A26 Yew Tree Road / Speldhurst Road Junction Improvement, Southborough.

A report by the Mid-Kent Programme Delivery Manager to the Highway Advisory Board on 4th of March 2008

Introduction

1. The purpose of this report is to inform the Board of the issues relating to this scheme to allow the Board to review the recommendations of the Tunbridge Wells Joint Transportation Board made at its meeting on 21st January 2008.

Background

2. At its meeting on 29th May 2006 the Tunbridge Wells Joint Transportation Board considered the report submitted by the Mid Kent Divisional Manager (070529/TB006) which identified several options for reducing congestion at the junction of the A26, Yew Tree Road and Speldhurst Road, Southborough. The Joint Transportation Board recommended that Kent Highways Services proceed on the basis of Option 2a 'Provision of new left turn lane into Yew Tree Road' and Option 3 'Alternative Staging'. If it was found that Option 2a was either not achievable or too expensive then Option 2b should be progressed. An extract from the above report identifying the proposed options is contained at the end of this report.

3. The report submitted to the Joint Transportation Board anticipated that Option 2a would typically allow 3 vehicles per cycle to benefit from the left turn lane whilst Option 2b would typically allow 1 vehicle per cycle to benefit. Both of these options would have an impact on vehicles turning right into Yew Tree Road.

4. Based on initial costs estimates an allocation for the delivery of this scheme had been set at £141,400 within the 2007/08 Capital Maintenance Programme.

5. Subsequent to the Joint Transportation Boards recommendation an outline design was prepared and a cost estimate produced for Option 2a 'Provision of new left turn lane into Yew Tree Road'. This option would include:
   (a) Construction of a new 50m long left turn lane into Yew Tree Road and associated footway.
   (b) Realignment of the Yew Tree Road junction.
   (c) Relocating the Yew Tree Road stop line further back to accommodate the swept path of left turning large vehicles and subsequent relocation of the existing controlled crossing point.
   (d) Construction of an offside traffic island for the positioning of the primary traffic signal.
   (e) Full replacement of the existing pelican crossing north of the junction, resultant from a combination of the widening on the east side and the age of the current installation.

   The estimated outline cost for delivering this scheme has been given as £207,100. This incorporates works, fee's, utilities and signal costs but does not include potential costs for vertical realignment, accommodation and any unsocial working hours uplift. The cost for delivering Option 2a would therefore be £65,700 above the schemes current allocation.

6. Because the estimated cost for Option 2a significantly exceeded the budget allocation and in accordance with the Boards recommendation Option 2b was considered. This option would vary from Option 2a in having a 25m left turn lane as opposed to the 50m left turn lane in Option 2a and the removal of the need to replace the existing Pelican Crossing on the A26. The cost estimate provided for the outline design of Option 2b is £178,100 which is £29,600 above the schemes current allocation. A significant cost component of both schemes relates to the alteration to public utility apparatus. It had been anticipated that these costs would be significantly lower in the case of Option 2b due to the shorter left turn lane. However most costs are incurred in the immediate area of the Yew Tree Road junction which is affected equally by each proposal and therefore costs are similar for both options.

7. A further report was submitted to the Joint Transportation Board at its meeting on the 21st of January 2008 detailing the issues identified above and including the following Officers Proposals and Recommendation:

   'Proposals

   (a) The view of officers is that the anticipated improvement in traffic movements for either Option 2a or 2b are insufficient to justify the level of expenditure indicated by the cost estimates, and the disruption that would result from the delivery of either option. Therefore officers propose that neither option be progressed further.

   (b) The report submitted to the Board on the 29th of May 2006 recommended the implementation of Option 2c 'Extend 2 lane approach on Speldhurst Road' and Option 3 'Alternative Staging' In addition it recommended that the causes of the congestion prevalent in Southborough be investigated. This should take the form of a route study to look at the wider local network that would fully establish and understand the traffic movements and demand along this section of the A26 corridor and also facilitate a micro simulation modelling exercise.

   Recommendation

   (a) Having regard of the cost for the delivery of either Option 2a or 2b the Board reconsider the original recommendations contained within the Mid Kent Divisional Managers report submitted to the Boards meeting on the 29th of May 2006.'

8. After considering the report the Joint Transportation Board recommended that KHS proceed with Option 2a. Because of programme pressures it is not possible for this scheme to be delivered during the current financial year. In addition because the allocation for the scheme within this year's Capital Programme is £141,400 there is a deficit of £64,700.

9. As this scheme has not been identified as part of the Capital Programme for 2008/09 previously approved by the Board it would be necessary to make provision within this programme for it to be delivered.

10. Because of the cost benefit aspects of this scheme and the potential impact on the Capital Programme for 2008/09 already approved by the Board, officers consider it appropriate for the Board to review the recommendation made by the Joint Transportation Board at its meeting on the 21st of January 2008.

11. However, forthcoming development proposals may present the opportunity to reconsider Option 2 in the light of associated traffic generation and traffic movement patterns, for example, the Southborough hub.

Proposals

12. That the Board review the recommendation of the Tunbridge Wells Joint Transportation Board in respect of this scheme and consider the potential benefits and costs associated with the delivery of this scheme.

13. If the Board supports the Joint Transportation Boards recommendation to proceed with Option 2a Officers review the Capital Works Programme for 2008/09 to facilitate this schemes delivery and report to the Board on the reprioritisation of schemes.

Recommendation

14. The Board reviews this scheme and recommends that officers:

    (a) proceed with the delivery of Option 2a in accordance with the recommendation of the Joint Transportation Board of 21st January 2008 and review and reprioritise the Capital programme for 2008/09

    (b) proceed in accordance with the officer recommendations for options 2c and 3 with the associated route study contained within the report submitted to the Joint Transportation Board of 21st January 2008

    (c) defer the implementation of Option 2a and review in the light of forthcoming development proposals, for example, the Southborough hub.

Accountable Officer: Alun Jones (01622 798306)

Extract of report submitted by the Mid Kent Divisional Manager to the JTB meeting on the 29th of May 2006 (070529/TB006) containing the options referred to in the above report

---

Option 1 Provision of on-crossing detectors and kerbside detectors.

1) Comments

i) Improved pedestrian responsive junction especially for pedestrians with limited mobility.
ii) Kerbside detectors will cancel any unwanted demands for the pedestrian stage and therefore provide a potential increase in capacity. However demands may still exist at other crossings and the all-red stage will still appear.
iii) Also on-crossing detectors will allow the pedestrian stage to run for a longer period possibly negating any benefit from cancelled demands.
iv) Although the elimination of false calls should improve the capacity of the junction, the possible extension of genuine calls and exit blocking could easily negate any improvements and may result in a lower capacity.
v) This option can be combined with any of the following options

2) Costs – approximately £50,000 excluding fees and TM

Option 2a. Provision of a new left turn lane into Yew Tree Road

3) Comments

i) Provides extra capacity for left turning vehicles into Yew Tree Road.
ii) 25% of southbound vehicles turn left, i.e. 1 in every 4.
iii) Given the feasible length of a left turn lane of 50m, typically 3 vehicles will benefit from the lane each cycle resulting in an increase in capacity of 64 vehicles per hour (assuming a 170 second cycle time at peak)
iv) The turning lane would be provided entirely on newly constructed carriageway.
v) With left turners having a dedicated lane, traffic wishing to turn right into Yew Tree Road (across two oncoming lanes) which could previously have taken advantage of any gaps will now be held on a red signal until their own phase is called and the southbound approach will have to be stopped. This could lead to a longer queue of right turning traffic (into Yew Tree Road) and will result in an increase in cycle time and a reduction in capacity.
vi) This does not remove the all-red stage
vii) As this option potentially increases the capacity of the southbound A26 and may reduce congestion, a costing has been prepared.

4) Costs - £50,000 + £98,000 stats diversions excluding fees, traffic management and land costs.

Option 2b Remarking of the southbound approach to the signals to create a left turn lane into Yew Tree Road with limited road widening

5) Comments

i) Provides extra capacity for left turning vehicles into Yew Tree Road.
ii) 25% of southbound vehicles turn left, i.e. 1 in every 4.
iii) Given the feasible length of a left turn lane of 25m, typically 1 vehicle will benefit from the lane each cycle resulting in an increase in capacity of 22 vehicles per hour (assuming a 170 second cycle time at peak).
iv) The turning lane would be provided existing carriageway starting at the existing Pelican crossing and some works will be required to facilitate the left turn...

v) *As with option 2a With left turners having a dedicated lane, traffic wishing to turn right into Yew Tree Road (across two oncoming lanes) which could previously have taken advantage of any gaps will now be held on a red signal until their own phase is called and the southbound approach will have to be stopped. This could lead to a longer queue of right turning traffic (into Yew Tree Road) and will result in an increase in cycle time and a reduction in capacity.*
vi) *This design will result in the through traffic being aligned with the island outside the library, this could result in some vehicle conflicts especially if the left turning lane is abused, and likelihood of vehicles driving into the island will be quite high.*
vii) *This does not remove the all-red stage*

6) *As this option potentially increases the southbound capacity of the A26, possibly only marginally, a costing has been prepared. Though this scheme will identify significant issues at Safety audit.*

7) *Costs - Estimate based on other costs provided - £20,000 + £50,000 stats diversions excluding fees, traffic management and land costs.*

Option 2c Extend 2 lane approach on Speldhurst Road

8) *Comments*

i) *Provides extra capacity for left turning vehicles into A26 London Road.*
ii) *30% of vehicles turn left, i.e. 1 in every 3.*
iii) *The current flared approach is 36m long, enough to hold on average 6 vehicles, but they are narrow lanes. Extending the lane could be achieved by banning parking on the approach (opposite Reynolds Lane).*
iv) *On site observations suggest there would be limited benefit in extending this lane. The right turning traffic flows freely at green provided there is no exit blocking on the A26 St John's Road into Tunbridge Wells. The storage capacity between the signals on the A26 is sufficient for the left turning traffic exiting Speldhurst Road but at times not all the left turners can make their turn before the lights change.*
v) *Any measures which improve the capacity of Speldhurst Road may increase traffic levels on Speldhurst Road and on other roads in Southborough.*
vi) *This does not remove the all-red stage*
vii) *This option involves the removal of the parking on Speldhurst Road opposite Reynolds Lane. The capacity increase would be slight and would be limited to Speldhurst Road*

9) *Costs - The estimated cost is £1,000*

Option 2d Removal of Bus Lane on A26 Northbound approach

10) Comments

i) *The removal of the bus lane would allow the segregation of northbound traffic into either*
   - *right turners into Yew Tree Road (right lane)and all other traffic (left lane) (the pre bus lane layout) or*
   - *left turners into Speldhurst Road (left lane) and all other traffic (right lane)*

   At the St John's Road stop line. At the Yew Tree Road stop line, the lane arrangement would remain unchanged.
ii) *The removal of the bus lane would require extensive construction works including the resurfacing of the bus lane and the removal/resiting of the existing signals*
iii) *Currently 17% of vehicles turn left into Speldhurst Road and 4% of vehicles turn right into Yew Tree Road. The remaining 79% proceed straight ahead.*
iv) *A dedicated right turn lane at the Speldhurst Road signals (for Yew Tree Road ahead) would only be used by 4% of traffic. This would have little effect on traffic in the other lane or on junction capacity. Any lack of lane discipline (commonplace in the pre bus lane days) will lead to conflicts for the ahead movement through the junction as drivers attempt to beat the queue which will increase the probability of injury crashes.*
v) *A dedicated left turn lane will remove that traffic from the ahead stream but this will only allow the ahead traffic to reach the Yew Tree Road junction a little quicker.*
vi) *The longer the left turn lane, the greater the effect but there is a limit to the length. In addition, although the bus lane might be removed, the cycle lane would be retained and this may be the limiting factor in determining the maximum length of a left turn lane. There is also the issue of traffic wishing to access St John's Park both in terms of vehicles in the left turn lane unexpectedly turning left early to get to St John's Park and the use of the access road to beat the queue at the traffic signals*
vii) *A dedicated left turn lane will shorten the queue on the A26 approach to the signals and may have a beneficial effect on air quality.*
viii) *During the AM peak there will be a 10% improvement in saturation on the northbound approach if the bus lane is removed, reducing the queue that is 300metres long to 252metres long. The results are similar in the PM peak.*
ix) *A dedicated left turn lane will not resolve the issue of exit blocking on the A26 London Road nor will it increase the capacity of the junction but will make Speldhurst Road a more attractive route to drivers. The possibility of poor lane discipline together with the need for ahead traffic to move from the outside lane at the first set of signals to the inside lane at the second set of signals will increase the probability of injury crashes.*
x) *Research shows that there are 7 scheduled bus services per hour using the bus lane. The Kent County Council threshold for the introduction of a bus lane is 6 per hour and therefore the removal of the bus lane appears to be contrary to Kent County Council practice.*
xi) *Bus journey's do benefit from the provision of the bus lane as it allows them to pass a 200metre length queue and ensure they proceed through the junction at the next green, were the bus at the end of the queue there is no guarantee they would make it though the junction on green with the exit blocking that occurs, and would then have to wait up to 75 seconds until the next green.*
xii) *Although this option does not increase the capacity of the junction, it should reduce the length of the approach queue from Tunbridge Wells.*
xiii) *The current bus lane is also the cycle lane along the A26 Northbound and any reconfiguration of the junction will cause problems. A dedicated left turn lane at the stop line would mean that the on-carriageway cycle lane could not remain on the nearside due to conflicting movements. If it were to come along the centre of the two vehicle lane approaches it would need to start at the beginning of the two lane approach, this would lead to the cyclists being in a very vulnerable position for up to*

200 metres. To maintain the cycle lane on the nearside the two lanes would need to be segregated for left and ahead in the nearside and right turners into Yew Tree in the right, however there is no benefit with this as described in paragraph iv) above.

11) *Costs. - The estimated cost is £60,000 excluding fees and traffic management. There should be no land costs or stats costs.*