

**TO: The Executive Member for Planning and Transport**

**DATE: 3<sup>rd</sup> March 2014**

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**SHOULDER OF MUTTON JUNCTION IMPROVEMENT  
INTEGRATED TRANSPORT CAPITAL PROGRAMME 2013/14  
(Director of Environment, Culture & Communities)**

**1 PURPOSE OF REPORT**

- 1.1 To approve the proposed improvements at the junction, as outlined Option B Appendix 2, of St Marks Rd/Beehive Rd/London Rd (B3408) also known as the Shoulder of Mutton junction.

**2 RECOMMENDATIONS**

**That the Executive member for Planning and Transport:**

- 2.1 **Notes the Traffic Regulation Order consultation results in Appendix 1, including the Officer responses to the objections received;**
- 2.2 **Approves the proposed junction improvement outlined within the report (Option B within Table1 and shown on attached plan Appendix 2) for implementation; and**
- 2.3 **Approves that no public inquiry be held and accordingly authorises the Borough Solicitor to make the Traffic Regulation Order banning the right turn from Beehive Road.**

**3 REASONS FOR RECOMMENDATION**

- 3.1 To facilitate delivery of the transport system in line with the Council's Local Transport Plan 3 (LTP3) and the Council's Medium Term Objectives including planning for the necessary changes that accompany a regenerated town centre and future strategic housing sites.

**4 ALTERNATIVE OPTIONS CONSIDERED**

- 4.1 To abandon improvement proposals at the Shoulder of Mutton junction. This would result in significant short and long term congestion and difficulties in managing the B3408 corridor with the resultant implications for delivering the Council's adopted Local Transport Plan objectives and commitment to supporting economic growth.
- 4.2 To implement a revised scheme. Revised proposals have been investigated but do not deliver an effective medium or long term solution.
- 4.3 The Executive Member could approve the scheme but defer implementation until after major development has been completed. This would be inadvisable for a number of reasons. Whenever possible, it is preferable to increase junction capacity in advance of development so that existing and new road users can have immediate benefit from the improvement rather than enduring an under-capacity junction followed by disruptive road works. Additionally, in operational terms, there are numerous junction improvements planned in the coming years all scheduled to minimise overall disruption to motorists and to delay this junction improvement would put unnecessary pressure on the overall road network and a more negative impact on motorists.

## 5 SUPPORTING INFORMATION

### Background

- 5.1 The B3408 forms one of the key transport corridors to and from Bracknell Town Centre and the extensive Western Business Area. It forms part of the Bracknell northern distributor route and between the Western and Coppid Beech roundabouts, it also provides an alternative route to Berkshire Way/A329 which serves the Town Centre and forms part A322/A329 corridor linking the M3 and M4.
- 5.2 Due to the considerable level of through traffic between the M3 and M4, the B3408 has become an attractive alternative route to and from Bracknell. As a result the road experiences high levels of peak hour congestion, particularly at the staggered signalised junction at Mutton Hill (where the 'Shoulder of Mutton' public house once stood).
- 5.3 With further growth forecast for the area, including the Town Centre regeneration and proposed housing development in Binfield and Warfield, congestion along this corridor is forecast to increase. Currently the route experiences a peak hour spike in activity due to improvements being carried out at the Twin Bridges junction.
- 5.4 In 2009 the Council improved the junction of John Nike Way/B3408 London Road by introducing traffic signals. Whilst reducing queues at the junction this has enabled more traffic to travel along the route which has been consequentially held by the Shoulder of Mutton junction. This situation was clearly apparent from observations prior to the start of the Twin Bridges work (April 2013) but has since been masked by the overall impact of displaced traffic onto this route. However, transport modelling work demonstrates that, in normal conditions, surrounding junctions along the corridor have sufficient spare capacity to cope satisfactorily with a future release of traffic flow through the Shoulder of Mutton junction.
- 5.5 Additionally in 2014, Wokingham Borough Council, in partnership with Bracknell Forest, will be implementing comprehensive improvements to the Coppid Beech roundabout. This project is part-funded by the Department for Transport who recognise the importance of the surrounding routes serving the junction and their role in the region. The economic benefits that can be generated by further improvements have been a key consideration during the Department's scheme assessment.
- 5.6 By improving capacity at the Shoulder of Mutton junction, and linking its operation to the traffic signals at John Nike Way and the improved Coppid Beech roundabout, a co-ordinated network can be achieved resulting in less traffic stops and more progression through this section of the London Road. This co-ordinated approach is important in helping develop a robust transport system that not only supports local needs and the local economy but also provides wider benefit to the region.
- 5.7 Additional benefits of the junction improvement work include the opportunity for the wholesale replacement of the existing ageing traffic signal infrastructure which has now reached the limits of its design life. Whilst modern technology cannot improve capacity at the junction it would influence the reliability of its performance. It should be noted that the existing junction control equipment has now developed a series of irreversible faults which impact on the junction. The necessary repair work would exceed £30k of which the majority would be abortive given the broader improvement proposals.

## Proposals

- 5.8 By capturing turning movement data, it has been possible to analyse the current demands placed on the Shoulder of Mutton junction, and model various revised layouts including the banning of certain movements in order to increase overall capacity.
- 5.9 This approach also allowed us to design for future growth along the corridor to meet the predicted capacity of the junction in 2026, which is the forecast year in the Borough's multi-modal transport model. This is important, as providing capacity improvements along the Borough's strategic corridors is in accordance with the National Planning Policy Framework by working proactively to help meet the development needs of business and support an economy fit for the 21st century in line with adopted Local Transport Plans and Local Development Framework.
- 5.10 Therefore, when implementing changes to the Borough's strategic road corridors, future growth must be considered along with the wider benefits any improvements may bring. Using this approach, various layouts were examined to maximise capacity whilst also delivering the Council's vision on developing a sustainable transport system that also considers the movement of pedestrians and cyclists.
- 5.11 During extensive testing of the Shoulder of Mutton junction improvement options, due regard was given to the geometric constraints that are common within highway transportation, such as land ownership. This assessment work included one option to revert to a more conventional crossroads and another (preferable) solution that provides maximum capacity and value for money, but results in banning the straight ahead and right turn movements from Beehive Road. This latter solution followed an assessment of the turning counts that showed the Beehive Road arm of the junction to represent, on average, 2.3% of the overall traffic movements through the junction in the peak hours. This manoeuvre also requires the junction to completely stop (all red phase of the traffic lights). Typical movements at the junction show an average split in the peak hours of 37 vehicles turning right out of Beehive Road against a peak of 1836 making other movements.
- 5.12 The overall approach to reducing the number of turning movements at busy junctions which have such land constraints is common place within transport planning. As such it is likely that future improvement works elsewhere on the Boroughs strategic road network will need to consider this same approach in order to accommodate future growth.
- 5.13 Under the Road Traffic Regulation Act 1984 the Council is empowered to promote restrictions on vehicle movement for the reasons of "facilitating the passage on the road or any other road of any class of traffic (including pedestrians)".as set out in section 1.1.c of the Act. Obviously, any proposal to ban a vehicle movement is approached cautiously and the impacts have been considered and investigated thoroughly. The right-turn ban from Beehive Road ban would require those currently making this movement to take alternative routes; however, this number is considered low in proportion to overall movements at the junction and this likely impact is considered minimal along these routes. The Rounds Hill and Popeswood Roundabouts have subsequently been tested for capacity to ensure there would be no detrimental effect on either as a result of the closure.
- 5.14 The option to retain an "all movement" style junction has been extensively tested and investigated. Table 1 below compares a new all movement crossroads style junction (Option C) with the proposal being put forward (Option B) and the existing situation (Option A).

Table 1

Option	Junction Layout – Performance	2012		2026	
		AM	PM	AM	PM
A	<b>Existing Layout</b>	<b>107%</b>	<b>128.1%</b>	<b>115.6%</b>	<b>133.6%</b>
	Cycle Time	180s	180s	180s	180s
B	<b>Banned Right Turn</b>	<b>88.9%</b>	<b>88.7%</b>	<b>98.6%</b>	<b>93.2%</b>
	Cycle Time	90s	82s	90s	82s
C	<b>Crossroads</b>	<b>91.8%</b>	<b>96.9%</b>	<b>105.4%</b>	<b>109.1%</b>
	Cycle Time	141s	156s	180s	180s

- 5.15 The percentage figures in the table show the practical reserve capacity for the junction in each of the arrangements and scenarios. A higher value will result in progressively higher levels of queuing and delay during the modelled periods. Once the % value exceeds 100 (shaded boxes in Table 1) the junction is considered to be 'saturated' with gridlock a likely scenario. A cycle time is the length of time in seconds for a complete stage sequence to run before it is repeated i.e. the max time a motorist can be expected to wait for their 'turn' in the light sequence.
- 5.16 It is noted from Table 1 that currently (Option A) the junction is over capacity in both the AM and PM peaks in 2012 and 2026. These results have been obtained by testing the junction with existing signal staging and the cycle time taken from the control box on-site.
- 5.17 By banning the right turn movement from Beehive Road (Option B), a marked improvement in the capacity at the junction is predicted, along with significantly shorter cycle times that allow more vehicles to cross the stop-line during green periods. This results in lower levels of queuing and delay. Although the total throughput of traffic increases between 2012 and 2026, option B still performs well in the 2026 peak periods. This is due to changes in traffic flow distribution combined with the benefits of fewer stages within the traffic signals sequence and a reduced cycle time.
- 5.18 While the crossroads layout (Option C) predicts an improvement on most of the results gained from the existing junction configuration, this is not as favourable as the banned right turn option given the clear indication that the junction will become saturated overtime.
- 5.19 In addition to performance Option B also provides far better value for money with a estimated cost of £150k compared to an approximate cost of nearly £1m for a crossroads Option C and therefore unaffordable for the foreseeable future.

#### Consultation

- 5.20 An improvement scheme for the Shoulder of Mutton was approved as part of the 2013/14 Capital programme.
- 5.21 As the banning of the right turn (Option B) movement required a Traffic Regulation Order, a public consultation was undertaken. Due to the nature of the proposed ban, the Council have received objections that are detailed in Appendix 1 along with the Authority's response.
- 5.22 The objections equate to a response rate of 15% of all properties included in the consultation.

The formal objections consisted of:

- 62 individual written objections.
- A petition containing 43 signatures. 6 of the 49 residents who signed the petition also submitted separate written objections – this total has therefore been adjusted to only consider the number of signatories who did not log individual objections.

5.23 Of the formal objections received, seven did not provide addresses. Their comments are however still considered within the analysis. Eight of the formal written objections received were from individuals who reside outside the Turnpike Road/Beehive Road estate. Seven of these objectors reside in areas that were not included within the consultation delivery areas.

#### Summary

5.24 It is clear from the comments received that there is local concern about the favoured approach. However, on balance, taking into consideration performance, overall cost (insufficient funds for Option C) and the benefits to the wider area, then Option B with the banned right turn out of Beehive Road remains the recommended option.

## **6 ADVICE RECEIVED FROM STATUTORY AND OTHER OFFICERS**

### Borough Solicitor

6.1 The Council has a discretion (but not a duty) to arrange for a public inquiry to consider the objections which have been made. In deciding whether or not to hold a public inquiry a view has to be taken whether or not the objections can properly and adequately be considered in the absence of an inquiry

### Borough Treasurer

6.2 The approved 2013/14 capital programme includes a budget for this scheme, Option B can be delivered within this sum. It is unlikely that the work will be completed in the current financial year and therefore a carry forward will be requested on the capital budget monitoring statement.

### Assistant Chief Executive – On Economic Objectives

6.3 Improvements along this corridor are key to economic growth in the area and strengthening its position in the region. These improvements are required if we are to deliver on our vision of developing a transport system that supports the local economy.

### Equalities Impact Assessment

6.4 An Equalities Impact Assessment was undertaken in preparation for the formal publication of the adopted LTP3 Core Strategy which includes the Shoulder of Mutton junction

### Strategic Risk Management Issues

6.5 Strategic Risk Category Number 8 identifies the risks associated with failing to maintain highways/buildings to meet health and safety standards resulting in injury, loss or damage to individuals or property. In addition, where highways/buildings, etc are not properly maintained or where adequate infrastructure is not put in place,

there is a risk that they are not fit for purpose this impacting on the Council reputation and having a negative impact on service delivery and productivity.

- 6.6 In planning to meet the Borough's transport needs, it is important that the Council has a robust transport strategy and effective programme of works and measures to meet the needs of all users of the transport network. This involves working closely with partners including agencies, groups, utility organisations and other interested parties.
- 6.7 It is in the interests of the local economy to ensure that the transport network is as sustainable as possible provide the best possible opportunities access to services and facilities by a range of modes of transport. In the absence of robust transport strategy and implementation, the Council would not fulfil its statutory duties in respect to the transport network

### Background Papers

Financial Plans and Budgets 2013/14 - 27<sup>th</sup> February 2013

### Contact for further information

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