months No flooding for 2 months No flooding for 2 months No flooding for 1 month No flooding for 2 months No flooding for 2 months Road closed on number of occasions, flooding to highway Flooding to highway and property Now clear of floods Now clear of floods	Nil (Addressed in current programme) Nil (Addressed in current programme) Nil (Addressed in current programme) 20 Nil 18 Nil 20 25 Nil (addressed in current programme) Nil 12 Nil Nil 17 Nil Nil Nil 10 10 12
Hertsmere	Earls Lane, Potters Bar Packhorse Lane, Potters Bar Blackhorse Lane, Potters Bar Arthur Street/Woodlands Road, Bushey and Water Lane, Watford	Road floods during heavy rain, passable with care Road impassable in low spots Often flooded after rainfall Underwater for long periods Impassable following flooding	Nil Nil Nil Nil

<u>AREA</u>	<u>LOCATION</u>	<u>STATUS</u>	<u>ROAD REPAIR COST £000'S</u>
North Herts	The Holt, Kimpton	Standing water in places, Passable	8
	Whiteway Bottom, Kimpton	Water subsided, road still under heavy mud/slurry	15
	Whiteway Bottom/The Causeway, Kimpton	Road closed, temporary wier in place	50
	Claggy Road, Kimpton	Now clear of flooding	5
	Porters End Lane, Kimpton	Regular flooding following rainfall	30
	Lye Hill, Breachwood Green	Temporary repairs to direct water. Road now open	13
	Lilley Bottom Road, Lilley (3 locations)	Some flooding in rainfall, water still flowing on road	50
	Church Road, Kings Walden	Now clear of flooding	10
	Law Hall Lane, Bendish	Now clear of flooding	8
Preston to Sootfield Green Road	Now clear of flooding	10	
St Albans	B651 Wheathamstead Road, Sandridge	Clear of flooding. Now open	30
	Gaddesdon Lane, Redbourn	Continuing running water	As yet undetermined
	Church End, Redbourn	Clear of flooding	95
	House Lane, Sandridge	Standing water. Road closed	25
	House Lane, St Albans	Water being pumped – passable	25
	Sandridgebury Lane, St Albans	Sometimes impassable due to water table of surrounding land	15
	Sergehill Lane, St Stephens	Running water and passable	Nil
	Jersey Farm Estate. Various roads including Villers Crescent, St Albans	Impact of diverted traffic due to House Lane closure	25
	Blunts Road, Chiswell Green	Standing water. Passable	20
	Grove Road, Harpenden	Height of water from Pipers Lane/Welbeck Rise. Passable	15
	School Lane, Old Bricket Wood	Clear of flooding	20
Stevenage	Nil	-	Nil
Three Rivers	Penn Close, Chorleywood	Clear of flooding	5
	Church Lane, Sarratt	Clear of flooding	68
	The Hoe, Watford Rural	Clear of flooding	7
	Valley Road, Chorleywood	Clear of flooding	28
	Berry Lane, Rickmansworth	Clear of flooding	105
	Chalfont Road, Rickmansworth	Clear of flooding	50
	Little Oxhey Lane, Watford Rural	Clear of flooding	141
	Harefield Road, Rickmansworth	Now clear of flooding	80
	Park Road, Rickmansworth	Now clear of flooding	Nil
	Green Street, Chorleywood	Now clear of flooding	Nil
	Station Approach, Chorleywood	Now clear of flooding	50
	Linksway/Durrants Drive area, Croxley Green	Now clear of flooding	100

<u>AREA</u>	<u>LOCATION</u>	<u>STATUS</u>	ROAD REPAIR COST £000'S
Watford	Nil	-	Nil
Welwyn Hatfield	Hill Farm Road, Ayot St Lawrence	Now clear of flooding	5
		Total	<u>1,277</u>

Appendix 2

Location	Proposed Short Term Action	Cost Est.	Long Term Solution	Cost Est.
Kimpton	<p>Temporary outfall arrangements in place and working.</p> <p>Upper holding lake drained, need to remove sheet piles, construct culvert and rebuild carriageway.</p> <p>Install pipes at intermediate road crossings and repair carriageway surface.</p>	<p>160,000</p> <p>100,000</p> <p>20,000</p>	<p>District Council complete feasibility study and design permanent outfall</p>	Unknown
Sandridge	<p>B651/Coleman Green Lane – Recent ditch clearance works, the provision of a connection into Thames Water surface water sewer, combined with a reduction in water table levels has now allowed this section of road to be opened. Current costs include the provision of temporary signals, drainage investigations and provision of new outfall.</p>	25,000	<p>Provide a permanent outfall to the TW Sewer. This will involve the laying of 400metre of a 300mm-dia pipe with new gully connections along the High Street section.</p> <p>Mouchel TSC have completed highway drainage feasibility and investigation works.</p>	35,000
	<p>House Lane Lagoon – The water table at the lagoon is above ground level. 50,000 sq.m of open land is currently submerged. 300metre section of House Lane is currently submerged. We are unable to assess the full extent of damage at this time until water levels have receded. Current costs are for sand bags and signs and inspections.</p>	5,000	<p>Few options exist due to limited capacity of existing sewer and ditches in the area and restrictions on the outfall to the River Colne. At current flood levels properties were not effected.</p>	
	<p>House Lane/ Villiers Crescent – Temporary pumping measure still in place. Water table levels remain high at this point.</p> <p>Temporary measures to open eroded ditch lines have created gravity flow systems. Pumping still required until more permanent measures applied.</p>	35,000	<p>Problems exist with gravity flows along this section. An option exists to upgrade the pump within Newgate close.</p>	120,000

Appendix 2 (cont'd)

Redbourn	Ben Austins – Temporary pumping exist in Ben Austins.	50,000	Pipe replacement with newly constructed outfall planned for August.	120,000
	TW have begun sewer-relining works along foul section in Church End.		Carriageway repair works required in Church End.	95,000

ROAD REPAIRS – ACCELERATED ROAD DAMAGE**APPENDIX 3**

AREA	LOCATION	ROAD REPAIR COSTS (£000's)
<u>Broxbourne</u>	Essex Road, Hoddesdon	30
	Cadmorelane, Cheshunt	26
	Hammond Street Road, Cheshunt	76
	Pindar Road, Hoddesdon	10
	Windmill Lane, Cheshunt	24
	Stanstead Road, Hoddesdon	21
	Rowan Drive, Turnford	19
	Burton Lane, Cheshunt	18
	Hailey Lane, Hoddesdon	6
<u>Dacorum</u>	Wingrave Road	40
<u>East Herts</u>	B1197 London Road, Hertford	30
	B158 Pegs Lane, Hertford	20
	Burnham Green Road, Burnham Green	15
	Railway Street, Hertford	30
	South Street, Hertford	15
	St Andrews Street, Hertford	12
	White Stubbs Lane, Broxbourne/Brickendon, Little Berkhamstead	170
	Windsor Drive, Hertford	10
	Brickendon Lane, Hertford	49
	Sacombe Pound, Sacombe/Dane End	33
	Walkern Road, Walkern	25
	Whempstead Road, Benington	60
	Town Lane, Benington	10
	Watton Road, Datchworth	40
	White Horse Lane, Burnham Green	25
	Priory Wood Road, Hertford Heath	10
	Bramfield Road, Bramfield	25
Walkern Road, Watton-at-Stone	18	

AREA	LOCATION	ROAD REPAIR COSTS (£000's)
<u>East Herts (Contd)</u>	Ashdene Road, Bayford Queens Road, Hertford Hawkins Hall Lane, Datchworth Acorn Street, Hunsdon Cricketfield Lane, Bishop's Stortford B1038 High Street, Buntingford B1001 Watton Road, Ware Warren Lane, Braughing Hoe Lane, Ware/Hertford Church Street, Ware Peterswood Hill, Ware Frogs Hall Lane, Station Road, Ware C10 Anstey C13 Little Hormead Standon Green End B1037 Cromer C16 West Mill	30 12 10 30 12 25 21 25 21 16 8 27 18 8 10 15 21 25
<u>Hertsmere</u>	B5378 London Road, Shenley Letchmore Road, Radlett Santers Lane, Potters Bar Sawyers Lane, Potters Bar Kitts End Road, Potters Bar Potters Lane, Borehamwood Hill Rise, Potters Bar Common Lane, Radlett	70 25 50 22 60 65 25 100

AREA	LOCATION	ROAD REPAIR COSTS (£000's)
<u>Hertsmere cont'd</u>	Clay Lane, Bushey Hill Crest, Potters Bar Forbes Avenue, Potters Bar Cranbourne Crescent, Potters Bar	30 5 35 20
<u>North Herts</u>	B651 Hitchwood Lane junction C24 Codicote Road C29 Rustling End The Broadway, Letchworth Arlesey New Road, Letchworth Norton Road, Letchworth Green Lane, Letchworth New Inn Road, Hinxworth York Way, Royston Duck Lake Lane, Ashwell	15 8 8 80 70 130 55 25 35 30
<u>St Albans</u>	Beaconsfield Road, St Albans Firbank Road, St Albans George Street, St Albans Albert Street, St Albans Cottonmill Lane, St Albans Drakes Drive, St Albans Holyroad Crescent, St Albans King Harry Lane, St Albans Mayne Avenue, St Albans Ridgmont Road, St Albans	30 40 60 25 30 70 20 100 30 30

AREA	LOCATION	ROAD REPAIR COSTS (£000's)
<u>St Albans cont'd</u>	Sandridge Road, St Albans Sepwell Lane, St Albans Stanhope Road, St Albans The Ridgeway, St Albans Woodlane Drive, St Albans	50 20 40 1,500 30
<u>Stevenage</u>	Hertford Road, Stevenage Rockingham Way, Stevenage Weston Road, Stevenage Elder Way, Stevenage Fairlands Way, Stevenage	29 56 60 22 70
<u>Three Rivers</u>	Bridlington Road, South Oxhey Chalfont Road, Rickmansworth Coppermill Lane, Rickmansworth Hayling Road, South Oxhey The Green, Rickmansworth The Parade, South Oxhey Barton Way, Rickmansworth Shepherds Lane, Rickmansworth Winton Drive, Rickmansworth Hornhill Road, Rickmansworth Chequers Lane, Abbots Langley Redhall Lane, Sarratt Berry Lane, Rickmansworth Durrants Drive, Croxley Green	24 40 54 75 10 24 70 32 66 75 20 115 50 60

AREA	LOCATION	ROAD REPAIR COSTS (£000's)
<u>Three Rivers (Contd)</u>	Links Way, Croxley Green	80
	Warwick Way, Croxley Green	25
	Lancing Way, Croxley Green	15
	Fairfield Avenue, South Oxhey	9
	Alva Way, South Oxhey	54
	Rectory Lane, Rickmansworth	26
	Church Lane,	10
	Olds Approach, Moor Park	5
	Windsor Way, Rickmansworth	12
	Moor Lane,	15
	Tudor Way, Rickmansworth	22
	Springwell Avenue, Rickmansworth	13
	Long Lane, Chorleywood	4
	Shire Lane, Chorleywood	45
	Stag Lane, Chorleywood	28
	Chorleywood Bottom, Chorleywood	18
	Quickley Lane, Chandlers Cross	98
	Green Street, Bedmond	42
	Harthall Lane, Bedmond	30
	Hyde Lane, Langley	30
	East Lane, Langley	15
	St Albans, Bedmond	7
	Old Mill Road, Hinton Bridge	10
	High Road, Leavesden	10

AREA	LOCATION	ROAD REPAIR COSTS (£000's)
<u>Watford</u>	Cassiobury Drive, Watford	40
	Lower Paddock Road, Watford	25
	Field Road, Watford	9
	Willow Lane, Watford	18
	Boundary Way, Watford	40
	Briar Road, Watford	30
	Whippendell Road, Watford	25
	Coates Way, Watford	35
	The Gossamers, Watford	65
	Longcroft Road, Watford	20
	St James Road, Watford	15
	Highview, Watford	25
	Charlock Way, Watford	25
<u>Welwyn Hatfield</u>	Whitehorse Lane,	18
	Digswell Park Road, Welwyn	7
	Fore Street, Hatfield	6
	Travellers Lane, Hatfield	8
	Birchwood Avenue, Hatfield	10
	Coopers Lane,	2
	Hollybush Lane, Welwyn Garden City	58
	Kentish Lane, Hatfield	3
	Bradgate, Cuffley	9
	Wildhill,	10
	Well Road, Northaw	13
	Coopers Green Lane, Hatfield	2

AREA	LOCATION	ROAD REPAIR COSTS (£000's)
<u>Welwyn Hatfield cont'd</u>	Bradmore Way, Brookmans Park	2
	Beehive Lane, Welwyn	5
	Judges Hill, Northaw	4
	Autumn Grove, Welwyn	1
	Total	<u>6,344</u>