The Condition Of The Roads In Tandridge

18 July 2003

KEY ISSUE:

To inform Members about the current condition of the roads in Tandridge, how they got into the state that they are in and what can be done about the matter.

SUMMARY:

This Report describes the nature of the road network in Tandridge and gives an outline of its condition. The background and extent of the problem is set out, including the financial provision and needs.
INTRODUCTION AND BACKGROUND

1 The road network is made up of a number of road types which are split into classifications, ie Motorways, A, B, C, D (unclassified). In general the higher the classification, the better the road (in width and construction) and it can be expected to take more traffic. Historically more funds have been expended on the maintenance of the higher class roads, ie the A, B and C class roads, consequently they are in generally better condition than the D class roads.

2 There is a mix of all types of roads in Tandridge (we are not concerned with Motorways) and it is a generally held view that the state of those roads has fallen below an acceptable level. The major reason for the deterioration in standards is financial; it is accepted that for many years successive Governments have failed to invest sufficient funds to adequately maintain the network nationally. Year on year the investment made has been insufficient to arrest the decline in standards, let alone bring about a reversal. The result is there to see; standards in some places are too low and more and more short term remedial maintenance is needed. This is the case across the whole Country not just in Surrey.

ANALYSIS AND COMMENTARY

3 Objectively our roads fall into three categories. Firstly, some are in excellent condition. These are the roads that have recently been reconstructed or resurfaced, say in the last five to eight years and have not been spoilt by subsequent excavation. Examples of these are:

Racecourse Road, Lingfield
Prince of Wales Road, South Nutfield
Essendene Road, Caterham
Wolfs Row, Lingfield
Copthorne Road, Felbridge
Shipley Bridge Lane, Copthorne
Harrow Road, Farleigh

There are many others.

4 Secondly, there are those roads which have not had any significant work done to them in recent years, apart from safety maintenance but are not in particularly bad condition - they are just average or indifferent, but without intervention will eventually deteriorate. There are many roads in this category.

5 Thirdly there are those roads whose condition ranges from poor to frankly abysmal and need major works done to them now to restore them to a “fit for purpose” condition. The only good news is that several of these roads are programmed for resurfacing this year so will fall into the first category when that work is done. Amongst these are:
Copthorne Bank, Burstow
Chalkpit Lane, Oxted
Station Road East, Oxted
Woodhurst Lane, Oxted
A22/A25 Roundabout
Rook Lane, Chaldon

6 There are too many roads in this last category and it is these that have led to the perception that, overall the state of our roads is poor. The lists of roads above are only representative and are not meant to be exhaustive.

7 Roads, like all man-made things have a finite life and need maintenance from time to time to extend that finite life, but eventually the life expires and they need renewing or reconstructing.

The length of the life depends on a number of factors:-

* What the road is made of.
* What the depth of construction is.
* What the drainage arrangements are.
* What the degree of interference is (eg work by Statutory Companies)
* What weather conditions prevail over the lifetime.
* What traffic in terms of both type and volume uses the road.
* How much maintenance the road has received in the past.
* The nature of the subsoil, which should have been taken into account in the design of the road.
* What maintenance can be given to the road for the rest of its life.

8 Obviously the life of different roads varies, but a reasonable estimate is that most will need maintenance to extend their lives after about 20-25 years and will need renewing after about 40 years. In the majority of cases and, as set out in this Report, these frequencies have never been achieved.

9 Failure when it occurs takes different forms and the rectification can be done in a number of ways.

- Failure of skid resistance – treated by surface dressing or similar.

- Failure in the structure of the road, ie potholing, crazing, breaking up – if limited these can be treated by localised repair, eg potholing (if more extensive then large patches up to and including resurfacing or reconstruction are necessary).

- Sometimes failure is more complicated and caused by a number of factors. Chalkpit Lane is a good example; poor drainage meant water movement through the structure, no edge restraint in a narrow road led to erosion and break-up on the edges. It is better to intervene in the process early and extend the road life before major failure occurs.
10 Most roads are made of some form of bituminous material (some are of concrete). With bituminous materials, the mass is made up of stones (the aggregate) held together by bitumen (the binder). Eventually, all bituminous materials fail, the binder just dies and it becomes weak and friable. Water then moves easily through the construction and accelerates the process. This is much worse in freezing conditions, when the freeze/thaw action (made worse by salt) causes expansion and contraction. With the action of traffic, the result is outbreaks of potholes. The action and result is much the same with concrete roads, although the process takes much longer. The major problems with concrete roads are usually associated with the joints between slabs.

11 Most of the A, B and C class roads are in better condition than the unclassified D roads because they were originally constructed to a higher standard and historically they have had a greater proportion of the available funding spent on them. The unclassified roads fall into two separate groups, suburban and rural, each with different problems. The suburban roads, which are mainly residential, are largely in an indifferent condition. Most have not been recently resurfaced or reconstructed, but maintenance, e.g., repair of potholes or other damage, has taken place and some have been dug up and reinstated, sometimes several times by Statutory Companies; in some cases they resemble patchwork quilts. This particularly applies to residential roads where, although the condition may not be particularly bad, residents are aware that they have not received significant attention for many years and they are not in the condition that they should be in. The rural roads present different problems. There are long lengths of rural roads whose origins are lost in antiquity. Many started life as farm access tracks or communication links between small rural communities carrying only horse-drawn vehicles or foot traffic. They have developed into this era by having successive thin layers of tar, etc applied to them at intervals over many years. The construction was never “designed” for a purpose or environment and has just happened. Drainage can be a problem because some roads are lower than surrounding fields so act as drains for those fields. Many rural roads do not have any positive means of drainage at all causing water to lie for long periods and in winter temperatures are lower in the rural areas, these factors aggravate deterioration. In many cases these roads are not wide enough for two vehicles (especially larger ones) to pass and they are now used for the passage of all types of traffic, including heavy goods vehicles and large agricultural machinery. The result is erosion and rutting of the grassed verges and margins and associated breaking up of the edges of the road (this is different and more difficult to deal with than simple pothole repairs). The end result is an unsightly mess of failing roads with rutted verges and breaking edges of which there are many examples. These are the technical problems that could all be solved by the application of enough money and expertise.

12 Ideally the rural roads need more than resurfacing or reconstructing, they need to be made “fit for purpose” (which is an engineering basic anyway). To achieve that many would need to be widened and some form of edge restraint like kerbs or flat edging installed as well as being
resurfaced/reconstructed. Attention should also be given to drainage. Many people are against widening roads and edging them in rural areas.

13 The logistical problems would be enormous. Surrey, not just Tandridge, has many, many miles of this type of road with the same problems.

14 In Tandridge the lengths of the different classes of road that make up the publicly maintainable highway network is as follows:

Principal Roads(A)  47.4Km
Non-Principal Roads(B & C)  190.8Km
Unclassified Roads(D)  272.0Km

510.2Km

15 There are also 24.4km of Motorways but this Report is not concerned with those. In all there are about 4780km of publicly maintainable highways in the whole of Surrey. So, while Tandridge is one of eleven districts in the County, it has about one-ninth of the County’s roads.

16 In 2001 the total replacement cost of all Surrey’s roads was estimated to about £1.9b, say £2b at today’s prices. This would lead to a very approximate figure for replacing all of the roads in Tandridge of about £200m.

17 Maintenance Allocations have varied in the last few years and the trend has been generally downwards. The revenue allocation for general maintenance is £1.762m this year and was £1.477m last year. Five years ago that allocation was about £2m. The capital maintenance allocation for reconstructing and resurfacing roads has been about £0.850m both this year and last.

A breakdown of the allocations for 2002/2003 is very indicative.

The revenue allocation was split between four functional heads.

Structural Maintenance  £0.847m
Environmental Maintenance  £0.257m
Safety Maintenance  £0.340m
Damage to County Property  £0.034m

£1.477m

18 Of the above, only the Structural Maintenance element contributes to the long term maintenance and renewal needs and then only marginally because it is essentially for repairing roads rather than renewing them. The rest is either environmental (grass cutting and trees) or has to do with other necessities like winter maintenance, white and yellow lines, guard rails, street lights etc, etc.

19 The capital allocation of £0.850m was for reconstruction and resurfacing, all of which contributed to the long term needs.
It can be seen that the recent investment in renewal, etc in Tandridge has been about £1m a year. But, as stated, the replacement cost is about £200m. So at the present rate it would take about 200 years to renew all the roads. To do this in some reasonable timescale, say ten years, would need an investment of £20m a year each year just for Tandridge which would be about £180m for the whole County. Herein lies the heart of the problem. Setting aside other important factors like the volume and type of traffic on our roads and the high activity of Statutory Companies, it is the nub of the reason that our roads are in the state that they are in. Design lives are different for different types of road, but it could be said that the average life should be about forty years. Investment to date would only allow renewal at something more than 200 years.

SUGGESTED FUTURE ACTIONS

It is presumed unlikely that the level of funding necessary to replace all or a significant part of the network in the foreseeable future will be forthcoming. If the same funding as received up to now continues in the next few years (or is not greatly different) and, if we go on doing the same sort of work with it, then matters will not change and the roads will only continue to deteriorate. The only way to get a noticeable difference quickly is to obtain additional funding and to use the resource in much more targeted ways. These problems and proposed solutions to them are the subject of discussions elsewhere in the County at the moment. The current funding needs to continue to be used for repairs, but we must obtain further funding and seek out and use the most economical and effective materials and methods so that much more lengths and areas of road can be treated. It is suggested that the most effective way forward would be to target the unclassified (D) network which is in the worst condition. As stated there are two separate problems - the suburban and the rural. Both would need substantial patching and then resurfacing. The best methods would be by using thin surfacing techniques in the suburban areas and by using surface dressing in the rural areas. It must be noted that there would be continuing problems with the high level of activities by the Statutory Companies. The problem of roads that are not wide enough would remain and, as stated, many people would be against any widening.

As previously set out above there are about 272km of unclassified roads in Tandridge and, if £1m a year was made available and a programme of sustained work for say five years was put in place (half suburban/half rural), then a really significant difference would be seen in the first year and towards the end of the programme enough would have been done to reverse the trends. In the end, however, the real answer lies with Government making available the really huge sums nationally that are needed to put everything right and invest properly for the future.

An overall estimation would be that there are about 272000 linear metres of D roads in Tandridge. On average they are 6m wide so there are about 1600000sqm. Therefore, if it costs £5 per sqm to treat roads using the methods outlined, then an investment of £8m would treat all the D
roads. But not all would need treating, so £5m over five years would treat virtually all that needed treating. It would of course be necessary to keep, or preferably enhance, the present level of investment and maintenance elsewhere on the network, so additional funding and an additional programme would be necessary. It must be pointed out that these economical methods of surfacing will only prolong the life expectancy for a few years. Underlying problems needing reconstruction, etc would remain.

FINANCIAL IMPLICATIONS

24 The expenditure of significant extra funds on road maintenance in future years.

SUSTAINABLE DEVELOPMENT IMPLICATIONS

25 Roads in better condition in the future.

CRIME & DISORDER IMPLICATIONS

EQUALITIES IMPLICATIONS

26 None

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BACKGROUND PAPERS: Previous Reports to County Committees available in the Local Transportation Service Offices.