

**RUNNYMEDE ROUNDABOUT
FEASIBILITY STUDY**

**RUNNYMEDE LOCAL COMMITTEE
22nd OCTOBER 2004**

KEY ISSUE

Improve facilities for motorists, pedestrians and cyclists using the Runnymede Roundabout, aimed at improving safety and improving accessibility to both Egham and Staines town centres and the M25.

SUMMARY

This report outlines the results of the feasibility study, which has been carried out to consider the existing situation at Runnymede Roundabout. The report assesses the provision of traffic signals at the Roundabout and the likely effect on queueing, safety and accessibility.

OFFICER RECOMMENDATIONS:

The Committee is asked to agree:

- a) **to Runnymede Roundabout Scheme being submitted as an intermediate scheme in the forthcoming LTP Bid and the contribution 25% of the scheme cost from the Runnymede LTP allocation.**
- b) **To the completion of the feasibility report and consultation with DETR / Highways Agency and the progression of the design with the Local Member.**

1.0 EXISTING SITUATION

- 1.1 The location of Runnymede Roundabout is shown in **Figure 1.0** below. The Roundabout is at the junction of the A308 / A30 and The Avenue (B388) at Egham. The A30 joins the M25 at M25 Junction 13 approximately 1100m to the north. The existing observed AM peak queues are shown highlighted in pink.

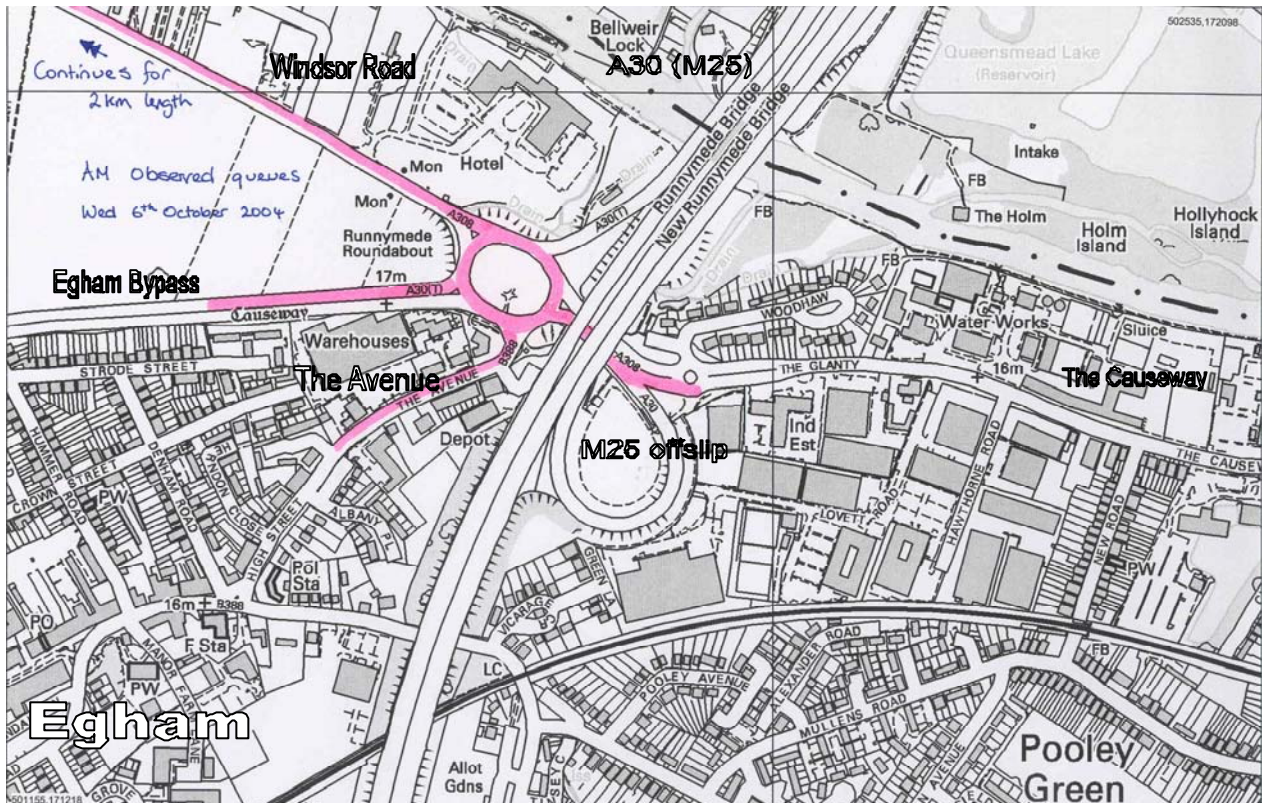


FIGURE 1.0

- 1.2 The existing layout of Runnymede Roundabout is that of a normal roundabout. The roundabout has 5 arms:
- ❑ The Glanty (A308) to / from Staines
 - ❑ Windsor Road (A308) to / from Windsor
 - ❑ The Avenue (B388) to / from Egham High Street and town centre.
 - ❑ A30 Egham By-Pass to / from Egham, Bagshot and Camberley.
 - ❑ A30 (exit only) northbound to M25 Junction 13 and the A30 Staines By-Pass.
- 1.3 There is dedicated jet lane for traffic from Windsor Road (A308) (Eastbound) to the A30 / M25 Junction 13. The junction of The Avenue / Runnymede Roundabout operates under part-time traffic signal control. The Glanty / The Causeway (A308) (from Staines direction) and the A30 Slip Road (from M25) merge together just in advance of the roundabout. The A30 slip road (Westbound / Southbound slip off) naturally merges with The Glanty (A308), there is no imposed priority at the merge point.

- 1.4 The speed limits are as follows:
- ❑ On the roundabout: 40mph.
 - ❑ A308 Windsor Road and The Glanty / The Causeway: 40mph
 - ❑ Egham By-Pass (A30): 50mph
 - ❑ A30 (M25): 60mph
 - ❑ The Avenue (and High Street) Egham: 30mph

1.5 The personal injury accident (PIA) record, for the 5-year period 1999 to 2003, is below in Figure 2. The accident record is summarised in Table 1, below:

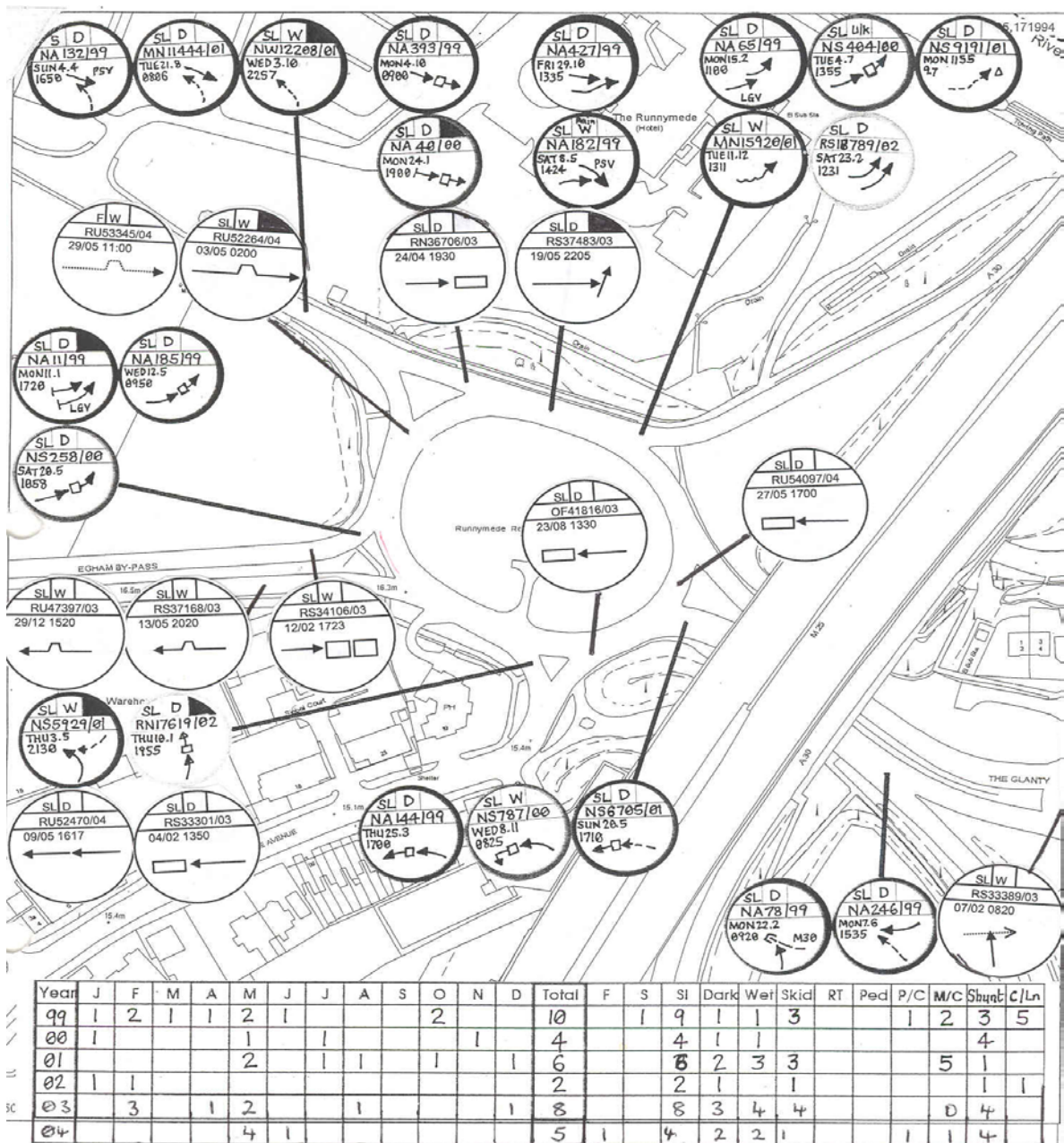


FIGURE 2.0

	1999	2000	2001	2002	2003	Total
Severity:						
Slight	9	4	6	10	8	37
Serious	1	0	0	0	0	1
Fatal	0	0	0	0	0	0
Total	10	4	6	10	8	38
Type:						
Shunt	3	4	1	4	4	16
Other vehicle conflict	7	0	2	5	2	16
Single vehicle	0	0	3	1	2	6
Total	10	4	6	10	8	38
Vulnerable Road Users:						
Pedestrian	0	0	0	0	0	0
Cyclists	1	0	0	0	1	2
Total	1	0	0	0	1	2

Table 1
Personal Injury Accidents
1999 – 2003

2.0 PROBLEMS WITH THE EXISTING ROUNDABOUT LAYOUT

- 2.1 Vehicle speeds are high; it is considered that the degree of delay at the site can give rise to competitive driving behaviour. As the above figures indicate the average accident rate at the site is 7.5 PIAs per year. During the 5 Year period from 1999 to 2003 there were 38 PIAs recorded.
- 2.2 The site is highly problematic in terms of severe queuing and delay to motorists. Figure 1.0 illustrates the typical queuing during the AM peak (0730 to 0930); the queues on Windsor Road are regularly 2km in length and the two lanes of the Egham Bypass are usually 500m in length. In the PM peak (1600 to 1900) the queues are not as severe as the morning peak but can still produce around a 400m tailback on The Avenue approach. It should also be noted that it has been reported that queues on the A30 can tail back to the M25 and that queues on The Causeway (A308) can exceed 500m.
- 2.3 Traffic flows are high, particularly during the peak hours. There is a heavy left turn from Windsor Road (A308) to A30 (M25). Although a jet lane has been provided this is not effective during the am peak.
- 2.4 There is a considerable degree of crossing activity at or near the roundabout. Pedestrians and cyclists crossing at this location are opposed by very high vehicle flows and speeds. It is very difficult to cross at or near the roundabout. Despite the fact there have been no PIAs recorded relating to crossing activity safety remains a paramount concern. It would be desirable to provide pedestrian crossing facilities.

3.0 PROPOSED OPTIONS

3.1 At the very early stages of this feasibility study a number of potential solutions to the problems at Runnymede Roundabout were considered;

- Overpass arrangement
- Underpass arrangement
- Removal of existing roundabout and replacement with a signal junction
- Signalising the existing roundabout

The first two options were ruled out quickly as there were too many opposing traffic movements for these to be viable and the costs would be very prohibitive. The third option would not accommodate the conflicting vehicle movements. So the final option was assessed in greater detail.

3.2 The installation and operation of traffic signals at the roundabout was assessed by Surrey County Council's Traffic Systems team in consultation with Runnymede LTS. The aims of the scheme are to improve the safety of the roundabout, improve the crossing facilities for both pedestrians and cyclists and finally to reduce the queuing at peak times.

3.3 Many different lane arrangements have been tested based on the existing traffic flows and an optimum option has been identified. Traffic signals will be placed at all 5 roads approaching the roundabout, there will be four sets of signals / stop lines on the roundabout itself (to stop traffic travelling around the roundabout to allow traffic on the approaches enter the roundabout). The A30 (M25) offslip and the Glanty will be signalised where these two roads meet, this will remove the existing conflict of movement.

3.4 The central island of the roundabout would be re-constructed to provide a widened circulatory carriageway.

- Egham By-Pass (A30) would be widened to provide a 3-lane approach.
- Windsor Road (A308) would be widened to provide a 2-lane approach.
- The Glanty (A308) would be widened to provide a 4-lane approach.
- The A30 (Glanty slip road) would be widened to provide a 3-lane approach.
- The Glanty (A308) would be widened to provide a 3 lane flared approach.

The existing service lay-by / turning head at the central island would be modified. High skid resistant surface dressing would be provided on the approaches to the traffic signals.

3.5 Most of this widening will take place within the existing highway boundary, however the extension of the two lane approach on Windsor Road will require landtake either from the National Trust land on one side or Runnymede Hotel on the other. The extension of the two-lane approach is necessary to reduce the queuing back on Windsor Road and will optimise the overall capacity of the roundabout.

3.5 A shared use footway / cycleway facilities is to be provided, including a new shared use route through the central island. Toucan crossing facilities are to be provided at signal controlled crossing points. The controlled crossing facilities will accommodate all known pedestrian / cyclist desire lines and crossing movements at the site.

3.6 The key to the success of this proposal is the use of spiral road markings. Vehicles enter the network in dedicated lanes and will stay in lane spiralling off at their destination. Clear lane markings on the approaches would be provided to enable this. This would resolve the current problems associated with weaving / lane changing on the circulatory carriageway. An improved signing scheme would be essential to promote good lane discipline and enable drivers to get in the correct lane early approaching the roundabout.

4.0 COST VERSUS BENEFIT FOR OPTIONS

- 4.1 The optimum option as described above provides the maximum overall benefit as it enhances safety, reduces queuing and provides good facilities for pedestrians and cyclists. The cost of this option is valued at £1,150,000. The scheme could be timed to be constructed over two financial years which would mean a contribution from the Runnymede LTP programme of £288,000 over two years, so £144,000 per year.
- 4.2 As mentioned earlier in the report the optimum option requires widening into non-highway land, as this can be un-predictable in terms of land costs and gaining agreement to acquire the land a slightly revised option has been costed. This revision will see the removal of the widening outside the highway boundary along Windsor Road, in effect, reducing the length that 2 lanes can be achieved on this approach. For ease of reference we have called this option 'reduced optimum scheme'.
- 4.3 The cost of the reduced optimum scheme is £940,000, however it should be noted that whilst this scheme will still improve safety and pedestrian and cyclist crossing facilities it will not remove the long queuing on Windsor Road. It is anticipated that queues of up to 1km will still be experienced along Windsor Road.

5.0 WAY FORWARD

- 5.1 It will be essential to consult with the DETR / Highways Agency as the proposed scheme will directly affect the M25 on and off slips via the A30. The proximity of the roundabout to the M25 will necessitate a comprehensive report showing the existing levels of queuing and testing the predicted queues for the signalised options. The feasibility study to date will require some additional traffic modelling and the drawing together of a detailed technical report for submission and discussion with DETR / Highways Agency.
- 5.2 The Highways Agency would need to agree to the provision of traffic signals control and (the associated modifications) at the A30 Glanty / A308. It may be possible to negotiate a contribution towards the scheme costs particularly if the report is able to demonstrate the benefits of the scheme for all road users.
- 5.3 Constuction on the scheme will not be possible until 2006 when the motorway widening works is complete, however it is unlikely given the existing forward LTP programme that the scheme would be in a position to proceed before this embargo date anyway.

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