Hampshire County Council

Economy, Transport and Environment Department

MF23 Fiveways - Joint Technical Note by the LHA, LPA and SS3.10 Promotors

Date: **6 November 2015**

Subject: **BDBC Local Plan Examination – Fiveways Junction update**

Background

1. A technical note and a report on Fiveways (PS/04/56) was published on 16 October. This includes a validated 2015 AM and PM peak hour baseline model using traffic data collected in September 2015 following the start of the academic year.

2. The report goes on to consider the operation of the junction in association with a potential development scenario of 300 dwellings at SS3.10 parcel 6a. This shows the operation of the existing junction would be expected to deteriorate as a result of the traffic demands arising from 300 dwellings on plot 6a.

3. A potential improvement to the junction as shown on drawing 'FIVE-ACH-AH-00-SK-CE-00002 Revision P01' has then been tested with the additional traffic from the 300 dwellings on plot 6a. This identifies that a 'nil detriment' situation could be achieved, i.e. that conditions at the junction with the 6a development and an improvement would be no worse that they would be in 2015 with no development at plot 6a and no improvement. In simple terms if the improvements shown on drawing 'FIVE-ACH-AH-00-SK-CE-00002 Revision P01' are implemented then 300 dwellings could be built at SS3.10 plot 6a by 2021 without a severe residual highway impact at the junction.

4. At the hearing session on 20th October a further question was posed by the inspector. This was, '*Is the proposed improvement of the Fiveways junction at Kempshott justified; will the increased capacity cater for likely traffic flows up to 2029; and how user-friendly will it be for both pedestrians and cyclists?'*

5. The remainder of this note will address this question, using the three underlined elements as topics. The comments and written submissions by other participants will also be addressed where possible within the topics.

*additional survey work will be required on completion of major works at M3 J6 – J7 and Black Dam

Justification

6. All testing of the Local Plan growth whether through the LPA's Transport Assessment (TR01), the HCC Technical Note or AECOM report on Fiveways (PS/04/56) recognises that there will be increased travel demands at the Fiveways junction. All testing recognises the requirement for mitigation in the form of a physical improvement. The justification for a physical improvement alongside local plan growth is common ground between all parties. It is also common ground between the LHA, LPA and the Manydown Promotors that the Manydown development will fund highway improvements necessary to mitigate its impact (including those at Fiveways) and will not rely on other sources of funding.

7. The AECOM report on Fiveways (PS/04/56) includes manual classified turning count data across all modes collected on site in September 2015. The data collection also included queue length surveys and saturation flow measurements which provide a detailed evidence base. September is a neutral month for traffic data collection consistent with DfT guidance in webTAG Unit M1.2 – Data Sources and Surveys.

8. As a matter of clarification Annex 1 of the AECOM report on Fiveways (PS/04/56) did refer to an assessment year of 2017 which is the potential year of opening of plot 6a. It was subsequently agreed that the assessment year should be 2021 for plot 6a reflecting the year of completion of plot 6a. This is consistent with the main body of the AECOM report on Fiveways (PS/04/56).

9. The improvements shown on drawing 'FIVE-ACH-AH-00-SK-CE-00002 Revision P01' will introduce additional traffic capacity at the junction and improve its operation and efficiency. The LHA considers that the improvement shown on drawing 'FIVE-ACH-AH-00-SK-CE-00002 Revision P01' is justified as part of a wider package of transport infrastructure needed to support the Local Plan.

Will the increased capacity cater for likely traffic flows up to 2029

10. Since the HCC Technical Note and AECOM report on Fiveways (PS/04/56) further work has been carried out by the LHA, WSP Parsons Brinkerhoff (on behalf of the LPA) and by AECOM (on behalf of the site promotors). This joint work has led to a revised 2021 assessment and a 2029 assessment of the improvements shown on drawing FIVE-ACH-AH-00-SK-CE-00002 Revision P01 (Appendix 1).

11. The 2021 assessment includes:

    - 2015 recorded traffic flows at the junction
    - Plot 6a traffic (assuming 0% through Dorset Crescent)
    - 2021 development flows from Kennel Farm (170 units)
    - 2021 development flows from Hounsome Fields (280 units)

12. The 2029 assessment includes:

- 2015 recorded traffic flows at the junction
- Plot 6a traffic (assuming 0% through Dorset Crescent)
- 2029 development flows from Manydown North (3100 units)
- 2029 development flows from Kennel Farm (310 units)
- 2029 development flows from Hounsome Fields (750 units)
- 2029 development flows from Golf Course site (1000 units)

13. The impact of the recently approved Critical Care Hospital has been considered and reference to its Transport Assessment shows that in the AM and PM peaks 116 and 89 vehicles are forecast to use the A30 east to / from Basingstoke. Based on population data (Census 2011) a worst case assessment indicates that some 15% of this traffic could route to destinations via the Fiveways junction resulting in circa 17 AM and 13 PM peak hour trips (less than one vehicle every three munites) through the Fiveways junction meaning that the impact of the proposed Hospital is not material at the Fiveways junction.

14. The existing junction layout has been modelled in 2015 and model validated by observed queuing. The results are shown in Table 1 and are as previously presented in the AECOM Report (PS/0456)

Table 1 2015 – Existing layout

Approach	AM (0800-0900)			PM (1700-1800)		
	DoS (%)[3]	MMQ[4]	Obs Q[5]	DoS (%)	MMQ	Obs Q
Buckskin Lane (N)	114.8	44.7	46	106.5	47.8	47
Pack Lane (E)	99.7	15.4	22	102.6	21.4	29
Kempshott Lane (S)	97.7	30.2	32	102.0	25.0	19
Pack Lane (W)	95.7	15.2	13	96.7	12.7	12
Cycletime (secs)	112			110		
PRC[6] (%)	-27.6			-18.3		

15. In 2015 the junction is observed and modelled to be operating over capacity with minus Practical Reserve Capacity in both peak periods.

16. The improved junction has then been modelled with the 2021 Assessment. The results are shown in Table 2.

Table 2 – 2021 Assessment with improved junction layout

Approach	AM (0800-0900)		PM (1700-1800)	
	DoS (%)	MMQ	DoS (%)	MMQ
Buckskin Lane (N)	103.6	29.0	107.2	55.1
Pack Lane (E)	98.9	12.5	107.9	28.7
Kempshott Lane (S)	102.3	41.1	106.4	34.5
Pack Lane (W)	103.7	27.9	103.1	20.5
Cycletime (secs)	119		120	
PRC (%)	-15.2		-19.9	

17. In summary, compared to 2015 with no improvement, the improved junction operates with a significantly better level of Practical Reserve Capacity in the AM peak although the junction performance slightly deteriorates in the PM peak. Queuing in the AM peak is broadly similar to 2015 but greater in the PM peak. Overall the 2021 Assessment achieves 'nil determent'.

18. The improved junction has then been modelled with a 2029 Assessment. The results are shown in Table 3.

    Table 3 – 2029 Assessment with improved layout

Approach	AM (0800-0900)		PM (1700-1800)	
	DoS (%)	MMQ	DoS (%)	MMQ
Buckskin Lane (N)	110.1	46.0	114.5	80.1
Pack Lane (E)	109.9	22.0	114.1	37.9
Kempshott Lane (S)	110.7	68.5	114.0	54.6
Pack Lane (W)	108.6	35.6	110.4	28.6
Cycletime (secs)	119		120	
PRC (%)	-22.9		-27.2	

19. In summary, compared to 2015 with no improvement the improved junction operates with an improved level of Practical Reserve Capacity in the AM peak although the junction performance deteriorates in the PM peak. Queuing in the AM peak and PM peak is greater but traffic entering a queue at the junction would be expected to pass through the junction after one cycle. Nil determent is achieved in the AM peak.

20. The 2029 test is considered a worst case scenario as it includes a bespoke assessment of development across all of Manydown and all the South West sites. It continues to use a spreadsheet methodology making no allowance for any re-assignment through either journey route choice, journey timing choice or journey mode choice. More sophisticated transport modelling would be carried out at the next stage of the planning process. This could utilise the North Hampshire Transport Model (NHTM) which is a webTAG compliant transport and land use interactive demand model which allows for factors such as congestion, cost and time to be reflected in forecast transport demands.

21. The assessment has excluded any option to utilise a vehicle connection to Dorset Crescent which could still emerge through master planning work that is planned for later this year and removing flows via Dorset Crescent is not an actual requirement of the LHA. Removal of Dorset Crescent for modelling purposes results in a worse case scenario as regards traffic flows through the Fiveways junction.

22. There is a lack of a specific threshold for the definition of 'severe' as stated in paragraph 32 of the NPPF. Transport practitioners now broadly agreed that severity should be considered individually and in terms of the relative setting. By its very definition the 'severity test' is a step away from 'nil detriment' and therefore some impact is acceptable, but not severe impact.

23. The 2021 Assessment shows a level of Practical Reserve Capacity that results in 'nil detriment' in both AM and PM peaks.

24. The 2029 Assessment shows that the level of Practical Reserve Capacity results in 'nil detriment' in the AM peak and comparatively modest deterioration in Practical Reserve Capacity in the PM peak but with all traffic expected to pass through the junction in the first or second cycle.

25. Personal Injury Accident (PIA) data for the most recently available five year period, between 1st August 2010 and 31st July 2015 shows that there have been no reported accidents at the Fiveways junction, during this five year period. The 2029 Assessment has been carried out on the basis of an improvement that does not affect the signal phasing i.e. there is no change to the movement of traffic that might lead to an increased risk of collision. In addition the proposed improvement does not remove or amend any pedestrian or cycle infrastructure within the junction i.e. there is no change to the way pedestrians and cyclists move through the junction that might lead to an increased risk to collision. There is no evidence of any likely road safety impact arising at the Fiveways junction.

26. The LHA is satisfied at this stage of the planning process that the improvement shown on drawing FIVE-ACH-AH-00-SK-CE-00002

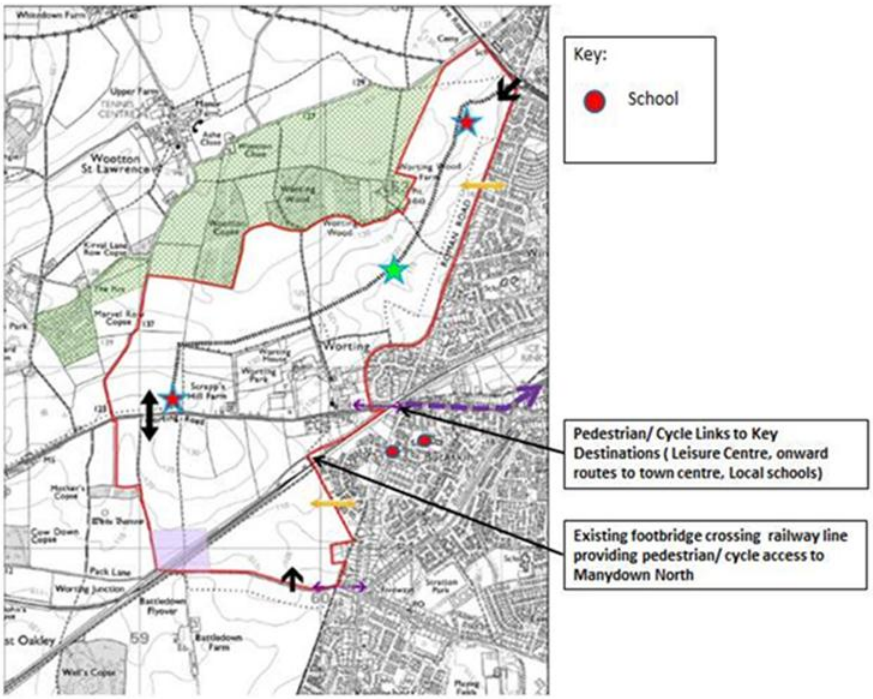
Revision P01 (Appendix 1) can deliver an appropriate level of mitigation at the junction such that the Local Plan growth (including sites at Plot 6a, Manydown North, Kennel Farm, Hounsome Fields and the Golf Course can be delivered without a severe residual highway impact at the Fiveways junction.

How user-friendly will it be for both pedestrians and cyclists?'

27. The junction improvement shown on drawing FIVE-ACH-AH-00-SK-CE-00002 Revision P01 (Appendix 1) retains at least the same footway widths, pedestrian facilities, Advance Stop Lines for cyclist, and 'all red cycle call' that exist in the current arrangements. Cyclists can continue to travel through the junction using the on-road advisory cycle facilities which currently are used.

28. The Plot 6a site will include a route for pedestrians and cyclists through to Dorset Crescent and there are other opportunities for pedestrians to cross the Railway at the existing footbridge at the north of plot 6a which connects to the permitted Worting Farm site (planning reference: 13/02553/FUL) and provides links to the North Manydown site and a range of existing and proposed facilities such as schools and local centres within the development boundary. These could connect to the existing strategic cycle route heading eastwards towards the Leisure Park, as suggested by the Basingstoke and Deane Borough Cycle Strategy (draft consultation version September 2015). The map below (Map 1) shows these links and those to popular local destinations to the east of Manydown do not require routing through the Fiveways junction for cyclists and pedestrians.

Map 1- Possible routes from Plot 6a via Dorset Crescent and alternatives



29. The Dorset Crescent pedestrian/cycle access (south of railway) provides cycle access to local schools including Bishops Challoner Secondary School and Chiltern Primary School with the expected cycle routes making use of existing shared use footway/cycleway through existing estates with physical characteristics favourable to cyclists (low traffic flows, street lighting, good forward visibility). Cycle journey times via the northern proposed pedestrian/cycle access are circa 6 mins to both Bishop Challoner and Chiltern Primary and therefore present a safe and attractive option for use. These routes do not require cyclists to travelling through the Fiveways junction. Similar routes would likely also be utilised by pedestrians accessing the same school sites.

    Based on the above, it can be assumed that a high proportion (approx 80%) of sustainable mode trips to/from to the Plot 6a site would utilise the Dorset Crescent pedestrian/cycle access point. This would result in the remaining 20% of pedestrian and cycle trips (approximately 14 pedestrians and 1-2 cyclists in the AM peak compared to 79 existing pedestrians and 15 existing cyclists) utilising the Fiveways Junction which could not be considered significant.

Other matters

30. Mr Wilson, (a participant at the hearing session on 20th October) requested that the proposed improvements drawing for Fiveways be amended to include the highway boundary. Drawing number FIVE-ACH-AH-00-SK-CE-00005 Revision P01 (Appendix 2) now shows this detail.

31. Drawing number FIVE-ACH-AH-00-SK-CE-00005 Revision P01 now also shows potential additional measures which for the avoidance of doubt are NOT included or relied on in any of the above modelling. The above junction modelling only includes the benefits arising from traffic lane flaring, kerb alterations, the reallocation of turning areas and the optimisation of the signal controller settings as detailed in the AECOM report (PS/04/56) and does NOT remove or down grade any pedestrian or cycle facilities within the junction.

Appendices

1. Drawing FIVE-ACH-AH-00-SK-CE-00002 Revision P01
2. Drawing number FIVE-ACH-AH-00-SK-CE-00005 Revision P01